



Service Level Procedure Embedded Network Manager Service

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Document ref:

Version: 1.2

Effective date: 15 December 2023

Status: FINAL

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Date: 6 December 2023

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Current version release details

Version	Effective date	Summary of changes
1.2	15 December 2023	Changes associated to the July 2023 REMP consultation: <ul style="list-style-type: none">• Removal of section 4.2.1 (f) to align with the NER

Note: There is a full version history at the end of this document.

1. Introduction

1.1. Purpose and scope

This is the Service Level Procedure – Embedded Network Manager made under clause 7.16.6A of the National Electricity Rules (NER) (**Procedure**).

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

1.2.1. Glossary

Terms defined in the *National Electricity Law* and the NER have the same meanings in these Procedures unless otherwise specified in this clause.

Terms defined in the NER are intended to be identified in these Procedures by italicising them, but failure to italicise a defined term does not affect its meaning.

The Retail Electricity Market Procedures – Glossary and Framework:

Is incorporated into and forms part of this Procedure; and

Should be read in conjunction with this Procedure.

1.2.2. Interpretation

This Procedure is subject to the principles of interpretation set out in Schedule 2 of the *National Electricity Law*.

1.3. Related documents

Title	Location
Retail Electricity Market Procedures – Glossary and Framework	http://aemo.com.au/Electricity/National-Electricity-Market-NEM/Retail-and-metering
MSATS Procedures	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/market-settlement-and-transfer-solutions-msats
Metrology Procedure: Part A	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/metrology-procedures-and-unmetered-loads
Guide to Embedded Networks	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/accreditation-and-registration
Qualification Procedure	https://aemo.com.au/energy-

Title	Location
	systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/accreditation-and-registration
Default and Deregistration Procedure	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/accreditation-and-registration
aseXML Guidelines	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/market-settlement-and-transfer-solutions-msats
NMI Procedure	https://aemo.com.au/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/metering-procedures-guidelines-and-processes

2. Obligations

The Embedded Network Manager (ENM) must carry out its obligations and provide its services in accordance with the NER, procedures authorised under the NER and relevant Jurisdictional codes and policies.

The ENM must be accredited and registered by AEMO in accordance with clause 7.4.2A of the NER and the Qualification Procedure.

2.1. Embedded Network Management Services

2.1.1. The Services

In addition to all NER requirements, the ENM must provide *embedded network management services*. The following is a list of those services:

- (a) Provide market interface services for *child connection point* End Users, which are services that link End Users to the National Electricity Market (NEM) systems, for example:
 - (i) Create Child National Metering Identifier NMI;
 - (ii) Maintain Child NMI Consumer Administration and Transfer Solution (CATS) Standing Data; and
 - (iii) Maintain the Network Tariff Code for Child NMIs;
- (b) Upon request from a *retailer*, apply to AEMO for NMIs for *child connection points* in the *embedded network* for which they are the ENM;
- (c) Register Child NMIs in Market Settlements and Transfer Solution (MSATS);

- (d) Provide the Metering Coordinator (MC), Financially Responsible Market Participant (FRMP), and Exempt Embedded Network Service Provider (EENSP) with the *NMI* of the *child connection point*;
- (e) Establish and maintain the *NMI Standing Data* for its Child NMIs within MSATS;
- (f) Allocate Embedded Network Codes for their Child NMIs in MSATS;
- (g) Act in the Role of Local Network Service Provider (LNSP) in MSATS for its *child connection points*;
- (h) Maintain and manage relevant Embedded Network (*EN*) *wiring information* and *meter arrangements*;
- (i) Assign a Distribution Loss Factor (DLF) to each *child connection point* in MSATS;
- (j) Provide AEMO with a list of all DLFs for all their *child connection points* indicating which ones were calculated by the EENSP; and
- (k) Maintain a register of all allocated Child NMIs.

