

SERVICE LEVEL PROCEDURE

METERING PROVIDER SERVICES

PREPARED BY: AEMO MARKETS
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Approved for distribution and use by:

APPROVED BY: PETER GEERS
TITLE: EXECUTIVE GENERAL MANAGER, MARKETS

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1. INTRODUCTION

1.1 Purpose and Scope

This Service Level Procedure (**Procedure**) is made in accordance with clause 7.16.6 of the NER.

This Procedure has effect only for the purposes set out in the NER. The NER and the *National Electricity Law* prevail over this Procedure to the extent of any inconsistency.

1.2 Definitions and Interpretation

The Retail Electricity Market Procedures – Glossary and Framework:

- (a) is incorporated into and forms part of this Procedure; and
- (b) should be read with this Procedure.

1.3 Related AEMO Documents

Title	Location
CATS Procedures	http://www.aemo.com.au/Electricity/Policies-and-Procedures/Market-Settlement-and-Transfer-Solutions
Metering Service Provider Accreditation Procedure	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes
Metrology Procedure: Part A	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering
NMI Procedures	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes
Retail Electricity Market Procedures – Glossary and Framework	http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Glossary-and-Framework
Service Provider Compliance Assessment and Deregistration Procedure	http://www.aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering/Metering-procedures-guidelines-and-processes

2. GENERAL REQUIREMENTS

2.1 Metering Provider Capability and Competency

In addition to all NER requirements, the MP must:

- (a) employ personnel with the skills, knowledge and expertise necessary for the discharge of the responsibilities under the NER and have procedures for ensuring that personnel maintain their knowledge and understanding of the requirements of the NER;
- (b) maintain a register of employees, which for each employee must include:
 - (i) skills, knowledge and expertise;
 - (ii) qualifications, registrations and accreditations where applicable to the discharge of MP duties;
 - (iii) training undertaken and planned;
 - (iv) authorisations to provide opinions and interpretations of technical information; and
 - (v) authorisations to access *metering installations* within secure and restricted areas.
- (c) have policies and procedures for making statements of opinions and interpretations, documented within the quality system;
- (d) comply with:
 - (i) AS 3000 Wiring Rules;

- (ii) applicable Australian Communications and Media Authority (ACMA) communications and cabling requirements;
- (iii) C-Tick compliance requirements;
- (iv) Jurisdictional legislation, including safety legislation and regulations; and
- (v) any reasonable requirements of the LNSP when working on or around LNSP assets.
- (e) undertake the provision, installation and maintenance of *metering installations* using the processes for which the MP has been accredited; and
- (f) comply with all directions from AEMO to fulfil any obligation under this Procedure.

2.2 Use of sub-contractors

Where an MP engages a sub-contractor to perform any of its obligations specified in the NER or this Procedure, the MP:

- (a) must have policies and procedures for assessing the sub-contractor's capability, competency and processes, procedures and systems, to ensure that they are compliant with the NER;
- (b) must ensure that auditable processes are in place to certify that all work performed by the sub-contractor complies with the NER and this Procedure;
- (c) remains liable for all acts and omissions of any sub-contractor;
- (d) must authorise the sub-contractor to provide any specific opinion or interpretation of technical information;
- (e) must provide AEMO, upon request, with any information pertaining to the sub-contractor that AEMO reasonably considers necessary for the discharge of the MP's responsibilities under the NER; and
- (f) must notify AEMO immediately if the MP elects to engage or change a sub-contractor for the delivery of any part of the services for which the MP is accredited; and
- (g) may be required to undertake an accreditation review to approve the engagement or change of a sub-contractor.

2.3 Insurance

The MP must:

- (a) hold public liability insurance for an amount not less than \$10,000,000 per occurrence;
- (b) hold professional indemnity insurance for an amount of not less than \$1,000,000 per occurrence, which must be maintained for a period of seven years after termination of the MP's registration; and
- (c) provide AEMO with certified certificates of currency upon request.¹

3. DEVICE MANAGEMENT AND TEST EQUIPMENT

3.1 Procurement

The MP must have processes and systems in place for the procurement of *meters*, *instrument transformers* and any other devices that can be installed by the MP within a *metering installation*, and ensure that *metering installation* components are suitable for use in accordance with the NER.

