Comparison of the Western Australia Electricity Market Metrology Procedure (September 2006) to the Proposed Updated Metrology Procedure for Metering Installations on the Western Power Network (October 2014)

Date: October 2014

This document provides a comparison between the Western Australia Electricity Market Metrology Procedure (September 2006) and the Updated Procedure for Metering Installations on the Western Power Network (October 2014). It also provides explanations where changes have been made.

The following general terms are used in the document.

Updated Procedure - *Western Australia Electricity Market Metrology Procedure (September 2006)*

Updated Procedure ('Updated Procedure') - *Metrology Procedure for Metering Installations on the Western Power Network (October 2014)*

Commonly used terms in the Current Procedure which have been substituted in the Updated Procedure:

- The term **'Network Operator'** has been replaced throughout the Updated Procedure by **'Western Power'**.
- Where the term **'good electricity practice'** is shown in the Current Procedure, this has been amended to **'good electricity industry practice'** in the Updated Procedure.
- Where the term **'meter'** is shown in the Current Procedure, this has been amended in some instances to **'metering installation'** in the Updated Procedure.
- In a number of instances throughout the Updated Procedure, the term **'must'** has been substituted by the word **'will'**.
- Where reference to a particular clause has changed in the Updated Procedure, these have not all been highlighted as amendments.
- In a number of instances throughout the Updated Procedure, the term **'will be'** has been substituted by the term **'may be'**.
- The *Electricity Industry (Metering) Code 2012*, is referred to as the 'Code' in this document.

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
1	General	1	General	Heading unchanged
1.1	Introduction – ***Deleted***			Not required
1.2	Purpose	1.1	Purpose	Minor formatting changes only
1.3	Scope	1.2	Scope	Minor editing changes and deletion of "Explanation" on pages 7 to 8 of the Current Procedure
1.4	Referenced Material - ***Deleted***			Now included in Definitions in Updated Procedure
1.5 and 4	Definitions	1.4	Definitions	Moved from section 4 in the Current Procedure to section 1.4 in the Updated Procedure
1.6	Interpretation - ***Deleted***			Not required
1.7	Commencement	1.3	Commencement	No wording changes
1.8	Metering Installation Components - ***Deleted***			The metering installation components are detailed in clause 3.5 of the Code

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
2	Responsibility for Meter Provision – ***Deleted***			Heading not required
2.1	Network Operator is responsible for Meter Provision – ***Deleted***	2	Provision of Metering Installations	Covered by clause 3.5(1) of the Code
2.2	Enhanced Technology Features	2.3.3	Enhanced Technology Features	Heading unchanged
2.2.1		2.3.3.1	Where reasonably requested by a code participant, ~~the Network Operator~~Western Power will provide enhanced technology features in a metering installation~~s with enhanced technology features~~in accordance with clause 3.20(1) of the Code	Changes marked-up
2.2.2		2.3.3.2	Metering installations with enhanced technology features will only be used where they meet or exceed the standards required ~~of the un-enhanced~~for Type 1-6 metering installations that would otherwise be used at the connection point under consideration.	Changes marked-up
2.2.3	Example deleted	2.3.3.3	Where a meter includes enhanced features ~~more normally~~ associated with a meter of a more advanced type, the normal provisions of the ~~standard~~ original type of meter apply for all aspects other than the enhanced feature.	Changes marked-up
2.2.4	Example deleted	2.3.3.4		
2.2.5	Deleted			Covered by clause 3.21 (2) of the Code
2.2.6	Deleted			This section is no longer applicable based on coverage by clause 5.4 of the Code - annual

