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DEIONNOELECTRICAL

# 6.5 kW SOLAR SYSTEM


WITH 13.5 kWh BATTERY STORAGE



**ADDRESSED TO:**

123 Solar Road  
South Australia 5000  
Australia

Prepared by Deionno Electrical on Jan 25, 2020  
Last updated Apr 1, 2020





**PROPOSED PANEL LAYOUT**

123 Solar Road  
5000 South Australia  
Australia

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## SYSTEM DETAILS

–  
Your custom design

**System size** <sup>1</sup>  
6.5 kW<sub>DC</sub> (STC)

**Estimated annual production** <sup>2</sup>  
9,371 kWh

**Solar panel**  
20 × 325W REC Solar N-Peak - REC325NP  
1675 mm × 997 mm · Monocrystalline · [Datasheet](#)

**Inverter**  
32 × Enphase IQ7PLUS-72-2-INT · 290 W  
1 phase · 96.5% max efficiency · [Datasheet](#)

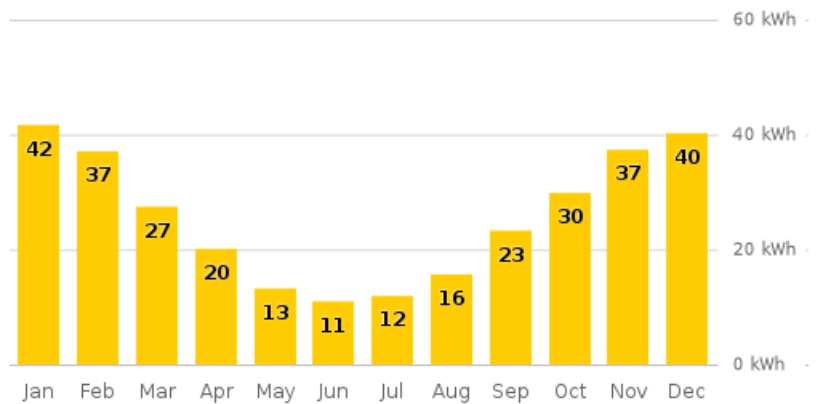
**Energy storage**  
1 × Tesla Powerwall 2  
13.5kWh · Lithium-Ion · [Datasheet](#) · [Manual](#) · [Warranty](#)

**System efficiency** <sup>3</sup>  
90%

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## DAILY PRODUCTION PER MONTH

–  
How much electricity will my system generate per day, on average?



## UTILITY COSTS

–  
Average monthly bill  
  
Annual bill

### BEFORE SOLAR

\$105.63

\$1,267.51

### WITH SOLAR

\$69.76 CR ↓ 166%  
First year average

\$837.12 CR ↓ 166%  
Est. annual savings \$2,104.64

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## ENERGY BALANCE

Where will your power come from?



Solar  
47%

Storage  
53%

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## SELF CONSUMPTION

How much of your solar power will be consumed on-site. More is better.

### SOLAR ONLY

12%

### WITH STORAGE

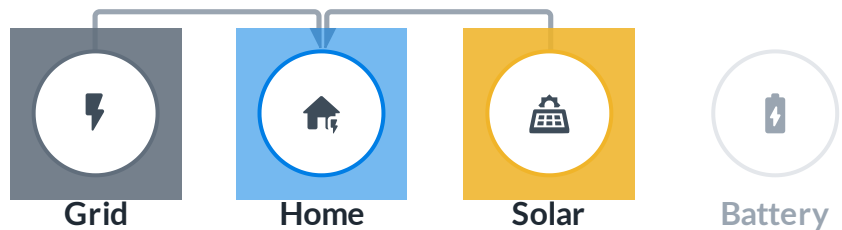
25% ↑ 13%

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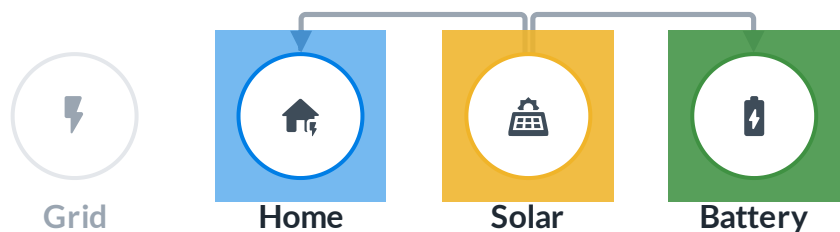
## BATTERY PERFORMANCE

How will you make the most of your battery storage?

