

**FOREST FUEL TREATMENT / BIOMASS UTILIZATION
BIOMASS CONVERSION FACTORS**

Summarized below are some woody biomass conversion factors that are commonly used by natural resource managers in the West:

1 green ton (GT) of chips =	2000 lbs.(not adjusted for moisture)
1 bone dry ton (BDT) of chips, =	2000 dry lbs.(assumes no moisture content)
1 bone dry unit (BDU) of chips, =	2400 dry lbs. (assumes no moisture content)
1 unit of chips =	200 cubic feet
1 BDT chips =	2.0 GT (assuming 50% moisture content)
1 unit of chips =	1.0 to 1.5 BDT chips (varies by compaction)
1 ccf (hundred cubic feet) roundwood =	1.0 BDU chips
1 ccf roundwood (logs) =	1.2 BDT chips
1 ccf roundwood (logs) =	1.2 units of chips
1 ccf roundwood (logs) =	1.2 cords roundwood (@ 85cu.ft./cord)
1 BF =	board foot lumber measure equivalent to wood volume of 12" x 12" x 1" thick
1 MBF =	1,000 BF
1 cf of logs ¹	4.5 BF of logs
1 GT of logs =	160 BF of lumber
6 GT of logs =	1 MBF

1 standard chip van carries 25 green tons, or approximately 12.5 BDT assuming 50% moisture content.

When woody biomass is utilized in a commercial (10+ MW electrical output) scale power generation facility the following energy output rule of thumb applies:

¹the conversion factor of 1 cf of logs to 4.5 BF of logs is based on recent research relative to the utilization of smaller (dbh) trees. This needs to be discussed with participants.

1 BDT fuel will produce approximately 10,000 lbs. of steam 10,000 lbs. of steam will generate about 1 megawatt hour (MWH) of electricity.

And 1 MW equivalents:

1 MW = 1,000 horsepower

1 MW = power for approximately 750 to 1,000 homes

1 GW = 1,000 MW (or enough power for 750,000 to 1,000,000 homes)

Source: Western Governors' Association 2006. Biomass Task Force Report.

<http://www.westgov.org/wga/initiatives/cdeac/Biomass-full.pdf>, last accessed 5/29/07.