

# Ensuring Forest Sustainability in the Development of Wood Biofuels and Bioenergy: Implications for Federal and State Policies

Initial Dialogue Session  
Washington, DC

February 9-10, 2009

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**EXECUTIVE SUMMARY**

On February 9-10, 2009, the Heinz Center for Science, Economics and the Environment (Heinz Center) and the Pinchot Institute for Conservation (Pinchot Institute) convened a dialogue session focusing on the intersection of policies affecting biomass-based energy and those concerning forest policy and management.<sup>1</sup> This meeting was convened as the first in a dialogue series intended to help ensure that, as the nation expands its capacity for production of forest-based energy sources, it will do so in a manner that promotes the use of biomass harvesting as a valuable conservation tool and minimizes negative unintended environmental, economic, and social consequences. The meeting brought together stakeholders from the energy and forest products industries, forest landowners, nongovernmental organizations, state and federal regulators and managers, and other experts. (See Appendix I for the participant list)

The dialogue was intended to identify a small suite of issues of concern to participants and to lay the groundwork for future discussions. Four related issues rise to this level:

- the need to ensure sustainability of bioenergy in general and of feedstock production in particular
- disparate policy treatment of different bioenergy technologies and feedstocks, potentially resulting in failure to take advantage of the most efficient and environmentally advantageous approaches
- the fragmented nature of the bioenergy policy framework, with sometimes inconsistent purposes, objectives, and requirements
- identification of what is needed to better evaluate policy development strategies.

***Sustainability Issues.*** While participants generally recognized the economic, environmental and energy security benefits that could result from the expanded use of renewable biomass for energy, participants also recognized the potential for undesirable impacts resulting from expanded or modified harvest practices to meet bioenergy

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feedstock demand. These concerns include overarching issues such as whether bioenergy strategies will result in a net reduction in greenhouse gas emissions, regional or landscape-scale concerns related to the amount and pattern of expanded harvest and related land use change, and local effects related to both production-site effects (e.g., water use for biorefineries) and harvest practices.

***Unequal Treatment.*** Current federal policy incentives focus largely on production of liquid fuels and at times place greater emphasis on the production of renewable electricity from non-biomass sources. This approach means that proven, existing and relatively high efficiency bioenergy strategies, such as recovery boilers, combined heat and power (CHP), and thermal energy technologies may be disadvantaged. Potentially-expandable CHP capacity within the forest products industry and small or community-scaled efforts are viewed as disadvantaged by this policy preference for large-scale facilities. Current federal policies also tend to favor dedicated (closed-loop) feedstocks over opportunistic (open-loop) forest derived feedstocks.<sup>2</sup> This approach leaves potential economic, environmental and energy security advantages unrealized.

***Policy Ambivalence.*** Existing renewable energy policies appear to incorporate a range of objectives: displacing foreign oil, reducing greenhouse gas (GHG) emissions, supporting more-efficient use of energy and related resources, sustainable forest management. The relationships of these objectives to one another should be considered in crafting federal policy so that they do not inadvertently create policy conflicts or fail to adequately address key concerns.

## **Outcomes**

Participants voiced a range of concerns and possible solutions to these challenges, but this meeting was intended to air these issues, not resolve them. However, the following general statements, while not “signed off on” by participants, are expressive of the broad outcomes of the discussion.

- While displacing foreign oil and gas is an important goal, the broader goals of increasing domestic renewable sources of energy that provide climate change mitigation benefits, and maximize efficiency, should also be incorporated into renewable energy policy.
- Because renewability alone does not ensure the sustainability of a resource, additional safeguards may be necessary.

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<sup>2</sup> In this instance the use of closed-loop and open-loop refers to feedstock production systems and not electricity produced and consumed in a closed-loop within a facility.

- Government subsidies may have unintended (potentially unsustainable) consequences. Consideration should be given to providing incentives aimed at increasing biomass supply as well as demand, perhaps with enhanced emphasis on those biomass sources that optimize net environmental benefits. Such incentives would provide an important complement to demand-side incentives and policies.
- Carbon neutrality of woody biomass energy production is premised on prompt regeneration of harvested woodlands and maintaining their biological productivity over time. If bioenergy production is to result in net reductions in greenhouse gases, then production of feedstocks must be guided by locally-relevant, effective, and practical standards, guidelines or performance-measures.
- If we are to better understand the combined effects of bioenergy at scale, it will be necessary to develop an integrated framework for research, monitoring and analysis of impacts of different bioenergy strategies.