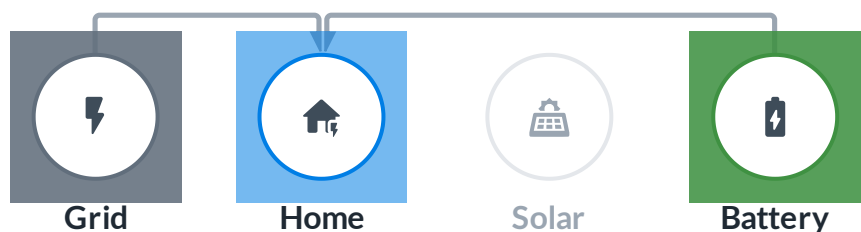
### MORNING



### AFTERNOON



### NIGHT



# 20 YEAR FINANCIAL SUMMARY

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<b>Net present value of investment</b> <sup>4</sup>	\$21,388.27
<p>The Net Present Value (NPV) is the <i>present day value</i> of all future cash inflows minus the outflows. Since money is worth more in the present day than in the future, all future cashflows need to be discounted by inflation. A positive NPV indicates a good investment.</p>	
<b>Discounted payback period</b> <sup>4</sup>	5 - 6 years
<p>Similarly, the Discounted Payback Period also accounts for all discounted future cashflows. The resulting period will typically be longer than a "simple payback period" calculation.</p>	
<b>Total return on investment</b> <sup>4</sup>	191%
<p>The Return on Investment (ROI) is another measure of the efficiency of your solar investment. Imagine you invested \$100 today and received \$300 in return. The ROI would be 200%.</p>	
<b>Rate of return on cash invested</b> <sup>4</sup>	18.8%
<p>The Rate of Return on Cash Invested (or Internal Rate of Return) is the annual compounded rate of return that the cash flows bring based upon the net cash invested in the year of installation. Think of it as the interest rate that a term deposit would need to provide to match the returns on your solar investment.</p>	

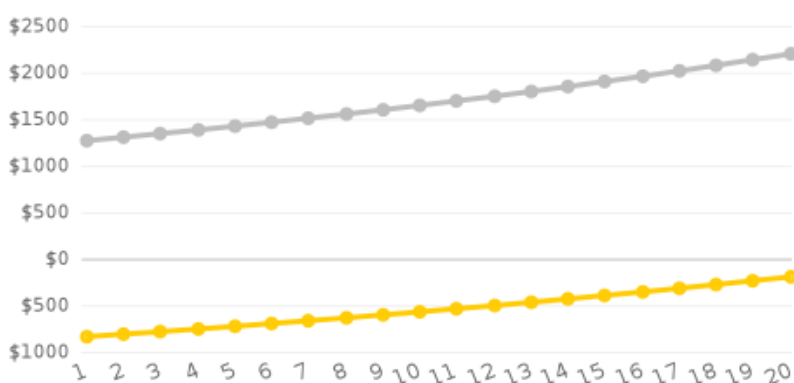
# FINANCIAL ANALYSIS

Your historical electricity bills were used to help size your solar system. Based upon the system size suggested, the expected electricity bill savings over a 20 year period are provided below.

In addition, the first-year electricity bill savings you can expect are provided together with a chart of the monthly solar system output you can expect.

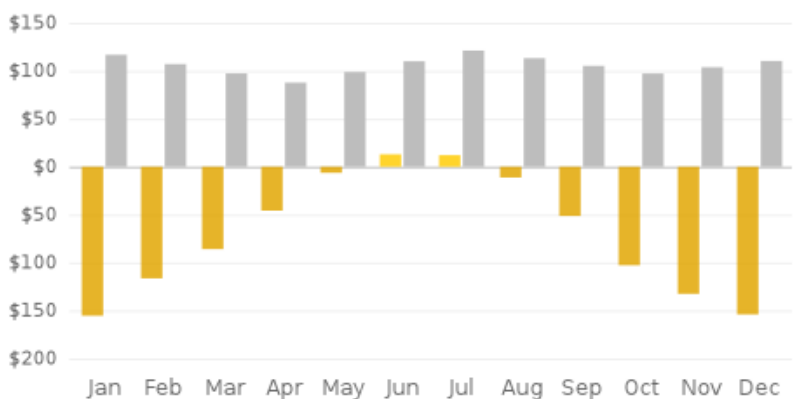
## ANNUAL ELECTRICITY BILL OVER TIME <sup>4</sup>

- Electricity bill without solar
- Electricity bill with solar



## MONTHLY ELECTRICITY BILL COMPARISON <sup>4</sup>

- Electricity bill without solar
- Electricity bill with solar



# ENVIRONMENTAL ANALYSIS

Your solar system will generate significant environmental benefits. These come primarily from avoided power plant emissions.

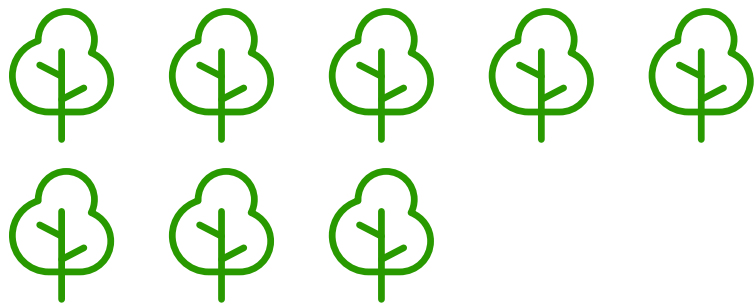
Below is a summary of environmental benefits your solar system will provide.

