

PAYBACK MEASURE FLAW

When accessing the investment value of a solar system, most customers primarily rely on the payback years as the key determinant. Both residential and commercial customers fall for this trap, which costs them far more in the long run.

Why is this so?

The cheaper the solar system the better the payback and ROI (Return on Investment). But the financial analysis approach of 'payback' typically only looks at the first year of results, not the 'real' solar performance beyond the first year. Two key factors are at play that make this approach flawed:

1. Conventional panels are susceptible to cracking and corrosion. As the years roll on the performance starts to deteriorate, with increasing performance degradation each year.
2. The major conventional panel brands mostly compete on price, knowing that Australians typically only consider the payback. **Lowest price means cheap everything when it comes to solar systems - cheap equipment, install and after sales service.**

When compared to the rest of the world, this helps explain why Australia has a reputation as the dumping ground for cheap and inferior underperforming solar.¹

How panel manufacturers 'go cheap', which Australian consumers don't realise:

- i) Build solar panels with slave labour.²
- ii) Use dirty, coal-fired power as the main energy source in panel production. Western China sourced panels and components have a much higher carbon intensity than anywhere else in the world.³
- iii) A broad range of product warranty loopholes (see Graph 1). Conventional panel buyers are shocked when they find out they're not covered for a variety of reasons.⁴
- iv) Conventional panel manufacturers never cover the full cost of faulty panel replacement. Yes, they provide replacement panels, but not their freight, labour or disposal (see Graph 2). The last three end up being very expensive for customers.

CONVENTIONAL PANEL'S SHORT LIFE

"You get what you pay for" holds true. Both research and infield results indicate the average effective life of conventional panels is around 12 years, with many underperforming years in the back half of their life. (See Graph 3 on the next page for an illustration). The first 5 years of ECONOMY and CHEAP panels look OK, but then things get ugly.

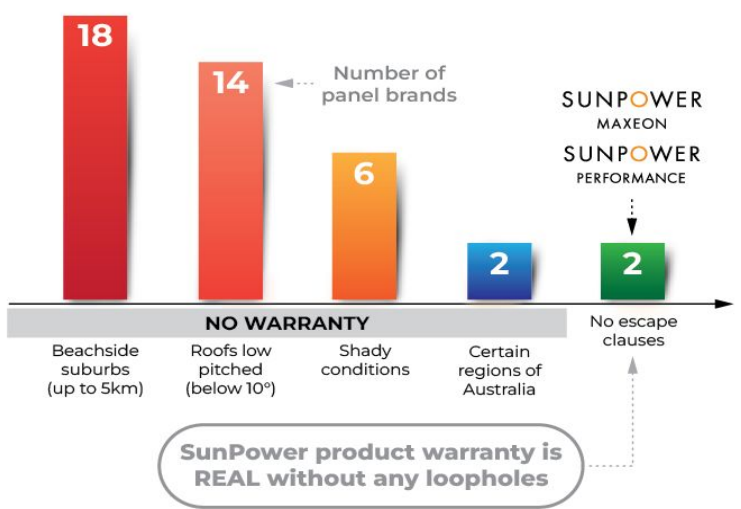
CHEAP SOLAR RETAILERS

Many solar retailer follow the cheap business strategy of most conventional panel manufacturers. They sell systems over the phone, and regularly vary the original sales price (sometimes hefty variations). They also pitch CHEAP solar as premium. In addition, cheap solar retailers tend to disappear, crippled by burgeoning warranty costs not covered by their panel manufacturers.

TOP 20 SOLAR PANELS Product Warranty Escape Clauses

GRAPH 1

Based on brands best selling model*

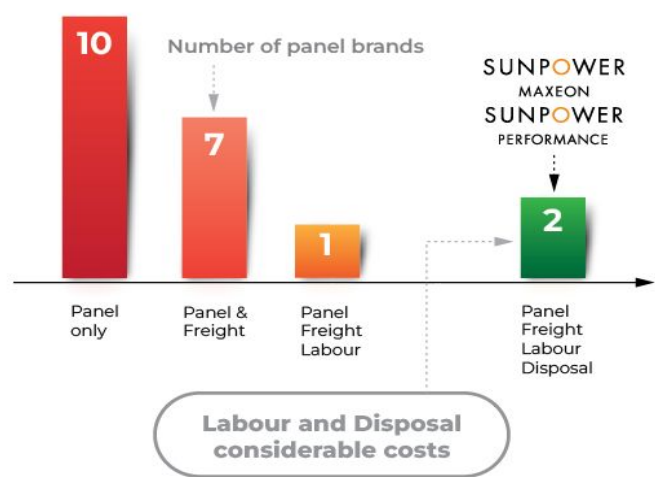


* 2023 survey conducted by Energy Buster

TOP 20 SOLAR PANELS Product Warranty Coverage

GRAPH 2

Based on brands best selling model*



* 2023 survey conducted by Energy Buster

1. Australia - China's solar dumping ground, The Weekend Australian, 17 May 2013 2. In Broad Daylight - report on slavery in panels 3. The current global solar manufacturing landscape, The Breakthrough Institute 4. Energy buster Survey

WHOLE-OF-LIFE ELIMINATES CHEAPNESS

Looking at what a solar system will save over its product warranty lifetime provides a good counterbalance perspective for investment analysis of solar systems. Most customers are shocked to discover that CHEAP solar will typically only return around \$2 for every \$1 invested - while the BEST solar returns around \$6.50 for every \$1 invested.

