

## FORESTS AND BIO-ENERGY – THE SUSTAINABILITY DIMENSION

The H. John Heinz III Center for Science, Economics and the Environment and  
and  
The Pinchot Institute for Conservation

**Summary:** The Heinz Center and Pinchot Institute are undertaking a yearlong, multi-stakeholder dialogue to identify policy actions that can improve the potential for forests to make a substantial and sustainable contribution to the nation's energy needs.

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### **Bio-energy and Forests – New Developments**

The United States and the world face daunting challenges in converting from a carbon-based economy to one based on more sustainable solutions. Concerns over climate change and the security implications of energy dependence are driving efforts to implement alternative energy sources, including solar, wind, and a variety of biomass-based energy solutions.

Biomass energy has significant potential to contribute to the nation's energy future. Cellulosic ethanol and related technologies have significant promise as liquid fuels, and a major expansion is being promoted and mandated at the federal level, following on the recognition of the negative environmental and economic consequences of corn based ethanol. At the same time, many states are seeking to diversify their electricity portfolios, with biomass-based power a potentially important component in many states.

Forest biomass will likely play an important role in this renewable energy future. Wood bio-energy already contributes more than 3.5 percent percent of the nation's energy, through combined heat and power (CHP), electric power production, wood pellet production, as well as combined pulp/fiber operations producing a variety of products, including electricity, fuels, chemicals, and on-site power. Extensive work is underway to characterize this resource to better determine reasonable levels of expected production, and to assist businesses in identifying sites for new facilities.

Environmental leaders have welcomed wood bioenergy as a low-carbon substitute for petroleum-based transportation fuels, as well as a renewable power source to augment wind, solar, and geothermal sources. Forest managers and landowners also have welcomed the potential for new markets for wood byproducts, residues, and wood waste. . However, there is growing concern over potential unintended consequences of large-scale rapid expansion of forest production and of the policy framework surrounding these developments.

For example, large scale increases in harvested area have the potential to increase water quality impacts and negatively affect biological diversity, threatening to re-ignite public controversies

over forest management that have, at times, paralyzed the forest products industry over recent decades. The energy industry has not been party to discussions that have, for example resulted in programs for certification of sustainably managed fiber, nor is it clear how such certification would be incorporated into a bio-energy policy framework.

In addition, while wood is abundant in many parts of the United States, it *is* a limited resource. The potential for overcapacity at local and regional levels is real, especially given the lack of familiarity of energy companies with assessing this new feedstock, uncertainties about access to fiber from federal and other public lands (increasingly affected by decisions on fire and fuel management), an aging forest landowner cohort, for whom timber harvest may not be a primary management objective, and finally, economically-driven swings in availability and price of materials such as wood waste and residues from wood products manufacturing.

Community-scale wood bioenergy and other approaches to distributed energy have a significant potential for increased production, but suffer from limited investment capital and inadequate incentives. The forest products industry also has a significant potential for increased bioenergy production, building upon a level of energy self-sufficiency (~65%) that is higher than any other major industry in the US. With the right incentives, these facilities could become major co-producers of renewable energy and wood products, through both expanded co-generation of heat and power, and production of advanced biofuels for the transportation sector. Because the current policy framework of goals and incentives is oriented primarily toward stimulating the development of large-scale biofuels and bioenergy facilities, there is a perception that there will be many lost opportunities for smaller-scale, better distributed, and perhaps more sustainable approaches to wood bioenergy development. As it stands, there is concern in the forest products industry that the current incentive structure puts them at a competitive disadvantage and does not account for their substantial existing and potential bio-energy contributions.

The coming year, with a new Administration and Congress, will intensify activity in this area. Action (or at least vigorous discussion) can be expected on creation of a federal renewable portfolio standard (RPS), amending the Energy Independence and Security Act limits on sourcing of bio-fuel feedstocks, revision and extension of financial incentives for renewable fuels production, implementation of new Farm Bill provisions, and a range of other issues. In addition, nongovernmental organizations (NGOs) and others are likely to continue development and encourage adoption of standards and certification requirements specific to bio-energy. At the same time, private investors will likely continue to evaluate both the economics of new plants, given changes in energy prices, and the effect of shifting public policies on these investments.

### **Policy Dialogue Series**

Bio-energy has significant potential to help meet the nation's energy needs, but given the new set of players and the potential for a dramatic increase in scale, it is by no means certain that its development will be sustainable. The economic and environmental concerns noted here and the rapidity of investment and expansion planning argue for a sustained and inclusive dialogue between parties at interest, so as to calibrate expectations, share plans, perspectives, and concerns, and identify mutually beneficial solutions.

