



Electricity Industry Metering Code 2005

Mandatory Link Criteria

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1. Preliminary

1.1. Commencement

- 1.1.1. This document is provided in accordance with part 6 of the Electricity Industry Metering Code 2005 (“**Metering Code**”).
- 1.1.2. These criteria come into operation at the same time as the WA Metrology Procedure.

1.2. Application

- 1.2.1. These criteria apply to *Code participants*.

1.3. Definitions

Unless defined otherwise below, terms in italics have the same meaning as in the *Metering Code*.

Definitions to be applied to these criteria are:

“**CDMA**” means the acronym for **C**ode **D**ivision **M**ultiple **A**ccess, and is a mobile phone system that may give reception in more remote or rural areas where a GSM phone would not pick up a signal.

“**communication link**” means all communications equipment, processes and arrangements that facilitate the collection of energy data from a data logger or a measurement element so as to enable a remote interface to be established that lie:

- a) if the data logger is internal to the device containing the measurement elements — between the data logger and the telecommunications network; and
- b) if the data logger is external to the device containing the measurement elements but is located at the same site — between the meter and the data logger and between data logger and the telecommunications network; and
- c) if the data logger is not located at the same site as the device containing the measurement elements — between the meter and the telecommunications network.

“**economically feasible**” means the annual cost to manually read a site is greater than the annual cost of installing and maintaining a communication link.

“**GPRS**” means the acronym for **G**eneral **P**acket **R**adio **S**ervice, and provides high speed data services across a GSM network.

“**GSM**” means the acronym for **G**lobal **S**ystem for **M**obile Communications, and is a standard for digital mobile phone networks using radio frequency.

“**Interval meter**” means a meter that measures interval *energy data* and records it in a data logger.

“**Modem**” means a device that converts data into a signal that is compatible with a telephone or radio network and back again.

“**PSTN**” means the acronym for **P**ublic **S**witched **T**elephone **N**etwork, and is a means of telephone communication using fixed landline.

“**WAER**” means the acronym for WA Electrical Requirements. This document is issued by the Office of Energy Safety and provides reference to technical requirements for the safe and efficient connection of consumers’ installations to electricity networks, in Western Australia.

2. Objective

- 2.1.1. The objective of this document is to establish, under clause 3.6 of the *Metering Code*, the mandatory requirements by which the *Network Operator* may require the installation of a *communication link* as part of the *metering installation*. These requirements are in addition to those required under clause 3.16(2).

3. Communication link criteria

- 3.1.1. Notwithstanding clause 3.16(2) of the *Metering Code* which, mandates that *Network Operator* must ensure a *type 1 to type 4 metering installation* includes a *communication link* so as to enable a meter of a metering point to be read from a remote location, the *Network Operator* may also require the installation of a *communication link* for *types other than types 1 to 4*.

- 3.1.2. Situations that may require the installation of a *communication link* are:

- a) the geographical remoteness of a *metering installation*, whereby, the manual collection of *interval energy data (type 5)* or *accumulated energy data* is not *economically feasible*.
- b) the *metering installation* meets the criteria for the installation of an Automatic Meter Reading (AMR) system given in Appendix 1.

{Note – the criteria for 3.1.2(b) are the criteria in the WAER. If the WAER criteria change then this document will be revised under the *Metering Code* provisions for amendment.}

4. Communication link provisions

4.1. Link Requirements

- 4.1.1. If a *metering installation* is required to include a *communications link*, then the *communications link* must, where necessary, include a *modem* and isolation device approved under the relevant telecommunications regulations, to allow accumulation and *interval energy data* to be downloaded to the *metering database* via a telecommunications network.
- 4.1.2. Where a *communication link* has been installed, the *metering installation* must include facilities for the on-site storage of *energy data* that comply with the requirements of the *Metrology Procedure*.

4.2. Ownership of communication links

- 4.2.1. The *Network Operator* owns the *communications link* in accordance with Clause 3.4 of the *Metering Code*.

{ clause 3.4 states:

"A network operator owns each meter on its network and all communications links associated with the meter despite any purported agreement to the contrary." }

4.3. Payment for communications links

- 4.3.1. Where a communications link is required due to access restrictions that are a consequence of the owner or tenant of the premises or facility being metered, the *retailer* shall be liable for the costs associated with the link.

{e.g. if the link is required because there is a fierce dog or the meter is kept locked or otherwise inaccessible.}

- 4.3.2. Where the communications link is installed for the convenience of the *Network Operator* or because a manual read is not *economically feasible*, the *Network Operator* shall be liable for the costs associated with the link.

