

Massachusetts DOER Manomet Study (June 2010)

A Review of the Facts

The Massachusetts Department of Energy Resources commissioned the Manomet Center for Conservation Sciences to study the sustainability of biomass energy production from Massachusetts's forests. The resulting report, "Biomass Sustainability and Carbon Policy Study," was recently released on June 10, 2010. While the study's framework and methods are generally valid, by design its focus is very limited and as a result does not allow for any generalization beyond Massachusetts and the single type of biomass material that it considers.

The study itself acknowledges its narrow focus and the limited applicability of its conclusions. Nevertheless, this has not prevented nearly immediate egregious misinterpretation of its results; misapplication of its conclusions to other geographic areas and biomass materials is likely, and both harm sustainable renewable energy initiatives around the country.

In particular, **virtually all of the study's conclusions are inconsistent with the context of the Gainesville Renewable Energy Center (GREC).** In large part, **the study is contrary to the established position of the US Department of Energy¹, European Commission², and the California Public Utilities Commission³, all of whom regard biomass power as carbon-neutral.**

The limited applicability of the Manomet study's conclusions and elements of the study that are open to misinterpretation are the result of the following points:

- ***The study exclusively considers forest biomass.*** Since the Manomet study assumes that the only material being used is new wood harvested exclusively for biomass energy, it does not evaluate the sustainability of what are by far the most commonly utilized biomass materials for biomass power: wood waste products and residual materials from forestry, agriculture and urban wood waste. Utilizing wood waste materials has an unequivocally favorable impact on greenhouse gas emissions. The Manomet study itself actually goes so far as to say:

"Net [greenhouse gas] impacts of biomass from sources other than natural forests may also be carbon neutral (or close) where these materials would have quickly entered the atmosphere through decay (e.g., residue from landscaping and tree work, construction waste)." (p. 95)

In the absence of biomass energy facilities like GREC, a large amount of wood waste material will be burned in the open with no emissions controls, landfilled or left to decompose which will lead to the release of harmful greenhouse gases.

"...[T]he record shows that electric generation using biomass (e.g., agricultural and wood waste, landfill gas) that would otherwise be disposed of under a variety of conventional methods (such as open burning, forest accumulation, landfills, composting) results in a substantial *net reduction* in GHG emissions." - California Public Utilities Commission, January 2007, Decision 07-01-039

¹ Energy Policy Act of 1992, Sect. 1605(b) (<http://www.eia.doe.gov/oiaf/1605/FinalGenGuidelines041306.pdf> and http://www.eia.doe.gov/oiaf/1605/January2007_1605bTechnicalGuidelines.pdf)

² Commission Decision of 18 July 2007 establishing guidelines for the monitoring and reporting of greenhouse gas emissions pursuant to Directive 2003/87/EC (<http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2003:275:0032:0032:EN:PDF>)

³ California Public Utilities Commission, January 2007, Decision 07-01-039, Section 1.6 (http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/64072.htm)

It furthermore is misleading inasmuch as the study title, "Biomass Sustainability and Carbon Policy Study " (as opposed to "Massachusetts Forest Biomass Sustainability and Carbon Policy Study") implies that it evaluates a broad range of biomass materials when it actually only considers a single type of biomass material.

- ***The study considers forest biomass harvest to be primarily whole trees.*** Logging residues resulting from timber product harvests have a much more favorable carbon emissions profile. The study argues that they will not be an important component of biomass output in Massachusetts. Regardless of the Massachusetts context, they will be an important component of the biomass utilization portfolio elsewhere, especially in north central Florida.
- ***The study evaluates only Massachusetts forests.*** Florida forests could hardly be more different in terms of growth rates, species composition, and silvicultural practices - all of which result in a much more favorable emissions scenario for GREC.
- ***The study ignores the carbon implications of forestland being converted to other uses.*** When forest is converted to other uses a permanent carbon deficit is generated. The sale of forest products, including biomass material for energy, helps landowners "keep forest in forest", thereby helping avert irreversible carbon emissions. This point was highlighted in the Woody Biomass Economic Study released by the FL Division of Forestry in March 2010.

GREC differentiates itself from the study's Massachusetts scenarios in the following ways:

- ***Approximately 85% of the GREC biomass fuel supply will consist of various woody biomass waste products.*** This includes urban tree debris, logging residue, and mill residue. Nearly all of this material would be open-burned or would decompose, in either case generating greenhouse emissions and other airborne pollutants. As the report itself notes:

“...[A]ll bioenergy technologies - even biomass electric power compared to natural gas electric - look favorable when biomass ‘wastewood’ is compared to fossil fuel alternatives.” (p. 110)
- ***Aside from logging residues, most forest derived material is expected to come from the harvest of thinnings.*** Since thinning forest stands improves growth rates, and thereby carbon sequestration rates, the emissions profile of thinnings utilization is more favorable from the standpoint of recovery time. Thinning furthermore makes forests more resilient to significant emissions generating events such as wildfires and pest outbreaks.
- ***Managed forests in the GREC supply area have rotation lengths far shorter than those cited in the study.*** This means that the "break-even point" on emissions identified by the study occurs much sooner in Florida than is possible in an environment like Massachusetts.
- ***Forest-derived fuel for GREC is subject to Minimum Sustainability Standards.*** These minimum standards, which are included in the binding contract between GREC and Gainesville Regional Utilities, mandate that any forest-derived biomass material originates from stands that will remain in forest. These forests will in turn ensure that carbon emissions resulting from GREC are recaptured.

