

Navigating Australia's Solar Manufacturing Maze: Your Roadmap to Permits, Standards & Compliance

A Roadmap to Permits, Standards & Compliance

Content Partner: J. v. G. technology GmbH

Turnkey solar module production lines — since 1997

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Technical Overview: Australia's Solar Manufacturing Permits and Compliance



Created as part of the PVKnowHow Knowledge Network



Prepared by J.v.G. Technology GmbH



European specialists in turnkey solar module production lines

Key Project Data

Solar

Factory Type

Solar module manufacturing
facility

CEC+

Compliance Focus

CEC listing + IEC standards

3

Core Standards

IEC 61215 / IEC 61730 /
AS/NZS 5033

6–18

Approval Timeline

Months – typical regulatory
pathway

 Region: Australia · Source: PVKnowHow / J.v.G. Technology GmbH

Australia's Solar Regulatory Landscape

Why It Is Complex

- Dual-layer system: federal product rules + state operational approvals
- No single authority governs the full manufacturing lifecycle
- Standards continuously evolve — transition periods are strict
- Market access (STCs) is tied directly to product certification status

Market Context

- ~1 in 3 Australian households has rooftop solar
- One of the world's highest per-capita solar adoption rates
- Strong policy push: Renewable Energy Target (RET) drives demand
- Local manufacturing remains a strategic policy priority

Key Regulatory Institutions

CER — Clean Energy Regulator

- Administers the Small-scale Renewable Energy Scheme (SRES)
- Oversees STC eligibility and validates module compliance
- Runs solar panel testing program to verify certified standards in market

CEC — Clean Energy Council

- Maintains the Approved PV Modules List (1,500+ models)
- Sets and enforces product listing terms and conditions
- Key industry body — not a government agency, but de facto gatekeeper

ACCC — Australian Competition & Consumer Commission

- Enforces Australian Consumer Law (ACL)
- Governs product warranties, quality claims, and product safety
- Issues product recalls; de-listings may follow CEC notification

State EPAs — Environment Protection Authorities

- Every state has an EPA regulating factory-level environmental impacts
- Issue operating licenses: air, water, noise, and waste management
- Hazardous materials permits for chemicals used in production

Core Technical Standards

IEC 61215:2021 — Design Qualification & Type Approval

- Primary standard for module design and long-term performance
- Mandatory for CEC listing since October 2024 (2016 edition no longer accepted)
- Tests: thermal cycling, damp-heat, UV exposure, mechanical load
- As of May 2026, new applications must also certify to IEC 61730:2023

IEC 61730 — Module Safety Qualification

- Covers electrical shock, fire hazards, and personal injury prevention
- Compliance is mandatory for CEC product listing
- Evaluates construction, materials, and safety testing protocols
- IEC 61730:2023 required for new applications from 1 May 2026

AS/NZS 5033:2021 — PV Array Installation & Safety

- Australian/NZ installation standard — mandatory since May 2022
- Directly references IEC 61215: modules must be qualified to the current IEC version
- Increased max system voltage: 1,000 V (commercial); aligns with IEC 62548
- Module design must be compatible with this standard to achieve market adoption

i Standards cascade: AS/NZS 3000 → AS/NZS 5033 → IEC 61215. Compliance at each level is required for STC eligibility and electrical safety approvals.

The Critical Market Gateway: CEC Listing

Why CEC Listing Is Non-Negotiable

- Modules must be CEC-listed to qualify for STCs under the SRES
- STCs reduce the upfront cost of solar — making unlisted modules commercially unviable
- Required by electricity network providers and state rebate programs
- Without listing: severe and likely fatal competitive disadvantage

Ongoing Compliance Obligations

- CEC listing is not a one-time event — renewal and maintenance required
- Manufacturers must notify CEC of any product or company changes promptly
- Non-compliance can trigger suspension or removal from the approved list
- Serial number tracking and warranty support in Australia are mandatory

Step-by-Step: CEC Certification Pathway

1

1 — Design to Standard

Design modules to meet current IEC 61215:2021 and IEC 61730 series from the outset
Frame, junction box, and connectors must be compatible with AS/NZS 5033

2

2 — Accredited Laboratory Testing

Engage an IECEE CB scheme-accredited testing laboratory
Complete full battery of IEC tests; obtain final certificates and test reports

