

Biomass Energy Development Working Group Interim Report

Pursuant to No. 37 of the Acts of the 2009 Session

January 2010

Legislative Council
State House
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**Biomass Energy Development Working Group
Interim Report**

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**Biomass Energy Development Working Group
Members**

- One member of the House of RepresentativesRep. Chris Bray
- One member of the SenateSen. Ginny Lyons
- The secretary of natural resources or designee.....Secretary Jonathan Wood
- The commissioner of the department of public service or designee.....Kelly Launder
- A representative of the biomass energy resource center.....Chris Recchia
- Two representatives of the forest products industry.....Rocky Bunnell, Paul Cate
- Two representatives of natural resources or environmental organizations.....
.....Jamey Fidel, Robert Turner
- Two representatives of an industry or utility that produces electricity or heat from
biomass.....Peter Condaxis, Bill Kropelin
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- A representative of the Vermont woodlands association.....Sam Miller
- A representative of a university or college with a focus on biomass.....Bill Keeton
- A representative of the consulting foresters association.....Ben Machin
- A representative of the forest guild.....Ehrhard Frost

Biomass Energy Development Working Group Charge

No. 37 of the Acts of the 2009 Session

Sec. 1. BIOMASS ENERGY DEVELOPMENT WORKING GROUP

(a) The biomass energy development working group is established to enhance the growth and development of Vermont's biomass industry while also maintaining forest health. In order to meet these goals, the working group shall analyze current issues in the biomass industry in order to develop a coherent body of recommendations. These recommendations may include incentives, harvesting guidelines, and procurement standards for the development and operation of biomass energy in the state of Vermont. The working group shall also include the following members:

(1) One member of the house, appointed by the speaker of the house;

(2) One member of the senate, appointed by the committee on committees;

(3) The secretary of natural resources or his or her designee;

(4) The commissioner of the department of public service or his or her designee;

(5) A representative of the biomass energy resource center, appointed by the committee on committees;

(6) Two representatives of the forest products industry that represent logging, processing, or wholesale operator interests, one appointed by the committee on committees and the other appointed by the speaker of the house;

(7) Two representatives of natural resources or environmental organizations that represent wildlife and biodiversity and forest health and sustainability interests, one appointed by the committee on committees and the other appointed by the speaker of the house;

(8) Two representatives of an industry, organization, utility, or corporation that either produces electricity or heat from biomass or purchases power from biomass, appointed by the governor.

(9) A representative of the Vermont woodlands association appointed by the governor;

(10) A representative of a university or college with a focus on biomass policy or research appointed by the speaker of the house;

(11) A representative of the consulting foresters association of Vermont appointed by the governor; and

(12) A representative of the forest guild appointed by the speaker of the house.

(b) The working group is authorized to operate for a maximum of three years in order to review the adequacy of its initial recommendations, continue research and analysis, and make additional recommendations to the legislature. The working group is authorized to hold four meetings each year during the interim between sessions of the general assembly. The working group shall elect co-chairs at its initial meeting, and one of the co-chairs shall be a member of the general assembly. For attendance at a meeting when the general assembly is not in session, legislative members of the commission shall be entitled to the same per diem compensation and reimbursement for actual and necessary expenses as provided members of standing committees under 2 V.S.A. § 406.

(c) The working group shall issue interim reports to the house and senate committees on agriculture and on natural resources and energy on or before November 15 of 2009 and 2010. The reports shall include:

(1) recommended fiscal and regulatory incentives for the promotion of efficient and sustainable uses of local biomass for energy production and opportunities for offering more predictability in the permitting process;

(2) recommended guidelines or standards for maintaining forest health, including model harvesting and silvicultural guidelines for retaining dead wood and coarse woody material; maintaining soil productivity, wildlife, and biodiversity and other indicators of forest health; and wood procurement standards. In reviewing and recommending standards for biomass procurement, the working group shall review whether:

(A) separate procurement standards are necessary for certain consumers of biomass, such as retail electricity;

(B) there are obstacles or policy considerations that need to be overcome to establish model procurement standards for biomass energy facilities;

(C) a uniform procurement standard for maintaining forest health would offer more predictability in the permitting process;

(D) procurement standards can be designed to effectively monitor whether the collective demand for energy produced from biomass does not impair long-term site productivity and forest health;

(E) it is feasible to coordinate with adjoining states to develop a regional procurement standard for biomass energy facilities.

(F) biomass procurement standards should require third-party certification; and

(G) a standard should be developed that would require biomass electricity generating facilities to provide for a fuel efficiency of at least 50 percent over the course of a full year.