Statements from Manomet Study Participants

STATEMENT FROM MANOMET ON THE BIOMASS STUDY

21 June 2010

There has been much press coverage of our study about using forest biomass for energy in Massachusetts. This study was commissioned and funded by the Massachusetts Department of Energy Resources (DOER). Many of the resulting press articles have oversimplified the results. Indeed, a key lesson of the study is that understanding the greenhouse gas (GHG) impacts and benefits of using wood for energy is more complex than most people have assumed, and that a lifecycle assessment is needed in order to assess these GHG costs and benefits. Here Manomet seeks to provide some additional clarifying comments about the study given the substantial press coverage that followed the release of our report on June 10, 2010. The study can be downloaded from www.manomet.org. Manomet encourages interested parties to read the report, or at least the Executive Summary, to understand first-hand what the study concludes.

One commonly used press headline has been ‘wood worse than coal’ for GHG emissions or for ‘the environment.’ This is an inaccurate interpretation of our findings, which paint a much more complex picture. While burning wood does emit more GHGs initially than fossil fuels, these emissions are removed from the atmosphere as harvested forests re-grow. As discussed in more detail below, the timing and magnitude of the recovery is a function of forest productivity, land management choices, and technology and fuel characteristics.

To help stakeholders and policy makers gain a more accurate and complete understanding of the study results, some of the key points found in the report are listed below.

- First, the study addresses only the carbon cycle implications of biomass harvested from actively managed, natural forests. The study did not analyze woody biomass from other sources, for example biomass plantations, land clearing, tree work and landscaping wastes, or construction waste. These materials can be important potential sources of biomass—ones that likely have very different carbon cycle implications than biomass from natural forests—and merit careful and separate consideration in biomass policy development.
- Second, the study did not analyze the impacts of non-GHG pollutants emitted from energy generation facilities (e.g., particulate matter, NO_x, SO₂, or other hazardous air pollutants such as mercury). Emissions of these pollutants vary considerably between wood and fossil fuel energy systems, and are an important consideration in determining the relative merits of biomass and fossil fuels.
- Third, the study clearly states that it focuses on the forest and energy situation in Massachusetts. While the study methodology is transferable to other regions of the country, the specific results of our analyses, particularly the carbon cycle implications, cannot be readily applied to states where the biophysical characteristics of forests, forest management practices and energy sector differ significantly from Massachusetts.
- Fourth, based on the results of our economic analysis of potentially available wood supplies, the report concluded that, overall, biomass harvests in the state would include a mix of logging residues (tops and limbs) and low-quality whole trees or logs (pulpwood and low-grade sawlogs). The relative proportions of these materials in the biomass feedstock have an important effect on the timing of GHG impacts and benefits to the atmosphere. The report further stated that these proportions will be different in other situations or states, and that conclusions about the impacts on the atmosphere will necessarily be different. Each state or situation (or even specific biomass facility) would need to do its own analysis to properly evaluate the GHG costs or benefits.
- Fifth, there has been some confusion about whether our assessments of GHG implications are based on a ‘lifecycle’ analysis of biomass and fossil fuel carbon emissions. In fact, the study considers the

‘upstream’ costs of producing and transporting both biomass and fossil fuels, and the stack emissions from burning these fuels. Capture of carbon in growing forests is also part of our lifecycle framework.

- Sixth, the study makes no recommendations regarding the development of specific policies to address GHG emissions from biomass. The intent of the study is simply to provide the best possible information and analysis of the carbon cycle implications to Massachusetts decision makers as they develop biomass energy policies for the state. These decision makers will need to carefully weigh the relative importance of nearer term increases in GHG emissions against longer-term benefits.

The study did show that using wood for energy generally results in greater emissions of GHGs per unit of energy than using fossil fuel. These differences are a function of the lower embedded energy content of wood relative to fossil fuels, inclusion of emissions from upstream production and transportation of fuels, as well as differences in the efficiency of the various energy generation technologies. The report called the excess emissions from burning biomass for energy the *carbon debt*. But because trees can grow back, this debt can be paid off and a *carbon dividend* can be achieved as GHG levels are reduced to levels lower than they would have been had only fossil fuels been burned.

The length of time it takes to pay down the debt and realize dividends depends on four factors:

1. The lifecycle of the wood (e.g., logging debris, whole trees, trees vulnerable to catastrophic events) in the absence of the biomass energy opportunity.
2. The type of energy that will be generated (heat, electricity, combined heat and electricity), because different types have different efficiencies and thus different CO₂ emissions profiles.
3. The type of fossil fuel being displaced (coal, oil, or natural gas), because different fuels have different emissions profiles.
4. The management of the forest—management can either slow or accelerate forest growth, and therefore recovery of carbon from the atmosphere.