### **Next Steps**

The Heinz Center and Pinchot Institute will consult with participants and other stakeholders and convene future consultations through meetings and conference calls. It is expected that the major topics identified here will serve as the architecture for these discussions. One specific next step will involve articulation of a set of key objectives related to forest bioenergy development, and analysis of the degree to which different policies help or hinder progress toward this goal.

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**Introduction**

The nation faces significant energy and climate change challenges, and bioenergy from the nation's forests has the potential to play an important role in meeting these challenges. Expansion of the scale and nature of bioenergy activities has the potential to significantly alter existing relations between users and suppliers of wood fiber, the nature of forest practices, and the production of other ecosystem goods and services. Energy policies, technologies, and practices will play a much larger role in forest management in the future than they have before<sup>3</sup>.

The forest management community (including private industry and landowners, governments, NGOs, and others) has historically wrestled with how best to balance the production of forest-based goods with maintenance of biodiversity, water quality, and other conservation values. This notion—of balancing current needs with future resource sustainability—is also a grounding principle in efforts to address the nation's growing needs for low carbon and carbon neutral forms of energy. This is particularly evident in areas in which energy production and forest management overlap.

With this concept in mind, the Heinz Center and the Pinchot Institute convened a diverse group of stakeholders on February 9-10, 2009, to establish an open and constructive dialogue about sustainability issues related to forest bioenergy policy.<sup>4,5</sup> This meeting was convened as the first in a policy dialogue series intended to help ensure that as the nation expands its capacity for production of these energy sources, it will be able to maximize benefits and minimize negative unintended consequences. Participants came from the energy and forest products sectors, the state and federal agencies responsible for energy policy and forest management, nongovernmental environmental organizations, academic and research institutions, and organizations representing small and large landowners. This forum was intended to create a space for candid dialogue about the preferences and positions of the diverse sectors that have a stake in the sustainable development of bioenergy; and, identify a suite of key issues that if handled poorly could result in unintended and negative consequences—or conversely— issues that if handled

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<sup>3</sup> See 2007 Pocantico Meeting - [http://pinchot.org/current\\_projects/national\\_dialogue](http://pinchot.org/current_projects/national_dialogue)

<sup>4</sup> A participant list and project brief are included in the appendices. Additional information and materials from this meeting can be found at: [http://www.pinchot.org/outlook\\_forums/2009](http://www.pinchot.org/outlook_forums/2009)

<sup>5</sup> In this document, the term “bioenergy” is used to refer to production of fuels, electricity, heat, pellet fuel and other fuel or energy outputs.

well, could best take advantage of the opportunities that wood-based bioenergy has to offer.

### **Findings and Observations**

The dialogue revolved around two main issue areas related to the sustainability of wood bioenergy systems. These are:

- the potential negative impacts—and options for lessening these impacts—associated with increased demand for woody biomass for bioenergy production, and
- perceived failures or gaps in the existing and evolving regulatory and legislative framework guiding forest bioenergy development.

The remainder of this document will outline some of the major issues addressed in this initial dialogue session, offer some general recommendations that emerged, and indicate possible next steps in this national dialogue on sustainable wood bioenergy.

### **Addressing potential threats and opportunities in wood-bioenergy**

The group recognized that despite the significant potential for wood-based bioenergy to be a tool used to address national goals for renewable energy, climate change, and forest management, it does pose potential threats to forest resources. The dialogue identified the following:

- The potential for overharvesting on a local or regional scale caused by increased demand for biomass, sometimes compounded by multiple new facilities locating in close proximity to one another.
- Inflated perceptions of locally available and sustainable supplies of woody biomass stemming from oversimplified interpretation of forest inventory and growth statistics.
- The potential for site level impacts from biomass harvesting that may not adequately be addressed by current voluntary or regulatory mechanisms.

