

Insuring a Solar Park's Performance: A Primer on Solar Photovoltaic Module Warranty Insurance

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Summary

- A product warranty is only as good as the entity backing it.
- Several solar manufacturers have filed for bankruptcy as part of a “solar coaster.”
- Solar-park owners should also ensure their commercial contracts contain appropriate indemnity and insurance requirements.



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In recent years, solar-plant construction has proliferated. Incentivized by tax benefits under the Inflation Reduction Act of 2022, solar manufacturing capacity has experienced a four-fold increase

domestically—now exceeding 31 gigawatts—making the United States the third largest PV module manufacturer in the world. *See, e.g.,* [Solar Energy Industries Association \(SEIA\), “REPORT: U.S. Solar Panel Manufacturing Capacity Grows Nearly 4x Under New Federal Incentives” \(Sept. 9, 2024\)](#); [SEIA, “United States Surpasses 50 GW of Solar Module Manufacturing Capacity” \(Feb. 4, 2025\)](#).

Accompanying this growth, however, several manufacturers have filed for bankruptcy as part of a “solar coaster”—the “ups and downs” by which solar companies “grow quickly and fade just as fast.” [Tyler Graham, “What’s Next After Solar Installer SunPower’s Bankruptcy?,” CNET \(Sept. 24, 2024\)](#). These manufacturer insolvencies can affect solar-park owners and other stakeholders in numerous ways. This is especially true if problems arise with PV module performance in the distant future, thereby affecting profitability.

On the one hand, solar-park owners can expect a certain level of degradation in module performance over time. For example, one study of approximately 90,000 solar PV facilities found consistent degradation over many years across panel types:

Size	Nameplate Capacity	Average Annual Output Degradation	Expected Capacity After 25 Years
Small	< 25 kW	-1.51%	< 69% original
Medium	25 kW-1 MW	-1.08%	< 77% original
Large	> 1 MW	-0.56%	< 87% original

Steven Ferrey, *Powering the Future: A Lawyer’s Guide to Clean Energy* 60 (ABA 2024) (citing [Sustainable Energy Advantage, “Where Did the Sun Go? A Quick Look at Solar Panel Degradation in Massachusetts \(May 2022\)](#))).

On the other hand, degradation (as well as the incidence of other defects) may be worse than expected. Thus, in purchasing modules, it is “importan[t] [to] obtain[] warranties regarding PV unit performance and degradation” for many years. Steven Ferrey, *Powering the Future: A Lawyer’s Guide to Clean Energy* 60 (ABA 2024).

Even with a warranty in hand, the risk that the supplier is unable to fulfil the warranty and correct the problems persists. By the time issues arise, the supplier may no longer exist or may not be sufficiently solvent to honor its contractual obligations—forcing park owners to bear the costs. Indeed, this risk is borne out by many manufacturers initiating bankruptcy proceedings in recent years. *See, e.g.,* [SolarInsure, The Complete List of Solar Bankruptcies and Business Closures \(Jan. 31, 2025\)](#); *see also* [Alana Semuels, “Another Solar Company Goes Bust,” Time \(June 18, 2024\)](#).

To help mitigate this risk, certain insurance companies offer a specialized insurance product: warranty insurance for PV modules. This line of coverage provides a long-term backstop (often 20–25 years) to a manufacturer’s performance warranty in the event of insolvency. *See, e.g.,* [Marsh, “Solar Performance Warranty”](#); [Reinsurance News, “Munich Re Completes Final Certification of Photovoltaic Warranty Insurance with Sunova Solar” \(Oct. 4, 2023\)](#); *see also* [Australian Govt., Dep’t of Climate Change, “Warranties and Insurance.”](#)

Normally, to place this coverage, insurers conduct technical due diligence as part of the underwriting process of the insured modules. Once the risk is approved, the manufacturer will pay a premium to insure its module warranty. And then when a buyer purchases the product, the supplier provides documentation about coverage terms for specific PV modules, often identified by serial number.

Buyer diligence of this risk occurs during the PV module procurement phase. While coverage can be tailored to the needs of the module customer, it is typical for coverage to mirror the period of the warranty and limited to 5–10 percent of a project's total value, while “top-up” coverage may be available to increase the limits and broaden coverage, such as covering loss of income. *E.g.*, [Munich Re, “Reliable PV Warranty Insurance: A Key Feature of Bankable PV Modules”](#); [Ronald Sastrawan, “Solar’s Warranty Risk,” *PV Magazine* \(July 30, 2020\)](#).

In turn, manufacturers and park developers alike benefit from this cover:

- For manufacturers: (1) enhanced ability to assure creditworthiness to buyers; (2) technical benefit from vetting of modules by third parties, creating confidence in product performance; and (3) optimized liquidity and financial stability, even in the face of a high number of warranty claims (as the coverage may provide a source of indemnity to suppliers, even while solvent).
- For investors, developers, and solar parks: (1) bankability of modules to secure better financing terms on assets; (2) enhanced quality assurance due to modules passing insurers’ technical due diligence; and (3) mitigation of counterparty credit risk of suppliers.

E.g., [Munich Re, “Photovoltaic Warranty Insurance.”](#) Thus, solar PV warranty insurance can offer significant protection from counterparty risk, helping to ensure long-term security for investors, developers, and solar parks.

While these may be significant advantages of warranty insurance, it remains to be seen how readily claims will be paid under this cover. It also continues to be incumbent upon a module buyer to ensure that the underlying warranty is adequate for its business, including with respect to transferability (if there’s a change of module ownership), apart from ensuring that the warranty coverage suits the buyer’s needs, too. *See, e.g.*, [Solar Insure, “Lifetime Solar Warranties: The Hidden Limitations.”](#)

Finally, while PV warranty insurance may be important, a solar-park owner should ensure it has other necessary coverage. A robust insurance program will often require the purchase of multiple insurance policies to meet the requirements and risk appetites of owners and other investors, such as property insurance for natural events and other occurrences, liability insurance for third-party property damage or bodily injury (such as from fire risks), and tax-liability insurance, to the extent a solar park is connected with tax-credit transfer arrangements, to name a few. *See, e.g.*, [Munich Re, “Wherever There Is Sun, There Is Need for Protection”](#); [Nat’l Renewable Energy Lab., “Insuring Solar Photovoltaics: Challenges](#)

[and Possible Solutions,” at 13 \(Feb 2010\)](#). Solar-park owners should also ensure their commercial contracts contain appropriate indemnity and insurance requirements.

Endnotes

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