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## OUR CARBON, OUR COMMUNITIES

*A community-based vision for using wood biomass in an era of climate change*

In the extensive temperate forests of the Northeast, the use of wood biomass to replace fossil fuels represents a potential four-fold benefit: climate-change mitigation, reduced dependence on foreign oil, improved forest management, and economic growth for struggling rural areas. But those potential benefits could be squandered if climate legislation continues to focus its biomass energy solutions on large, centralized, capital-intensive approaches such as electrical-generation facilities and cellulosic biofuels.

There is a more effective, less expensive, and simpler path to take. The solution lies with market-driven networks of public and privately owned forests, community-scale wood-burning projects, and a frank acknowledgment of the most efficient way to use wood fuel.

Our vision is simple:

- Maintain the forested landscape that has re-grown over the last 150 years across the Northeast.
- Reward the traditional stewards of our forests—private landowners, professional foresters, loggers, and sawmill owners—for supplying both durable wood products and biomass for thermal and cogeneration applications.
- Encourage the practice of sustainable forestry, using best management practices that integrate biomass harvesting standards, management plans, and certification procedures.
- Help communities to use their local wood-energy resources to provide primarily thermal energy for schools, town halls, college campuses, and neighborhoods.
- Create local, place-based investment opportunities in the green economy that focus on wood-fuel enterprises.

A corollary benefit of these strategies will be the improved ecological health of our forests, which provide a wide range of services to human beings, including clean water, flood control, preservation of wildlife habitats, recreation, and tourism.

We can best optimize use of our forest resources by thinking and acting locally. We can start by having federal, regional, and state legislative efforts on climate change work in concert to launch a community energy movement—town by town, woodlot by woodlot.

### **The Thermal Imperative**

In recent years, federal efforts to promote wood biomass have concentrated R&D funding on large-scale generation facilities or the development of cellulosic biofuels. These investments will

do little to meet the environmental, economic, or energy-production benefits in our region. In the Northeast, it is clear that small-scale and locally controlled energy resources represent the best use of our forests and can provide the most net low-carbon energy.

*In the case of energy from wood resources, the local thermal use of biomass can provide three to four times more net energy than if used in a centralized electrical generating facility.*

The use of biological materials in forests to produce cellulosic ethanol has also been held out as a great energy hope for the Northeast. But despite large federal R&D subsidies, early signs are that the amount of cellulose needed to produce a gallon of ethanol is very high. Again, the thermal imperative suggests that using wood to produce thermal energy to heat buildings is a much more efficient use of the resource.

### **Keeping Working Forests Working**

The forested landscape of the Northeast, characterized by a mosaic of land uses and forest types, faces an uncertain future. The average age of the landowner base is growing older, in many areas approaching 65. Without the stabilizing counterbalance of the option to manage working forests profitably and sustainably, the rapid turnover in ownership of our lands will result in greater residential development and fragmentation, which will further exacerbate carbon emissions.

The climate crisis offers a unique opportunity to engage the next generation of landowners to manage their land sustainably for carbon and climate-change mitigation.

- Creating financial incentives and new business models will increase the overall profitability of privately owned forestland while serving public values.
- Managing forests for traditional end uses—sawtimber, veneer logs, furniture-grade wood, structural beams, and other value-added items—will sequester carbon for the long term in durable wood products.
- Managing forests sustainably for biomass energy will mitigate climate change by substituting wood fuel for fossil fuels.

In order for our vision to succeed, it will be necessary to address the entire value chain that connects forest owners with end users of wood resources.

Without markets for traditional end uses and emerging wood products, wood use for biomass energy will not be economically feasible. Growth in the use of wood fuel should take full advantage of human and natural resources that have evolved over many generations. In the Northeast, rural communities have suffered from global pricing of wood supplies, a process that has stunted the economic activity of sawmills and wood-processing plants already suffering from the recession, negatively impacting the communities that host these industries. The sad result has been steady increases in unemployed foresters, loggers, mill workers, and truckers, and fewer equipment suppliers than once served a thriving forest industry.