Following are brief outlines of key discussion topics

- There was a diversity of opinions within the group regarding the degree and pace at which bioenergy should progress, given the many unknowns about both bioenergy development and its impacts. Some were comfortable with moving ahead without additional harvesting safeguards, as long as the footprint of bioenergy is spread over the landscape in a limited number of smaller scale facilities. Many felt that bioenergy should progress, as long as an adaptive management framework is in place that includes stakeholder driven regional biomass resource planning and decision support tools. There was also a contingent sharing a view that good business practices, market effects, and the marginal economics of bioenergy would be sufficient to prevent overharvesting on a significant scale.
- Participants variously proposed addressing site-level effects through expanded state harvesting guidelines, third party monitoring and auditing, detailed voluntary BMPs, and forest certification. Comments also focused on the need to address

potential landscape level impacts arising from aggregate land use change (involving both forested and agricultural landscapes) caused by expanded removal of forest biomass and the production of energy crops.

- There were differing views on the level at which government should regulate, guide, or manage biomass harvesting and related matters. There was strong support for state involvement, but also support for both county-level action and a strong federal role, which might provide an enabling policy framework within which individual states could develop tailored policies, goals, and implementation plans.
- Likewise, views differed on the nature of government intervention in harvesting, with some endorsing the existing emphasis on-voluntary best management practices (perhaps updated to address concerns other than water quality). Others looked to more regulatory models, such as some state forest practices laws. Some felt that biomass harvesting guidelines are largely symbolic since they are voluntary with little to no resources available for enforcement or to monitor their effectiveness. There was support for the development of approaches (such as guidelines) that can address specific regional contexts. It was also recognized that most states that have adopted or are developing harvesting guidelines are outside the South (with the exception of North Carolina) the region in which the bioenergy and biofuels industries are developing the most quickly.
- Some participants supported forest certification as one possible option since the concept of certification generally has an adaptive management framework built into it, while others focused on certification's market incentive approach. Concerns about relying on certification include the cost and complexity of certification for small landowners, the feasibility of chain of custody (CoC) certification for biomass, and that competition for certified wood may be elevated in areas where existing forest products firms have established a supply chain for high value certified products. Some noted that cost-efficiencies can be gained through group certification of several small landowners.
- There was broad recognition that regional (or state) level planning might be well suited to addressing regional ecological issues and regional fiber supply complexities, but also that there are positive examples of successful collaborative national planning efforts, e.g. the National Fire Plan. It was suggested that such an approach would include regional assessments of supply and demand as well as current safeguards in place as the first two steps in defining useful sustainability criteria. In this regard, the group recognized that in times of fiscal instability and budget shortfalls, state agencies may not be able to offer adequate technical assistance to landowners to realize the opportunities in new markets for biomass and ecosystem services.
- There was significant discussion about the various definitions of renewable biomass in federal legislation, because these definitions have been used as the venue for including sustainability safeguards in federal legislation. (Note, however, that there were many participants who believed that the definitions

sections of legislation to promote biofuels or electricity production were not the right venues for addressing forest sustainability.) A host of questions arose with respect to the sustainability of closed loop biomass production systems, e.g. short-rotation woody crops (SRWCs) and agro-forestry systems.<sup>6</sup> Some were optimistic that SRWCs could be integrated into the landscape in ways that produce net gains for water quality, wildlife habitat, and other environmental services. Others saw potential undesirable tradeoffs associated with energy crops, such as the introduction of non-native and genetically modified energy species and potentially significant fertilizer and other inputs. Still others suggested that establishing sustainability criteria for open loop biomass systems (e.g. managed forests on private and public lands) should remain a priority. It was suggested that utilizing currently unutilized woody biomass from hazardous fuel treatments on public lands could be a net gain for forest sustainability, if adequate safeguards were in place. It was also identified that without markets for low grade and small diameter wood, priority hazardous fuel removal and ecosystem restoration projects are unlikely to occur. Finally, the reality of both demographics and economics for private forest landowners was noted – without adequate return, conversion of land to non-forest use will continue and perhaps accelerate.

- There was concern that existing incentives focus only on increasing the demand for woody biomass for energy, but do nothing to support increased supply. Incentives for construction of facilities and commercialization of biofuel technologies have not integrated bioenergy with broader forest management and conservation strategies. When considering the continued development pressures that forest landowners face, there were suggestions that additional incentives (e.g. biomass feedstock assistance programs, master logger programs, and ecosystem service markets) are needed to support increased investment in woody biomass supply. There was support for continued federal research of woody feedstocks and sustainable supply systems. The bulk of research funding has gone to the Department of Energy (DOE), to support biomass conversion technologies, but far less has been devoted to woody biomass supply R&D at federal or state land management agencies.
- There was extensive discussion of issues involving management of federal lands. Participants noted that feedstock from federal lands is excluded under the Energy Independence and Security Act's (EISA) renewable fuels standard; there are contracting difficulties that hinder long-term supply arrangements; stewardship contracting, which can help agencies achieve their land management goals, has not been used as widely as some preferred; and fuel treatment residues often are left to decay or are burned. With upwards of half of the annual budget of the USFS going towards fire suppression, there was support for regional woody biomass planning to identify areas with significant forest health issues, and where biomass removal may be appropriate. On the other hand, there remain strong