Unless these factors have been assessed, as they have in our report for Massachusetts, it is not possible to estimate the time it would take to pay off the debt or the magnitude of the carbon dividends—making it difficult to draw conclusions about GHG implications of using wood. For example, when the wood used to fuel an energy facility is all, or nearly all, logging debris that would have decomposed in the forest anyway, the debt period can be relatively short, even for large-scale electricity generation where biomass replaces coal. Conversely, fueling an electricity generating facility with mostly whole (live) trees will likely incur a longer carbon debt period (up to several decades) before GHG benefits are realized. Thermal uses of wood generally have a shorter debt period than electricity generation with wood. Renewable energy policy makers who seek to reduce GHG emissions by using wood for energy will be well served by assessing these four factors for the specific energy and forestry contexts of their state or region.

Finally, there are many other considerations besides GHG emissions when making energy policy—these include energy security, air quality, forest recreation values, local economics, other environmental impacts besides just GHG emissions, and quality of place, among others.

Manomet hopes these comments help to more accurately present the major findings of this study and to better inform policy makers and stakeholders. Manomet welcomes and invites feedback on the study, as well as improvements or corrections to our approach.

[end]



Leadership in Conservation Thought, Policy and Action

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For Immediate Release

**MASSACHUSETTS RELEASES STUDY OF ENVIRONMENTAL EFFECTS
OF WOOD BIOMASS ELECTRICITY PROPOSALS**

Washington DC, June 11, 2010 – “Bioenergy technologies, even biomass electric power compared to natural gas electric, look favorable when biomass waste-wood is compared to fossil fuel alternatives.” Thus concludes a study released this week by the Manomet Center for Conservation Sciences, and by the Massachusetts Department of Energy Resources, which funded the study. The Pinchot Institute was among several organizations participating in the study.

The six-month study, entitled “Biomass Sustainability and Carbon Policy Study,” addresses a wide array of social, scientific, economic and technical issues related to the use of forest biomass for generating energy in Massachusetts. Key components of the study include a full analysis of existing domestic and international biomass policies; a supply analysis of forest biomass availability based on competitive pricing for energy generation; and the atmospheric greenhouse gas implications of combusting forest biomass instead of fossil fuels for energy. The Pinchot Institute provided a review of regulations and standards needed to ensure the sustainability of forest resources in light of potential increases in wood consumption for bioenergy.

Determining the sustainability of forest-based bioenergy is complex and requires evaluating a number of interrelated social, economic, and environmental values that people expect from forests. The analysis and recommendations within the study are specific to current policy issues in Massachusetts, particularly whether expanded use of wood biomass in place of fossil fuels in electricity generation is an effective means to reduce the Commonwealth’s carbon emissions. In 1997, Massachusetts adopted a Renewable Portfolio Standard requiring electric utilities to generate at least 15 percent of their electricity from renewable sources by 2020.

In addressing the specific question of whether wood biomass electricity can reduce carbon emissions relative to fossil fuels, the study concluded that carbon emissions per unit of electricity generated can be higher with wood, based on the more concentrated energy content of fossil fuels such as coal or natural gas. However, this conclusion is not meant to address the additional significant environmental, economic, and social effects of fossil fuel use, nor does it reflect that electric power generation from forest residuals and waste wood results in minimal if any net carbon emissions. Both of these factors are important to consider in policymaking relating to opportunities to substitute renewable energy sources for fossil fuels.

For more information or to download the full report, please go to www.manomet.org or www.pinchot.org/gp/Massachusetts_Biomass

*The mission of the **Pinchot Institute for Conservation** is to advance conservation and sustainable natural resource management by developing innovative, practical, and broadly-supported solutions to conservation challenges and opportunities. We accomplish this through nonpartisan research, education and technical assistance on key issues influencing the future of conservation and sustainable natural resource management.*

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Statement from the Biomass Energy Resource Center

Manomet Team Releases Study of Woody Biomass in Massachusetts

The Biomass Energy Resource Center (BERC) was a partner on the study performed for the Massachusetts Department of Energy Resources, led by the Manomet Center for Conservation Sciences (Manomet) along with other organizations and partners, including the Pinchot Institute for Conservation, the Forest Guild, and consulting forest and resource economists.

BERC's role included the following:

Analysis of the technology scenarios and direct carbon emissions for various biomass energy technologies and their fossil fuel equivalents (Chapter 2).

Analysis of existing public policy at the state and federal levels (Chapter 1).

Review of the wood supply analysis (Chapter 3), although BERC did not have a role in selecting the methodology used.

The policy actions and recommendations as expressed by the Commonwealth of Massachusetts come entirely from the Commonwealth, not the study. The study was commissioned only to provide information and analysis, not policy recommendations.