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
				read obligation, and substitution obligations in appendix 3. Section 2.2.6 of the metrology procedure adds operational expenditure and pressure on Western Power and the retailers to gain access to properties with access issues.
2.2.7	Deleted			Covered by clause 3.22 of the Code
2.2.8	Deleted			Covered by clause 3.23 of the Code
2.2.9	Deleted			This section is no longer required as any changes to enhanced technology are provided through Code amendments
		2.3.3.5	Where bi-directional capability is required for the metering installation, Western Power, in accordance with clause 3.3C of the Code, must ensure the net electricity production and consumption is separately measured and recorded by the meter	New section in Updated Procedure to reflect Code amendments
2.3	Prepayment Meters	2.1	Installation of meters	Heading changed
2.3.1		2.1.2 a), b)		No wording changes for a) and b)
		2.1.2 (c)	Where pre-payment meters are installed, they will comply with the technical requirements in Part 9 of the *Code of Conduct for the Supply of Electricity to Small Use Customers 2012*	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
2.3.2	Deleted			Pre-payment meters are Type 6 meters so this section is not required
2.3.3	Deleted			Pre-payment meters are Type 6 meters so this section is not required
2.4	Metering Installation Components-Meter Provision	2.2	Metering Installation Components	Heading changed
2.4.1		2.2.1		No wording changes
2.4.2		2.2.2	~~The *Network Operator* must~~Western Power will ensure that the components, characteristics and requirements for *meter* provision for Type 1 – 4, Type 5 and Type 6 *metering installations* are ~~as shown in Schedules 1, 2 and 3~~in accordance with section 5.	Changes marked-up. Schedules 1, 2 and 3 have been consolidated and reflected in Section 5 of the Updated Procedure
2.4.3	Deleted			Schedules 1, 2 and 3 have been consolidated and reflected in Section 5 of the Updated Procedure
2.4.4	Deleted			Covered by clause 3.14 of the Code
2.4.5		2.2.4	~~The choice of~~ Western Power will make a determination of the metering installation type ~~will be~~ based on the historic or anticipated annual consumption and peak load at the connection point, ~~as agreed~~ with the retailer~~, and on the need for interval energy data and communications~~. If the	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			retailer and Western Power cannot agree on the type of installation, then subject to clause 3.9(3A) of the Code, Western Power may make the determination on the matter.	
2.4.6		2.2.5		No wording changes
2.4.7		2.2.7(a)		No wording changes
2.4.8	Example deleted	2.2.7(b)		No wording changes
		2.2.6	Where a Type 6 meter is capable of recording both interval energy data and accumulated energy data, it will be treated as an accumulation meter, unless otherwise agreed between Western Power and the retailer	New section in Updated Procedure
		2.2.8	The metering installation database must permit collection of data within the timeframes specified in the relevant service level agreement at a level of availability of at least 99% per annum if the metering installation does not have a communications link. Where the metering installation does have a communications link, the metering installation database must permit collection of data within the timeframes specified in the relevant service level agreement and at a level of availability of 95% for the communications link and 99% for the remainder of the metering installation.	New section in Updated Procedure to expand on clause 3.11 of the Code
2.5	Metrology Procedure Defines Minimum Rather Than Maximum Requirements –			No longer relevant as the Code establishes minimum

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
	Deleted			requirements
2.6	Removal of Meters – ***Deleted***			No longer relevant as inconsistent with the clause 3.5 of the Code
2.7	Testing and Inspection of Meters	2.3.1	Testing and Inspection of Meters	Heading unchanged
2.7.1		2.3.1.1	~~The Network Operator must~~Western Power will ensure that meter~~sing installations~~ on its network are sampled and tested ~~and inspected~~ in accordance with ~~Schedules 1, 2 and 3.~~AS1284.13. Details of how Western Power conducts its sampling and testing are found in Appendix 2.	Changes marked-up and reflect changes to clause 3.11A (1) of the Code
2.7.2 to 2.7.11	Deleted			Reflects the removal of clause 6.8(d) from the Code
		2.3.1.2	Western Power will ensure that its meters meet the specifications and/or guidelines outlined by the National Measurement Institute under the National Measurement Act.	New section in Updated Procedure
		2.3.2	Maintenance of Metering Installations	New heading
		2.3.2.1	Where Western Power identifies a component of a metering installation is not performing in accordance with the Code, the meter specifications or in accordance with good electricity practice, the component will be repaired or replaced.	New section in Updated Procedure
		2.3.2.2	Notwithstanding section 2.3.2.1, if Western Power identifies any performance issues with wiring, fuses, or modems that form part of a metering installation, those	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			components must be repaired or replaced in accordance with good electricity industry practice.	
		2.3.2.3	A code participant who becomes aware of an outage or malfunction of a metering installation or any of its components must advise Western Power as soon as practicable.	New section in Updated Procedure
		2.3.4	Replacement	New heading
		2.3.4.1	Where a population of meters has been sampled and tested in accordance with section 2.3.1.1 and deemed to have failed, Western Power will remove and replace all meters within that population in accordance with the requirements of the Code.	New section in Updated Procedure
2.8	Installation of Meter	2.1	Installation of Meters	Heading unchanged
2.8.1 a), b)		2.1.1(a)	~~The Network Operator must~~Western Power will ensure that when each meter and associated data logger (where the data logger is located at the metering point) is installed, it is checked to ensure that ~~it~~: a) it c~~C~~omplies with the relevant requirements of ~~Schedules 1-3, respectively subject to clause 2.4.4;~~section 5 of this procedure, and it has the optical port, communications port, and/or visual display ~~located so that the optical port, communications port, and/or visual display~~which can be readily accessed for meter reading.	Changes marked-up
2.8.2	Deleted			Meters that are procured are based on the specifications outlined in section 5 of the Updated Procedure. If the