The Heinz Center and Pinchot Institute for Conservation are undertaking such a dialogue, in a manner that will take advantage of the most recent research and development and maintain tight linkages to the policy deliberations that will occur in Congress and the new administration.

This will be a policy-oriented dialogue process extending over approximately one year, involving key participants from the energy and forest products industries, environmental organizations, state and federal officials with responsibility for aspects of forest management or energy development, and other experts. The goal will be to explore strategies that can maximize the production of bio-energy, with clear and well accepted understanding of the limits imposed by the imperative to ensure sustainability.

The Pinchot Institute is compiling an authoritative white paper on what is currently known about emerging wood bioenergy technologies, and efforts to ensure that increased demand for woody biomass does not result in overharvesting or unsustainable forest management. This white paper, with invited and contributed papers from a wide range of public, private, NGO, and academic contributors, will reflect the most up-to-date understanding of methods for determining available and sustainable wood supplies, developments in biomass energy technologies, economic considerations, environmental concerns, and regional outlooks for bioenergy development. This white paper will provide an objective factual basis for this dialogue, and ensure that all participants have access to a common set of facts from which to begin discussions. (See attached outline.)

***The Dialogue Series:*** The two organizations will work together to build on these initial components to conduct a year-long, five part dialogue series.

- Including participation from energy and forest products industries, environmental and community NGOs, state and federal agencies, and outside experts.
- Relatively small, intensive meetings (less than 35 participants, 2 days), with discussions held mostly in plenary to facilitate as much communication across sectors as possible
- An initial broadly framed scoping meeting (see additional discussion below), with subsequent meetings focused on specific aspects of the policy framework (e.g., federal lands access issues, certification/best practices norms, tax and incentive policy), concluding with another broadly framed meeting to bring the various threads together.
- All meetings will be held subject to the Chatham House Rule<sup>1</sup>. Specifically, there will be no attribution of participants' views without their express consent, and all participants will be provided the opportunity to review any meeting reports.
- The dialogue will attempt to find areas of agreement, but we also acknowledge the possibility that agreement will be elusive. If so, the project will perform a crucial function by communicating to policy makers about key issues and outstanding factual matters.

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<sup>1</sup> "When a meeting, or part thereof, is held under the Chatham House Rule, participants are free to use the information received, but neither the identity nor the affiliation of the speaker(s), nor that of any other participant, may be revealed". <http://www.chathamhouse.org.uk/about/chathamhouserule/>

- Each meeting will produce a stand-alone product highlighting areas of agreement, disagreement, factual unknowns, and potential policy directions arising from our discussions.

***The Dialogue Policy Agenda:*** Through discussions with many stakeholders, the Center and Institute are developing a manageable agenda of issues that are important to stakeholders, are likely to be addressed in the coming year, and that deal primarily with forest-related issues.

The goals of the initial session (to be held in February 2009) will be to ensure that all participants are on a common footing with respect to major policy and technical issues and to use a wide-ranging discussion process to explore two key themes. These boil down to two simple questions: where will the biomass come from, and how can we be sure the system of producing and using it for energy it is sustainable? The Pinchot Institute manuscript will serve as a key element for meeting the first goal, while a wide-ranging stakeholder dialogue process will be used to scope answers to the major questions. We have begun developing a set of discussion questions to shape this discussion. Candidates currently being considered include the following.

- Are policies that assume that the main source for bio-energy will be “residuals” realistic?
- Is the existing mix of voluntary standards (including third party certification) and state-required BMPs adequate to ensure the sustainability of expanded harvests to meet bio-energy needs? What additional elements are appropriate?
- If a national renewable portfolio requirement is developed, what strategy should be employed in that legislation to maximize the sustainability of resulting bio-energy developments?
- Are there conditions under which federal lands outside of the “wildland urban interface” could be a sustainable source of biomass for energy?
- Should national and state policies treat the sourcing of biomass for biofuels differently from sourcing of biomass for other energy uses?
- Can concerns related to the scale of facilities be influenced effectively by state and national policies?

A list of potential attendees for the first meeting is attached. Our goal is to maintain high consistency of attendees over the full series. We expect to focus subsequent meetings on specific topical and regional issues. For example, individual meetings might focus on: access to federal forest lands, the renewable biomass definitions to be used in the proposed renewable energy standard, and the design of an appropriate scheme(s) for ensuring that biomass production does not degrade biodiversity, water quality, and other ecosystem services.

