

# EMBRACING THE POWER OF THE AUSTRALIAN SUN

LG Solar Power Modules

LG Electronics, Inc. (LG) is a widely diversified global leader and technology innovator in consumer electronics, turning over more than Aus \$48 billion in 2010. Unlike some rival panel manufacturers, whose fortunes fall and rise with the ups and downs of the solar industry, LG manufactures leading flat panel TVs, home appliances, communication equipment, LED lighting and solar modules.

LG walks the talk regarding environmental leadership. We have set a greenhouse gas reduction goal and established our management system accordingly. For example in 2010 we cut greenhouse gas emissions from product manufacturing by 160,000 tons compared with 2008 emissions.

“LG’s strategy is to lead solar development in this decade”

### LG Solar

The history of LG’s solar business can be traced back to the mid-1980’s, when the LG central research laboratory started R&D on solar technologies. LG considers the solar power business not as a mere business expansion, but an important growth engine for the LG Group.

Today solar manufacturing across the world is going through a consolidation phase. A similar consolidation occurred in TV manufacturing 20 years ago. From a field of 20 plus TV companies only a handful manufacture flat panel TVs today. LG is one of those leaders. We believe that solar will follow a similar scenario. Over the next three years LG is embarking on a strategic expansion of its solar manufacturing capacity in order to increase efficiencies and offer a wider product range.



## The LG warranty advantage

When you are buying a solar module from LG you are dealing with an international company that has the capacity and longevity to provide a reliable backup and makes their warranties count for many decades.\*

### 10 Year Product Warranty

LG's 10 year product warranty provides peace of mind, because LG will authorise a module repair or replacement for any major failure caused by a manufacturing or materials defect.

### 25 Year Linear Output Warranty

Our module support policy includes a linear performance warranty, which guarantees a power output of 80.2% after 25 years. The linear warranty allows the purchaser of LG solar modules to calculate the amount of electricity being generated by their system for each of the next 25 years with a degree of certainty.

### Transferable Warranty

The warranties provided in the manufacturer's warranty are transferable. This means that when an owner sells the home with LG modules installed, the new owners of the property will continue to enjoy the LG warranty protection.

\* Warranty Conditions apply, please see warranty document for more details.



["See your solar investment grow"]



## Increasing electricity costs

Across Australia electricity costs are increasing for example, between 2011 and 2014 the national residential electricity price is projected to increase by 29% in nominal terms.\* Also, the CEO of Origin Energy, stated in *The Australian Newspaper* (14.4.2010) that "Energy prices are likely to triple over the next 10 years".

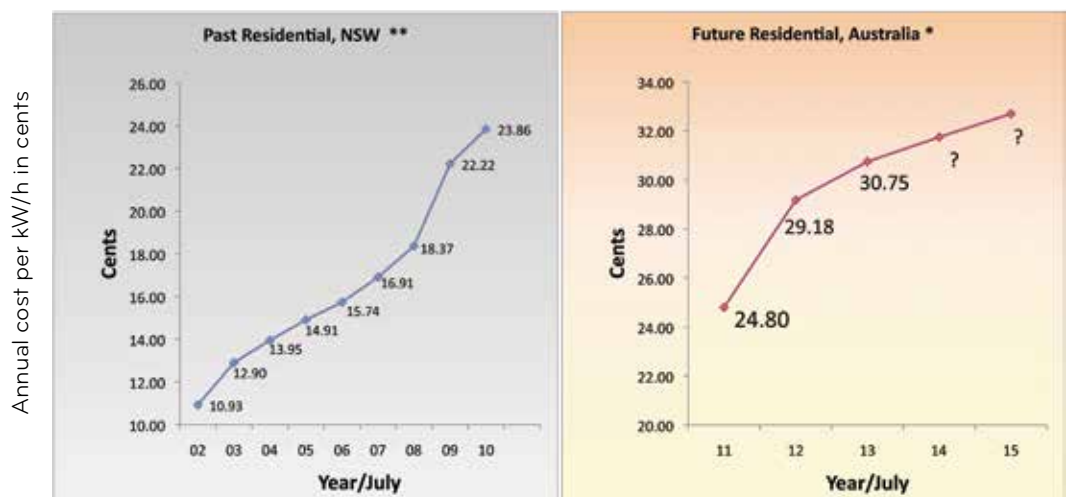
## Reduce electricity bills

With ever increasing electricity prices solar can be a wise financial choice. Depending on system size and electricity prices in your particular area, the payback time on most solar systems is between five and eight years.

As electricity prices increase this payback time shortens considerably. You will maximise your financial return if you purchase a high quality and reliable solar system.

We recommend that you buy quality LG panels with long warranties, a high quality top of the line inverter and solid mounting rails. Most importantly choose a local LG installer who will be able to provide you with excellent advice and service. A combination of this quality-first approach will ensure that you maximise long-term financial reward through a reliable, long lasting solar power system.