{e.g. if the link is required because the site is remote or has a very high cost of reading due to another reason.}

4.4. Access to data

- 4.4.1. Access to data associated with or originating through the link is in accordance with the provisions laid out in Clause 4.8 of the *Metering Code*.

{Clause 4.8 of the code details ownership, security and rights of access to data. Clause 4.8(3) states, in relation to a metering installation with a communication link:

"Network operator must allow a user who supplies, purchases or generates electricity to have local and (where a suitable communications link is installed) remote access to the energy data for metering points at its associated connection points, using a 'read only' password provided by the network operator."

Furthermore, clause 4.8(4) states

"A network operator must have devices and methods in place that ensure that energy data held in its metering installation is secured from unauthorised local access or remote access, by electronic password and electronic security controls which are sufficient to the standard of good electricity industry practice"

5. Compliance with the Metering Code

The following table cross-references the provisions within this document to the relevant requirement within the Metering Code.

Table 1. Identification of Compliance to Metering Code Requirements

Metering equipment component	Equipment characteristics	Requirement	Metering Code Clause or Table
<i>Communication link</i>	Location	The electronic connection between the data logger and the telecommunications network boundary is classified as a <i>communications link</i> .	1.3
	Equipment	A <i>communications link</i> may consist of a metallic cable (<i>PSTN</i>) connecting to the telecommunications network and require isolation equipment, <i>modem</i> and associated connections	3.3(3)
	Equipment	A <i>communications link</i> may include a radio communications system, a microwave communications system, a <i>GSM</i> or <i>CDMA</i> communication system or a satellite communications system or a combination of systems	3.3(3)
	Equipment	A <i>communications link</i> may include a <i>metering database</i> .	3.3(3)
	<i>Modem</i>	Used to connect the <i>metering installation</i> to the telecommunications network at a <i>data logger</i> or <i>metering database</i> .	
	Security	The <i>communication link</i> is to be secure and associated links, circuits and information storage and processing systems are to be secured by means of seals or other devices.	3.8
	Access to data	To be provided on a device and to display as a minimum the accumulated total Active energy measured by that <i>metering installation</i> .	4.8
	Access to data	The data held in the <i>metering installation</i> is to be protected from direct or remote electronic access by suitable password and security controls.	4.8(3), 4.8(4)(a)
	Performance	Metering data is required for all trading intervals at a level of availability of at least 95% per annum from the <i>communications link</i> .	3.11(1)(b)
	Outages	If an outage or malfunction occurs to a <i>communications link</i> , repairs must be made as soon as practicable in accordance the applicable <i>service level agreement</i> .	3.11(2)

APPENDIX 1 – WAER Criteria for Mandatory Link Provision

This appendix is based on the *WAER* criteria for mandatory link criteria (section 13). These provisions remain unchanged from those in existence at the time the Metering Code came into affect.

A1.1 Automated Meter Reading Facility requirements for Multiple and Distributed Master Metering (WAER 13.8.6.7)

Meters suitable for automated meter reading (AMR) remote reading and the associated remote reading facilities shall be installed where Multiple Master and Distributed Master metering is installed and any of the following criteria apply:

- a) . where access to the meters is restricted by a security system or process;
or
- b) . where any of the multiple master or distributed master meters are located on more than 3 levels, including below, on or above ground level.

A1.2 Automated Meter Reading (AMR) System Installations (WAER 13.8.6.9)

Western Power will only permit approved AMR systems to be connected to its master meter network. The approval process and technical requirements for AMR systems are detailed in the Western Power document “WPC Policy and Technical Requirements for Automated Meter Reading (AMR) Systems”. The type of AMR system required will depend on the particular installation.

The basic technologies are: telephone, power line carrier, pulse collecting, local area network and radio. Some technologies require data collection from the master meter on the site with a single communication link to a central reading location whilst others involve individual communications at each meter to the central reading location. Telephone, pulse counting and local area network systems require the developer to provide and install appropriate cabling to each meter from the data-collecting device or site Telephone Building Distributor. Telephone systems will usually share the customer’s telephone service.

Prior to the installation of any AMR system, Western Power requires an “Automated Meter Reading System (AMR) Application” form to be completed and submitted by the developer/installer. This form provides the installation details, the type of AMR system to be used, number of units and the meters required. The form is available from Western Power’s Metering Services Group and a copy is included in the “WPC Policy and Technical Requirements for Automated Meter Reading (AMR) Systems” document. Meters suitable for the particular AMR system must be ordered by Western Power, therefore it is essential that the AMR system application form is completed and forwarded to Western Power Metering Services well in advance of the estimated project completion date. It may be possible to provide a facility, which would allow a customer to read the master meter at any time from a remote location. This will be dependant on the type of meter installed and the type of remote meter reading technology being used. The customer will be charged for any expenditure incurred.