Meeting Local Standards: Product Certification for NZ-Made Solar Modules

Market Entry Requirements for Local PV Module Manufacturers

Content Partner: J. v. G. technology GmbH

Turnkey solar module production lines — since 1997

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Technical Overview: Certification Standards for NZ-Made Solar Modules

Created as part of the PVKnowHow Knowledge Network

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European specialists in turnkey solar module production lines

Market Entry Challenge: The Certification Barrier

The Core Problem

- Producing a high-quality module is only half the journey
- First question from distributors: *"Are your modules on the CEC approved list?"*
- Without certification, no legal or commercial path to market exists
- Quality and price are irrelevant without compliance proof

Why New Zealand Is Distinct

- Applies AS/NZS standards — locally adapted versions of IEC
- CEC approved product list is the de facto market gatekeeping mechanism
- No CEC listing = locked out of virtually all reputable supply chains
- Certification must be integrated into the business plan from day one

Why Certification Is Non-Negotiable

Legal Requirement

- AS/NZS 3000 mandates compliance with AS/NZS 5033
- AS/NZS 5033 in turn requires IEC 61215 qualification
- WorkSafe NZ: grid-connected PV installation is prescribed electrical work (PEW)

Commercial Requirement

- CEC listing is required by most distributors, installers, and financiers
- Projects requiring financing or insurance exclusively use CEC-approved modules
- Non-listed products face de facto exclusion from all reputable channels

Strategic Requirement

- Compliance signals quality and durability to the entire supply chain
- Transforms regulatory burden into a competitive differentiator
- Foundation for brand trust in a relationship-driven market

IEC vs. AS/NZS Standards: Understanding the Framework

IEC Standards

- International baseline — developed by the International Electrotechnical Commission
- Globally accepted; used for testing by accredited labs (TÜV, etc.)
- Testing can be conducted at accredited labs in Europe or Asia
- Key IEC modules standards: IEC 61730 (safety) · IEC 61215 (performance)

AS/NZS Standards

- Joint Australian and New Zealand versions of IEC standards
- Based on IEC but include local modifications for NZ conditions and regulations
- AS/NZS 5033 governs PV array installation safety requirements
- Mandatory via AS/NZS 3000 (Electrical Wiring Rules)

The accredited test lab must be approved to test against both IEC **and** AS/NZS standards. The lab does not need to be located in New Zealand.

Key Standard: IEC / AS/NZS 61730 — Module Safety

What It Covers

- Fundamental construction requirements for safe electrical and mechanical operation
- Verifies module can withstand electrical stresses including high voltage
- Incorporates requirements for safe insulation and wiring practices

Two-Part Structure

- Part 1 (61730-1): Requirements for construction
- Part 2 (61730-2): Requirements for testing — lists all mandatory tests
- Current active edition: IEC 61730:2023 (required for new CEC applications from May 2026)

Market Access Impact

- Baseline requirement for any module to be considered safe for public or commercial use
- AS/NZS 5033 installation checklist explicitly requires IEC 61730-2 qualification
- Directly referenced in CEC approved product list criteria

Key Standard: IEC / AS/NZS 61215 — Performance Qualification

What It Validates

- Module design for long-term performance under demanding outdoor conditions
- Simulates decades of wear and tear through a defined series of stress tests
- Current active edition: IEC 61215:2021 — required for all new CEC applications

Key Test Sequences

- Thermal cycling — resistance to extreme temperature fluctuations
- Damp-heat — performance in hot and humid environments
- UV exposure — material stability under prolonged sunlight
- Mechanical load — resistance to wind, snow, and hail simulation

Regulatory Chain

- AS/NZS 3000 → AS/NZS 5033 → IEC 61215 qualification required
- From April 2024: only IEC 61215:2021 accepted for new CEC applications
- Non-compliant modules are ineligible for CEC listing and regulated incentive schemes