¹ If an MDP and MP or MC (as applicable) are the same legal entity, a single insurance policy for public liability insurance for an amount not less than \$10,000,000 per occurrence and professional indemnity insurance for an amount of not less than \$1,000,000 per occurrence that covers the operations of the MDP, MP and MC Roles (as applicable) will satisfy the insurance requirements under this Procedure, the Service Level Procedure (MDP) and eligibility requirements for registration as an MC.

3.2 Storage, Handling and Transport

- (a) The MP must have processes that are consistent with Good Industry Practice, specifying the requirements for storage, handling (including packaging) and transport (including return to owner) of any equipment that is calibrated including *meters*, *instrument transformers* and test equipment. The processes must be designed to:
 - (i) minimise the risk of physical or environmental damage to the equipment; and
 - (ii) identify conditions under which the physical condition of the equipment or accuracy is compromised as a result of storage, transport or handling.
- (b) the MP must ensure that *meters*, *instrument transformers*, devices removed from the *metering installation* and *network devices* are returned to their owner within 10 *business days* following their removal, unless otherwise agreed with the owner.

3.3 Management of Test Equipment

The MP must:

- (a) establish a register of test equipment used for testing *metering installations*, *meters* and *instrument transformers*;
- (b) maintain records of test equipment, including records of calibration certificates, for a period of 7 years from the issue date of the calibration certificate;
- (c) ensure that all test equipment is calibrated by a NATA accredited testing laboratory holding ISO 9001 and 17025 accreditation for the calibration of test equipment, current at the time of calibration; and
- (d) ensure that all tests are undertaken with test equipment where the calibration certificate is current and stated calibration due date has not passed.

3.4 Management of Meter Programming and Authorised Software

The MP must:

- (a) establish a register of equipment and authorised software used for programming *meters*; and
- (b) maintain records of equipment, authorised software and programs used for programming *meters*, including any changes to firmware or software within the *meter*, for a period of 7 years from the most recent date of use.

4. INSTALLATION AND COMMISSIONING REQUIREMENTS

4.1 General Commissioning Requirements

The MP must develop, maintain and operate processes and procedures for the installation and commissioning of *metering installations* for which they are accredited, which must include installation and verification requirements to ensure:

- (a) electrical wiring at the *metering installation* is:
 - (i) wired and terminated in compliance with *meter* and *instrument transformer* manufacturer requirements, relevant *Australian Standards* and Jurisdictional documents;
 - (ii) terminated in a manner that ensures no electrical conductors are exposed, that the cable type and size, and number of cables terminated in any one termination are appropriate and that all terminations are tight;
 - (iii) of an appropriate cable type, size and insulation meets the requirements of AS 3000;
 - (iv) connected with the correct polarity at each termination and connection; and

- (v) connected with the correct phase sequence, where three phases are connected at the *metering installation*; in the case of a change to an existing *metering installation*, the existing phase sequence is maintained.
- (b) the accuracy class of *metering installations* and any documentation from a certified body verifying the errors of *meters* and *instrument transformers* comply with the NER;
- (c) nameplate information reflects the design accuracy class of the *meters* and *instrument transformers*;
- (d) the actual connected ratios of all *instrument transformers* at a *metering installation* and the calculation of the constant to be applied to the collection and processing of *metering data* by the MDP are aligned;
- (e) burdens applied to *instrument transformers* are within the rated burden specified on the name plate of the *instrument transformer*;
- (f) *voltage* phase sequence relationships are correct unless the MP can verify to the satisfaction of AEMO the accuracy of the *metering installation* when a non-standard phase sequence is applied;
- (g) the combined current and *voltage* phase relationships at the *meter* terminals are correct;
- (h) the *meter* programming parameters, display and error functions are all correct in accordance with manufacturer specifications, including the measurement of the forward rotation of *energy* applied to the *meter*, and that the correct pulse rates have been programmed into the *meter*;
- (i) where the *metering installation* includes *instrument transformers*, register readings are validated by use of a *load* being placed on the load side of the *metering installation* and may include a timing check by comparing the readings on the *meter* display or pulse indicators against load and time;
- (j) where the *metering installation* has Meter Alarms, occurrences of alarms identified upon commissioning are investigated and resolved prior to leaving the Site;
- (k) for a *small customer metering installation* where the MC has not obtained an exemption from AEMO under clause 7.8.4 of the NER to provide a *meter* without telecommunications (type 4A) and the *small customer* has not communicated its refusal to the installation or proposed installation of a type 4 *metering installation* in accordance with clause 7.8.4(e) of the NER, the *metering installation* is classified as type 4 and meets the *minimum services specification*;
- (l) where an aerial or antenna is installed as part of the *metering installation*, it is installed in accordance with the manufacturer's instructions and in a manner that maintains the integrity of the *meter* enclosure, including water and environmental seals; and
- (m) the time setting of the *metering installation* is referenced in accordance with clause 7.10.6 of the NER.

