



National Electricity Market
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Guideline for Clarification of the National Measurement Act

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National Standards Commission*

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1. Purpose

The purpose of this Guideline is to provide clarification of the requirements of the National Measurement Act in relation to its application on metering installations.

2. Scope

This Guideline applies to all existing and future metering installations that have been or will be registered under the National Electricity Code (the Code). The Guideline covers metering installations referred to in the Code as types 1 to 7.

This version of the Guideline makes reference to those parts of the National Measurement Act that are currently in force. For information, the Guideline also makes reference to aspects of Part VA of the Act, which is expected to come into force in the near future when changes to the Regulations are made. Those aspects of the Act that are not currently in force appear in *Italics* in this version of the Guideline.

Subsequent revisions of the Guideline will be released when changes to the Act or Regulation are made.

The Guideline covers the roles of the National Standards Commission, NEMMCO and the Jurisdictions in the administration of metering installations.

The Guideline has been prepared in accordance with clause 7.3.1(bb) of the Code.

3. Responsibility

- (a) The National Standards Commission is responsible for the administration of the National Measurement Act and the Regulations made under the Act. It is also responsible for advising the Minister on matters relating to the administration of the Act and Regulations.
- (b) NEMMCO is responsible for the performance of its Code obligations associated with the measurement of electricity and the collection of metering data for the operation of the market. It is also responsible for the preparation and publication of metrology procedures for metering installation types 1 to 4.
- (c) Each Jurisdiction is responsible for the administration of electricity metrology for matters not specifically covered in the Code, Act and Regulations. Under the Code, each jurisdiction must appoint a Metrology Coordinator who is responsible for the development and approval of metrology procedures for metering installation types 5 to 7.

4. References

This Guideline has been developed with reference to the following information:

- (a) National Measurement Act, 1960.
- (b) National Measurement Regulations, 1999.

- (c) National Measurement Guidelines, 1999.
- (d) Pattern Approval and Initial Verification of Electricity Meters and Associated Transformers – Definitions, Metrological and Technical requirements, April 2000.
- (e) Trade Measurement Act of each jurisdiction.
- (f) The National Electricity Code.
- (g) Other specific electricity utility related legislation of each jurisdiction.

5. Definitions

The following terms have been used in this Guideline:

- (a) Act – the National Measurement Act, 1960.
- (b) Code – the National Electricity Code.
- (c) measuring instrument – a thing by means of which a measurement of a physical quantity may be made, or a component of such a thing.
- (d) metering installation – the assembly of components and / or processes that are controlled for the purpose of metrology.
- (e) metrology procedure – a document required by the Code that contains information on the devices and processes that are to be used to measure, or determine by means other than a device, the flow of electricity in a power conductor, to convey the measured or determined data to other devices using communication link(s), to prepare data using devices or algorithms to form metering data and to provide access to the metering data from a telecommunication network.
- (f) Regulation – National Measurement Regulations, 1999.
- (g) *utility meter – means a measuring instrument that is an electricity meter but does not include a meter that is included in a class of meters exempted from the operation of Part VA by the Regulation.*

6. Clarification of the Act

6.1 The objectives of the Act are:

- to establish a national system of units and standards of measurement of physical quantities;
- to provide for the uniform use of those uniform units and standards of measurement throughout Australia;
- to co-ordinate the operation of the national system of measurement;

- to bring about the use of the metric system of measurement in Australia as the sole system of measurement of physical quantities; and
- *to provide for a system of verification of utility meters used for trade.*

6.2 Section 7A of the Act provides for the establishment (through the use of the Regulations) of the Australian units of measurement for physical quantities. In regard to the national electricity market, electric current (amp), potential difference (volt) and power (watt) are identified as Australian legal units of measurement.

6.3 Section 12 of the Act requires contracts, etc made for goods that are sold by measurement of a physical quantity to be made or entered by reference to Australian legal units of measurement of that physical quantity.