3

3 — Factory Audit

Testing body typically conducts a manufacturing facility audit
Confirms quality control processes produce modules consistent with tested samples

4

4 — Documentation Package

Prepare: IEC certificates, Construction Data Form (CDF), datasheets, labels (with serial number format), English installation manual, and Australian warranty documentation

5

5 — Appoint Australian Legal Entity

A registered Australian entity (with ABN) is required as the official importer
This entity is legally responsible for warranties, serial number records, and ongoing compliance

6

6 — CEC Application & Listing

Submit application and all documentation via the CEC online portal; pay applicable fees
Address any CEC queries promptly; listing typically includes an expiry date requiring renewal

Manufacturing Permits & Environmental Approvals

Development Approval (DA)

- Submitted to local council or state planning authority
- Covers: zoning compliance, building codes, noise, traffic, waste management plans
- DA process varies significantly between states (e.g., NSW vs. Victoria)
- Early engagement with local authorities is essential

EPA Operating Licence

- Every state EPA requires a licence for industrial manufacturing operations
- Covers: air and water quality, noise emissions, waste management, hazardous materials
- Specific permits for chemical storage and handling used in module production

EPBC Act — Federal Assessment

- Required if the facility may impact matters of national environmental significance
- Referral to DCCEEW triggers formal assessment and ministerial approval
- Environmental reforms (NEPA Bill 2025) expected to take effect mid-2026

Work Health & Safety (WHS)

- State-based WHS/OH&S laws apply to all manufacturing operations
- Comprehensive risk assessments required for all processes
- Documented safety management system and staff training are legal requirements

Federal vs. State Responsibilities

Area	Federal Jurisdiction	State / Territory Jurisdiction
Product Standards	National benchmarks (IEC/AS/NZS via CEC & CER)	Enforcement through electrical safety regulators
Market Access	STC eligibility under SRES (CER/CEC)	State rebate programs may add requirements
Environmental	EPBC Act – national significance matters	EPA licensing – site-level pollution and waste
Planning & Construction	Limited – import/export controls	Development Approval, zoning, building codes
Consumer Protection	ACCC / Australian Consumer Law (ACL)	State fair-trading offices enforce ACL locally
WHS / Safety	National framework (harmonised WHS Act)	State WHS regulators administer and inspect

 Federal and state approvals are parallel – not sequential. A coordinated strategy addressing both layers from the outset is essential.

Product Stewardship & End-of-Life Trends

The Scale of the Challenge

- Annual solar panel waste predicted to rise from ~59,340 t (2025) to ~91,165 t (2030)
- Only ~17% of decommissioned modules are currently recycled in Australia
- By 2035, an estimated ~1 million tonnes of solar panel waste is projected nationally
- Panels contain recoverable materials: silver, copper, aluminium, silicon

Regulatory Trajectory

- **Product Stewardship Act 2011** provides the legislative framework
- Commonwealth committed AU\$24.7M to a National Solar Panel Recycling Pilot (2026)
- WA (Jul 2024): landfill disposal of solar panels prohibited
- VIC (Mar 2025): panels banned from landfill under Solar Homes Programme
- National mandatory scheme under active development – manufacturers should prepare now

Operational Compliance Requirements

Product Quality

- Maintain strict quality control in all manufacturing processes
- Australian Consumer Law: warranties and product quality obligations are legally binding
- ISO 9001 quality management system – industry best practice

Serial Number & Traceability

- Track and maintain records of all serial numbers sold in Australia
- Required for STC claims and Solar Panel Validation Scheme compliance
- Mismatches between serial numbers and CEC listings must be resolved promptly

Standards Monitoring

- Follow CEC, Standards Australia, and IEC for updates proactively
- Transition periods typically 6–14 months – stockpiling beyond 12 months carries risk
- Any product or company change must be notified to CEC without delay

End-of-Life Obligations

- Monitor and prepare for mandatory national solar panel recycling scheme (expected mid-to-late 2020s)
- WA and VIC already prohibit landfill disposal – other states expected to follow
- Establish take-back or recycling partnerships ahead of regulatory deadlines
- Document end-of-life pathways as part of product stewardship obligations under the Product Stewardship Act 2011

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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