4.2 Metering Data Validation Requirements

The MP must develop, maintain and operate processes and procedures for the Validation of *interval metering data* with the MDP upon the installation or alteration of that *metering installation*, which must include processes to ensure that:

- (a) where a *metering installation* has *remote acquisition* capability:
 - (i) remote communication with the *meter* is established and is of sufficient quality to support communication and *metering data* transfer; and
 - (ii) for a *metering installation* that is not a whole current *small customer metering installation*, the measured and stored *interval energy data* within the *meter's* buffer is Validated with the *interval metering data* as remotely read and stored within the MDP's *metering data services database*; or

- (iii) for whole current *small customer metering installations*, *metering data* is Validated in accordance with section 13.5 of Metrology Procedure: Part A;
- (b) for manually read *metering installations*, *metering data* is Validated in accordance with clause 123.5 of the Metrology Procedure Part A;
- (c) where Validation has failed or cannot reasonably be undertaken, the MP must inform the MDP and the MC that the *metering installation* cannot be Validated and undertake wiring checks which visibly verify correct connection and phase relationships of *voltage* and current circuits and also undertake one or more of the following alternative measurements and commissioning checks to enable the MC and MP to confirm that the *metering installation* complies with the NER:
 - (i) utilisation of *meter energy* measurement to calculate *load/demand* and that this value is reflective of expected magnitude;
 - (ii) use of a dummy *load* or phantom *load* box to verify correct *energy* measurement at the *metering installation*; and
 - (iii) compare *meter* measurement of *energy* or *load* with an alternative measurement of demand, current and other measurements of electrical energy; and
- (d) Where the MP has undertaken in-situ testing to verify correct *energy* measurement at the *metering installation*, the MP must inform the MDP of the start and end times of the test to facilitate the MDP Substituting and Validating *metering data*.

4.3 MSATS updates and notifications following Metering Installation Commissioning

Following *metering installation* commissioning, the MP must:

- (a) ensure that all relevant *NMI Standing Data* for the *connection point* is updated within 5 *business days* from the *day* that the MP is appointed as the MP for a *market load* in MSATS, including:
 - (i) entry and update of relevant *NMI Standing Data* information into the MP's systems and databases; and
 - (ii) Provision of meter change installation notice to the respective MC and MDP(s) for the *connection point*; and
- (b) provide a notice of completed *metering installation* work to the LNSP within 2 *business days* of completion of the installation with the minimum content requirements provided in Table 1, and in a format agreed with the LNSP.

Table 1: Notice of completed installation work – minimum content requirements

Information category	Field	Description
Metering installation	NMI	NMI for the <i>metering installation</i> . Does not include <i>NMI</i> suffix or check-digit
	Date and time	The date and time the <i>metering installation</i> work was completed.
Metering device(s)	Meter number(s)	The Meter Serial ID(s) recorded in MSATS
	Action(s)	For each <i>meter</i> , confirming the action performed, for example: installed, removed, reconfigured, existing unchanged
	Suffix	For each <i>meter</i> remaining at the <i>metering installation</i> , the <i>NMI</i> suffix, for example: E1, B1, Q1, K1, and the network tariff for each <i>NMI</i> suffix.
	Load type	For each <i>meter</i> remaining at the <i>metering installation</i> , the <i>load</i> type connected to the <i>meter</i> , for example: general supply, Controlled Load, <i>generation</i>
	Meter reading	Where an Accumulation Meter is at the <i>metering installation</i>
Control device(s)	Equipment number	The serial number(s), or other identification number(s) on the control device(s).

	Action(s)	For each control device, confirming the action performed, for example: installed, removed, reconfigured, existing unchanged
	Channel	The channel setting of the control equipment at the <i>metering installation</i>
Instrument transformer(s)	Equipment number(s)	The serial number(s), or other identification number(s) on the <i>instrument transformer(s)</i>
	Type	The <i>instrument transformer</i> type, for example: CT, VT
	Action	For each <i>instrument transformer</i> , confirming the action performed, for example: installed, removed, reconfigured, existing unchanged
Network Device	Equipment number(s)	Where a <i>network device</i> is installed or remains connected to the <i>metering installation</i> , the serial number(s), asset number(s), and other identification number(s) on the <i>network device(s)</i>
	Action	For any <i>network device</i> at the <i>metering installation</i> , confirm the action performed, for example: installed, removed, reconfigured, existing unchanged
Test results	Test results	Confirmation that <i>metering installation</i> commissioning tests passed or failed.
Metering Provider	Participant identifier	The MP's Participant ID.

