



Electricity Engineers'
Association

HEALTH & SAFETY
ASSET MANAGEMENT
PROFESSIONAL
DEVELOPMENT

International Approaches to DER Standards

EEA.CO.NZ



Electricity Engineers' Association (EEA)

- An industry NFP organisation representing members and stakeholders in the electricity supply industry (ESI).
- Supporting safe, sustainable and reliable delivery of electricity to New Zealanders.
- An advocate, knowledge hub, and 'go to' body on ESI *safety, engineering/technical, asset management, professional development, and emerging technologies.*
- Helping industry recognise, understand and manage risks and opportunities.
- Providing common industry guides.



Energy Network Australia – National Connection Guidelines

- Connecting to network
- Network connection framework
- Network connection process
- Technical requirements



Energy Network Australia- Guides

Network connection framework and guides

- Basic Micro
- Low Voltage
- Medium Voltage
- High Voltage
- Registered Generator

The guidelines do not apply to registered generators with a generating unit greater than 5MW in the National Electricity Market or 10MW in the Western Australian Energy Market



Standards

Standard #	Standard Name	Standard Type
AS/NZS 3000	Electrical installations (known as the Australian/ New Zealand Wiring Rules)	Australian/ New Zealand Joint Standard
AS/NZS 4777	Grid connection of energy systems via inverters (multiple parts)	Australian/ New Zealand Joint Standard
AS 600341	Rotating electrical machines, Part 1: Rating and performance	Australian Standard
AS 60034.22	Rotating electrical machines, Part 22: AC generators for reciprocating internal combustion (RIC) engine driven generating sets	Australian Standard
AS 60044	Instrument transformers (multiple parts)	Australian Standard
AS/NZS IEC 60947.6-1	Low-voltage switchgear and control gear - Multiple function equipment - Automatic transfer switching equipment	Australian/ New Zealand Joint Standard
SA/SNZ TR IEC 61000.3.14	Electromagnetic compatibility (EMC), Part 3.14: Limits— Assessment of emission limits for harmonics, interharmonics, voltage fluctuations and unbalance for the connection of disturbing installations to LV power systems	Australian/ New Zealand Technical Report
SA/SNZ TR IEC 61000.3.15	Electromagnetic compatibility (EMC), Part 3.15: Limits— Assessment of low frequency electromagnetic immunity and emission requirements for dispersed generation systems in LV network	AU/NZ Technical Report
IEC 60255-12	Electrical relays - Part 12: Directional relays and power relays with two input energizing quantities	International Standard
IEC 60255-26	Electrical relays - Part 26: Electromagnetic compatibility requirements	International Standard
IEC 60255-27	Electrical relays - Part 27: Product safety requirements	International Standard
IEC 60255-127	Measuring relays and protection equipment - Part 127: Functional requirements for over/under voltage protection	International Standard
IEC 62109	Safety of power converters for use in photovoltaic power systems	International Standard
IEC 62116	Utility-interconnected photovoltaic inverters - Test procedure of islanding prevention measures	International Standard
IEC 62786	Distributed energy resources connection with the grid	International Standard
IEEE standard 1547-2018	IEEE Standard for Interconnecting Distributed Resources with Electric Power Systems	IEEE Standard



Standards Australia key focus areas

OVERVIEW OF TOPIC AREAS

MARKET SYSTEMS AND OPERATIONS



GOVERNANCE AND SERVICES



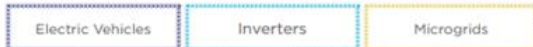
GENERATION: DISTRIBUTED AND CENTRALISED



TRANSMISSION AND DISTRIBUTION



PROSUMERS



SUPPORTING TECHNOLOGIES



DATA



- Identified as in need of urgent work or broader participation
- Identified as in need of work
- Identified as lack of Australian activity, but consensus for work not clear
- Current Work Underway or Active Committee with broad representation
- No clear status identified or discussed



ENA – UK Guides

- **Micro Generation – Single dwelling and Multiple Dwelling:** Domestic-Scale Type Tested Generation to the Distribution Network (Typically by Householders (G98)
 - Capacity <16A / phase
 - Voltage <230V single or 400V three phase
- **Type A Power Generating Modules,** multiple dwellings, commercial or farms
 - Registered capacity > 16A / phase combined
 - Voltage >230V single phase or 400V three phase
- **Large Scale Generation:** Type B-D
 - Capacity > 1MW
 - Voltage connection 110kV or above



EEA – Guide for the Connection of Small-Scale Inverter – Based Distributed Generation

- Published July 2018
- Interim guide
- Scope
 - Assessment process
 - Connection application
 - Technical requirements for inverter-connected DG systems
 - 10 kW at the point of supply
 - Connected to LV distribution network
 - LV network congestion methodology



Going forward- possible approach ?