(3) Recommend standards and policies for the design of new renewable energy from biomass that are designed to promote sustainable, efficient, local, and fair use of biomass supplies.

(4) Recommend additional research and analysis that is needed to ensure that forest health is maintained while providing for a sustainable, long-term supply of local biomass for the production of energy and forest products.

(d) On or before November 15, 2011, the working group shall submit to the house and senate committees on agriculture and on natural resources and energy a final report addressing the issues in subdivisions (c)(1)–(4) of this section.

(e) Prior to reporting to the general assembly under subsections (c) and (d) of this section, the working group shall allow for public review and comment of any proposed recommendations for incentives, guidelines, or standards for the development and operation of biomass energy. At a minimum, the working group shall allow the department of forests, parks and recreation; the department of fish and wildlife; the public service board; the agency of agriculture, food, and markets; the Vermont economic development authority; and the department of public service to review and offer comments on any proposed recommendations for incentives, guidelines, or standards. In addition, the working group should coordinate with the Forest Roundtable to hold a minimum of two meetings to collect stakeholder input and gather expert testimony on the issues included in this section.

(f) The working group shall seek funding from available funding sources to hire consultants and conduct research and analysis related to the issues included in this section. In no event shall the working group seek more than \$200,000.00 under this subsection. Funding acquired by the working group shall be administered by the office of legislative council.

(g) As used in this section, “biomass” means material from trees, woody plants, or grasses, including limbs, tops, needles, leaves, and other woody parts, grown in a forest, woodland, farm, rangeland, or wildland-urban environment that is the product of forest management, land clearing, ecosystem restoration, or hazardous fuel reduction treatment.

(h) Legislative council shall provide legal and administrative services to the working group. The department of forests, parks and recreation shall provide technical and economic advice to the working group.

I. Overview

No. 37 of the Acts of the 2009 Session of the Vermont General Assembly established a Biomass Energy Development Working Group that would meet over the course of three years to enhance the growth and development of Vermont biomass industry while also maintaining forest health. As part of its charge, the Biomass Energy Development Working Group is required to issue two interim reports and one final report to the Vermont General Assembly. The reports are required to address: (1) recommended fiscal and regulatory incentives for the promotion of efficient and sustainable uses of local biomass for energy production and opportunities for offering more predictability in the permitting process; (2) recommended guidelines for maintaining forest health, including model harvesting and silvicultural guidelines; and (3) recommended standards and policies for the design of new renewable energy from biomass that are designed to promote sustainable, efficient, local, and fair use of biomass supplies.

II. Working Group Action

A. August Meeting

The Biomass Energy Development Working Group convened on August 12, 2009. Michael O’Grady of Legislative Council convened the meeting, reviewed the provisions of Act 37 — “An Act Relating to Encouraging Biomass Energy Production” — and recommended that the working group elect a chair or co-chairs. The working group then elected Representative Chris Bray and Secretary of Natural Resources, Jonathan Wood, as co-chairs.

Co-chair Bray then outlined the meeting agenda and materials for review and discussion by the group. Adam Sherman, of the Biomass Energy Resource Center (BERC), and Robert DeGeus, a Forester for the Vermont Division of Forests, Department of Forests, Parks and Recreation then reviewed the BERC Vermont Wood Fuel Supply Study. The working group discussed the results of the BERC study and whether the data inputs of the study required revision or updating in order to provide an accurate accounting of wood fuel supply in Vermont and surrounding states.

After discussion of the BERC wood supply study, Co-chair Secretary Wood reviewed the Vermont statutes relating to forestry. Following Secretary Wood, Bill Kropelin discussed Burlington Electric Department's "Harvesting Policy for Whole Tree Chipping Operations in Vermont" and the history of how Burlington Electric developed and implemented the policy. David Lane, Deputy Secretary of Agriculture, Food and Markets, then reviewed the Vermont 25 by 25 Initiative, the effort for 25 percent of the total energy demand in Vermont to be produced from in-state renewable energy sources, such as biomass, by the year 2025. After Deputy Secretary Lane, Deputy Commissioner of Public Service, Rich Smith, reviewed the Department of Public Service programs relating to biomass, including a recent feed-in tariff bill and the Clean Energy Development Fund.

B. September Meeting

The Biomass Energy Development Working Group met on September 9, 2009. The working group reviewed the group's major statutory charges of: (1) "enhancing and developing Vermont's biomass industry" while (2) "maintaining forest health" and developed a list of the issues or topics that the group should consider in fulfilling its charge. The biomass enhancement and forest health issues and topics lists are included in this report as Appendices A and B, respectively.