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
				samples tested comply with the specifications, the entire population held in our warehouses are also deemed to comply. This is normal industry practice and does not need to be stated in the Procedure.
		2.1.1(b)	b) the CT cores of revenue metering installations must not be used for any purpose other than revenue metering and check metering as per clauses 3.12 (1) (a) and 3.12.(1)(b) of the Code.	New section in Updated Procedure
		2.1.1(c)	c) the CT cores of Types 1 and 2 check metering installations must not be used for other purposes subject to clause 3.12 (1) (a) of the Code, unless with the written approval of Western Power.	New section in Updated Procedure
		2.1.1(d)	d) if only one set of VT secondary winding is provided for a Type 1 or 2 revenue and check metering installation, then the voltage supplies to both metering installations must be separately fused subject to clause 3.12 (1) (d) of the Code.	New section in Updated Procedure
3	Responsibility for Energy Data Services		Energy Data	Heading changed
3.1	Overview – ***Deleted***			Heading no longer relevant
3.2 and 3.2.1, 3.2.2	Metering Installation Components – Energy Data Services – ***Deleted***			These requirements are now contained in section 5, Components of Types 1-6 Metering Installations – Meter

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
				Provision
3.3	Meter Reading for Metering Installations	3.1	Energy data Collection	Heading changed
		3.1.1	Western Power collects energy data from metering installations by the following methods: a) manual meter read; b) remote meter read (via a communications link); and c) customer supplied meter read.	New section in Updated Procedure
		3.1.2	Western Power must for each meter on its network ,at least once in any 12 month period undertake a meter reading that provides an actual value that passes the validation process as per clause 5.4 of the Code. A copy of the meter reading schedule can be found on Western Power's website.	New section in Updated Procedure
		3.1.6	Western Power will ensure that for Type 7 metering installations, energy data is calculated, validated and substituted in accordance with the Code.	New section in Updated Procedure
		3.1.9	Where Western Power receives a request from a customer to provide energy data or standing data, Western Power will provide such energy data or standing data in accordance with clauses 5.17 and 5.17A of the Code. Further requirements may be expressed in other enactments such as clause 10.7 of the Code of Conduct.	New section in Updated Procedure
3.3.1		3.1.3	~~The Network Operator~~Western Power will ensure that for Types 1-4 metering installations~~, of types 1-4~~, interval energy data will be collected on a monthly basis in accordance with the relevant service level agreement, or, by agreement with the relevant retailer~~, daily~~.	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
3.3.2		3.1.4	~~The Network Operator~~Western Power will ensure that for Type 5 metering installations ~~of types 5~~, interval energy data will be collected on a monthly basis or in accordance with the relevant service level agreement.	Changes marked-up
3.3.3		3.1.5	~~The Network Operator~~Western Power will ensure that for Type 6 metering installations ~~of types 6~~, energy data will be collected on a monthly or bi-monthly basis or in accordance with the relevant service level agreement, as agreed between ~~the Network Operator~~ Western Power and the retailer at the time of installation.	Changes marked-up
3.3.4		3.2.3	Notwithstanding sections 03.1.3 and ~~3.3.2~~3.1.4, ~~the Network Operator~~Western Power may choose ~~for operational or other reasons~~ to disseminate the energy data for metering installation Types 1-5 more frequently than provided for under the applicable service level agreement. Under these circumstances the published meter reading schedule, ~~and~~ substitution and other deadlines will not be affected.	Changes marked-up
3.3.5	Note deleted	3.2.2	Where ~~the Network Operator~~Western Power chooses to gather and issue energy data more frequently than the published meter reading Schedule, the retailer will only be charged for reading in accordance with the ~~agreed and~~ published meter reading schedule or in accordance with the applicable service level agreement.	Changes marked-up
3.3.6		3.1.7		No wording changes
3.3.7	Deleted			The established practice within Western Power is not to use Type

