

Biomass Resource Assessment

Australia-forestry / plantations

A photograph of a modern building with a glass facade and a metal grid structure. The building is partially obscured by green foliage in the foreground. The sky is blue with scattered white clouds. The text 'University of the Sunshine Coast' is visible on the building's facade.

Prof. Mark Brown
Director, Forest Industries Research Centre



The Forest Industries Research Centre - USC

Aim: Leading provider of applied, whole of supply chain, research for commercially managed plantations & forests

Focus: Establish & grow strong collaborative research networks, nationally & internationally, with industry, government & research partners



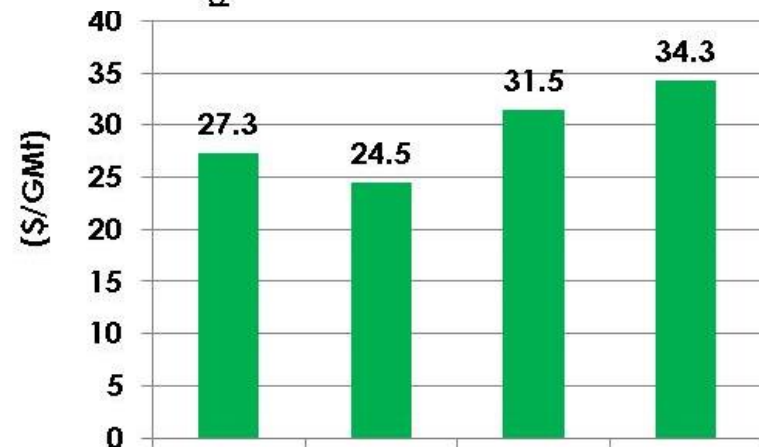
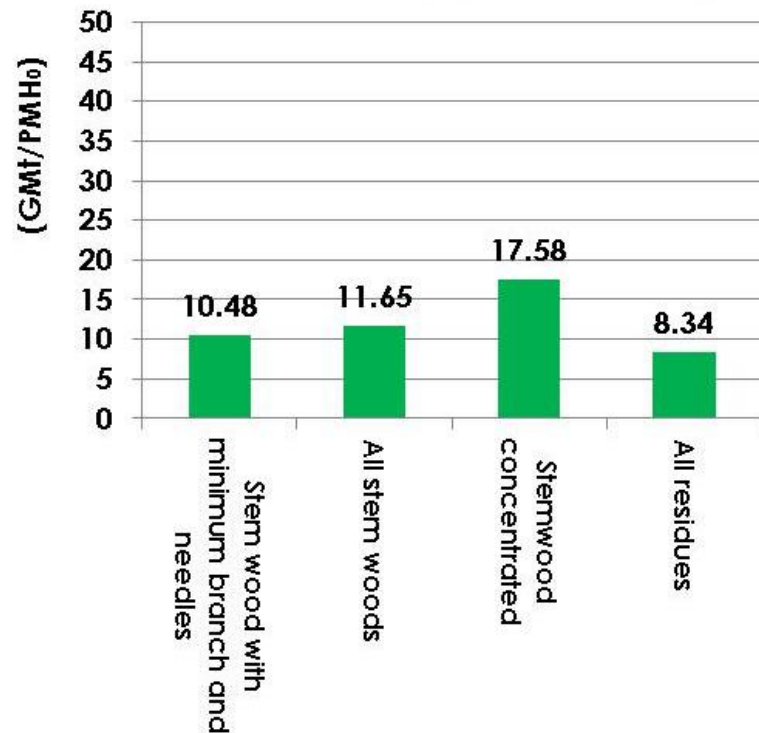