2.1.2. Additional obligations

In the provision of *embedded network management services*, the ENM must:

- (a) Comply with all directions from AEMO to fulfil any obligation under this Procedure;
- (b) Co-operate in good faith with AEMO, all *Registered Participants*, Metering Providers (MPs), Metering Data Providers (MDPs) and other ENMs;
- (c) Ensure any information collected by the ENM is kept confidential and secure in accordance with the NER and only provided to persons entitled to have such access; and
- (d) Ensure the *embedded network owner*¹ has a valid exemption from the AER with regard to the requirement to be registered as a *Network Service Provider*.
- (e) Inform AEMO within five *business days* of becoming aware that the EENSP no longer has a valid exemption

2.2. Use of Sub-Contractors

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

- (a) 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;
- (b) Remains liable for all acts and omissions of any sub-contractor;
- (c) Must have policies and procedures for assessing the sub-contractor's capability and competency where the ENM engages a sub-contractor to provide opinions and interpretations of technical information, and must provide the authorisation for the sub-contractor to provide the opinion and interpretation;
- (d) Must provide AEMO, upon request, with any information pertaining to the sub-contractor that AEMO reasonably considers necessary for the discharge of the ENM's responsibilities under the NER; and

¹ The party required to seek a *Network Service Provider* registration exemption from the AER..

- (e) Must notify AEMO immediately if the ENM elects to engage or change a sub-contractor for the delivery of any part of the services for which the ENM is accredited and subject to AEMO's assessment of the notification:
 - (i) The ENM may be required to undertake an accreditation review to approve the engagement or change; and
 - (ii) Where practicable, the accreditation review may take place as part of the next scheduled ENM audit.

2.3. Insurance

The ENM must:

- (a) Hold public liability insurance for an amount not less than \$5,000,000 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 ENM's accreditation; and
- (c) Provide AEMO with certified current copies of insurance policies upon request.

3. Systems and Administration

3.1. Systems and Interface Requirements

- (a) Each ENM must establish and maintain systems and business interfaces to:
 - (i) MSATS for the management of *child connection point* creation, updates, notifications, objections, reports, and relevant CATS Standing Data;
 - (ii) Other technologies for the general management of information and alternative delivery of information to *Registered Participants*, MDPs, MPs and other ENMs; and
 - (iii) Where the ENM is proposing to become a *B2B Participant*, the *B2B e-Hub* for the interface with *B2B Participants*.
- (b) Each ENM must maintain a MarketNet connection for the purposes of communication and file transfer with MSATS.
- (c) Each ENM will be provided with an inbox and outbox directory on the MSATS file server, which must be used for the transfer of files to and from AEMO via MarketNet and manage the appropriate directories in accordance with the MSATS Procedures.
- (d) Each ENM must interface with MSATS either via the browser or a batch interface, or both, using the market aseXML file format in accordance with the aseXML Guidelines and schemas.
- (e) The provision of any documents, plans or other information required to be kept by the ENM (**information**), regardless of form, and provided by ENM to AEMO or any other person in accordance with this Procedure, does not give rise to any intellectual property rights in the recipient. Nevertheless, the ENM grants AEMO and each other person to whom such information is provided (**recipient**), a perpetual, irrevocable, royalty-free, transferable and non-exclusive licence (including sub-licence) to copy and use any intellectual property forming part of that information for the purpose of fulfilling the recipient's obligations under the NER or any procedure under the NER.

3.2. Embedded Network Information

The ENM must maintain information about each *embedded network* it is responsible for, which includes:

- (a) Type and configuration of *metering installations* for all *child connection points*;
- (b) Subtractive or other arrangements used in respect of those *metering installations*;
- (c) Relevant *EN wiring information*;
- (d) Version control of *EN wiring information*;
- (e) DLFs applicable to each *child connection point*; and
- (f) Correspondence with all persons.

3.3. Audits Undertaken by AEMO

- (a) The ENM 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 *embedded network child connection points*.
- (b) AEMO will undertake periodic certification reviews to a negative assurance level of any relevant database maintained by the ENM to assess the ENM's compliance with the NER, applicable procedures under the NER and this Procedure and for the maintenance of its accreditation as an ENM.
- (c) All scheduled reviews will be through a centralised review process established by AEMO and will be undertaken at the ENM's cost.

3.3.1. ENM to Assist

Where a review is conducted under this Procedure, the ENM must, at its 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.

3.3.2. Timing of Audits

Scheduled reviews of the ENM's performance will be as follows:

- (a) The first audit to be nominally within six months after accreditation; and
- (b) At AEMO's discretion annually based on previous satisfactory audit reviews.

3.3.3. Notice of Audit

AEMO must provide the ENM a minimum of:

- (a) 30 *business days*' notification prior to a scheduled review; and
- (b) 15 *business days*' notification for the provision of any specific data requests as part of the audit.