4.4 Meter Churn

- (a) An MP may undertake a Meter Churn only after:
 - (i) authorised to do so by the Current MC; and
 - (ii) if the MP is a New MP and the relevant Change Request has passed the Objection Logging Period.
- (b) Where Meter Churn is to be carried out by a New MP and the *metering installation* has *remote acquisition*, prior to carrying out the Meter Churn the New MP must:
 - (i) use reasonable endeavours to contact the Current MDP;
 - (ii) provide the Current MDP with details of the New MDP and New MP and their Participant IDs; and
 - (iii) request and verify that the Current MDP undertakes a Final Reading.
- ~~(c)~~ Where Meter Churn is to be carried out by a New MP and the *metering installation* does not have *remote acquisition*, the New MP must:
 - ~~(d)~~ use reasonable endeavours to contact the Current MDP to confirm that a Meter Churn is to be carried out and; ~~and~~
 - ~~(e)~~(c) provide the Current MDP with details of the New MDP and New MP and their Participant IDs.
 - ~~(f)~~(d) On completion of the Meter Churn the MP must ensure that sufficient information is captured regarding the removal of the old *metering installation* components and the testing and commissioning of the new *metering installation* components.
 - ~~(g)~~(e) The MP must provide the New MDP with formal confirmation of the new *metering installation* details and commissioning times.
 - ~~(h)~~(f) When replacing a *metering installation* with *accumulated metering data* with a *metering installation* with *interval metering data* or vice versa, the MP must ensure the *meter* register record in MSATS is updated accordingly using the *day* of:
 - (i) physical removal of the old *meter(s)* as the removal date; and
 - (ii) physical installation of the new *meter(s)* as the installation date.
 - ~~(i)~~(g) The MP must ensure that all redundant *network devices* that do not form part of the *metering installation*, are recorded as "removed" in MSATS following the Meter Churn.

~~(j)~~(h) The MP must ensure that MSATS is updated within 5 *business days* from the day of the Meter Churn.

~~(k)~~(i) Where the MP reasonably suspects or identifies evidence of tampering or electricity theft at the *metering installation*, the MP must inform the MCand, if the MP is a New MP, the Current MP, and not proceed with the Meter Churn unless the MC instructs the MP to proceed.

5. METERING INSTALLATION MAINTENANCE

5.1 Test Plan

- (a) The MP must develop and maintain a test plan that provides confirmation of the MP's testing approach to ensure *metering installations* for which the MP is nominated to maintain as recorded in MSATS, are maintained:
 - (i) in accordance with the testing and inspection requirements of the NER;
 - (ii) in accordance with the MC Asset Management Strategies; or
 - (iii) any combination of the above.
- (b) As a minimum, an MP's test plan must include:
 - (i) the approach to testing and inspecting for each *metering installation*, or groups of *metering installations*;
 - (ii) where appropriate, the approach to testing and inspecting various device types; and
 - (iii) the details of the test equipment and test methodology to be employed in undertaking works considered in the test plan.

5.2 Management of Metering Installation Malfunctions

- (a) The MP must have processes and systems to support the MC in identifying and rectifying a *metering installation malfunction* in the timeframes specified in clause 7.8.10(a)(1) and (2) of the NER.
- (b) Where an MP identifies a *metering installation malfunction*, the MP must advise the MDP and MC within one *business day* of identification in accordance with clause 7.8.10(d) of the NER.

5.3 Telecommunications

- (a) The MP must notify the MDP and MC if communications equipment is to be temporarily disconnected such that it may affect the *remote acquisition of metering data*.
- (b) The MP must use reasonable endeavours to assist the MC and the MDP with the manual collection of *metering data* from the *metering installation* where *remote acquisition* becomes unavailable.

