



RESOLVING CLAIMS FOR PV MODULES

AS RENEWABLE ENERGY BEGINS TO COMPETE WITH FOSSIL FUELS IN THE RACE TO MEET THE BURGEONING POWER DEMAND IN SOUTHEAST ASIA, THERE HAS BEEN A DRAMATIC INCREASE IN THE CONSTRUCTION OF LARGE-SCALE SOLAR POWER PLANTS IN THE REGION. THIS IS INEVITABLY LEADING TO A RISE IN CLAIMS AND A DEMAND FOR EXPERIENCE AND INNOVATION TO OVERCOME POTENTIAL CLAIM DISPUTES.

Global and regional investors have been attracted to solar by tax incentives, Feed-in-Tariffs (FiT), subsidies, and the continuing fall in the price of PhotoVoltaic (PV) modules. You only have to look at the Philippines and Thailand to see the extent of these investments. Research by Solarplaza suggests that the Philippines had less than 30MW PV capacity in 2014; today it stands at over 900MW and they expect to grow this to 3GW by 2022. During the same period, the regional solar leader,

Thailand, has more than doubled PV capacity. There are naturally more claims for PV modules and Matt Robinson, Senior Adjuster with Integra Technical Services in Singapore, suggests that “the assessment of PV module damage can pose difficulties for Insurers, the Insured and other stakeholders, and on a number of recent claims we’ve been exploring solutions to overcome these challenges for the benefit of all parties.”

FEAR OF DAMAGE

Events such as flooding are commonplace in the tropical climate of the region, and widespread flood damage can involve many thousands of solar panels. The industry standard is for PV cells to be resin encapsulated and for panels to have a waterproof rating to allow for most weather conditions. The trouble is that fully submerged panels can potentially suffer water ingress and delamination that can bring about corrosion and degradation which may affect long-term performance.

As Matt points out, “even if the panels remain watertight, exposure

of array boxes to water can result in ground faults affecting the connected strings of PV modules. The risk of flooding damage is also higher during the construction phase as back panel connections can be exposed.”

Across the industry, PV module manufacturers offer 25-30 year performance warranties guaranteeing a maximum reduction in power output over the life of the equipment. Typically this will allow an initial degradation in the first year of operation (~3%) followed by a much smaller reduction per annum thereafter, with a guaranteed minimum power rating after 25 years of ~80%. Damage or degradation of

PV modules due to an insured event can be measured against this warranty curve, with the results then compared to a control group of undamaged panels to ensure the manufacturers performance promise is justified, *see chart opposite.*

Solar plant operators may present claims due to a ‘fear of damage’ driven by concerns about long long-term performance, or voided manufacturer’s warranties. Such ‘fear of damage’ is insufficient to trigger coverage under the construction or operational insurance policies and testing is therefore necessary to prove the insurable loss and the extent of physical damage.



TEST OPTIONS

Manufacturers often suggest that a full battery of testing is required, such as those used in the International Electrotechnical Commission (IEC) accreditations. These types of test are performed in laboratory conditions, with the sample size severely restricted by the number of test rigs available and test duration. Matt feels that “such testing is more appropriate for design qualification rather than establishing damage or performance degradation. Consequently, reaching an agreement with interested parties on the scope of testing is a crucial step in resolving large-scale PV module claims.”

The economics of testing can equally be a significant issue, particularly in the construction phase where manufacturers often offer reduced equipment prices to secure lucrative long-term service contracts. With unit prices of PV modules continuing to fall, the expense of panel demounting, transportation, testing and

reinstallation may exceed the cost of a replacement panel. As a result, claims for widespread panel replacement can place Insurers in an unsatisfactory position where there is no proof of insured damage to trigger the policy. Specialist consultants are now able to offer on-site performance testing with portable equipment at a fairly modest price per panel, which can then be verified against a small sample laboratory test.

Matt explains, “Integra Technical Services has found this approach useful on a number of occasions in identifying a specific pattern of damage. For example, ascertaining a notable pattern of degradation in the first few panels at the low voltage end of the PV module strings. This has enabled settlement to be reached based on the established extent of damage without Insurers paying for undamaged equipment, whilst allaying the operator’s concerns about long-term performance issues.”

“Alternative approaches could include the purchase or hire of test equipment

and the establishment of workshops on site to conduct testing and basic panel repair or restoration in order to mitigate transportation expenses.”

CONCLUSION

Considerable experience in the solar energy sector is imperative to resolving potential disputes and to reach an amicable and technically sound settlement of PV module claims. In the majority of claims involving large numbers of PV modules, issues of testing, voided warranties, limited repair options, and long-term performance concerns can be resolved with appropriate technical knowledge and using innovative solutions to bridge the void between the requirements of Insurers and concerns of the Insured.

To find out more about Integra Technical Services’ Renewable Energy Practice email matt.robinson@integratechnical.com

25-YEAR LINEAR PERFORMANCE WARRANTY

Performance Warranties can themselves be subject to insurance policies taken out by the manufacturer.

