m³ Softwood

Timber comes in a wide range of varieties and sizes. It is used for structural and non-structural purposes, and can vary significantly in density, grain texture, workability, usage and cost. It is lightweight, easy to handle and transport, and has a good strength to weight ratio. It is typically divided into softwood varieties, such as Pine, Cypress and Spruce and hardwood varieties such as Victorian Ash, Blackbutt and Oak. The term hardwood and softwood is a botanical distinction, and not an indication of timber strength or density. The density of timber is highly dependent on the species, varying from 120 kg/m³ to 1 300 kg/m³ or higher.

Softwood generally has a lower density and better workability than hardwood varieties. It is comparably cheap due to the fast growing nature of many softwood plantation varieties. It is widely used for timber framing purposes, feature walls, door and windows.

Commercial timber products are typically kiln, or air-dried. Kiln/oven drying is done in a controlled environment over a relatively short time period. It produces a uniformly dried, high quality product that generally kills any fungi and insects in the wood. Air-drying is done over extended periods of time, and does not require any fuel inputs. It is cost effective, but needs to be carefully managed to reduce cracking and ensure consistent drying.

Category	*Timber products*
Type	*Softwood*
Functional unit	*m³*
Specific heat	*1 380 J/(kg·K)*
Density	*510 kg/m³*

Common uses
*Beams, columns, framing, joinery, flooring, walling, furniture, cladding, doors, windows*

Process name
Sawn timber, softwood, planed, air dried, at plant/RER U/AusSD U

Input-output sector
Sawmill Product Manufacturing

Further information
doi.org/10.26188/5da5578416cc9

Material variations

Material variations	Unit	Energy (MJ/unit)	Water (L/unit)	GHG emissions (kgCO₂e/unit)
Softwood air-dried	*m³*	*9 392*	*13 091*	*549*
Softwood kiln-dried	m³	9 704	13 181	583

TOP THREE INPUTS

45.0% Road Transport

1.0% Wholesale Trade

0.8% Construction Services

Process	IO	Hybrid
2 086	14 443	**9 392**

ENERGY

9 392 MJ/m³

TOP THREE INPUTS

3.6% Road Transport

1.9% Construction Services

1.2% Wholesale Trade

Process	IO	Hybrid
2 678	23 796	**13 091**

WATER

13 091 L/m³

TOP THREE INPUTS

25.2% Road Transport

18.1% Sawn timber, softwood, raw, air dried, u=20%, at plant/RER U/AusSD U

1.9% Construction Services

Process	IO	Hybrid
181	598	**549**
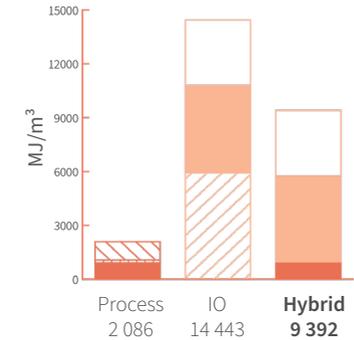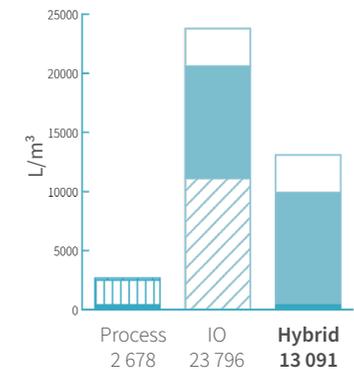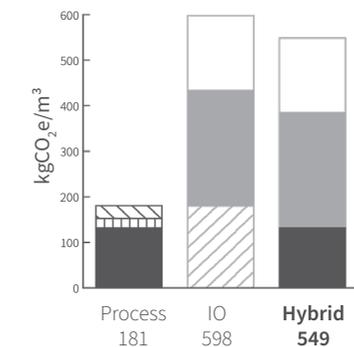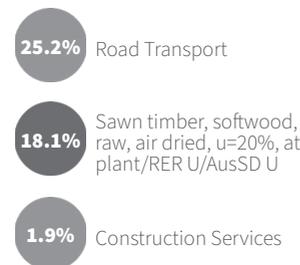
GREENHOUSE GAS EMISSIONS

549 kgCO₂e/m³

EPiC Database