# ENERGEX METER ASSET MANAGEMENT STRATEGY AER EXPLANATORY STATEMENT

# EXECUTIVE SUMMARY

This Metering Asset Management Strategy (MAMS) outlines the strategy Energex will utilise to meet the requirements as a Metering Coordinator under the National Electricity Rules. This strategy will be applied to metering installations for which Energex is the nominated Local Network Service Provider (LNSP), Metering Coordinator (MC) and Metering Provider (MPB). Energex Limited participant IDs are as follows:

LNSP/MC = ENERGEXP

MPB = EGXLTDMP

This MAMS provides an alternative non time based maintenance and inspection strategy for meters and low voltage current transformers as specified in S7.6.1 of the *Rules* and hence is submitted for the approval of Australian Energy Market Operator (*AEMO)* in accordance with clause S7.6.1 of the *Rules.* The alternative strategy is based on:

For meters - AS 1284.13 Electricity Metering Part 13: In service compliance testing.

For low voltage current transformers – AEMO document *"Alternative Testing and Inspection Guidelines for Metering Installations in the NEM".*

The remaining metering asset classes Energex is responsible for will be maintained as per the *Rules.*

| Name | Position Title | Date |
|---|---|---|
| **Endorsements** | | |
| Mitch Cocks | Metering and Customer Support Manager | |
| Han Chiu | Senior Engineer Metering Support | 10/11/2023 |
| Ray Pannam | Lead Engineer | 29/11/2023 |
| Travis Boyle | A/Manager Customer Metering | |
| Cloe Kernick | GM Customer and Market Operations | |
| **Approval** | | |
| Michael Dart | Chief Customer Officer | |
| Peter Price | Chief Engineer | |

# ENQUIRIES REGARDING THIS MAMS

# Contact person:

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# VERSION CHANGES

This MAMS shall be reviewed and updated as required.

| Date | Version | Details |
|------|---------|---------|
| Nov 2023 | 1.0 | Initial issue as AER Explanatory Statement |
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# 1.0 PURPOSE AND SCOPE

This document describes the Metering Asset Management Strategy methodology for Energex Electricity Metering Asset Classes. The purpose of this Strategy is to set out the Metering Coordinator's approach to effectively asset manage its metering portfolio for the period from 2025-2030. This document has been developed to:

- Describe the assets covered by this strategy

- Outline the alternative testing methodology to be enacted by the Metering Provider

- Describe the family groupings and sample sizes to be applied

# 2.0 DEFINITIONS, ABBREVIATIONS AND ACRONYMS

| | |
|---|---|
| **AEMO** | National Electricity Market management Company |
| **CT** | Current transformer |
| **EQL** | Energy Queensland Limited |
| **FRMP** | Financial Responsible Market Participant |
| **HV CT** | High Voltage Current Transformer |
| **Ib** | Basic Current |
| **In** | Rated Current |
| **LNSP** | Local Network Service Provider |
| **LR** | Local Retailer |
| **MAMP** | Metering Asset Management Plan |
| **MAMS** | Meter Asset Management Strategy |
| **MC** | Metering Coordinator |
| **MDP** | Meter Data Provider |
| **MPA** | Meter Provider category A |
| **MPB** | Meter Provider category B |
| **NEM** | National Electricity Market |
| **NER** | National Electricity Rules |
| **Smart Meter** | A Smart Meter is deemed to be an electronic meter, which meets a Minimum National Specification in terms of functionality with remote communications enabled |
| **VT** | Voltage Transformer |

# 3.0 ASSET AND TEST STRATEGY

## 3.1 LV CURRENT TRANFORMERS

Energex as the LNSP is currently responsible for LV CTs installed on Type 6 installations. Energex will provide maintenance and testing services for these assets with the cost for this service to be recovered through distribution network charges.

For LV CT's purchased and installed after the 1st July 2015 the market reclassification of metering services for these assets as an alternative control service (ACS), made it mandatory for the customer to pay an up-front cost for these assets, whereby making them responsible for the costs of any future asset replacement for these installations. Where Energex is the nominated MP till the installation churns to other market MP's, Energex will continue to arrange for the testing and inspection of these instrument transformers.

In the AEMC (2023) "*Final Report Review of the Regulatory Framework for Metering Services*" it was mentioned that meter family sample testing is not required once the legacy meter retirement plan is approved by the AER for NEM connected sites. Once this rule change comes into effect the number of LV CT's to be tested by Energex will decrease significantly potentially resulting in the cancelling of this service offering. Although it is estimated that approximately 15% of the existing current Type 6 fleet may experience some sort of difficulty transitioning to a Smart Meter and onto other market MP's by 2030, however the current assumption is that sample testing is not required on these remaining fleet, as there will be a drive from local government to assist and encourage the transition of the remaining sites. The remaining part of this document mentions the testing approach to be implemented if sample testing is to be conducted.

### 3.1.1 TYPE OF TEST

Secondary injection testing will be utilised for testing all LV CTs. The accuracy limits to be used are shown below in Table 1**Error! Reference source not found.**. An enhanced site inspection is also to be performed on every LV CT site in the 5 year period. Admittance testing will not be conducted, with Ratio Check testing being used as a regulatory equivalent as per AEMO's requirements in the document *"Alternative Testing and Inspection Guidelines for Metering Installations in the NEM"*.

| Test Point Name | % Rated Current | Error at 25% Rated Burden | |
|---|---|---|---|
| | | **Ratio Error Limit (%)** | **Phase Displacement Error Limit (Minutes)** |
| Energex MAMP | 5 | ±1.5 | ±90 |
| | 20 | ±0.75 | ±45 |
| | 100 | ±0.5 | ±30 |
| | Extended Range (Whatever it may be) | ±0.5 | ±30 |

**Table 1: Limits of Class 0.5 LV CT Error for Compliance**

## 3.1.2 PERIOD AND TEST VOLUMES PER YEAR

The number of LV CT's to be tested per year will depend on the population size that the Distribution business is accountable at the period the test sample is being created. With the proposed rule change highlighting that meter family sample testing is not required once the legacy meter retirement plan is approved by the AER for NEM connected sites, it is envisaged that no LV CT sample testing is required starting in the year 2025/26.