## TREES PLANTED EQUIVALENT

-

169 trees per year <sup>5</sup>

Each tree icon represents 20 trees



## AVOIDED EQUIVALENT FUEL

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2806 litres of petrol per year <sup>5</sup>

Each fuel can icon represents 290 litres of fuel

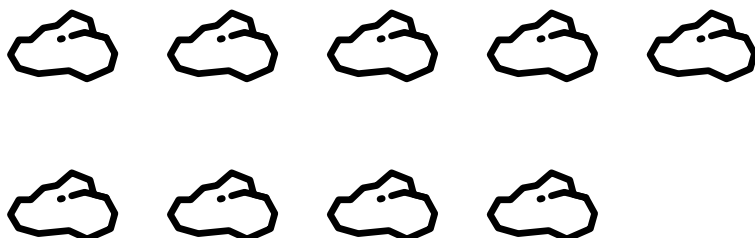


## AVOIDED COAL BURNT

-

3189 kg of coal per year <sup>5</sup>

Each coal lump icon represents 320 kg of coal



# QUOTE

To  
Address -  
123 Solar Road  
SouthAustralia 5000

From Deionnoelectrical

Description	Qty	Price	Total
6.5 kW Solar System		\$14,840.00	\$14,840.00
Tesla Powerwall 2	1	(incl.)	
Balance of system		(incl.)	
Network pre-approval		(incl.)	
Installation & labour		(incl.)	
		Subtotal incl. GST	\$14,840.00
		Included GST	\$1,349.09
		98 STCs <sup>6</sup> × \$37.00	-\$3,626.00
		<b>Total incl. GST</b>	<b>\$11,214.00</b>

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## ACCEPTANCE

Please sign and return to Deionnoelectrical. Be sure to keep a copy for your own records. A 10% (\$1,121.40) deposit is required to initiate the process. Final payments are to be made upon full completion of installation.

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**Client Name**

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**Client Signature**



## ASSUMPTIONS & DISCLAIMER

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<sup>1</sup> The Standard Test Condition rating (STC) assumes a standard set of optimal operating conditions (25°C cell temperature, 1000 W/m<sup>2</sup> and an air mass of 1.5). The STC rating is most often used by manufacturers to classify the power output of PV modules. To calculate the system's energy production for any future year, the expected degradation in system performance is included (See "PV degradation", in table below).

<sup>2</sup> Energy Output is calculated based on historical solar irradiance at the given location. A typical meteorological year is selected using statistical methods. Factors including panel tilt, orientation (azimuth), and system efficiency are taken into account.

<sup>3</sup> System efficiency is estimated to account for losses caused by a variety of factors. These factors include intermittent shading, cable losses, dirt, scheduled downtime, manufacturer tolerances, inverter efficiency for DC to AC (this does not affect off-grid DC only systems), battery round trip efficiency, and other factors.

<sup>4</sup> Utility electricity price inflation is adjusted based on the given location.

<sup>5</sup> United States Environmental Protection Agency. 2017. Greenhouse Gases Equivalencies Calculator - Calculations and References. [ONLINE] Available at: <https://www.epa.gov/energy/greenhouse-gases-equivalencies-calculator-calculations-and-references>.

<sup>6</sup> Australian Small-scale Technology Certificates (STCs) are an incentive provided under the Renewable Energy Target. One certificate is equal to one megawatt hour of eligible renewable electricity either generated or displaced by the installed system. [ONLINE] Read more at: <http://www.cleanenergyregulator.gov.au/RET/Scheme-participants-and-industry/Agents-and-installers/Small-scale-technology-certificates>.

**Note** The system design may change based on a detailed site audit. Estimated savings are based on past electrical usage and utility rates provided by the customer. Actual system production and savings will vary based on final system design, configuration, utility rates, applicable subsidies and your energy usage. Utility rates, charges and fee structures imposed by your utility are not affected by this proposal and are subject to change in the future at the discretion of your utility. The production calculations in this report are based on historical climate data for the site location and represent typical estimates of future solar production.

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**ASSUMED VALUES**

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<b>DC Array Power</b>	<b>Tilt</b>	<b>Azimuth</b>
4.55kW	25°	-130°
1.95kW	25°	-42°

**System efficiency**  
90%

**AC System Size**  
5.85 kW

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**Quarterly Electric Bill**  
\$350 (Summer)

**Utility Rate Inflation**  
2.95% per annum

**Self-Consumption Rate**  
24.69%

**Daily supply charge**  
\$1.00

**Current Electricity Price**  
\$0.39

**Feed in Tariff**  
\$0.18

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**Term**  
20 years

**Inflation rate**  
1.5% per annum

**Effective interest rate**  
3.29% per annum

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**PV degradation**  
REC Solar N-Peak  
REC325NP  
98% for the first 1 year(s)  
-0.5% per year to year 25

**Nominal storage capacity**  
13.5kWh

**Maximum depth of discharge**  
100%

**Power**  
7kW peak / 5kW continuous

**Round trip efficiency**  
90%