The working group then reviewed a draft proposal from the Biomass Energy Resource Center (BERC) to update the Vermont Wood Fuel Supply Study N.A.L.G. Calculations. The working group discussed the need for revisions to the BERC model in order to incorporate additional data inputs. The working group then voted to approve formation of a subcommittee to review: (1) the BERC model; (2) the BERC proposal to update the information in the model; and (3) the need for a phase two update of the BERC model that includes additional data inputs. This subcommittee would be authorized to raise funds for Nos. (2) and (3) immediately above and would return to the full working group with a recommendation on whether to proceed with No. (3) above. The working group continued to discuss the BERC model and the need to authorize BERC to update the information in its model as soon as possible. Consequently, the working group voted to

approve BERC updating the information in its model (No. 2 above), with the cost of the study to be fixed at the \$4,500.00 estimated in the BERC draft proposal.

The working group formed three subcommittees: (1) a Funding subcommittee; (2) a Biomass Enhancement and Development subcommittee; and (3) a Forest Health subcommittee. The Funding subcommittee will proceed in accordance with the above-described motions concerning the BERC model and focus on identifying funding sources and applying for funding for the update of the information in the BERC model. The members of the Funding subcommittee are: Co-chair Secretary Wood, Bill Keeton, and Robert Turner. The Biomass Enhancement and Development subcommittee will focus on the enhancement and development issues identified by the group (listed in Appendix A). The members of the Biomass Enhancement and Development subcommittee are Chris Recchia, Kelly Launder, and Peter Condaxis. The Forest Health subcommittee will focus on the forest health issues and topics identified by the group (listed in Appendix B). The members of the Forest Health subcommittee are: Bill Kropelin, Jamey Fidel, Bill Keeton, and Co-chair Chris Bray.

C. October Meeting

The Biomass Energy Development Working Group met on October 6, 2009. The working group began with a discussion of issues related to the enhancement and development of the biomass industry. The group discussed: (1) the need for incentives for biomass development; and (2) the need to eliminate or mitigate disincentives to development. Incentives are also needed for people buying biomass equipment for residential and commercial use.

The working group then heard from Co-chair Secretary Wood who described the forest health indicators utilized by the Department of Forests, Parks and Recreation. The working group discussed the process at the state level for determining forest health, including ongoing monitoring with multiple partners and the U.S. Forest Service Forest Inventory and Analysis (FIA) system. The FIA system is in the process of shifting from a 10-year to a 5-year cycle. The working group discussed what would constitute the definition of “healthy forest” and what is the context of how to measure forest health. The

context of what is a healthy forest needs to be known in order to provide incentives in the future for management practices and other measures to aid forest health.

The Forest Health subcommittee then summarized for the working group the subcommittee's discussions between the September and October working group meetings. The subcommittee proposed to use the Maine guidelines for retaining woody biomass on timber harvest sites as the starting point for the working group's discussions on forest health. The working group could identify where more or less specificity is needed for Vermont. Questions were raised as to whether guidelines were necessary in Vermont, especially when contrasting the forest industry in Vermont with the forest industry in Maine. Guidelines may or may not be necessary in Vermont for the landscape or the industry. However, the point was made that guidelines could be developed that are practical and enforceable and that provide an even playing field for all parties. The working group decided to use the indicator subjects of the Maine guidelines as a reference from which to work, but the substance of the Maine guidelines would not be the starting point for the working group.

D. November Meeting

The Biomass Energy Development Working Group met on November 3, 2009. Secretary Wood began the meeting by discussing the concept of a hearing about prior biomass projects that succeeded and failed, suggesting that the group hear from the developers of the successful Clarendon wood pellet project and from those involved in a less successful wood pellet project. Member Recchia also raised the possibility of separately hearing about successful and less successful biomass energy projects. After discussion, there appeared to be general agreement that these would be useful activities for the group to undertake, probably as separate items.

The working group then discussed its work plan and schedule for the next two months and the beginning of the legislative session. The subcommittees that have previously been formed will continue to work during November and December. A Workplan subcommittee also will be formed, to consist of a member of each of the

previously formed subgroups, to serve the functions of coordination and maintaining momentum. The Workplan subcommittee is not intended to be an executive committee.