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<sup>6</sup> In this instance the use of closed-loop and open-loop refers to feedstock production systems and not electricity produced and consumed in a closed-loop within a facility.

reservations among some participants regarding the use of federal forests as energy sources. The historical pressures to “get out the cut” and accompanying environmental concerns resonate strongly in this debate, and the EISA provisions were seen by some as a necessary bulwark against a possible return to this situation.

- It was suggested that long-term research efforts are necessary to help determine the consequences of climate change for forest management and the role of biomass in both climate mitigation and adaptation. Other participants believe that more research is needed to define the effectiveness of hazardous fuel treatments to reduce wildfire risk and protect conservation values.
- There was concern that small-scale biomass facilities which currently are unregulated under the Clean Air Act could lead to air quality problems if appropriate steps are not taken. A proliferation of unregulated small-scale wood bioenergy facilities could mean prolonged exposures to the most sensitive sub populations, such as children, if schools are burning wood in uncontrolled units. There are concerns that small scale facilities are not burning as efficiently and cleanly as possible. Regulatory and non regulatory approaches could spur innovation and bring cleaner burning and more efficient European biomass boiler and district energy systems to the US, but may also make these small scale bioenergy facilities more expensive to implement, until they are more widely available.
- There was significant discussion around which existing data sources could be used to help in planning regional bioenergy strategies and how basic forest inventory and growth statistics can be interpreted to provide more accurate assessments of locally available and sustainable woody biomass supplies. It was suggested that the Forest Inventory and Analysis (FIA) Program, the Resource Planning Act (RPA) Assessments, and state forest resource assessments are data sources and assessment processes that should inform ongoing regional specific dialogues. It was also suggested that the USFS State and Private Forestry and university cooperative extension should package technical resources for landowners and state planners, using information from the national woodland owners survey and other sources to more accurately portray likely available woody biomass supply.

### **Critique of the current policy framework**

The group noted that the desired outcomes of national bioenergy and biofuels policies are inconsistent and in some instances are contrary to one another. This “policy ambivalence” results from the rapid pace of developments and the fragmented nature of the process, and has created a framework that attempts to achieve too many objectives simultaneously, with the result that no single objective is met effectively. Do we want to displace foreign sources of energy? Do we want to reduce greenhouse gas (GHG) emissions? Do we want to produce more efficient energy or just more energy? Do we

want to view bioenergy as a forest management tool or simply feedstock for growing demand?

- Participants generally agreed that climate change and forest management are both national priorities, and that the role of woody biomass utilization must (1) be more clearly articulated in policy and (2) be more effectively advanced in unison than is currently the case. Many expressed that current bioenergy policies like the RFS appear to be largely about displacement of foreign fuel sources, which has forced climate change mitigation in particular to take a back seat in both the philosophy and language of bioenergy policy.
- Market demand for bioenergy could be stimulated by a more accurate accounting of a full-cost market price for carbon. Participants generally agreed that bioenergy and sustainably managed forests could play a significant role in addressing climate change because of the urgency of reducing GHG emissions quickly and the flexibility of biomass to provide multiple forms of low carbon energy (liquid fuel, thermal applications, and electricity). Demand for bioenergy has been stimulated by a number of subsidies and incentives—such as construction loan guarantees, investment tax credits, production tax credits, import tariffs, grants, federal Renewable Fuel Standard (RFS), state Renewable Portfolio Standards (RPS)—that appear to be derived from a goal of displacing fossil fuel use rather than achieving measured reductions in GHG emissions. While these goals are not mutually exclusive, the complexity in determining the life cycle GHG emissions of bioenergy systems has left the policy emphasis being on direct substitution of fossil energy.
- There was support for the development of adequate processes and metrics for GHG life cycle analysis (LCA) and accounting standards for bioenergy systems that can be realistically integrated with energy policy.
- There was broad agreement that the sustainability of forest resources was not adequately integrated into current policy, and that a shared vision for sustainable use of forest biomass would provide a useful alternative to the existing “policy ambivalence” mentioned above. Such a shared vision would help frame desired outcomes, leading to specific measures and metrics to achieve and quantify progress. Such a shared vision, which for the group clearly includes something like “maximizing the efficiency of use of forest biomass,” would drive policy strategies such as the use of sliding scales for incentives, to reward more efficient energy producers.
- Several participants stated that the current policy framework disadvantages the forest products industry. This results from the focus of federal incentives on liquid fuels as well as from state renewable energy policies that tend to favor large centralized power production (under the premise that centralization offers greater reliability). Forest products companies now produce a significant amount of bioenergy, largely for industrial process heating, often with ancillary electricity production. Expansion of this capability would increase use of one of the most