3.4. Other Audits

- (a) Audits may be undertaken at any time by AEMO in accordance with the NER and may be carried out following a request from a *Registered Participant*.
- (b) Each ENM must assist AEMO with reasonable requests for the provision of information about the types and configuration of *metering installations*, or CATS Standing Data relating to *child connection points* that are the subject of a *market audit*.

3.5. Review of Accreditation

AEMO may review an ENM's accreditation and subsequently require the ENM to apply for re-accreditation in accordance with the Qualification Procedure if:

- (a) An ENM has been suspended from providing *embedded network management services* and seeks to have the suspension lifted;
- (b) There are 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 ENMs;
- (c) The ENM is proposing to make significant changes or upgrades to an ENM's existing systems, *telecommunications networks* or a system platform; or
- (d) The ENM is the subject of organisational mergers and acquisitions.

3.6. Disputes

For the purposes of dispute resolution in accordance with clause 8.2 of the NER, the ENM is considered to be a *Registered Participant*. If a dispute arises between an ENM and AEMO, a *Registered Participant*, an MDP, an MP, or any other ENM in relation to the provision of services or this Procedure, the process detailed in clause 8.2 of the NER shall apply.

4. Market Interface Functions

4.1. NMI Allocation

The ENM must do the following to allocate a *NMI* to a *child connection point* that does not already have a *NMI*:

- (a) If the Embedded Network Code has not already been inputted into MSATS, co-operate with the LNSP to establish the Embedded Network Code and the Parent NMI for the *embedded network* in MSATS.
- (b) Upon request from a *retailer* for a new *connection* for a *metering installation* at a *child connection point*, apply to AEMO for a *NMI* for that *child connection point*.
- (c) Provide the MC, FRMP and EENSP with the *NMI* for the *metering installation* within five *business days* of receiving the *NMI* from AEMO.
- (d) Create the Child NMI in MSATS using Create NMI Change Request 2020, 2021, 2520, or 2521. When creating the Child NMI the ENM must:

- (i) Assign the TNI Code² of the Parent NMI to the Child NMI;
- (ii) Link the Child NMI to the Parent NMI by assigning the same Embedded Network Code of the Parent NMI to the Child NMI in the "Child Name" field; and
- (iii) Assign the appropriate DLF Code to the Child NMI.

4.2. Distribution Loss Factors and Transmission Node Identity

4.2.1. Overview

- (a) In accordance with clause 3.6.3 of the NER and the Australian Energy Regulator's (AER's) Electricity Network Service Provider Registration Exemption Guideline³, a *child connection point* with actual or forecast *energy* volume of more than 40 gigawatt hours (GWh) per year or demand or output more than 10MW must have a site-specific DLF. All other *child connection points* must have a small load DLF.
- (b) The DLF associated with the DLF Code that is assigned to a Child NMI in MSATS is applied for *settlements* purposes and is related to the losses between the *transmission network connection point* and the *child connection point*.
- (c) AEMO expects a site-specific DLF for a *child connection point* will be calculated by the EENSP using the same methodology published by the connecting LNSP or an alternative methodology approved by the AER. The site-specific DLF is related to the losses within the *embedded network* between the *parent connection point* and the *child connection point* to which the site-specific DLF is to be applied.
- (d) A small load DLF for a *child connection point* is the *published* DLF that would be applied by an LNSP as if the LNSP supplied the *child connection point* directly.
- (e) If the small load DLF contemplated in paragraph (e) cannot be readily ascertained, the DLF is the DLF otherwise applicable to the *parent connection point* of the *embedded network*.

4.2.2. Site-specific DLF

The ENM must:

- (a) Provide to AEMO the DLF for a site-specific DLF Code, which is the product of:
 - (i) The AER approved site specific DLF between the *parent connection point* and the *child connection point*, as calculated by the EENSP, and
 - (ii) The *parent connection point* DLF, published by the LNSP.
- (b) Within five *business days* of receiving the approval from the AER, liaise with AEMO to have the site-specific DLF Code created in MSATS;
- (c) Assign the related site-specific DLF Code to the Child NMI as the DLF Code in accordance with the MSATS Procedures; and
- (d) Provide to AEMO, for *publication* by 1 April each year, the revised site-specific DLF Codes and the related DLFs.