***Communication to Decision Makers:*** Both the Pinchot Institute and the Heinz Center view communication with decision makers as crucial components of problem solving. The two organizations will undertake the following activities in this regard:

- Following each meeting, Heinz and Pinchot will produce a summary report (see above).

- Pinchot will produce a series of short fact sheets and briefing materials based on the comprehensive assessment, and conduct both formal and informal briefings on Capitol Hill to bring both the findings of the assessment and the dialogue process to this key audience.
- The Heinz Center will also produce summary and briefing materials from the ongoing dialogue series, timed for consideration as key issues arise on the legislative or executive branch calendar.

The goal of these products is to ensure that decision makers receive information that is reflective of a wide range of perspectives. As noted above, the dialogue process is not constrained to consensus solutions. In the case of biofuels and bio-energy, simply articulating the knowns, unknowns, agreements, and disagreements will provide a crucial public service.

### **Products and Benefits**

This collaborative project will produce a range of outcomes:

- Comprehensive summary of status, trends, and future prospects for wood bio-energy in the US, with contributions from the full range of participants in this field. This will consist of the Pinchot assessment and a distillation of key findings and conclusions, in forms appropriate for senior decision makers and staff.
- A significant policy-oriented stakeholder dialogue that will highlight issues, differences of perspective, and policy directions, and a firm basis for continued dialogue. This will consist of the early-2009 meeting and subsequent topical sessions.
- A summary report outlining possible positive and negative outcomes, factual agreements, disagreements, and uncertainties, and policy options and views of various parties on these options. This will be derived from the initial dialogue session.
- Policy maker communications tools (briefings, fact sheets, etc.) on an ongoing basis targeted to key decision points affecting biofuels, bio-energy, and forests. These will be prepared after each dialogue session and after the series as a whole is completed.

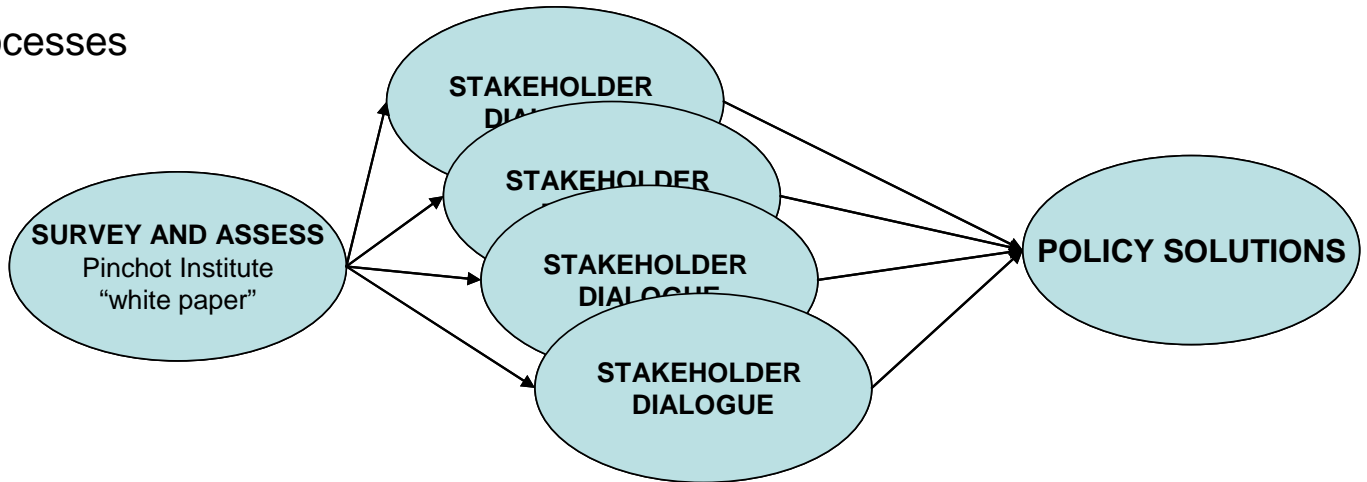
Ultimately, this process aims to improve the understanding of both participants and decision makers of the issues and concerns related to bio-energy development in a timely and policy-relevant manner.

**Advisory Committee:** We are creating an advisory committee for this project. Informal at present, we expect the group to remain as a steering and integrating body over the life of the project.

# Forests and Bio-Energy: The Sustainability Dimension

The Heinz Center and Pinchot Institute for Conservation

## Processes



## Products

- ❖ Comprehensive survey of forest bio-energy status, trends, prospects

- ❖ Clarification of stakeholder views, plans, constraints

- ❖ Meeting summaries approved by participants

- ❖ Briefings, fact sheets for policy audience

- ❖ Summary and outcomes report