efficient bioenergy strategies, support an existing employment base, and continue the industry's provision of lower-value residues for other bioenergy facilities.

- It was noted that smaller scale and community-scale combined heat and power (CHP) facilities, district heating plants, or wood pellet plants have many socio-economic benefits for rural forest dependent communities and society at large. The group also identified that distributed generation is often disadvantaged by the existing state, regional, and federal policy framework. Regional Transmission Organizations (RTOs), which have a reliability mandate, have enacted policies that can (intentionally or not) marginalize small power producers. Prior to the 2005 Energy Policy Act, the Public Utility Regulatory Policies Act (PURPA) encouraged small distributed generators and co-generators to sell their power to the grid for a fair price. This greatly increased the number of small power producers, many of which were wood-fired CHP units. Several members of the group suggested that energy policy should encourage as much distributed generation as possible, and should encourage market parity for distributed CHP facilities and other efficient bioenergy options. Some suggested feed-in-tariffs<sup>7</sup> as one policy tool to accomplish greater market parity.

### **Trust as a Policy Consideration**

It is evident that there is a continuing lack of trust among participants in the forest management arena, especially with respect to whether current or proposed policies are adequate to ensure sustainable use of public and private forests. This manifests itself most prominently in the discussion over expansion of the eligible sources of biomass for energy (e.g., beyond the fairly restrictive limits placed by EISA / RFS provisions). It is clear that access to expanded source areas is contingent, in many minds, on the creation of effective assurances that feedstock production will be sustainable. At the same time, there are many who believe these mechanisms and institutions (US Forest Service, state forestry agencies and BMPs, NEPA, FLPMA<sup>8</sup>, etc.) provide a comprehensive approach and should be relied upon for this purpose as well.

### **Preliminary Recommendations that Emerged from the Dialogue**

The following are tentative and preliminary, and are not presented as consensus recommendations from the entire group. Rather, they should be viewed as “first drafts”, subject to significant continuing dialogue among participants.

- ✓ Bioenergy policy should focus on the desired outcomes for renewable energy, with climate change mitigation, increased low carbon energy sources, the most efficient conversion of biomass-to-energy, optimization of the environmental benefits that feedstocks can provide, enhanced energy security, and displacement of fossil energy being of primary importance.

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<sup>7</sup> Feed-in-tariffs are a common policy in Europe that requires regional electric utilities to buy renewable electricity from distributed generators, generally at above market rates. Some states have adopted or are currently considering similar policies.

<sup>8</sup> BMP: best management practices; NEPA: National Environmental Policy Act; FLPMA: Federal Land Policy and Management Act.