4.2.3. Small Load DLF

² Indicative TNI Codes for the *parent connection point* is available to the ENM through the MSATS C1 report

³ See www.aer.gov.au.

The ENM must:

- (a) Where it is appropriate for the LNSP's standard DLF to be applied to a *child connection point*, identify the LNSP's *published* DLF for a *child connection point* and assign the related LNSP's DLF Code to the Child NMI in accordance with the MSATS Procedures; or
- (b) Assign to the *child connection point* the LNSP's DLF Code that is applied to the *parent connection point* in accordance with the MSATS Procedure.

4.2.4. TNI

The ENM must assign the TNI Code of the Parent NMI to each Child NMI in accordance with the MSATS Procedures, except in the case of a *Generator* with *generating units* within an *embedded network* where section 9.1(c) of the NMI Procedure applies.

4.3. MSATS Setup

4.3.1. Market Exit

When a *child connection point* is no longer settled in the *market*, the following applies:

- (a) Upon request from the FRMP of the Child NMI, the ENM must update the NMI Status Code of the Child NMI in MSATS to 'N' using Maintain NMI Change Request 5060 or 5061 within five *business days* of the *connection point* no longer being settled in the *NEM*.
- (b) The *NMI Standing Data* maintenance and obligations on the ENM do not apply for the Child NMI while it has the NMI Status Code of 'N'.
- (c) Roles do not need to be updated. Current Roles (i.e. Current ENM) remain recorded against the Child NMI.

4.3.2. Resumption as Child Connection Point

When an existing off-market *embedded network* End User's *connection point* becomes a *child connection point* and a *NMI* already exists in MSATS for that *connection point*:

- (a) The existing MSATS transfer processes will apply.
- (b) Within five *business days* of a request from the *retailer* of the Child NMI which is becoming on-market, the ENM must update the NMI Status Code to 'A' in MSATS using Maintain NMI Change Request 5060 or 5061.

4.3.3. Network Tariff Code Update

The ENM must carry out the following actions in MSATS:

- (a) liaise with the EENSP to ensure that the Network Tariff Code populated by the MPB when the *meter* was recorded in MSATS for a *child connection point* is correct; and
- (b) update the Network Tariff Code if it was incorrect for any *child connection point* using Change Request 'Maintain Metering – Change Network Tariff Code' with CR Code 3100 or 3101.

4.3.4. De-energisation and Re-energisation of Child NMIs

The ENM must update the Child NMI status in MSATS when a *NMI* is de-energised or re-energised as follows:

- (a) Use Change Request Maintain NMI 5060 or 5061.
- (b) Update Child NMI Status Code to 'D' within five *business days* of the *child connection point* being de-energised. The Proposed Change Date shall be the *day* after the de-energisation for an Interval Metered *child connection point* or the *day* of the de-energisation of an Accumulation Metered *child connection point*.
- (c) Update the Child NMI Status Code to 'A' within five *business days* of the *child connection point* being re-energised. The Proposed Change Date shall be the *day* the *child connection point* is re-energised.

4.3.5. Child NMI Abolishment

The ENM must update the Child NMI status to 'X' using Change Request Maintain NMI 5060 or 5061 within five *business days* of becoming aware of the abolition of the *child connection point*. The Proposed Change Date shall be the *day* after the *child connection point* was removed for an Interval Metered *child connection point* or the *day* of the removal for an Accumulation Metered *child connection point*.

5. Delivery of information upon deregistration

All data, documents, plans or other information required to be kept by the ENM, regardless of form, must be delivered by the ENM to AEMO (or AEMO's nominee) in a format required by AEMO if the ENM is to be deregistered in accordance with the Default and Deregistration Procedure.

Version release history

Version	Effective Date	Summary of Changes
1.0	1 Dec 2017	First Issue Document incorporates changes resulting from: <ul style="list-style-type: none">National Electricity Amendment (Expanding competition in metering and related services) Rule 2015. No.12;National Electricity Amendment (Embedded Networks) Rule 2015 No. 15; and National Electricity Amendment (Meter Replacement Processes) Rule 2016 No. 2.
1.1	20 May 2020	Clarifying ENM's obligations with respect to DLFs and Network Tariff Codes and that the EN for which the ENM has been appointed has an exemption by the AER.
1.2	15 December 2023	Changes associated to the July 2023 REMP consultation: Removal of section 4.2.1 (f) to align with the NER