### Electricity Prices 2005-2015



\* Australian Energy Market Commission (AEMC) report, Nov 2011, page 18, (With carbon tax applied).

\*\* KPMG Energy Price, released for the 2010 Electricity Statement of Opportunities (AEMO)





“We conduct more rigorous testing on our modules than the industry standards”

## Reliable for the Future

LG's focus on quality control sits at the heart of our manufacturing philosophy. This quality-first philosophy has been developed through decades of creating top class electronic equipment.

A solar production cluster has been organised within the LG Group to ensure vertical integration in the solar power industry.

Today LG Electronics has a team of more than one hundred engineers working in solar research and development. Our module manufacturing plant located in Gumi, Korea uses the latest state-of-the-art equipment to manufacture solar panels that deliver product reliability and high performance for decades to come.

It means every component from PV cells to glass and framing undergoes individual performance testing and separate quality control. If the quality of any component does not meet our industry leading standards, then it will not be used.

## More rigorous testing than industry standards

Reliability Test	IEC 61215 Test	LG Test
Thermal Cycling Test	-40°C to <b>85°C</b> , 200 Cycles	-40°C to <b>90°C</b> , 200 Cycles
Damp Heat Test	85°C/85%/1000hrs	85°C/85%/2000hrs plus Pmax degradation check
Lengthy Salty Water Spray Test	No	Yes





 **LG Electronics**



## The LG quality advantage



### Positive Power Tolerance

LG provides rigorous quality testing to all solar modules to ensure the rated power output. Our modules have a positive nominal tolerance starting at 0% and going as high as +3%. For instance, this guarantees that a new LG 250 Watt module will not deliver a rated output less than 250 Watts.



### Designed for Durability

Our solar modules are made with slim and durable glass to be light in weight while also being able to withstand heavy loads up to 5400 Pa, which represents premium quality. The module frame is uniquely anodized to increase durability and minimize damage from rain and salty sea wind.



### 100% EL Test Check Completed

All LG modules are tested via an Electroluminescence inspection after manufacture. The EL inspection detects micro-cracks invisible to the naked eye.



### Highest Testing Standards

The LG solar manufacturing plant also contains state-of-the-art testing laboratories. These facilities test daily for product quality and performance. Our labs have been certified as high quality photovoltaic testing facilities by two world leading certifying authorities, TÜV Rheinland (Germany) and Underwriters Laboratories (USA). This dual certification is a first for the solar industry.



### Low Environmental Impact

LG undertakes a rigorous Life Cycle Assessment from raw materials to end of use. This process helps us to choose the input materials with the least environmental impact. The key components of our modules are aluminium, glass and silicon, all of which have excellent recyclable properties.



### LG on Every Cell

We sign off on every single manufactured solar cell with our LG logo. The LG logo reflects cutting edge technology and durability standards which have guided LG for over 50 years.



### Key Benefits of a LG Solar System

- Reduces electricity costs
- Long term financial returns
- Increases property value
- Easy to maintain
- Clean Energy
- Innovative technology
- Reliable warranties
- Strong output yields
- Great looking panels
- Trained installer network

### Average annual output of systems for each 1 KW (as per Clean Energy Council)

Adelaide	Brisbane	Cairns	Hobart	Melbourne	Sydney	Perth
1533 kW/h	1533 kW/h	1533 kW/h	1277 kW/h	1314 kW/h	1423 kW/h	1606 kW/h



## Watch out for inferior installations & panels

In June 2011 the NSW Department of Fair Trading undertook an audit of grid connected solar systems in Sydney's North West. Of the 658 systems inspected 18.5% had major defects and 63.5% had minor defects. Only 18% of all solar systems were installed correctly.\* Therefore, LG recommends using installers with the appropriate qualifications and references.

In 2007, quality solar panels cost over \$6 per watt. Today the cost of solar panels has reduced by over 75%. Many solar only manufacturers have been forced to find big savings and as the photos show, not all solar panels are the same.

With poor quality panels look out for:

- Delaminating of panel;
- Micro cracks on wafers;
- Short circuits within panel;
- Poor UV rating of panel leads;
- Degradation of cell connectors;
- Water entering panel causing corrosion;
- Imprecise cell positions causing hotspots.

When choosing your panels ask yourself - will my supplier and manufacturer be around to honour their warranty in decades to come? Has my product undergone rigorous testing and A1 quality control? Choose LG for peace of mind.

\*From solar panel installation audit report, NSW Department of Fair Trading, pg 1



Poor installation quality



Yellowing and corroding panel



Micro crack between bus bars



Laminated lady bug



LG Distributor Details:

#### HEAD OFFICE

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#### STATE OFFICES

##### Queensland

23 Terrace Place, Murarrie, QLD 4172

##### South Australia

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##### Victoria

3 John Deere Court, Derrimut, VIC 3030

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