- ✓ Bioenergy policy should be technology neutral—not favoring certain fuels or forms of energy—and should instead seek a more equitable distribution of subsidies and incentives to favor the most efficient feedstocks and conversion technologies consistent with regional practicalities. Specifically, current incentive disparities affecting market entry of forest biomass, forest products firms, smaller-scale, distributed operations, and thermal energy technologies should be reduced or removed.
- ✓ Incentives for biofuels and bioenergy should be distributed according to the performance of facilities and systems with respect to greenhouse gas life cycle emissions, comparative environmental benefits and efficiency, while taking into account regional situations.
- ✓ A set of well defined desired outcomes related to sustainability would include such things as regional contributions to overall renewable energy objectives, GHG life cycle analysis, effects on long-term forest economics, and impacts to environmental quality, efficient use of wood resources, and community socio-economic viability. Defining such desired outcomes might be achieved through a broad based stakeholder process guided by sound science.
- ✓ Consistency in the definition of renewable biomass is of utmost importance. Multiple definitions applicable to different uses of biomass (2007 Energy Independence and Security act, 2005 Energy Policy act, federal Renewable Energy Standard, Farm Bill, state Renewable Portfolio Standards, tax code) complicate the administration of incentives, programs, and technical services provided by federal and state government, and greatly add to the complexity faced by private market participants.
- ✓ Policies dealing with forest management (open loop biomass) should be harmonized with those addressing agro-forestry and SRWCs (closed loop biomass).<sup>9</sup> Appropriate approaches to sustainability should be identified for both.
- ✓ While biomass harvesting has been practiced in some locations for some time, its geographic scope will likely expand. There is a need for ongoing monitoring and evaluation of the effectiveness of existing and forthcoming biomass harvesting guidelines, both in their application at the site level and in their feasibility as a voluntary approach to addressing sustainability concerns. Allocating funding to this purpose at the state, federal, or both levels, may be necessary.
- ✓ There is a need for long term research especially with respect to soil productivity and landscape ecology.
- ✓ The USFS State and Private Forestry program should work with each state forestry agency to inventory current mechanisms to help maintain sustainability of biomass harvesting at both the site level and state level, and to help maintain appropriate harvesting practices over time.

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<sup>9</sup> In this instance the use of closed-loop and open-loop refers to feedstock production systems and not electricity produced and consumed in a closed-loop within a facility.

- ✓ State resource management agencies should use existing state and forest certification programs as a basis for evaluating and, where necessary, improving state-specific approaches.
- ✓ Federal agencies (and potentially Congress) should review impediments to achievement of agency objectives related to biomass and forest health that are caused by (1) the current structure of stewardship contracts and agreements, and the provision of the Federal Acquisition Regulations (FAR) related to bonding and cancellation ceilings required for new bioenergy production facilities and (2) current demands of wildfire suppression funding.
- ✓ The dialogue process should seek to develop a vision and strategy document to help frame and clarify the many complex issues affecting sustainable wood bioenergy for decision makers. The dialogue process should also inform the FACA of the interagency Biomass Research and Development Initiative (BRDI) of its progress and availability as a resource.

### **Conclusions and Next Steps in this Dialogue**

There is strong consensus that the dialogue process can develop and refine a shared vision of sustainable bioenergy and that this is an important aspect of defining desired outcomes and performance metrics for improved policy. There was also agreement that the nation needs to develop as many low carbon fuel sources as possible, within the bounds of sustainability, and that forest bioenergy will have a role to play. However, given the complex nature of the term “sustainability,” there emerged no single clear vision for this, but rather a number of paths toward defining sustainable wood bioenergy. It is clear that with ongoing dialogue, the areas where these paths cross may help lead the energy and natural resource policy debate toward the best outcome.

For next steps down this path, the Heinz Center and Pinchot Institute will plan future conference calls and meetings around some of the issues that emerged from the February 9–10 meeting. In particular, a next phase of the dialogue will involve articulation of a set of key objectives related to forest bioenergy development, and analysis of the degree to which different policies help or hinder progress toward this goal. This policy dialogue will continue to provide a forum where diverse stakeholders can vet their thoughts, policy concepts, and discover their common interests, to move in the direction of more equitable and meaningful policy for bioenergy.

# Appendix I: Dialogue Participants

## Forest Bioenergy Conference

### Participant List

February 9-10, 2009

Fred Deneke 25x25	Ken Skog Forest Service
Doug Williams 25x25	Mary-Louise Smith Forest Service
Jerry Schwartz American Forest & Paper Association	Greg Comatas International Paper
Christopher Recchia Biomass Energy Resource Center	Nancy Schmicker International Paper
Ann Swanson Chesapeake Bay Commission	David Struhs International Paper
Jesse Caputo EESI	Steve Mueller International Wood Fuels
Will McDow Environmental Defense Fund	Steve Koehn MD Forest Service
Karen Blanchard EPA	Bob Fledderman MeadwestVaco
Robert Wayland EPA	David Tenny National Alliance of Forest Owners
Brian Doll ExxonMobil	David Garman National Association of Forest Owners / Decker Garman Sullivan and Associates, LLC
Marilyn Buford Forest Service	Jake Donnay National Association of State Foresters
Doug Crandall Forest Service	Barbara Bramble National Wildlife Foundation
Edmund Gee Forest Service	Bob Abt NC State University
Lew McCreery Forest Service	Charlie Niebling New England Wood Pellet
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Ron Barmore  
Range Fuels