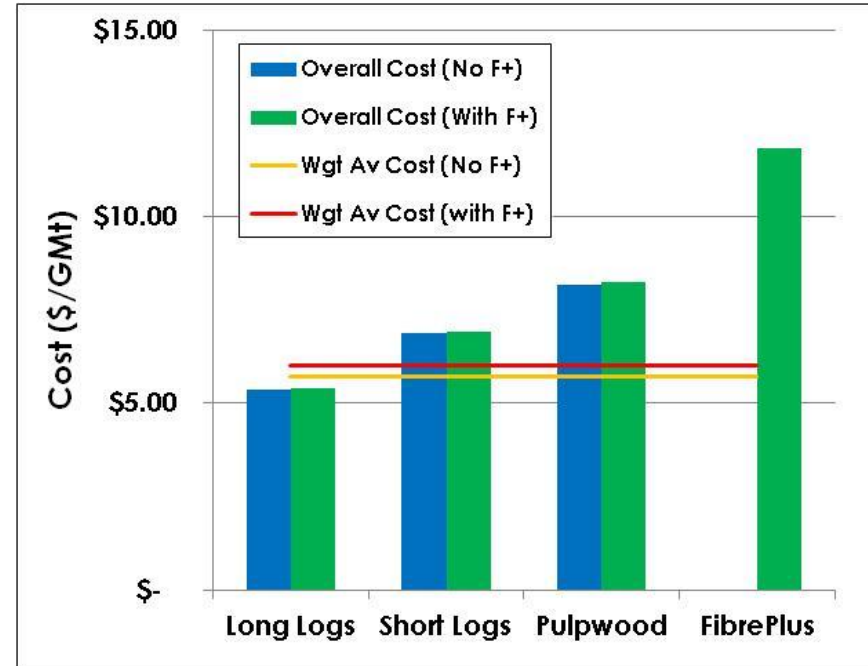
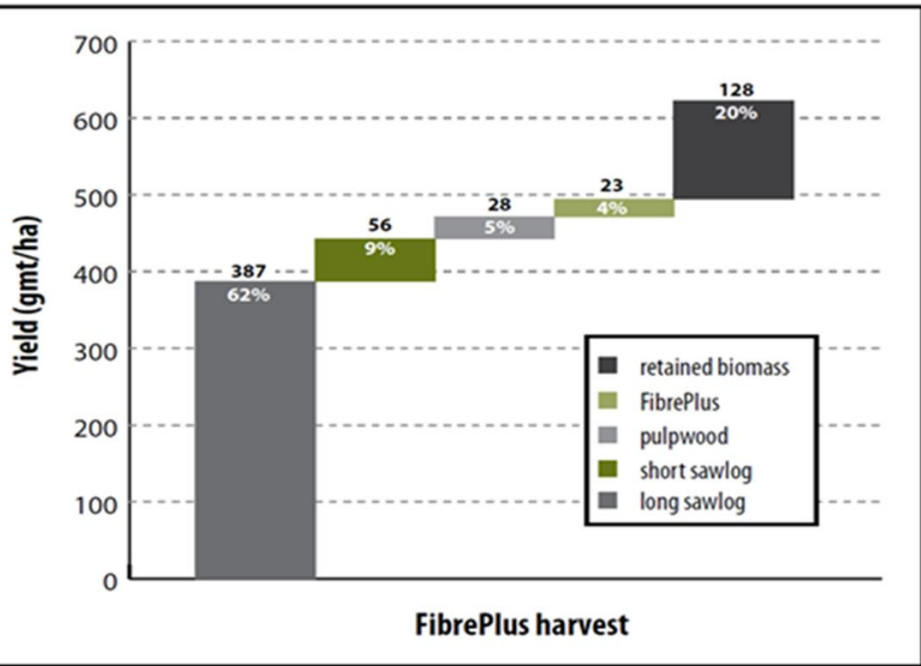
- Industry alliance within FIRC - USC
 - 18 partners
 - 15 forest growers/managers (>3/4 industry)
 - 2 University research centres
 - 1 Bioenergy producer
- In the area of forest operations aims:
 - Improve cost management and value recovery
 - Improve biomass recovery and utilisation
 - Improve logistics planning and execution

Perspective on Biomass Assessment

- Supply & supply chain
- What is operationally & economically available
- Technology & systems development for mobilisation

