



Massachusetts Chapter

Policy On Forest and Woody Biomass Fuels, December 2009

Background

The Sierra Club opposes the unsustainable exploitation of forest ecosystems. The Sierra Club has significant concerns over the production of energy from forest or woody biomass, including the inefficiency of utility-scale wood-burning biomass energy production, the resultant operational CO₂ emissions, and the associated impacts on forest ecosystems, air and water quality, and public health. Claims of “carbon neutrality” by biomass and industry proponents rely on outdated information and questionable assumptions.¹ The Sierra Club is not confident that significant potential for biomass power generation is possible without compromising soil and forest health, nor are we confident that regulatory frameworks exist or can be developed to prevent the unsustainable exploitation of forest eco-systems for utility-scale biomass power generation. Regardless of the scale of a facility, it is the scale of harvesting that is most relevant. The impacts of multiple small-scale facilities could easily exceed that of larger facilities. Neither scenario is a desirable outcome.

Whereas:

- Native forests are presently the largest source of fuel for projects defined as biomass.
- Harvesting existing forests for electricity adds net carbon to the atmosphere.²
- There is little likelihood that energy resources provided by forest biomass can be increased sustainably.
- Leading climate change scientists call for immediate carbon dioxide reductions of 2 to 3 percent per year to avert the worst impacts of global climate change.
- A net carbon dioxide increase at this time from biomass harvesting and burning may accelerate climate change impacts and make it difficult or impossible to meet CO₂ reduction targets of 80% by 2050.
- *A typical Utility-Scale electricity-only power-plant using forest or woody biomass as fuel:*
 - Generates electricity at less than 25% efficiency, or less than a typical coal-fired power plant.
 - Emits 1.5 times as much operational CO₂ than coal per unit of energy generated.
 - Emits 3 to 4 times as much operational CO₂ than natural gas per unit of energy generated.
 - Has the potential for profound impacts on local and regional air and water quality.
 - Burns over one ton of wood per minute, requiring 13,000 tons of green biomass to generate one megawatt of biomass power for one year, or 35 tons of green wood per megawatt per day.³
 - With unsustainable biomass harvesting and consumption, can reduce the ability of remaining and regenerating forest eco-systems to sequester carbon and destroy important natural habitats by reducing the amount of nutrients and woody debris available for recycling in the forest.

Be it resolved that the Massachusetts Chapter of the Sierra Club hereby:

- Opposes biomass energy generation processes which contribute to the destruction of existing forests.
- Opposes utility-scale electricity-generating biomass facilities whose fuel consists of woody biomass extracted from forest ecosystems.
- Opposes regulatory classification of utility-scale woody biomass as “renewable” or “carbon-neutral”.
- Encourages governmental and regulatory entities to remove eligibility for *Renewable Energy Credits* and all similar incentives or subsidies for utility-scale wood-burning biomass facilities.
- Encourages full environmental review of all proposed biomass facilities regardless of scale.
- Will review on a site-specific basis small-scale combined heat and power biomass-to-energy projects which avoid inefficient transportation of fuel stocks by providing distributed power directly to end users and on lands where they are carefully monitored and designed as part of a sustainable system similar to that required for Forest Stewardship Council certification.

Approved unanimously by the Massachusetts Chapter Executive Committee, December 20, 2009. *The term “biomass” in this policy refers to forest/woody biomass and does not apply to agricultural waste as fuel, algae crops, or farm crops which may include switch grass, woody herbaceous crops, and short rotation woody crops such as willow. The Sierra Club opposes burning of construction and demolition debris as biomass fuel which is further covered in separate Chapter policies. For a complete background on this policy and biomass issues please visit www.sierraclubmass.org/biomass.html.*

¹ Searchinger, Timothy D. et. al., Fixing a Critical Climate Accounting Error, Science 326, 527-528 (2009).

² *ibid*

³ Innovative Natural Resource Solutions, 2007. Biomass Availability Analysis Report prepared for the Massachusetts Division of Energy Resources.