

Biomass briefing

Forest Futures

June 23, 2009

Why should the Forest Futures Visioning Process address biomass on state lands?

Secretary's Certificate on Pioneer Renewable Energy Plant in Greenfield

...DCR has already begun a long range process, including the formation of an advisory group of stakeholders and a Technical Steering Committee, to address sustainable stewardship and management of state forest lands...

...In light of that report and other inputs, DOER will evaluate the range of options to enhance sustainable management of forest resources through requirements for renewable energy credits available to biomass facilities...

How much biomass energy generation is planned?

DOER/DCR biomass availability report states 165 MW planned.

This represents 1.2% of the 13,557 MW of summertime capacity in 2007.

Status	Plant	Location	Capacity (megawatts)
<i>Existing</i>	Pinetree Power	Westminster	17
<i>In review</i>			
	Russell Biomass	Russell	50
	Palmer Renewable Energy	Springfield	38
	Pioneer Renewable Energy	Greenfield	47
<i>Proposed</i>			
	Tamarack Energy	Pittsfield	30 - 50
	"Munksjo Paper"	Fitchburg	15
	CCI plant at F'burg airport	Fitchburg	15
		Total	212 to 232 MW

What kinds of wood are used for biomass power generation?

- Logging "residues" – tops and branches
- "cull" trees
- Construction and Demolition debris (CDD)

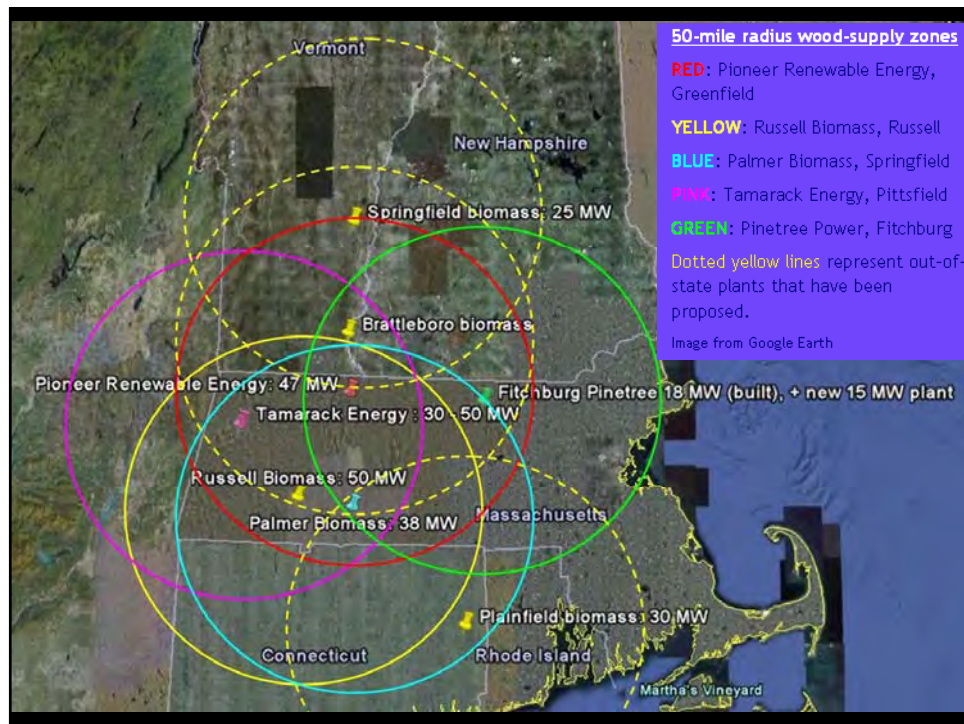
How much wood would be required by biomass energy generation?

- Takes about 13,000 tons green biomass to generate 1 MW
- Approximately 135 – 202 MW from forest biomass (negligible amount of pallets)
- Total wood: 1,755,000 to 2,626,000 tons/yr
- (Pinetree plant currently burning about 180,000 tons per year)

Where would forest biomass fuel come from?

DOER/DCR Biomass availability report:

- “Core” counties: Berkshire, Franklin, Hampden, Hampshire, and Worcester
- 14 “buffer” counties
- 50-mile radii “sourcing” areas



Some numbers from the report:

- Current logging residues 5 core counties: 110,000 tons per year
- 34% of biomass in core counties is “urban wood residues”
- Total biomass in core counties about 646,147 green tons, about enough for one 50-MW plant

Is wood in other states really available?

- Tim Maker, Biomass Energy Resource Center, VT: “BERC has taken a strong policy position that using wood residues to fuel power plants is an inappropriate use of a limited resource.”
- BERC considers 20,000 tons per year from 750,000 acres to be sustainable
- VT “fuels for schools” program – 200 to 400 tons per year per facility

How much land is available for biomass harvesting?

Kelty, Barton, D’Amato report (Silvicultural and Ecological Considerations of Biomass Harvesting:

- 465,000 acres state land (reserves excluded)
- 379,000 acres private land (>100 ac parcels)
- Total of 844,000 acres
- “The requirement for harvest sustainability (i.e., sustained yield) is that the total harvest per year does not exceed the total net growth per year on the land base of interest.”

How much new cutting would be required to supply biomass fuel?

MW	total tons	tons cut per acre	acres cut per year	years to cut 844,000 acres
135	1,755,000	20	87,750	10
202	2,626,000	20	131,300	6
135	1,755,000	50	35,100	24
202	2,626,000	50	52,520	16

Actual cutting in MA 2001 – 2005:

State lands: 1,417 acres/yr

Private lands 27,561 acres/yr

Total: 28,978 acres/yr