At the highest level, the study supports three important conclusions regarding the carbon and sustainable forestry implications of biomass:

There is a carbon "debt" when biomass is burned for energy, i.e., burning carbon often releases more carbon at the time of combustion than an equivalent amount of fossil fuel and it takes a certain amount of time (specific to both the type of fuel used and the energy technology) to "recover" that debt by re-sequestering that additional carbon. Beyond this point, the continued sequestration of carbon makes the combustion of biomass carbon-beneficial as compared to fossil fuels.

It is not accurate to simply consider biomass energy "carbon neutral." The carbon implications and/or benefits of biomass energy depend entirely on several factors, including: where the wood comes from, applied forest management practices, how harvesting and management are distributed over the landscape and over time, and the types of technology used. The study clarifies that, when biomass is sustainably harvested and forest lands are well managed overtime, biomass can be a source of low carbon energy, especially when compared to fossil fuels.

In using biomass, biomass for heat and cogeneration is the use that is most efficient in reducing greenhouse gas emissions over time compared to fossil fuels. Using biomass for electric generation has a slower payback period, taking longer to show carbon-emission benefits.

) The use of sustainably harvested biomass to replace oil heat would begin to yield benefits in as little as five years, with a 25 percent net benefit over oil by the year 2050. Use of biomass to make electricity takes longer—about 42 years—to begin to create a net dividend compared to coal, but with a positive carbon dividend of 19 percent by the year 2100.

IMPORTANT NOTE: The Associated Press (AP) story by Steve LeBlanc, and subsequent reporting by much of the media, stated: "A new study has found that wood-burning power plants using trees and other 'biomass' from New England forests release more greenhouse gases into the atmosphere than coal over time." This statement is incorrect. The study shows that woody biomass for energy initially has higher CO₂ emissions than the fossil fuel equivalent, but, as noted above, over time this carbon "debt" is recovered and becomes a carbon "dividend" in all scenarios analyzed. As noted below, the study also only looked at green woody biomass from forests. It did not look at "other biomass" as suggested by AP, much of which may add no new carbon to the equation (example: forest residues or other wood that would decompose quickly anyway). Finally, the headline associated with the AP report: "Mass. Study: Wood Power Worse Polluter than Coal" is not a conclusion that can be gleaned from this study, and is entirely inaccurate. Pollution includes other emissions of concern present in coal and absent in wood, such as mercury, arsenic, and sulfur dioxides that were not considered in this study.

As with any study of this kind, there are key assumptions that must be understood that affect how the study should be used and interpreted. For the most part, these are explicitly described in the study, but include:

Statement from the Biomass Energy Resource Center (continued)

The study makes no distinction between carbon already in the atmospheric cycle and geologic carbon currently sequestered, and the study does not attempt to address the implications of loading the atmospheric system with new additive carbon from geologically sequestered sources (e.g., fossil fuels).

The wood supply analysis is an economic and social analysis of how much wood is likely to be available in Massachusetts. It does not provide an assessment of how much wood is actually available on an ecological basis in Massachusetts, which is considerably more.

Forest harvesting and carbon recovery rates are specific to Massachusetts' land base and are not applicable elsewhere.

All harvesting examples assume "business as usual (BAU)" continues, with biomass harvesting added to the BAU case, so there is no analysis about what biomass harvesting alone might look like and no change in harvesting methods for biomass relative to other harvesting. In other words, there was no attempt to optimize the harvesting of biomass and forest management relative to CO2.

This study addresses CO2 only. Mercury, arsenic, sulfur dioxide, particulates, etc. were not evaluated.

A key assumption in calculating the relative benefits of burning wood versus fossil fuel is that in the fossil fuel examples, forests must remain forests for the fossil fuel debt to be as low as it is. When burning fossil fuels, those forests are assumed to be there storing carbon on behalf of the fossil fuels.

<http://biomasscenter.org/about-berc/berc-in-the-news/256-manomet-study.html>

Statement from the Forest Guild

New Study Demonstrates the Climate Benefits of Sustainable Use Forest Biomass for Thermal Energy in Massachusetts [^](#)

June 10, 2010 — A new report released today confirms for the state of Massachusetts that sustainably using woody biomass from forests to replace oil heat can significantly reduce greenhouse gas emissions. A team led by Manomet Center for Conservation Sciences (Manomet), including the Forest Guild, the Pinchot Institute for Conservation, the Biomass Energy Resource Center, and private consultants, worked to answer questions about forest biomass and carbon for the Massachusetts Department of Energy Resources (DOER). The study looked at how much wood might be available in Massachusetts and the carbon impact of using wood for energy. The Forest Guild contributed to the study by providing information on the potential impacts of biomass harvesting and guidelines for ensuring the sustainability of biomass harvesting.

The team's study of biomass availability showed that based on the best available economic data, between 150,000 and 250,000 green tons of forest biomass could be utilized. This would be enough biomass to supply as many as 16 typically sized thermal energy facilities in the state. Using wood to generate heat and replace fuel oil would reduce greenhouse gas emissions by 25 percent by 2050 and 42 percent by 2100. Wood initially releases more CO₂ per unit of energy than fossil fuels, but that CO₂ is sequestered as the forest regrows. Therefore, the climate benefits of using sustainably harvested biomass increase significantly over time. Using forest biomass yields greenhouse gas reductions within approximately five years when it replaces thermal energy from oil and within approximately 20 years when it replaces electricity generated from coal. The carbon account varies depending on how the biomass is harvested, which the report describes in detail.