The Biomass Enhancement and Development subcommittee presented an oral report and a memorandum, which the working group then discussed. Co-chair Rep. Bray next led a discussion of topics for potential legislation that might be introduced during the upcoming session. Co-chair Rep. Bray also distributed materials related to flaws in how the potential of biomass energy to reduce greenhouse gases is being assessed and on how the landscape, including forests and tree species, may respond to climate change. The Model Funding subcommittee reported that it had conducted an active e-mail discussion of whether and how to proceed with the modeling issues described in prior meetings, noting a concern that the modeling needs to mesh with the questions to be addressed by the working group, which are still being focused.

Bob De Geus of the Agency of Natural Resources reported that, through funding available from the federal government, both of the modeling activities described in previous minutes are moving forward. The scope of work for updating the data used in the BERC model has been established and now awaits the release of the new data. Funding is secured for the larger step of enhancing the model, but the scope of work has not yet been established.

The working group also discussed a draft interim report provided by Legislative Counsel O'Grady. After discussion, the working group approved the draft interim report subject to revisions and updating. The draft report will be circulated to members when revisions are completed.

E. Site Visit

On November 6, 2009, Biomass Energy Development Working Group member Bill Kropelin organized and led a three-hour field trip to a logging site currently being harvested under contract to provide Burlington Electric's McNeil Generation Station with green chips. The group toured the 138-acre Ballfield Road site within the 3,225-acre Moretown Gap Tract.

In attendance were the following BioE members: Chris Bray, Jamey Fidel, Bill Kropelin, and Sam Miller. Hosting at the site were: David Daut, President, Fountains Forestry (the local contracted forestry service hired by the owners); Jeff Langmaid, Forester, Fountains Forestry; and Tony Harvish, Regional Forester and representative of the parcel's owner, Timbervest. Robert DeGeus, Forester, Vermont Agency of Natural Resources also participated.

The Ballfield site operations included free thinning, seedtree, and shelterwood practices. The owner's stated forest management objectives for the site include:

- maintaining the even age management practices of the last two decades;
- regenerating stands in decline due to previous highgrading;
- allowing the balance of the forest to grow with an expectation of shelterwood and overstory removals in several stands in approximately 20 to 30 years.

The group had lengthy wide-ranging discussions relating to silvicultural practices, forest health and the assessment of same, the amount and type of wood and coarse woody debris left following harvesting, harvesting techniques, and more. A discussion regarding encouraging good forestry practices through requiring credentials for foresters in Vermont was supported by all members of the tour.

There was general agreement amongst the practicing foresters that they thought that a viable biomass marketplace was important as it allowed for more profitable, integrated harvests (for saw logs, pulp wood, firewood, and biomass), and that this greater profitability, in turn, encouraged more careful harvesting practices.

Fountains America (the foresters) also prepared an information packet on the parcel, including its history, ownership, stand descriptions, and maps. Copies may be found in the committee's archival file.

III. Working Group Findings

Due in part to the complexity of the issues inherent in its charge and in part to its three-year duration, the Biomass Energy Development Working Group has yet to develop any of the formal recommendations, standards, or guidelines required by Act No. 37 of the 2009 Session. The working group is developing findings that will be included in subsequent reports.

IV. Further Working Group Action

The Workplan subcommittee is developing a workplan for the future action and agenda of the Biomass Energy Development Working Group. The Workplan subcommittee will circulate a draft work plan to the working group as soon as is practicable.

The Biomass Energy Development Working Group will continue to meet in 2010 during the legislative session. The next full meeting of the working group will be scheduled for some time during the week of January 11, 2010.

Appendix A: Biomass Development Issues and Topics for Consideration

In pursuit of fulfilling its charge to enhance and develop Vermont's biomass industry, the Vermont Biomass Energy Development Working Group developed the following list of issues and topics for review:

- Provide incentives for use;
- Coordinate programs to ease path to harvesting and using biomass, e.g., state and federal regulations, incentives from various sources, and permits (Act 248, Act 250, air quality, etc.);
- Promote regional coordination, which may or may not include procurement standards;
- Increase truck weights allowed on interstates to move forest products;¹
- Consider renewable energy credits; identify obstacles to these;
- Explore American Society of Mechanical Engineers (ASME) certification vs. other forms of certification as promotion mechanisms;
- Review permitting process – e.g., individual permit requirements; could look at using permitting to provide incentives;
- Tie into Regional Greenhouse Gas Initiative (RGGI) and the developing national cap and trade system;
- Suggest inclusion of field-based crops, or at least coordinate our work with work on biomass crops. Is this within our statutory mandate?
- Look at (conduct survey?) last five years of applicants for biomass facilities and determine what the obstacles were to having them built; also look for commonalities among those projects that were built;
- Define critical term “efficiency” in subdivision (c)(1) of Act 37;
- Critical cross-cutting issue is the net CO₂ effect of biomass fuel use; need to consider this carefully based on recent research; minimize associated emissions however possible, for example by encouraging local use, reducing transportation emissions, etc.;
- Find ways to use very small woodlots, materials chipped along roads;
- Establish transfer stations to create economies of scale;
- Explore mechanisms to capture unused waste material;