5.4 Non-Conforming Test Results or Calibrations

The MP must have a process for the management of non-conforming test results or calibrations at a *metering installation*, and for devices removed from a *metering installation* for testing and evaluation, which must include:

- (a) a process to perform the evaluation of the non-conformance;
- (b) authority for management of the non-conformance;
- (c) notification of the non-conformance to parties affected by the non-conformance, which must include the MC, MDP, FRMP, LNSP, AEMO and where in the case of a *child connection point*, the ENM; and
- (d) initiation of corrective action.

6. SYSTEMS AND ADMINISTRATION

6.1 Metering Register

- (a) The MP must establish and maintain a register of *metering installations* which must include the details listed in clause S7.1.2 (b) of the NER, the contents of which must be accessible on-line for a minimum of 13 months for each *metering installation* from when the details of the *metering installation* are first recorded in the register and may be archived after this period.
- (b) The register must be retained for 7 years for each *metering installation* from when the details of the *metering installation* are first recorded in the register and any archiving retrieval mechanisms must facilitate analysis and management of information using the same processing rules applied to the on-line register.
- (c) The MP must provide information from their register of *metering installations* to a party authorised to receive data in accordance with clause 7.15.5 of the NER in a timeframe agreed with that party.

6.2 Disaster Recovery

- (a) The MP must establish and maintain a disaster recovery plan and business continuity processes that include:
 - (i) detailed documentation that is maintained up to date, showing revisions and the date of the last review;
 - (ii) confirmation at least annually by the MP's management that the plan is current for the systems and processes in place; and
 - (iii) confirmation that the plan has been subjected to an annual end-to-end test that facilitates both a 'fail-over' from and 'recovery' back to the production system.
- (b) In the event of an IT system failure, the MP must ensure that systems are returned to normal operational service within five *business days* of the failure, as evidenced by:
 - (i) the software and the most recent back-up of data being restored to operational service within the five *business days*; and
 - (ii) no outstanding processing or delivery of *NMI Standing Data* to AEMO and *Market Participants*.
- (c) The MP must at its earliest opportunity notify AEMO of any failure where the MP has a requirement to implement its disaster recovery plan.

6.3 Audits undertaken by AEMO

- (a) The MP must undertake all services in a manner that is auditable by AEMO and must provide all reasonable assistance to AEMO in discharging its obligations under the NER in relation to *metering installations*, including co-operating with and providing assistance to AEMO when AEMO periodically reviews each *metering installation* and the qualifications of each MP.
- (b) AEMO will audit MPs as follows:
 - (i) AEMO will conduct periodic random audits of *metering installations* in accordance with the NER;
 - (ii) AEMO will seek periodic review certification, to a negative assurance level of each MP's system, process and procedures to assess the MP's compliance with the NER and implementation of any *metering installation* test plans, and:
 - A. will be through a centralised review process established by AEMO undertaken at the MP's own cost;
 - B. the MP must, at its own cost, provide all reasonable assistance, including making databases, equipment and premises available for inspection, making personnel

available for questioning, and providing copies of any data or information as requested;

- (iii) the MP must establish with AEMO the *business days* for audit reviews in advance;
- (iv) AEMO must provide the MP with a minimum of 15 *business days*' notice if specific data is required prior to the audit being undertaken; and
- (v) the first scheduled review will be nominally 12 months after an MP's first accreditation in any category and at 24-month intervals thereafter, or at AEMO's discretion subject to the findings of the initial or subsequent reviews.

6.4 Review of Accreditation

AEMO may require an MP to review its accreditation in any category and subsequently apply for re-accreditation in circumstances including:

- (a) where an MP has been de-registered and seeks re-registration;
- (b) where an MP has been suspended from providing services under certain categories and seeks to have the suspension lifted;
- (c) subsequent to changes to the NER, procedures under the NER, or *service level procedures*. This is likely to apply where changes to the NER have been made or new versions of the *metrology procedure* have been issued that require significant functional system, process or procedural changes to be made by MPs;
- (d) significant changes or upgrades to an MP's existing systems, *telecommunications networks* or a system platform change. The MP must apply for re-accreditation prior to implementing the changes into their production environment and accepting or transmitting any *market* transactions in accordance with the Metering Service Provider Accreditation Procedure; and
- (e) as a result of organisational mergers and acquisitions.

6.5 Quality Systems

The MP must operate and retain a quality system that meets the requirements of clause S7.2.3(f) of the NER to the satisfaction of AEMO.

6.6 Disputes

If a dispute arises between an MP and AEMO, a *Registered Participant*, an MDP or any other MP in relation to the provision of services or this Procedure, the process detailed clause 8.2 of the NER shall apply.