Installation Compatibility: AS/NZS 5033

What AS/NZS 5033 Governs

- General installation and safety requirements for PV arrays
- DC array wiring, electrical protection devices, switching, and earthing
- Current version: AS/NZS 5033:2021 — mandatory since May 2022
- Cited by AS/NZS 3000 (the NZ Wiring Rules); compliance is legally required

Why It Matters for Manufacturers

- Module design — frame, junction box, connectors — must be compatible with this standard
- If installers cannot comply with AS/NZS 5033 using a module, it will not be adopted
- Incompatible module design = commercial failure regardless of technical quality
- Compliance must be built into initial product design, not added retrospectively

Role of the CEC Approved Product Listing

1

What It Is

The Clean Energy Council (Australia) maintains an approved product list that serves as the de facto quality benchmark for the New Zealand solar market

2

Commercial Weight

Most distributors, installers, financiers, and network providers in NZ will only accept CEC-approved modules — it is not a legal mandate but a commercial necessity

3

How to Obtain

Submit proof of IEC/AS/NZS certification, pass the CEC's own verification process, then apply formally for listing — the list contains 1,500+ approved module models

As of 1 May 2026, all new CEC listing applications must include certification to IEC 61730:2023. Standards are actively evolving — early engagement with an accredited test lab is essential.

Certification Process: Step by Step

1

1 — Product Design Alignment

Integrate AS/NZS 5033, IEC 61730, and IEC 61215 requirements into module design from the outset

Frame, junction box, and connector specifications must be installation-compatible

2

2 — Selection of Accredited Test Laboratory

Choose a lab accredited to test against the required IEC and AS/NZS standards (e.g., TÜV in Europe or Asia)

Lab does not need to be based in New Zealand

3

3 — Formal Testing

Sample modules submitted for the full battery of IEC 61215 and IEC 61730 tests

Thermal cycling, damp heat, UV, mechanical load, electrical safety tests

4

4 — Factory Audit

Testing body audits the manufacturing facility to verify quality control processes

Confirms that production output is consistent with the tested samples

5

5 — Certificate Issuance & CEC Application

Laboratory issues IEC/AS/NZS certificates upon successful completion

Manufacturer submits certificates to CEC for formal approved product listing

Timeline, Risks & Planning Considerations

Timeline Realities

- Full certification process: 6–12 months from sample submission to CEC listing
- Re-certification (standard updates): 2–3 months minimum
- Standards evolve — IEC 61215:2021 replaced 2016 edition; 61730:2023 now required from May 2026
- Certification must be budgeted and scheduled from the start of the business plan

Key Risks

- **Design risk:** Module incompatibility with AS/NZS 5033 discovered late in process
- **Standards risk:** Certifying to a superseded edition renders listing ineligible
- **Commercial risk:** Inventory ready but CEC listing not yet active — no sales possible
- **Lapsing risk:** CEC listings have expiry dates; ongoing compliance monitoring required

⚠ Modules not on the CEC approved list are ineligible for regulated incentive schemes and will be rejected by most network providers and reputable installers.

Strategic Importance: Certification as Competitive Advantage

1

Market Access Gateway

Certification is the prerequisite — without it, no legal or commercial path into the New Zealand domestic market exists, regardless of product quality

2

Brand & Trust Signal

CEC listing signals to the entire supply chain that the product meets established benchmarks for safety, performance, and durability

3

Long-Term Business Foundation

Integrating certification requirements from day one transforms compliance from an obstacle into the bedrock of a sustainable, scalable manufacturing business

An experienced European turnkey provider integrates certification requirements into the full-line manufacturing methodology — reducing the learning curve for new manufacturers entering production in New Zealand.

About the Content Partner

J. v. G. technology GmbH — The DESERT Company

Founded in 1997 in Bavaria, Germany. Family-owned engineering company specializing in turnkey solar module production lines.

More than 90 factory projects delivered worldwide.
On-site team training included — no prior manufacturing experience required.

Key areas:

Turnkey PV manufacturing lines | DESERT Technology® | TÜV-certified module designs | Factory planning to production

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