David Carr  
Southern Environmental Law Center

Lark Hayes  
Southern Environmental Law Center

Bob Cleaves  
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Chad Davis  
Sustainable Northwest / Rural Voices  
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Jim Gan  
Texas A&M University

Mike Debonis  
The Forest Guild

Dennis Ojima  
The Heinz Center

Robin O'Malley  
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Daryl Williams  
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Joe Dammel  
Union of Concerned Scientists

Ben Larson  
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Jay O'Laughlin  
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Dennis Becker  
University of Minnesota

Brenna Lattimore  
University of Toronto

Roger Conway  
USDA Office of the Chief Economist

Janaki Alavalapati  
Virginia Tech

Nick Goulette  
Watershed Research and Training  
Center

Jay Jensen  
Western Forest Leadership Coalition

Ann Walker  
Western Governors Association

Bob Emory  
Weyerhaeuser Company

Allison Hellman  
Wisconsin DNR

## Appendix II: Project Brief

### FORESTS AND BIOENERGY – THE SUSTAINABILITY DIMENSION THE H. JOHN HEINZ III CENTER FOR SCIENCE, ECONOMICS AND THE ENVIRONMENT 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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#### **Bioenergy 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 bioenergy already contributes more than 3.5 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 bioenergy 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 bioenergy 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 bioenergy. 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**

Bioenergy 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 bioenergy, 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>10</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.
- 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 is sustainable? The Pinchot Institute manuscript will serve as a key element for

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<sup>10</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/>

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 bioenergy 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 bioenergy 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 bioenergy 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 bioenergy, 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 bioenergy 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.

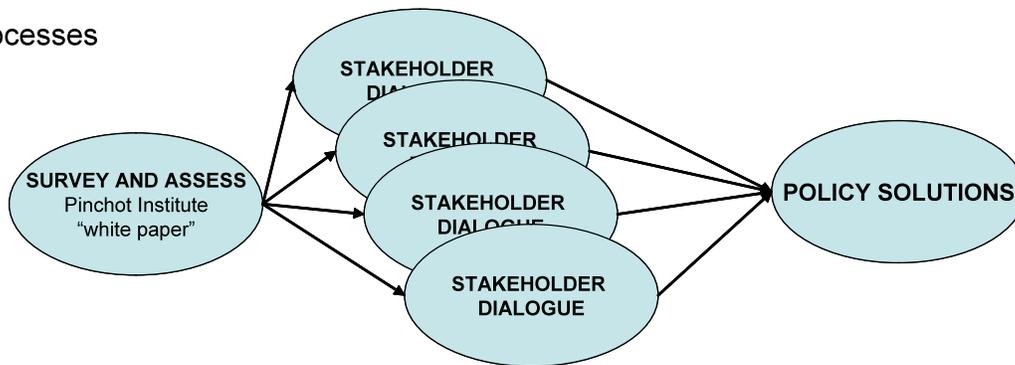
- A significant policy-oriented stakeholder dialogue that will highlight issues, differences of perspective, and policy directions, and a firm basis for continued dialogue. This will consist of the early-2009 meeting and subsequent topical sessions.
- A summary report outlining possible positive and 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, bioenergy, 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 bioenergy development in a timely and policy-relevant manner.

**Advisory Committee:** There is an advisory committee for this project. This group is 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 |
|---|--|--|--|-------------------------------|

The Pinchot Institute for Conservation advances forest conservation and sustainable natural resource management by developing innovative and practical solutions to the most urgent conservation challenges, today and into the future. Named for Gifford Pinchot, an early leader in American conservation, the Pinchot Institute is an independent, nonprofit research organization. For more information, please visit [www.pinchot.org](http://www.pinchot.org).



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At the crossroads of science and environmental policy, The Heinz Center brings leaders together from business, government, academia, and environmental groups to brainstorm solutions that are both scientifically and economically sound. Founded in 1995 in honor of Senator H. John Heinz III, the Center's guiding philosophy is that only by working together can we solve today's environmental challenges and leave the world a better place for generations to come.



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