This second financial analysis technique is of critical importance if the new solar is being put on a new building, or the customer has a mid to long term investment perspective. On average conventional panels typically last for around 12 years, not 25 years. SunPower's Maxeon solar panels (the BEST) have a 40-year comprehensive product warranty. At year 40 the panel's minimum output (performance warranty) is 88.3%.⁵

WHOLE-OF-LIFE REVERSES ECOLOGICAL OVERSHOOT

When investing in solar why not also think of the planet, not just your personal circumstances? Did you know humankind is consuming the planet faster than it can ecologically replenish it? Currently, too many cheap short-life lasting solar panels are being installed, grabbing valuable resources, creating much more carbon in production, using slave labour, and dying around year 12.

The alternative is to use the BEST panels, which will initially use a similar amount of the Earth's resources, but make far less carbon during manufacturer, not use slave labour, not include toxic elements (lead, chlorine and fluorine), and have a life well beyond 40 years.

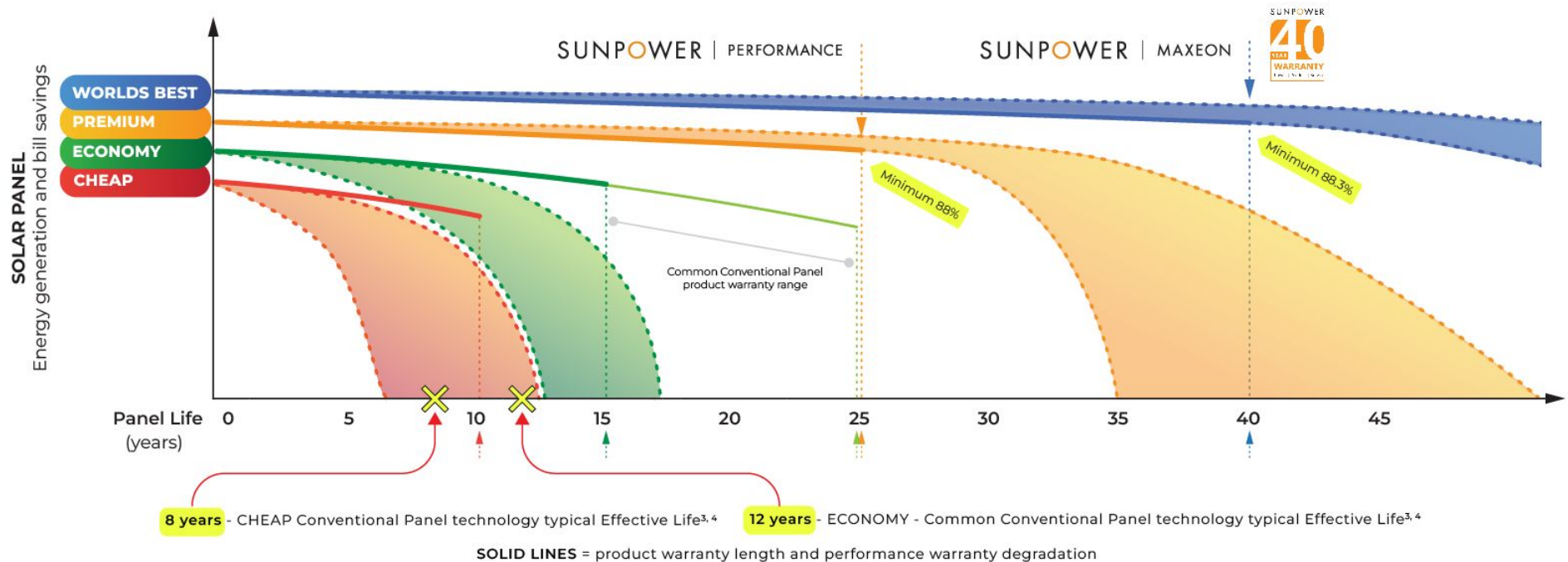
This is how we can help reverse the earth's Ecological Overshoot.

For more on Ecological Footprint and Overshoot visit footprintnetwork.org

A LITTLE EXTRA GOES A LONG WAY

GRAPH 3

Over lifetime cheaper panels cost considerably more than leading quality panels^{1,2}



8 years - CHEAP Conventional Panel technology typical Effective Life^{3,4}

12 years - ECONOMY - Common Conventional Panel technology typical Effective Life^{3,4}

SOLID LINES = product warranty length and performance warranty degradation

CHEAP

and

ECONOMY

panels use Conventional Panel technology

SUNPOWER

panels use unique patented panel technology

1. Illustrative guide 2. Based on product warranty 3. EFFECTIVE LIFE = 70% of panels still generating at least 70% compared to when first installed 4. Wohlgemuth, J. "Reliability of PV Systems," Proceedings of SPIE



INTRODUCING WHOLE-OF-LIFE

DEEPER LOOK

5. Wohlgemuth J. "Reliability of PV systems," proceedings of SPIE