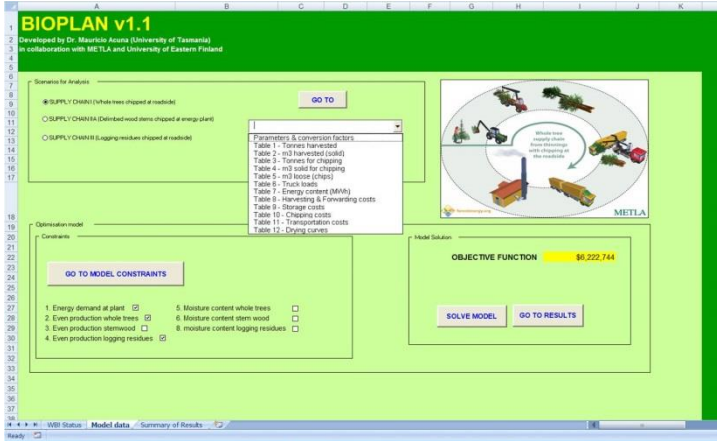






System	Cost	% Recovered
Bundler – scattered material	\$65 - \$70/t roadside	65%
Bundler – concentrated material	\$35 - \$40/t roadside	65%
Mobile chip – stem only scattered	\$25 - \$28/t roadside	15%
Mobile chip – stem/limbs scattered	\$23 - \$26/t roadside	19%
Mobile chip - stem/limb concentrated	\$30 - \$33/t roadside	25%
Mobile chip – all residue scattered	\$33 - \$36/t roadside	55%
Mobile chip – stem forwarded road - subsidised stem forwarded road - real	\$13 - \$18/t roadside \$24 - \$29/t roadside	25% - 40%
IFC – stem forwarded road - subsidised stem forwarded road - real	\$13 - \$18/t roadside \$24 - \$29/t roadside	15% - 19%
Whole tree chip failed plantation	\$40 - \$60/t roadside	90% - 95%

BIOPLAN: Optimization tool



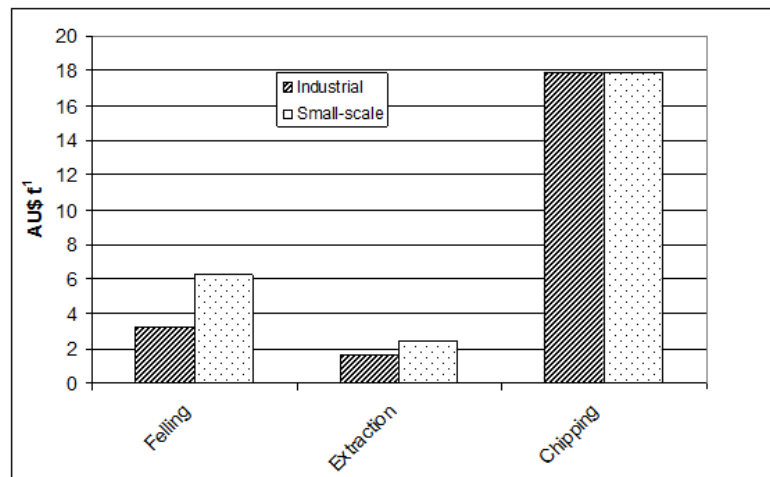
	Extraction	Storage	Chipping	Transport	Total
$\$/m^3$ harvested	6.90	0.70	17.10	16.40	41.04

	Tonnes harvested (Year 1)	Tonnes harvested (Year 2)	Tonnes chipped (Year 2)	Truck loads (chips)	Energy (MWh)
January	1131	1131	1489	49	5000
February	1110	1110	1511	50	5000
March	1089	1089	1541	50	5000
April	1089	1089	1509	49	5000
May	1070	1070	1459	49	5000
June	1032	1032	1482	49	5000
July	1032	1032	1576	49	5000
August	1032	1032	1588	50	5000
September	1110	1110	1593	50	5000
October	1089	1089	1636	50	5000
November	1050	1050	1640	50	5000
December	1110	1110	1714	52	5000
Total	12945	12945	18736	596	60000

Agriculture

- Optimised supply chains for biorefinery/biofuels from residues:
 - Sugar industry – bagasse, trash, supplementary sources
 - Wheat stubble – integration with other sources
 - Woody weed management
 - Integrated woody crops for land and farm management

Integrated woody crops



Australian Biomass for Bioenergy Assessment (ABBA)

- National interactive map of biomass availability
- Collaboration of State departments and ARENA
- Seek to support investment decisions
 - Approaching “bankable” data
 - Location specific availability, supply chains, costs, etc.
 - Include all sources

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