

## TRACTILE ECLIPSE

### SUSTAINABILITY & SAVINGS - QUEENSLAND RESIDENTIAL EXAMPLE

Tractile is extremely well suited for commercial and residential projects, providing a strong and low maintenance roof, solar power and solar hot water. Below is an example of potential savings for a residential property. For commercial projects and depending on the building and energy usage profile similar calculations but extrapolated can be made.

Residential: The average 4 person family in QLD uses 20kWh per day, of which on average:

- 3kWh to 6kWh per day for HVAC
- 6kWh to 8kWh per day to heat hot water from an average 19° C inlet to 59° C outlet temperature.

A Tractile solar system can be configured to pre-heat the cold water to for example 39° C, saving 50% of energy required to heat hot water. The energy required to heat hot water electrically is for an average family thus reduced to 3kWh to 4kWh per day.

The table below presents the estimated performance of a 3kW Tractile solar system.

<u>Estimated daily averages for SEQ</u>	<u>Low end</u>	<u>High end</u>
Solar power generated from 3kW Tractile (based on CEC)	10kWh	14kWh
Solar pre-heated hot water generated from Tractile (19°C to 39°C)	3kWh	4kWh
total generation:	13kWh	18kWh
Energy used for HVAC	3kWh	6kWh
Energy used to boost hot water from 39°C to 59°C	3kWh	4kWh
total identified load:	6kWh	10kWh
Available for unidentified load (TV-sets, washing, drying, cooking, standby's, charging, etc.)	7kWh	8kWh
Daily consumption of electricity without solar system	18kWh	22kWh
Estimated average savings (see disclaimer) with Tractile RIPV-T roof	72%	82%

Disclaimer: estimated averages only, actual savings and generation depends on weather, hot water and electricity consumption patterns. These are highly user dependent and vary from day to day.

Tractile Solar can heat water above 70° C, but to optimise PV output we regulate the system to operate at a temperature range of 30° C to 35°. This balances the provision of heated water with lowering the temperature of the PV module for higher PV output.

### SUSTAINABILITY - EMBODIED ENERGY

Tractile participated in a case study organised by the Queensland Government. The findings from this Embedded Energy Project show that Tractile significantly outperforms concrete tiles and colorbond in terms of embodied energy:

- in MJ, Tractile is 8 times more sustainable
- in kg of CO<sub>2</sub>, Tractile is 4.5 times more sustainable