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
				6 meters as interval meters, but as accumulation meters only
3.3.8		3.2.4		No wording changes
3.3.9	Deleted			Deleted because the section does not reflect current business practice and the current SLA
3.3.10	Example deleted	3.3.1		No wording changes
3.3.11		3.3.2		No wording changes
3.3.12		3.2.1		No wording changes
3.3.13	Deleted			Deleted because the section does not reflect current business practice and the current SLA
3.3.14		3.2.5	~~The Network Operator~~Western Power will accept requests for special meter reads outside the published schedule in accordance with the provisions of the Communication Rules or the Code, and will respond to valid requests within the response times specified in the applicable service level agreement.	Changes marked-up
3.3.15		3.2.5	See above	This section is reflected in section 3.2.5
3.3.16		3.1.8	Where energy data for Type 1-5 metering installations ~~of type 1-5~~ is gathered at a frequency greater than a trading interval it will be aggregated into trading intervals as per	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			3.16 (3A) of the Code.	
3.3.17		3.3.3	Where a check meter is installed which is of the same precision as the revenue meter ~~the Network Operator~~ Western Power ~~will~~ may calculate and pass to market the average of the check and revenue meter reading for active and reactive channels to be used for billing and settlement purposes, unless otherwise agreed between Western Power and the retailer.	Changes marked-up
		3.3.5	Following a successful meter read or, substitution or estimation of energy data, the metering database will store the energy data for a period of at least 13 months in a readily accessible online format and for a further period of 5 years and 11 months in archive that is accessible independently of the format in which the data is stored.	This section 3.3.5 of the 2014 Metrology Procedure reflects section 8.5 of Schedule 4 and section 9.6 of Schedule 5 of the 2006 Metrology Procedure
		3.3.6	The format of the energy data must be in accordance with the Communication Rules.	New section in Updated Procedure
		3.3.7	Energy data (actual, substituted or estimated) is required by Western Power by data stream for all trading intervals (that is, 48 intervals per 24 hour period) within the timeframe outlined in the Code or the applicable service level agreement.	New section in Updated Procedure
3.4	Validation and Substitution/Estimation of Energy Data	3.4	Validation of Energy Data	Heading unchanged
3.4.1		3.4.1	~~The Network Operator must ensure that~~Western Power validates energy data collected ~~for a metering installation of~~from Types 1 ~~to~~ 5 metering installations in accordance with section 6 – Metering Installation Types 1-5 Validation	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
3.4.2		3.4.2	~~The Network Operator must ensure that~~Western Power validates energy data collected ~~for a metering installation of~~from Type 6 metering installations in accordance with section 8 – Metering Installation Type 6 – Validation, Substitution and Estimation	Changes marked-up
3.4.3	Deleted			Covered by clause 5.20 of the Code
3.4.4	Note deleted	3.4.3		Removed reference to section 3.4.3 and deleted Note
3.4.5		3.5.7	Where any of the ~~error conditions~~alarm status descriptions listed ~~as resulting in substitution in Appendix 1 are~~in section 10 occur, ~~encountered,~~ the energy data ~~will always~~may be substituted except where the reported status is determined to be ~~spurious by the Network Operator~~incorrect by Western Power. Where ~~a spurious~~an incorrect error condition has been detected, ~~the Network Operator will~~Western Power may consult with the retailer over the correct course of action or apply procedures in line with this Metrology Procedure or good electricity industry practice.	Changes marked-up
3.4.6		3.4.4	Where the energy data fails ~~the~~ validation ~~tests~~ under ~~clauses 0or~~sections 3.4.1 or 3.4.2, ~~or 3.4.3 the Network Operator will always~~Western Power may review the validation failures to determine the cause of any apparently lost or erroneous energy data. Where ~~the Network Operator~~Western Power believes the error to be due to a metering installation fault identified as: a) ~~if~~ the meter ~~is believed to be~~ performing outside of its design specification, then the meter	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			installation ~~will be placed under test~~may be tested either onsite or in the Western Power meter laboratory to determine the cause of the validation failure; or b) ~~where~~ the metering installation is ~~clearly~~ defective~~,~~, then the metering installation ~~will~~ may be repaired or replaced in accordance with the Code~~within the period defined in the~~or applicable service level agreement ~~for meter repairs~~. c) a fault associated with the measurement of data, Western Power may, acting in accordance with the Code or good electricity industry practice, make corrections or adjustments to the energy data.	
3.4.7	Example deleted	3.5.8	Where an~~y~~ alarm outlined in section 10 is ~~reported~~ triggered by the meter, regardless of whether it requires substitution of energy data, ~~or not,~~ which is not caused by a metering installation fault but which can be compensated for by an adjustment to the metering installation, the metering installation ~~must~~ may be reset, reprogrammed or otherwise adjusted as applicable, within the period defined in the applicable service level agreement for meter repairs, unless ~~the Network Operator~~Western Power is satisfied that the alarm condition triggered will not re~~oc~~cur.	Changes marked-up
3.4.8		3.5.5		No wording changes
3.4.9		3.5.1		No wording changes
3.4.10		3.5.6		No wording changes