# 3.2 TYPE 6 LV ENERGY METERS

For type 6 metering installation, direct injection testing is to be performed on the meter at the point of installation where possible. Meters shall be tested at the test points specified in Table 2 below. The test points are to be supplemented with other test requirements as per the requirements of AS1284.13.

The percentage error limit criteria as referenced in AS 1284.1, AS 62053.21 and Schedule 7.4.3 of the NER is shown in Table 3 below.

| Meter Type | Light Load | Full Load 1 | Full Load 2 | Full Load 3 | Creep Test | Register Test |
|---|---|---|---|---|---|---|
| Direct Connected 1 Phase | 0.1Ib Unity PF | Ib Unity PF | - | - | ✓ (Induction meters only) | ✓ (for dual rate meters, both registers are tested) |
| Direct Connected Polyphase | 0.1Ib Unity PF | Ib Unity PF | Ib 0.5 Lagging PF | - | | |
| CT Operated | 0.05In Unity PF | Ib Unity PF | In 0.5 Lagging PF | 2In or Imax Whichever is lesser | | |

**Table 2: Tests and Test Points for Meters**

Ib (Basic Current) – Value of current with which the relevant performance of a direct-connected meter is fixed.
In (Rated Current) – Value of current with which the relevant performance of a CT-operated meter is fixed.

| Meter Type | Required Accuracy Class | Class Error | Site Error Limit | Rules Meter Error Limit | Chosen Meter Error Limit |
|---|---|---|---|---|---|
| Direct Connected Induction Meter | General Purpose | 1.5 | ± 2.0 | ± 1.5 | *± 1.5 |
| Direct Connected | General Purpose | 2.0 | ± 2.0 | ± 2.0 | *± 2.0 |
| CT Connected | (0.5, 1.0 or 2.0) Meter & 0.5 CT | (0.5, 1.0 or 2.0) Meter + 0.5 CT | ± 2.0 | Based on Meter Class | Tested at Class |

**Table 3: Required Accuracy Class and Error Limit for Metering Installations**

*All of the site error for a direct connected installation is within the meter.

In the AEMC (2023) "*Final Report Review of the Regulatory Framework for Metering Services"* it was mentioned that meter family sample testing is not required once the legacy meter retirement plan is approved by the AER for NEM connected sites. Once this rule change comes into effect the number of LV meters to be tested by Energex will decrease significantly potentially resulting in the cancelling of this service offering.

### 3.2.1 PERIOD AND TEST VOLUMES PER YEAR

The number of LV energy meters to be tested per year will depend on the population size that Energex is accountable at the period the test sample is being created. With the proposed rule change highlighting that meter family sample testing is not required once the legacy meter retirement plan is approved by the AER for NEM connected sites, it is envisaged that no LV meter sample testing is required starting in the year 2025/26.

## 3.3 OVERALL ERROR CALCULATIONS

For all high voltage metering installations, the overall error calculations will be performed for each metering installation based on the individual CT, VT and meter accuracy test certificates.

For low voltage current transformer installations, Energex installs Class 0.5 low voltage current transformers and Class 1.0 Meters which in practise ensures the overall error meets the requirements of Chapter 7 of the National Electricity Rules. For legacy Class 1.5 and 2.0 LV CT connected meters, the Metering and Customer Support Manager will review high error sites to determine if overall error calculations are required.

# 4.0 FAMILY NUMBERS

This section provides a summary of the assets still managed by Energex in 2025/26. Table 4 shows the estimated volume of asset population as at 1 July 2025. The assumption applied is that no family sample testing is required once the legacy meter retirement plan is approved by the AER for NEM connected sites.

| Asset Class | Estimated Population as at 2025 | Assets to be Tested determined in 2023 |
|---|---|---|
| Single Phase Direct Connected Meters | 1,131,506 | 0 |
| Polyphase Direct Connected Meters | 78,725 | 0 |
| Current Transformer Connected Meters | 3,845 | 0 |
| Current Transformer | 9,145 | 0 |
| **TOTAL** | **1,223,221** | **0** |

**Table 4: Estimated Asset Population as at 1 July 2025**

# 4.1 LV CURRENT TRANFORMERS

A summary of the number of estimated low voltage current transformers installed for type 6 metering installations as at 1 July 2025 by current transformer type is presented in Table 5 below. Note: the table does not represent CT metering installations, but number of individual assets. The assumption applied is that no family sample testing is required once the legacy meter retirement plan is approved by the AER for NEM connected sites.

| CT Type | Ratios | | | Total Estimated LV CT's as at 2025 | Sample Size |
|---|---|---|---|---|---|
| **A** | 150/5 | 300/5 | 600/5 | 136 | 0 |
| **B** | 200/5 | 400/5 | 800/5 | 84 | 0 |
| **B** | 400/5 | 800/5 | 1200/5 | 85 | 0 |
| **C** | 1000/5 | 2000/5 | 3000/5 | 9 | 0 |
| **S** | 200/5 | | | 8,096 | 0 |
| **T** | 800/5 | | | 701 | 0 |
| **W** | 1500/5 | | | 28 | 0 |
| **Other** | Various | | | 7 | 0 |
| **Total** | | | | **9,145** | **0** |

**Table 5: Estimated Current Transformers Installed at Type 6 LV Metering Installations**
**as at 1 July 2025**