





**Fibre Management for Efficient Planning, Processing and Transportation - AWF's Perspective**

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### Overview


- Company Overview, History & Services
- The Customer and End Use for Biomass
- Planning: Setting up successful Forest Operations for supply and delivery of Biomass
- Processing Equipment
- Transportation Options, Considerations & Limiting Factors



### End-Users & Application






### Understanding the Customer and Intended Use

- > What is the end user looking for & What is the Best Product?
- > How available is the fibre
- > Critical Timing & Consumption Rates
- > What does the Tenure Holder need/want access to the fibre?
- > What are factors to consider in negotiating fair contract terms? Consistent Units of Measure

**Don't forget to add in stumpage!!**

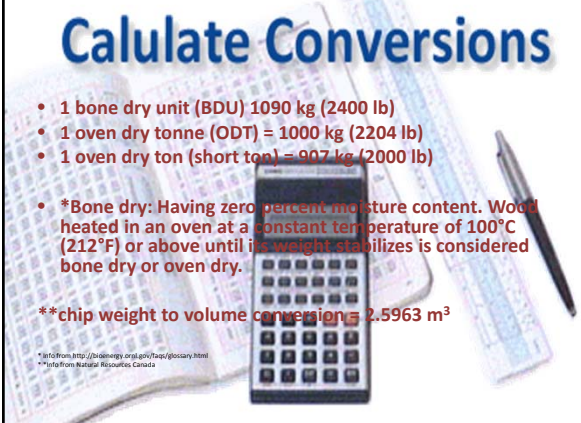


### Calculate Conversions

- 1 bone dry unit (BDU) 1090 kg (2400 lb)
- 1 oven dry tonne (ODT) = 1000 kg (2204 lb)
- 1 oven dry ton (short ton) = 907 kg (2000 lb)
- \*Bone dry: Having zero percent moisture content. Wood heated in an oven at a constant temperature of 100°C (212°F) or above until its weight stabilizes is considered bone dry or oven dry.

**\*\*chip weight to volume conversion = 2.5963 m³**

\*Info from <http://bioenergy.org.au/faq/glossary.html>  
\*\*Info from Natural Resources Canada

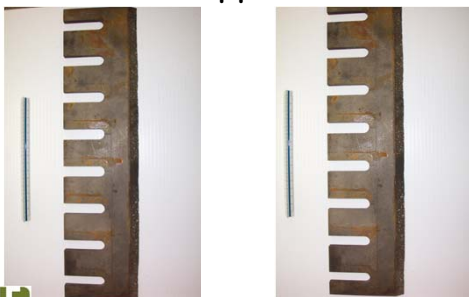


## Common Feed Stocks & Application

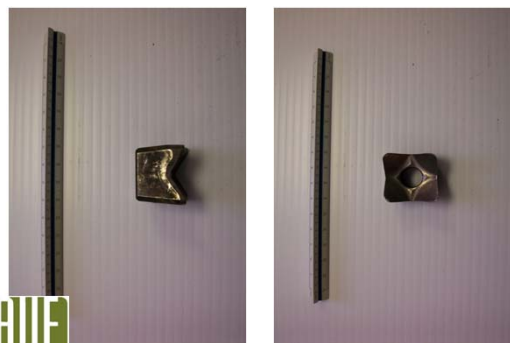
- Hog Fuel, Pellet Stock & Feed Stock
  - 4" minus
  - 2" minus
  - 3/8" - 1" minus
- Pulp Chips / Whole Log Chips
- Fuel Chips (Heating Projects, Boilers)



## Processing Equipment -Drum Chippers



## Processing Equipment



### Processing Equipment



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### Processing Equipment



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### Planning for Year Round Operations



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### Winter Conditions Pros & Cons



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### Summer Conditions Pros & Cons



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### Fibre Sourcing Considerations

- Delivered Price \$/Unit influences the economic Circle (i.e. How far we can transport)
- Site constraints (i.e. Winter vs Summer Ground)
- Fibre Sources:
  - Replaceable Licensees
  - BCTS
  - Community Forests
  - Woodlot Owners
  - Private
  - Future Receiving Licenses
  - Certification & Chain of Custody (i.e. CSA, SFI, ISO)

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## Species & Quality of Biomass



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## Are All Slash Piles created Equally?



vs.

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## Transportation

What trucking configuration to use?

Shuffle (walking) Floor vs B-Train

- What can the end user take?
- Road Layout & Design (Grades, Safety)
- Who else is using the road system?

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## Unloading Facilities, Scales & Storage Capacity



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## How not to unload!



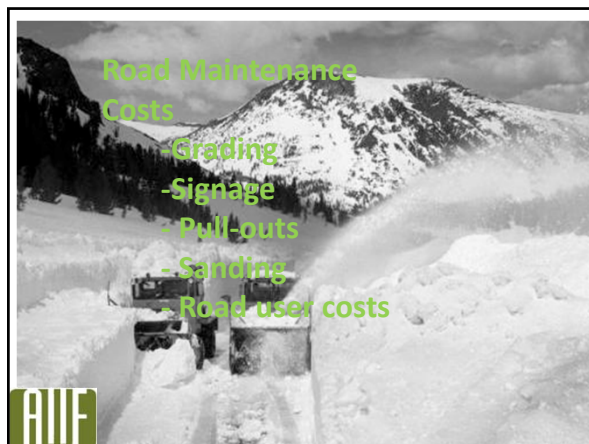
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## Safe Working Limits - The R&D Department



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## Site Selection & Mobilization Constraints



### Road Maintenance Costs

- Grading
- Signage
- Pull-outs
- Sanding
- Road user costs



## Setting up a Project?

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