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
3.4.11		3.5.2	~~For metering installations of type 6 the Network Operator must ensure that the energy data is substituted or estimated~~Western Power estimates or substitutes energy data from Type 6 metering installations in accordance with ~~Schedule~~ section 8 – Metering Installation Type 6 – Validation, Substitution and Estimation, where: a) ~~the network Operator~~Western Power has elected to perform substitution or estimation under section 3.4.~~4~~3(c) or b) ~~the network Operator~~Western Power has elected to perform estimation under section 3.~~4.8~~5.5; or c) there has been a failure of the metering equipment; or, d) an inspection or test on the metering equipment has established that the measurement uncertainty exceeds the specified standard for that class of meter; or, e) it has not been possible to obtain a reading from the meter.	Changes marked-up
3.4.12	Note deleted	3.5.9		No wording changes
3.4.13		3.5.10	Where it is necessary to substitute a meter reading because of an inability to access the meter, a reason code will be supplied in accordance with the NEM12 and NEM13 meter data file format specification and in accordance with Appendix 3 of the Code.	Changes marked-up
		3.5.3	Western Power calculates energy data for Type 7 metering installations by way of substitution in accordance with Appendix 3, clause A3.7(5) of the Code – Substitution Method 74.	New section in Updated Procedure
		3.5.4	Western Power will ensure that for Type 7 metering installations; energy data will be calculated on a monthly	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			or bi-monthly basis in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents.	
3.5	Calculation of Energy Data for Type 7 Metering Installations – ***Deleted***			Now covered by clauses A3.6 and A3.7 of the Code. New Type 7 schedule has been added in Updated Procedure
3.6	Data Storage – ***Deleted***			These clauses have been incorporated into section 3 Energy Data, or are already included within the Code
3.7	Information	3.6	Access to Energy Data	Heading changed
3.7.1		3.6.1	~~The Network Operator must~~Western Power provides access to energy data to a code participant for each connection point at which the Code Participant supplies, generates or purchases electricity and has an access contract with Western Power.	Changes marked-up
3.7.2		3.6.3		No wording changes
3.7.3		3.3.4	~~The Network Operator~~After conducting a meter reading and obtaining energy data for a metering point, Western Power ~~must~~will provide access to that energy data to the user for the metering point and the IMO ~~for settlement and load forecasting purposes~~in accordance with clauses 5.6 and 5.7 of the Code and in accordance with the Communications Rules.	Changes marked-up
3.7.4	Deleted			Deleted because the section does