¹ The Biomass Energy Working Group acknowledges that 23 U.S.C. § 127(a)(13) establishes a pilot program authorizing increased truck weights on the interstate highways of Vermont. The Biomass Energy Working Group applauds the establishment of this program, but notes that it currently is authorized for only one year. The Biomass Energy Working Group recommends permanent authorization for increased truck weights on the interstate highways of Vermont.

- Utilize future salvage, e.g., insect dieback? Multiple issues that must be considered for salvage logging, including mitigating potentially negative ecological impacts;
- What kinds of energy facilities? What kinds of harvesting systems do they need to generate supply?
- Consider the bundle of ecosystem services provided by forestlands; promote biofuels as an element of this bundle that maintains economic viability of working forests and thus open space; look for opportunities to promote working forests through the bundled ecosystem services approach (e.g., integrating things such as current use, certification, federal forest legacy program, biofuels, etc.);
- “One stop shopping” for credits/certification/validation of bundled ecosystem services will reduce transaction costs and increase market accessibility for small landowners;
- Assess equipment availability. What are the mechanisms for financing for equipment? Several group members feel the market will take care of this;
- Importance of maintaining labor force; arrest declines in logging-related employment. Loggers and others need to be paid a living wage. Can we increase education opportunities?
- Create stability in prices paid to people in the industry, e.g., landowners and loggers; how to overcome some of the instability in the commodity marketplace? Can we develop long-term contracts?
- Generators may, through their relatively steady demand, serve similarly to a mall’s “anchor tenants,” but for the biomass industry;
- The product should pay its way. Should not have to subsidize;
- Precommercial thinning – how to incentivize? Create efficiencies and economies of scale, e.g., through coops, transfer stations, community forestry associations, etc.
- How will the market respond in terms of capital investment in harvesting equipment to do precommercial thinning?
- Need to consider changing demographics, land ownership, parcelization, future insect and disease problems, etc.;
- Priority is reducing land conversion and maintaining forestlands. This may be one of the most important overall goals. Capture value from woodlots to pay taxes;
- Need to educate the public about the value of forest management; and
- Look at current numbers and assess how much more biomass may go into generation, e.g., 30MW/year.

Appendix B: Forest Health Issues and Topics for Consideration

In pursuit of fulfilling its charge to enhance Vermont's biomass industry while "maintaining forest health," the Vermont Biomass Energy Development Working Group developed the following list of issues and topics for review:

- Consider guidelines for retention of coarse woody debris, standing and downed;
- Consider looking at the table of contents in the Maine Biomass study. Use major topics as the outline for issues we will consider;
- Guidelines for salvage specifically, e.g., exotic insect outbreaks. How will we respond in terms of biomass salvage?
- Consider global change as a context on which biomass harvesting is superimposed; how to maintain/enhance ecosystem resilience;
- Work towards improving forest health. How can biomass harvesting be used as a progressive tool that improves forest health?
- Fragmentation/landscape context. Providing biomass as a marketable product that generates revenue, reduces land conversion pressure, and thus maintains forest cover and connectivity;
- Site-specific appropriateness – e.g., acid deposition sensitivity mapping – relevance to whole tree harvesting and calcium depletion;
- What forest health indicators are currently tracked? Which indicators and by whom?
- Do not reinvent the wheel regarding forest health indicators. Make consistent with previous work, e.g., Sandy Wilmot's indicators project;
- Biomass procurement standards will be considered and, if recommended, tying biomass procurement standards directly to specific indicators, e.g., those used in fuel supply model and existing AMPs (acceptable management practices) and ANR standards will also be considered;
- The committee will have to discuss the issue of how specific and quantitative the guidelines should be;
- Flexible guidelines related to range of treatment objectives. There is value in general guidance that maintains silvicultural flexibility;
- Evaluate existing procurement standards. Are they adequate to achieve our objectives? Do we need revisions or alternate mechanisms, e.g., that the legislature might consider?
- Consider longer-term context of changing energy demand; and
- Consider emerging research on carbon balance effects of biomass fuel harvesting.