<http://www.forestguild.org/whatsnew.html#manomet>

Statements from Organizations



For Immediate Release: June 10, 2010

Media Contact: Carrie Annand at (202) 470-5367; CarrieAnnand@rational360.com

Biomass Power Association CEO: Massachusetts Biomass Study Badly Misrepresents Biomass Industry Practices

WASHINGTON, DC – Following is a statement by Bob Cleaves, President and CEO of the Biomass Power Association, in response to a study released today by the Manomet Center for Conservation Sciences on biomass sustainability in the state of Massachusetts:

“We continue to review the findings of the study, but on initial review the Biomass Power Association finds the Manomet report is based on assumptions that do not accurately reflect real world practices.

“The report’s authors appear to focus primarily on growing and harvesting trees for use in the generation of energy. For decades, the biomass industry has taken forest and agricultural by-products—everything from rice hulls, to sugar cane wastes, to wood residues from the forest products industry—to generate electricity. These materials, which are collected sustainably, would otherwise be dumped in landfills, openly burned, or left as fodder for forest fires. When you do the “math,” the carbon equation for this form of biomass is dramatically favorable.

“Biomass power is utilized and recognized for its sustainability across the country. Virtually every state in the country that mandates using renewable energy has endorsed the use of biomass power as a clean, carbon-neutral, renewable energy source. In fact, the California Air Resources Board – known across the country for its tough environmental standards – recently deemed biomass to be exempt from California’s cap and trade program, supporting the biomass industry’s status as an important renewable energy source.

“Additionally, respected scientific and environmental groups like the Union of Concerned Scientists and The Forest Guild have expressed strong support for converting sustainable biomass to electricity.

“Time again, virtually every federal agency that has looked at the carbon issue—the Department of Energy, USDA, EPA—has recognized the benefits of biomass.”

Biomass power is a \$1 billion industry with 80 facilities in 20 states and provides over 18,000 jobs nationwide. Power plants are predominately located in rural communities, creating thousands of jobs and producing millions in revenue for small towns. Biomass power is a clean and abundant source of electricity that will allow states to pursue even more aggressive goals for increasing their use of renewable energy in the future.

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The Biomass Power Association is a member-driven organization with the goal of increasing the use of biomass power and creating new jobs and opportunities in the biomass industry. As policymakers at every level explore ways to lower greenhouse gases and reduce America’s dependence on foreign oil, BPA is the leading advocate at the state and federal level for a strong commitment to clean, renewable biomass energy. Members include local owners and operators of existing biomass facilities, suppliers, plant developers and others all across the U.S. For more information please visit www.BiomassPowerAssociation.org.

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For Immediate Release: June 11, 2010

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Biomass Power Association CEO on Manomet Study: Assertion that Biomass Less Carbon Friendly than Coal is Inaccurate, Misleading

WASHINGTON, DC – Bob Cleaves, President and CEO of the Biomass Power Association (BPA), the nation’s leading association of biomass power companies, issued the following statement on a press conference call this morning to address a misleading report on biomass released yesterday by the State of Massachusetts.

Cleaves remarked, “We want to emphasize to the Commonwealth of Massachusetts, that our industry is proud of its accomplishments. We want the Commonwealth and Manomet to issue a statement immediately recognizing that this study is not about waste wood and waste materials and organic residues that are not generated solely for the purpose of producing energy. And we look forward to working with the Patrick administration to look at their existing regulatory structure and if changes are needed with that structure then we welcome that dialogue, but to issue a statement and issue a study like was done yesterday and boldly assert that biomass is less carbon friendly than coal is flatly misleading, irresponsible and not an accurate portrayal of our industry.”

Below is Cleaves’ full statement:

“The biomass study released yesterday in Massachusetts is of grave concern to my members who do business in twenty states and employ approximately 18,000 people in this country. The report issued by Manomet on behalf of the Commonwealth of Massachusetts yesterday has generated both a lot of interest but also a tremendous amount of confusion and misinformation about a very, very important issue for our industry and that is the carbon impacts from utilizing biomass in the production of electricity.

“As a result of that, my industry wants to make very clear four very distinct principles that guide us in what we do and how we do it:

- First, we believe in using sustainable biomass fuels that do not contribute to land use changes and offer much lower life-cycle greenhouse gas emissions than traditional fossil fuels.
- Second, **we do not promote the harvesting of forests for the purpose of producing energy.** The residues generated from forest harvesting, however, play an important role in combating climate change and generating renewable energy.
- Third, we fully support the use of woody wastes and byproducts derived from sustainable forestry slash, unused residues from mill operations and forest thinnings removed either to reduce forest fire risk or to allow select trees to attain merchantable sizes more quickly.
- And fourth, we also fully support non forestry waste from the agriculture industry whether that's generated from rice mills, sugar cane debris, orchard and agricultural prunings and other biogenic materials that would otherwise be discarded.

