

Forest Residues

DESCRIPTION

Forest residues typically refer to those parts of trees unsuitable for sawlogs – treetops, branches, small-diameter wood, stumps, dead wood and even misshapen whole trees – as well as undergrowth and low-value species. While applications may exist for any individual constituent, the difficulty is determining whether there are sufficiently large quantities to warrant separation and harvesting.

CLASSIFICATION

Lignocellulosic biomass

SOURCE INDUSTRY

Forest management. See the [Pulp & Paper](#) or [Solid Wood Products](#) industry roadmaps.

ANNUAL VOLUME GENERATED IN WISCONSIN

1,138,000 dry tons¹

CURRENT APPLICATIONS

If harvested, these residues are sometimes used for combustion.

COST

~\$15/ton to load, plus hauling costs

APPLICABLE BIOREFINING PROCESSES

[Biomass gasification](#), [combustion](#), [fast pyrolysis](#), [fermentation of lignocellulosic biomass](#), [fiber composites manufacturing](#), [thermochemical liquefaction](#)

REFERENCES

¹ Wisconsin Bioenergy Resources. 2004. Energy Efficiency and Renewable Energy, US Department of Energy. http://www.eere.energy.gov/state_energy/tech_biomass.cfm?state=WI (27 April 2004).

Reineke, L. H. 1965. Uses for Forest Residues. US Department of Agriculture Forest Products Laboratory. <http://www.fpl.fs.fed.us/documnts/fplrn/fplrn092.pdf> (26 April 2004).