A Contract is formed under the Code whereby market participants are required to pay NEMMCO settlement amounts. NEMMCO is required under the Code to calculate the settlement amounts based on metering data. Metering data may be the data obtained from metering installations, processed data or substituted data.

The data obtained from metering installation types 1 to 5 is the measurement of a physical quantity. The data obtained from metering installation type 6 is a processed and substituted estimate of a measurement, although the measurement of physical quantities may be used to derive the estimate. The estimate is calculated, in accordance with the metrology procedure, by applying a net system load profile to the data producing data in trading intervals. The data obtained from a metering installation type 7 is derived from a calculated estimate of a physical quantity.

Where data from a metering installation 7 or the processed or substituted data from a metering installation type 6 is used to calculate a settlement amount, the settlement amount is calculated on the basis of an estimate. Therefore the contract formed under the Code for the market participant to pay NEMMCO the settlement amount is not covered by section 12 of the Act.

6.4 Section 10 of the Act requires, that where, for any legal purpose, it is necessary to ascertain whether a measurement of a physical quantity for which there are Australian legal units of measurement has been made or is being made in terms of those units then the integrity of that measurement shall be ascertained by reference to appropriate standards of measurement, certified reference materials or certified measuring instruments.

Therefore if, for any legal purpose, it is necessary to ascertain whether a measurement of a physical quantity from metering installations types 1 to 5 has been made or is being made in terms of Australian legal units of measurement the integrity of that measurement shall be ascertained by reference to appropriate standards of measurement. Similarly any

measurement of a physical quantity that is used to enable the derivation of processed or substituted data from a metering installation type 6 has been made or is being made in terms of Australian legal units of measurement the integrity of that measurement shall be ascertained by reference to an appropriate standard of measurement.

- 6.5 *Section 3(1) of the Act provides a definition for utility meter. This term is used to describe a measuring instrument that is either a gas meter, an electricity meter or a water meter. However, the definition does not include a meter that is included in a class of meters exempted from the operation of Part VA by the Regulations.*
- 6.6 *Part VA of the Act in relation to utility meters was given Royal Assent in April 1999. The National Measurement Regulations 1999 prescribe an electricity meter as being exempt from the definition of utility meter in the Act. Reference to utility meter in the Act is only made in Part VA and hence has no implications for the current operation of the Act.*
- 6.7 *Section 18R in Part VA is not currently in force. If Section 18R was activated it would be an offence for a person to sell a quantity of electricity for a price, if the price is not determined by reference to a measurement of a quantity in the unit of measurement required by the Regulations.*

Section 18R only applies to transactions based on the measurement of a quantity. Section 18R does not apply to transactions based on the estimate of a measurement. Therefore, once activated, section 18R will not prevent metering data being determined by applying any form of profiling.

7. Clarification of the Regulation

- 7.1 The National Measurement Regulations 1999 provide further details on the application of the Act.
- 7.2 Regulation 5 and Schedule 1 of the Regulations may prescribe Australian legal units of measurement of any physical quantity, these units being the sole legal units of measurement of those physical quantities, with the exception of certain additional units which have been prescribed for particular purposes. Electric current, potential difference and power are classified as sole legal units of measurement.
- 7.3 Regulation 72 allows the Commission to appoint verifying and certifying authorities. A verifying authority is empowered to issue certificates under Regulation 13 that attest to the verification of a standard of measurement. Such a certificate is evidence of the matters stated in it and may be received as evidence in any court of law.

7.4 *Regulation 87 provides an exemption for electricity meters (one form of a utility meter) from Part VA of the Act. The National Standards Commission has prepared a draft to amend the Regulation and revoke the exemption.*

7.5 Regulation 89 provides for limits of accuracy for utility meters. The maximum permissible error for a utility meter is set out in Schedule 12 and in the certificate for the utility meter. Schedule 12 does not contain any information for electricity meters due to the current exemption. This information will be provided when the Regulations remove the exemptions placed on utility meters.

8. Documentation Responsibility

NEMMCO is responsible for the update of this Guideline after consultation with the National Standards Commission.

9. Annexure

There is no annexure to this Guideline.