

PV Module Warranty and Warranty Insurance Comparisons:

A Cornerstone Of Bankability

Canadian Solar is a global leader in the photovoltaic industry and one of the largest solar module manufacturers in the world. This groundbreaking company is spearheading yet another innovation and is backing up its proven performance with an insurance guarantee that is an additional first in the business.

U.S. Solar PV Market

As everyone in the solar business is aware, the photovoltaic (PV) market is exploding in the U.S. Over the past five years (2006-2010), total U.S. PV installations have increased at a compounded annual growth rate of 78 percent, and 878 MW were installed in the last year alone. Residential and commercial installations have contributed to this impressive expansion, with average annual gains of 50-60 percent each year. But with new portfolio standards coming on line and improvements in system costs and financing, it is utility installations that have really taken off in the past few years, posting an average annual increase of 203 percent over the past three years and poised to surpass both of the other market segments in the next year or two.

With the increased emphasis on large-scale utility installations, issues surrounding module warranties are becoming critical. While a homeowner or small commercial customer may be willing to accept the fact a PV panel purchased today may not produce as promised 20 or 25 years from now, investors in a multi-megawatt power plant are not as forgiving. In order to fund projects and plan for the future, bankers and investors require extremely high standards of product and performance over the long term, and anything that reduces their risk can increase their potential for funding and improve the probability of project success.

Photovoltaic Module Warranties and Risk

Solar photovoltaic modules are among the longest-lived consumer products on the market. But because the payback from a solar investment comes only over decades of operation, it is essential to investors that output from the solar modules they have purchased not degrade over long periods. Also, as larger projects are installed, the total value of the risk becomes sizeable. The risk associated with solar module performance over time is mitigated primarily by a PV module's manufacturer warranty; the current industry standard is a 25-year, multi-tiered, declining performance level warranty.

PV manufacturers have responded to the demand for risk reduction by continuously improving the warranties on their solar modules. The following table summarizes the published warranties for the top ten producers of PV modules in 2010:

Manufacturer	Materials & Workmanship	Performance Warranty
1. Suntech	10 years	95% @5yr, 90% @12yr, 85% @18yr, 80% @25yr
2. First Solar	10 years	90% @10yr, 80% @25yr
3. Sharp	5 years	90% @10yr, 80% @25yr
4. Yingli	5 years	90% @10yr, 80% @25yr
5. Trina	10 years	96.5% @1yr, linear to 80.18% @25yr (monocrystalline) 97.5% @1yr, linear to 80% @25yr (polycrystalline)
6. Canadian Solar	10 years	97% @1yr, linear to 80% @25yr (-0.7%/year)
7. Hanwha Solarone	5 years	90% @10yr, 80% @25yr
8. Sunpower	10 years	90% @12yr, 80% @25yr
9. REC Solar	5.25 years	90% @10yr, 80% @25yr
10. Solarworld	10 years	97% @1yr, linear to 80% @25yr (-0.7%/year)

Warranty Insurance

Even with the best of warranty coverage on the modules, however, performance risk on the warranty itself remains a concern for investors. The solar industry is young and still undergoing rapid changes in technology and high turbulence in the marketplace. How can a buyer be confident the company they bought their panels from today will still be around to support them in 25 years?

To reduce this remaining exposure, companies are now offering additional insurance for the product warranties themselves in the hope that further project risk reduction will result in improved credit terms from lending institutions. This warranty insurance is being offered both by manufacturers and independent insurance companies. Insurance offered by manufacturers is especially useful to project developers because it eliminates the need for an insurance company to investigate and qualify the products for each project.

Among the top ten PV module producers, only Canadian Solar provides independent insurance on panel warranties. Several smaller producers, as well as producers of panels using less-mature technologies, have also begun to offer insurance on their warranties in order to reduce the long-term risks to investors using their panels, as shown in the following table:

Manufacturer	Location	Type of Panel	Date of Announcement
Astronergy	China	Crystalline Si	5/27/2010
SolFocus	US	Concentrator PV	10/6/2010
Eco Supplies	Sweden	Si	4/15/2011
Solar Frontier	Japan	CIS Thin Film	7/28/2011

Canadian Solar's Warranty Performance Solution

Canadian Solar, Inc. has long been a pioneer in the photovoltaic industry and is one of the world's largest manufacturers of solar modules. The company has raised the bar once again by offering a solid insurance guarantee to back up its already industry-leading warranty on solar photovoltaic modules; No other top-tier PV manufacturer provides this benefit. This warranty insurance, backed by insurers and requiring no additional registration or user engagement, provides "double protection" for customers – first, the protection of an excellent panel performance and quality warranty; and second, the security that no matter what happens in the future, the warranty will be supported by third-party A-rated insurance companies and financial institutions. By providing the certainty of future protection, Canadian Solar makes its modules an even more attractive and ironclad investment, improves bankability of projects that use Canadian Solar modules, and differentiates the company and its products from the rest of the solar world.

Warranty and Insurance Details

The standard Canadian Solar warranty includes a ten- year warranty on materials and workmanship, and a power performance warranty that promises 97% of labeled performance at the end of year one and declines linearly by 0.7% per year to 80% at the end of year 25. Canadian Solar customers whose panels have been registered enjoy these benefits, as well as insurance coverage on the product warranty, which provides complete peace of mind regarding the security of the warranty. This warranty insurance is provided to all Canadian Solar module purchasers without additional cost and with no user requirements above the standard warranty registration terms. The fully paid-up

policy protects module owners from potential problems during the entire period of the product warranty.

The product warranty insurance, purchased through PowerGuard Specialty Insurance Services, is underwritten by the following three A-rated, investment-grade insurance carriers:

- Companion Property Casualty Insurance Company (A.M. Best Credit Rating: A VIII) www.companiongroup.com
- International Insurance Company of Hannover Limited (A.M. Best Credit Rating: A XV) www.inter-hannover.com
- RSUI Indemnity Company (A.M. Best Credit Rating: A XII) www.rsui.com

Highlights of the coverage include:

- Global coverage
- Immediate coverage (no waiting period) with nothing to sign or acknowledge
- Claims process remains the same as before
- Pre-determined payouts based on a depreciation scale
- 25-year pre-paid, non-cancellable term
- Highly reputable, A.M. Best rated "A" VIII or better, investment-grade insurance underwriters (enhanced bankability)
- Comprehensive coverage including design defect, workmanship and power output
- Allows Third-Party policy rights (to satisfy investor and banker requirements)
- Coverage extends through insolvency or bankruptcy, so no matter what happens to Canadian Solar as a company, the module owners remain covered

Benefit to Customers

The fundamental purpose of the Canadian Solar Warranty Insurance program is to reduce the risks inherent in any solar investment and provide solar investors and purchasers of Canadian Solar PV modules with absolute peace of mind that their investment is sound and well-protected. Additionally, the credit risk reduction provided by this program should allow project developers to negotiate better credit terms and obtain credit more easily. Developers and their capital providers can rest assured that their investment is doubly protected with a world-class warranty program backed up by sophisticated and complete insurance coverage for the full term of the warranty.