“The report unfortunately, completely ignores these fuels in the first 109 pages of the report and it's not until page 110, almost an afterthought, recognizes the fact, ‘All bioenergy technologies, even biomass electric power compared to natural gas electric, look favorable when biomass waste-wood is compared to fossil fuel alternatives.’

“Instead, let's be very clear about what this study is about. This study is an analysis of what is available for fuel in the Commonwealth of Massachusetts, a state that, unlike others parts of the country, does not have a significant forest products industry and therefore may have resources different from other parts of the country where my companies do business. It assumes, we think, that in order to support the growth initiative that's been announced in Massachusetts, that the chopping of trees has to occur to produce an adequate amount of fuel to support these facilities. But that is a different kind of fuel than the fuel relied upon by the 18,000 hard-working men and women who go to work every day and produce green, renewable energy for this country.

“We want to emphasize to the Commonwealth of Massachusetts, that our industry is proud of its accomplishments. We want the Commonwealth and Manomet to issue a statement immediately recognizing that this study is not about waste wood and waste materials and organic residues that are not generated solely for the purpose of producing energy. And we look forward to working with the Patrick administration to look at their existing regulatory structure and if changes are needed with that structure then we welcome that dialogue, but to issue a statement and issue a study like was done yesterday and boldly assert that biomass is less carbon friendly than coal is flatly misleading, irresponsible and not an accurate portrayal of our industry.”

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small towns. Biomass power is a clean and abundant source of electricity that will allow states to pursue even more aggressive goals for increasing their use of renewable energy in the future.

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FOR IMMEDIATE RELEASE

Will Family Forest Owners Sell Wood or Will They Sell Real Estate?

Massachusetts Agency's Views on Woody-Biomass Energy Raises Concern

JUNE 18, 2010 – *Atlanta:* The Forest Landowners Association, the nation's pre-eminent advocacy organization for family forest owners, today praised the Manomet Center for Conservation Sciences for its recent efforts to study the climate change and forest sustainability impacts of the budding woody biomass energy industry in Massachusetts, but the association voiced concerns about the interpretations of the state agency that commissioned the Manomet Center's report, asserting that they could set the stage for public policy changes that could accelerate forest loss in Massachusetts and elsewhere.

The Manomet Center conducted the study at the request of the Massachusetts Department of Energy Resources (DOER). The DOER then concluded from the report that burning wood to generate electricity is more harmful to the climate and environment than burning coal and other fossil fuels. It also opined that the emergence of a vibrant biomass energy market might result in the state's forests being harvested at accelerated rates. As a result, the agency is suggesting that additional regulatory frameworks may be needed to protect public values. The Forest Landowners Association questioned the DOER's conclusions and cautioned against public policy decisions being made on the basis of agency's narrow interpretations of the Manomet study.

-More-

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Scott Jones, FLA's CEO, said, "We hold the Manomet Center in very high regard and we are completely supportive of the goals they set for this study and of their recognition of the long-term carbon neutrality attributes of biomass. However, we see no logic or compelling evidence to support the State of Massachusetts' views that burning wood is less climate friendly than burning fossil fuels and that promoting renewable electricity generation will result in unsustainable forest management."

Jones went on to say, "Contrary to the state's views on these matters, the idea that private landowners would clear their forests and sell high-value whole trees at a discount so they can be used to produce woody-biomass fuels is nonsensical. It not only flies in the face of basic resource economics, to our knowledge, there is absolutely no precedent of this happening in the other parts of the country where woody biomass is being used extensively to generate electricity."

Jones concluded, "America's 10 million private forest owners manage 60 percent of the nation's forested land base and it is expensive for them to maintain these lands, which not only provide renewable wood products, but also clean water, clean air, aesthetic values and recreational opportunities. As a result, private forest owners need vertical markets into which they can sell high-value sawtimber, mid-value pulpwood and low-value logging residuals like bark, limbs, chips and sawdust, which are the primary sources of woody-biomass fuels. Without these varied outlets for their wood products, the economics of land ownership often does not work, which means some landowners have no other option than to sell their forests for development, which certainly is not in the long-term interest of society as a whole."

-End-

Articles on Manomet Study

MA Study of Biomass Fails to Recognize Full Sustainable Benefits

25 x '25 America's Energy Future

June 15, 2010

A six-month [study](#) commissioned by the Massachusetts Department of Energy and recently released by the Manomet Center for Conservation Studies has raised multiple questions about the role of biomass in a new, clean energy future. The Manomet study, Biomass Sustainability and Carbon Policy, strives to analyze the carbon impacts of using forest biomass for energy and adds a significant amount of research to findings that have long shown that the sustainable use of renewable forest biomass for energy over time does not increase carbon in the atmosphere. In fact, the study reaffirms a basic tenet of renewable energy policy by showing that biomass for energy results in significant carbon benefits, especially when compared with fossil fuels, because unlike the latter, it recycles atmospheric carbon.