Fostering the wise use of wood resources for local energy consumption will help re-energize these traditional businesses.

In an emerging green economy, we can create jobs that are low-carbon and locally controlled, but only if we recognize the interconnectedness of all aspects of the value chain for forest products and services.

## **The Importance of Communities**

A low-carbon energy economy can be achieved through community-scale energy and resource-management networks that support a bioenergy infrastructure. These networks would include aggregations of forestland ownerships that would connect biomass supplies to markets serving end users for local and regional benefit.

*With this approach we can aggregate the wood supply and provide incentives to groups of private landowners to harvest their timber sustainably and profitably. This is an alternative to not harvesting the timber at all. It also may help avoid selling forestland for development when the land asset passes from one generation to the next.*

We must encourage communities to undertake demonstration projects to develop these networks of privately owned forests—perhaps in combination with public lands or community forests—to harvest a sustainable supply of wood. These community energy networks at the same time will reinforce existing supply chains that depend on higher-value material coming out of the forests. Wood harvested in this way would replace fossil fuels used to heat buildings and contribute also to small-scale cogeneration facilities in commercial clusters, such as industrial parks, local schools, college campuses, and municipal offices and garages. In combination with conservation and other renewables, the use of biomass for thermal energy can greatly increase the energy self-reliance of communities in our region.

Community resource aggregation and market development models share the costs associated with management, harvesting, certification, and marketing wood and make it easier for individual landowners to turn a profit. Community energy networks also lower operating costs, connect communities to a wider range of market opportunities, and provide a more stable structure of landowners.

*Because the start-up cost of aggregating ownerships could be significant, financial incentives in the form of subsidies or grants for capital expenditures may be needed to forge links between landowners and end users of wood for energy. We believe that over time the successful market-driven models will be those capable of generating sufficient revenues to operate without subsidies. Such long-term success will require that markets for sawlogs and other higher-end forest products remain stable in regions with communities aggregating forestland ownerships.*

An added benefit to a decentralized model of smaller-scale bioenergy users is the greater economic and ecological resiliency it provides, enabling communities to respond better to uncertainty through a wider range of market options. Wood markets are famous for their volatility. Market-driven community networks will be able to make adjustments to business

models in response to supply disruptions and market changes. Community-based forestry has greater freedom to make decisions on harvesting practices, including cutting rotations, which species to harvest, and which parcels should be left uncut. Large centralized energy systems do not have this flexibility and therefore place a greater risk on invested capital and the forest resource. With community systems in place, communities are shielded from disruptions in the supply of imported fuels.

The compelling fact remains that much of the forested lands in the Northeast are privately owned. But without community interest and buy in, much of the region's wood resources will be inaccessible. There will need to be a concerted effort on the part of citizens to persuade their fellow community members of the opportunities provided by investing in local wood-energy resources. There are key roles here for governmental and community organizations, for conservation groups, and for landowners, extension officers, and scientists.

Community-based wood-energy business models can deliver economic, carbon, and social benefits for generations to come. The economic multiplier effects are significant:

*Dollars that currently go overseas to pay for fossil fuels will instead flow into local economies, providing paychecks for loggers and foresters, and providing financing for mill owners and woodchip manufacturers to expand and modernize their facilities.*

Looking longer term, new flows of wood-energy dollars will help keep working forests working by providing financial incentives to landowners to maintain the age-old tradition of forestry.

Forests have been heating our homes for a very long time. But we can expand the use of wood as a proven fossil fuel replacement by adding new wood-burning infrastructure that goes far beyond just adding more woodstoves to homes.

*We believe it is critical that these issues be recognized and addressed in the development of new national climate change legislation.*

The end result will be greatly strengthened rural economies, improved forest health and productivity, and a significant contribution to regional energy independence. As winter approaches, consider, too, the blessings of warm homes and schools, each with an affordable and dependable energy supply that can be seen rolling over the hills to the horizon.

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