EXPLORING REAL-WORLD APPLICATIONS OF BIPV, ASSESSING THE LEVELISED COST OF ENERGY, AND IDENTIFYING FUTURE MARKET OPPORTUNITIES
Leeson Projects launched in 2015, developing utility-scale solar farms most notably the 34MW Cohuna Solar Farm with a current pipeline of 800MW in the connection application process in Victoria and 1GW in Australia.
RESIDENTIAL AND COMMERCIAL SOLAR

“Our vast design and technical knowledge ensures the best possible outcome for our systems.”
We believe in a future where every new home will power itself with clean, independent energy, ushering in a new standard of sustainable living.
BIPV APPLICATIONS
YIELD FACADE - SUMMER SOLSTICE
Deflected to solar cells in frame

UV Converted to IR and deflected to solar cells in frame

Visible light Up To 70% Transmission

THINFILM SOLAR GLASS
- 6.6% efficiency
- 20% light transmission

CLEARVUE SOLAR GLASS
- 3% efficiency
- 70% light transmission
THINFILM SOLAR GLASS LIGHT TRANSMISSION
Deflected to solar cells in frame

UV
Converted to IR and deflected to solar cells in frame

Visible light
Up To 70% Transmission

Electricity Output
SOLAR GLASS CHALLENGES

- low efficiency and performance
- electrical connections
- electrical installation cost
- isolation
- Maintenance access
SOLAR GLASS PERFORMANCE

15kW System Melbourne cbd
90 degrees north no shading performance reduction calculated 37%
Actual 52%

System Performance

- GENERATION (kWh/day)
- CONSUMPTION (kWh/day)

January: 73.3
February: 75.7
March: 56.5
April: 48.7
May: 32.9
June: 32.5
July: 40.5
August: 47
September: 66
October: 71.8
November: 76.5
December: 76.5

System Performance

- GENERATION (kWh/day)
- CONSUMPTION (kWh/day)

January: 27.9
February: 37.2
March: 38
April: 42.9
May: 33
June: 28.1
July: 34.2
August: 37.1
September: 35.1
October: 37.3
November: 30.3
December: 26.9
BIPV FACADES
ISOLATION

Isolator Locations and
FACADES AND WINDOWS
BUSINESS CASE
LCOE OVER 20 YEARS

Total cost of system PV only - $18,000
Total Cost of Extrusion and Glass Installation - $26,000
Total Cost of System - $44,000
Energy Generation 20 years - 76,800kWh
Simplified LCOE (No Maintenance) - $23.4 cents per kWh
Simplified LCOE Including Facade (No Maintenance) - $57.3 cents per kWh
THE WORLD’S MOST POWERFUL SOLAR TILE, WITH A MAXIMUM POWER OUTPUT OF 115W, AND 18.8% EFFICIENCY.

**MECHANICAL CHARACTERISTICS**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Details</th>
</tr>
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<tbody>
<tr>
<td>Cell Size (mm)</td>
<td>166 x 83</td>
</tr>
<tr>
<td>No. of cells</td>
<td>32</td>
</tr>
<tr>
<td>Module Size (mm)</td>
<td>1723 x 445 x 54</td>
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<tr>
<td>Module Weight (KG)</td>
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<tr>
<td>Fixing Method</td>
<td>Screwed at top. Interlock at nose (refer manual). This product must not be installed using clamps.</td>
</tr>
<tr>
<td>Fire Class Rating</td>
<td>UL 1703 Class C</td>
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</tbody>
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MAX POWER OUTPUT OF 105W WITH AN INCREDIBLE 19.5% EFFICIENCY.

MECHANICAL CHARACTERISTICS

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<tr>
<td><strong>Module Size (mm)</strong></td>
<td>1542 x 445 x 57</td>
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<tr>
<td><strong>Module Weight (KG)</strong></td>
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ACCESS AND INSTALLATION METHOD
ACCESS AND INSTALLATION METHOD
INSTALLATION BARRIERS
LCOE OVER 20 YEARS

Total cost of 5kW Volt System - $13,000
Energy Generation 20 years - 122,000kWh
Simplified LCOE (No Maintenance) - $10.6 cents per kWh
ADDRESSABLE MARKET - AUSTRALIA

- 11,000,000 Homes
- 170,000 Homes built per year of which -
  - 100,000 Semi Detached Dwellings
- NCC Requirements for Energy Budget
- BIPV - New Home $76M Market in 2025 and Growing
PATHWAY TO MANUFACTURING IN AUSTRALIA
COST BENEFIT

- Dedicated Manufacturing Line Creating a Cost benefit
- Automated for Bespoke Product
- Quality improvement and control
- Maintaining IP in Australia
- Exporting Globally
- Australia’s only manufacturer to export solar modules
- Vertical manufacturing opportunities