But the study is not without its shortfalls. The study asserts that greenhouse gas emissions (GHGs) from power generation are greater in the near-term for biomass than for fossil fuels, and that net reductions in GHGs from biomass energy relative to fossil energy do not become apparent for many years. However, that conclusion is based on an overstatement of near-term GHG emissions from biomass by focusing only on forest plots that are harvested in any given year, ignoring carbon uptake across the broader landscape that is going on simultaneously and has exceeded the removal of carbon for many years.

The Manomet study acknowledges that although forest biomass releases carbon when it is used for energy, it is unique because, unlike fossil fuels, forests can grow back and recapture (or sequester) carbon from the atmosphere. Over time, accelerated forest growth is paying off this so-called "carbon debt," making the use of wood for energy increasingly beneficial for greenhouse gas mitigation. The benefits have been acknowledged by EPA, which concluded in May, 2009, that carbon "emitted from biomass-based fuels combustion does not increase atmospheric [carbon] concentrations, assuming the biogenic carbon emitted is offset by the uptake of [carbon] resulting from the growth of new biomass." And the California Public Utilities Commission noted in 2007 "that electric generation using biomass that would otherwise be disposed of under a variety of conventional methods (such as open burning, forest accumulation, landfills, composting) results in a substantial net reduction in GHG emissions."

Because the Manomet study bases its assumptions on the use of new wood harvested exclusively for the generation of power, it ignores the real-world practice of the industry, which is primarily using residual materials from forestry, agriculture and urban wood waste, including tops and limbs left after more valuable traditional timber harvesting is completed. On average, the biomass power industry removes 68.8 million tons of forest waste annually, improving forest health and dramatically reducing the threat of forest fires. By using this waste to generate electricity, the biomass power industry is preventing the need for open burns and reducing carbon dioxide and methane, a very potent greenhouse gas.

Another shortfall of the Manomet study is its focus on the on the wrong threat. The attention to the so-called "carbon debt" ignores the bigger carbon implication stemming from the loss of the trees permanently to other uses, be they shopping centers, housing developments, even soybean fields, because the private landowner no longer has markets for timber and is forced to convert the land to other uses. Bioenergy development gives the forestland owner an outlet

MA Study of Biomass Fails to Recognize Full Sustainable Benefits (continued)

for waste material as pulpwood and sawtimber markets continue to shrink. Preventing the loss of private timberlands to land conversion should be foremost in this debate.

The prevailing science is clear on the carbon benefits of producing energy from sustainable forest biomass as compared to fossil fuels. Over the long term our nation will be better served by increasing its use of an energy source, like excess forest biomass, that recycles atmospheric carbon than burning more fossil fuels that don't.

<http://blog.25x25.org/?p=1625>

Takes time to grow

Biomass ban would be big blunder

Worcester Telegram

June 13, 2010

Much has been made of a study released last week by the Manomet Center for Conservation Studies which purports to show that power generated by the burning of biomass is worse for the climate than producing power from coal.

The study was cited by opponents of biomass energy plants proposed for Western Massachusetts as proof those projects should not proceed. And state Environmental Secretary Ian Bowles stated that it was time to reevaluate the role of biomass, given that biomass is not "carbon neutral in a timeframe that makes sense."

We're not energy scientists, but we're not convinced that one six-month study should overturn years of state policy, particularly when a substantial scientific argument has been mounted by the other side, which maintains that a longer view can show biomass is indeed carbon neutral.

Biomass advocates argue that the Manomet study assumed the use of new wood from forest clearing and logging operations, rather than the more likely practice of the industry, which would be to fuel any plants through a combination of selective cutting and clearing, including stumps, and other vegetative waste products. Left untouched, they say, such products will produce both carbon dioxide and methane, a very potent greenhouse gas.

The central issue is a scientific one. Both sides acknowledge that cutting and burning trees for fuel creates a carbon "debt" in the form of CO₂ released to the atmosphere. Both sides agree that planting new trees acts, in time, to absorb CO₂, thus "repaying" the debt. The questions to be answered include: What balance of biomass fuels is economically and ecologically feasible to obtain? How much fuel will be needed? How long a growth cycle for reforestation should be included in any calculations of biomass's viability?

Those are difficult questions that will require additional years of study, and should be decided on the basis of science and economics, not politics. And, in any scenario, consumers need to understand that it will be a long time before biomass makes a serious contribution

Takes time to grow (continued)

to reducing our region's reliance on fossil fuels.

It is important that the state chart a middle course on biomass while the scientists do their work.

These questions cannot be properly decided by citizen petitions and ballot questions, nor should environmental officials make snap decisions that could cut off promising lines of inquiry. For their part, scientists studying biomass ought to isolate themselves from the influences of any groups — whether they be conservationists or those in the power industry — whose primary motivations are political, or who are intent on pushing some other form of energy that meets with their favor, or for which they happen to hold a subsidy or tax credit.

New England will always need energy. Biomass may have a role to play in that. But the technological breakthroughs and insights that could come in the future won't happen if the state simply cuts it down on the basis of a single study.