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
				not reflect current business practice
3.7.5	Deleted			Now in model SLA
3.7.6 3.7.7		3.6.4	~~The Network Operator must~~Western Power ensures that access to ~~the~~ a metering installation and the metering database is secured from unauthorised access in line with clauses 4.8.4(a) and 4.8.4(b) of the ~~Metering~~ Code and in line with good electricity ~~and IT~~ industry practice.	Changes marked-up
		3.6.5	The only persons entitled to have local access and/or remote access, using a read only password provided by Western Power, to the energy data from a metering installation are a user who is a retailer or generator of the connection point with which the metering installation is associated.	New section in Updated Procedure
3.8	Validation of Metering Database – ***Deleted***			Removed because there is no requirement in the Code for the validation of the metering database (refer to Part 4)
		3.6.2	Where Western Power receives a request from a user's customer or third party to provide energy data or standing data, Western Power will provide such data in accordance with clause 5.17A of the Code.	New section in Updated Procedure
		4	Data Quality	New Heading
		4.1	Energy Data Verification Requests	New Heading
		4.1.1	Where a code participant requests verification of energy	New section in Updated

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			data under clause 5.20(3) of the Code by using its Energy Data Verification Request Form, Western Power will use all reasonable endeavours to verify the energy data in accordance with this procedure by repeating any tests applicable to the metering installation type.	Procedure
		4.1.2	In accordance with section 4.1.1, Western Power will perform the validation process applicable to the metering installation that is the subject of the verification request in order to verify the energy data.	New section in Updated Procedure
		4.1.3	In accordance with clause 5.20(4)(b) of the Code, Western Power will make the results of the test described in section 4.2 available to the code participant as soon as practicable but no later than 5 business days after receiving the Energy Data Verification Request Form, or in accordance with the applicable service level agreement.	New section in Updated Procedure
3.9	Request for Testing of the Metering Installation	4.2	Test and Audit Requests	Heading changed
3.9.1		4.2.1	~~If requested by a Code Participant, the Network Operator must conduct a test to determine the consistency of data held in the metering database and data held in the meter or associated data logger of a metering installation.~~ Where a code participant reasonably requests a test or audit of: a) The accuracy of the metering installation, b) The energy data from the metering installation, or c) The standing data for the metering installation; Western Power will conduct a test or audit in accordance with the request.	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
3.9.2	Deleted			Deleted because the section does not reflect current business practice
3.9.3	Deleted			Deleted because the section does not reflect current business practice
3.9.4	Deleted			Now in Model SLA clause 4.1
3.9.5	Deleted			Now in Model SLA clause 4.1
3.9.6		4.2.8	When performing a test or audit pursuant to section 4.2.1 (b) or (c), and ~~Where~~ there is a discrepancy between: a) energy data stored in the meter or meter's~~/~~ associated data logger; and b) energy data stored in the metering database in respect of the respective meter or meter/associated data logger, the energy data stored in the meter or meter's~~/~~ associated data logger is prima facie evidence of the amount of electricity supplied to that metering point.	Changes marked-up
3.9.7		4.2.9	When performing a test or audit pursuant to section 4.2.1 (b) or 4.2.1(c), if ~~Where~~ there is a discrepancy between the energy data or standing data held in the metering database and the physical inventory, the physical inventory is ~~to be taken as~~ prima facie evidence of the actual data.	Changes marked-up
3.9.8	Note deleted	4.2.11	If requested by a Code Participant to undertake a test or audit of energy data or standing data for a metering installation, ~~the Network Operator must~~Western Power	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			will, prior to any test being undertaken ~~in accordance with section 3.9.1~~, provide an estimate of the costs of, or associated with, that test, where the test does not fall within the scope of the applicable service level agreement.	
		4.2.5	Where errors are detected during the test or audit that are inconsistent with the requirements of the Code, Western Power will advise the code participants the errors detected and possible duration of the existence of errors.	New section in Updated Procedure
		4.2.6	Where errors are detected during the test or audit, that are inconsistent with the requirements of the Code, Western Power will restore the accuracy of the metering installation in accordance with the applicable service level agreement.	New section in Updated Procedure