<http://www.telegram.com/article/20100613/NEWS/6130378/1020>

Related Information

Press Release

Large biomass potential not being realised today

Brussels, June 10, 2010. *A new report published today shows that biomass for heat and power holds a very large untapped potential for Europe as a cost effective source of renewable energy and greenhouse gas emission reductions. However, this potential is not being realised today.*

The report is the work of a consortium of organisations representing many of the relevant stakeholders in the biomass debate (environmental organisations, the forest products industry, the utility industry), including the European Climate Foundation, Sveaskog, Södra, and Vattenfall. WWF was involved and extensively consulted in the development of the report, and endorses most of the main conclusions. Management consulting firm McKinsey & Company provided analytical support. The report provides a fact base on biomass as a fuel for heat and power production so that its advantages and disadvantages compared to alternative production technologies – principally fossil fuels – can be debated in an objective way.

The European Commission counts on biomass to grow in the same order of magnitude as all other sources of renewable energy together between now and 2020. If this growth is realized, biomass costs look likely to come down 15-40%, so that biomass becomes cost competitive versus fossil fuel alternatives at a CO₂ price of 30-50 EUR/ton. However, the report highlights that this growth potential is not being realised today – biomass use for heat and power is currently growing at only a third of the pace foreseen by the European Commission to meet the 2020 targets. This presents a major challenge for Europe's transition to a sustainable energy supply. To unlock growth, and avoid missing the biomass opportunity, policy makers and companies need to recognise that while biomass for heat and power is a proven technology, most supply chains are immature and face a number of barriers that need to be removed for the industry to scale up, e.g. lacking initial profitability.

As biomass for heat and power is only one of several products harvested from forests – and depends for its profitability on the other products also being harvested – the scale-up must be done in a way that does not jeopardize the rest of the industry. In addition, reinforced environmental frameworks and legislation will be needed to ensure such a development does not come at the expense of a sustainable use of natural resources.

Speaking at the launch of the report Jules Kortenhorst, CEO of the European Climate Foundation said: *“Biomass is an important part of the solution in the shift to a low carbon economy in Europe. With the right regulatory structure, business leadership and proper regard for land-use change, biomass could realise its true*

growth potential. At present the growth rate is only a third of what is necessary to meet existing targets, but our report highlights what needs to be done to rectify this situation and to ensure that biomass by 2020 delivers as much energy to Europe as diesel does today.”

Eight key observations underline the overall conclusion laid out above and are substantiated in the report:

1. The most common types of biomass energy applications reduce carbon dioxide emissions significantly, by 55 to 98 percent compared to fossil fuels, even when transported long distances, as long as it does not result in any land-use changes.
2. The European Commission expects heat and power from biomass to play a very important role in meeting the EU’s legislated “2020” targets – actually a full 850 TWh final energy consumption growth from biomass is expected. This is as much as the Commission expects from all other renewable energy sources taken together, but current European growth rates are only a third of what would be required to meet these forecasts.
3. Contrary to common belief, there is a large inherent cost improvement potential in biomass-generated power and heat as experience and volumes grow – 15 to 40 percent compared to today. Capturing these cost improvements will be challenging but would make biomass cost competitive with coal, gas and oil in a broad range of applications at a CO₂ price of 30 to 50 EUR per ton in 2020.
4. Achieving the expected growth in biomass for power and heat in a 2020 time horizon will require greatly increased biomass demand from both the energy producing industry and smaller scale heating applications – no single segment is sufficient.
5. European biomass supply for heat and power could be doubled through 2020 in an ambitious mobilisation scenario, releasing a full ~1,000 TWh of sustainable, domestically produced primary renewable energy in addition to the ~1,000 TWh primary energy that biomass already delivers. Biomass would then deliver as much energy to Europe as diesel does today. But this biomass supply mobilisation is not happening today – current supply growth is only 35-40 TWh primary energy per year.
6. A faster global biomass supply mobilisation than today is needed to avoid supply shortage in the transition phase – and the resulting negative consequences on food, feed and the forestry industry – even though there is technically enough unused land and forest/agriculture residues available globally to meet 2020 demand without compromising other stakeholder needs.
7. Biomass can play an important role in European renewable energy production beyond 2020, for instance as one of few ways (another being

CCS) to reduce carbon dioxide emissions from coal power plants with long remaining life-times. Biomass is not only a short-term bridging solution.

8. To unlock the great untapped potential in biomass, policy makers and companies will need to regard it as a proven technology that holds significant promise for the future, but also recognize that the current value chain is immature and that investments are not happening at the expected pace. To address this, policy makers will need to take targeted action to unlock biomass value chains and create some level of confidence in price and volume of demand for producers and users of biomass, companies will need to make investments for the long-term and assume some risks, and NGOs, policy makers and companies will together need to put in place reinforced environmental frameworks and legislation.

ENDS

The full report is available on the web pages of the authoring organizations including www.europeanclimate.org. For media enquiries please contact Tim Nuthall at the European Climate Foundation (tim.nuthall@europeanclimate.org or + 32 478 98 74 79).

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