		4.2.7	Where errors are detected during the test or audit that are inconsistent with the requirements of the Code, Western Power may make corrections to the lost or erroneous energy data up to 12 months based on a test or audit, to minimise adjustments to the final settlement account.	New section in Updated Procedure
		4.2.13	Where a code participant requests a metering point to be tested, the meter will be tested at Base load current (Full load test) and 10% Base load current (Light load test). Western Power will use the result of the Full load test and the Light load test to calculate the Weighted Average Error for the meter. The meter will be deemed defective if the result of applying the Weighted Average Error equation exceeds the accuracy limit of the meter under test. The equation used is: $WA\ error\% =$	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			$\frac{(4xFull\ Load) + Light\ Load}{5}$ *Where;* *WA error is the percentage Weighted Average Error for the meter [overall* *meter error] at time of test,* *Full Load is the percentage full load error of meter at time of test,* *Light Load is the percentage light load error of meter at time of test.*	
3.10	Request for Testing of the Energy Data Processing	4.2	Test and Audit Requests	Heading changed
3.10.1		4.2.2	~~If requested by a Code Participant, the Network Operator must conduct a test to determine the correct processing and storage of energy data for a metering installation.~~ Where Western Power receives a request to assess the accuracy of the metering installation pursuant to section 4.2.1(a), the metering installation, or components thereof will be tested in accordance with clause 3.9 of the Code to ensure the metering installation or component tested meets the applicable accuracy requirements.	Changes marked-up
3.10.2		4.2.3	~~This test shall ensure that~~Where Western Power receives a request to test or audit the energy data or standing data pursuant to section 4.2.1 (b) or 4.2.1(c), Western Power may: a) ~~The~~repeat any validation ~~tests~~that ~~have~~ has been performed in ~~agreement~~ alignment with this Metrology Procedure; ~~and~~ b) ensure ~~T~~that metering statuses are reported in	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			~~agreement~~ alignment with this Metrology Procedure; ~~and~~ c) ensure ~~T~~that aggregation of quarter-hourly data to half-hourly data has been performed in ~~agreement~~ alignment with this Metrology Procedure; and/or d) ensure ~~T~~that substitution and/or estimation has been performed in ~~agreement~~ alignment with this Metrology Procedure.	
3.10.3		4.2.4		No wording changes
3.10.4		4.2.12	Where ~~the~~ a test or audit undertaken in accordance with ~~clause~~ section ~~3.10.1~~4.2.1 ~~determines an inconsistency, the Network Operator must pay the costs of, and associated with, that test.~~reveals a non-compliance with the Code, Western Power will not charge the code participant for conducting the test or audit.	Changes marked-up
3.10.5	Deleted			Now in Model SLA
3.10.6		4.2.10	~~Where~~ When performing a test or audit pursuant to sections 4.2.1 (b) or 4.2.1(c), if there is a discrepancy between energy data determined during the testing process and the energy data values stored in the metering database, the energy data determined during testing shall be prima facie evidence of the amount of electricity pertaining to the affected metering point.	Changes marked-up
3.10.7		4.2.11	If requested by a code participant, to undertake a test or audit of energy data or standing data for a metering installation, ~~the Network Operator must~~Western Power will, prior to any test being undertaken ~~in accordance with section 3.10.1~~, provide an estimate of the costs of, or associated with, that test, where the test does not fall	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			within the scope of the applicable service level agreement.	
3.11	Procedure Changes - ***Deleted***			This section has been deleted as Part 6 of the Code contains full details
3.12	Disputes - ***Deleted***			This section has been deleted as Part 8 of the Code contains full details
3.13	Disaster Recovery, 3.13.1 to 3.13.4	3.1.10	Energy Data Collection	Now covered by section 3.1.10
4	Definitions	1.4	Definitions	Heading unchanged
5	Schedule 1 – Components of Types 1-4 Metering Installations – Meter Provision	5	Components of Types 1-6 Metering Installations – Meter Provision	Schedules 1, 2 and 3 combined under section 5 of the Updated Procedure
5.59 – Schedule 1	Time Function	2.2.3	The ~~data logger~~meter internal real time clock ~~is to~~must be referenced to ~~Western~~ Australian Western Standard Time (AWST) and maintained ~~to a standard~~within an absolute error of: Type 1 ±5 seconds, Type 2 ±7 seconds, Type 3 ±10 seconds, Types 4 – 5 ± 20 seconds	Changes marked-up
6	Schedule 2 – Components of Type 5 Metering Installations – Meter Provision	5	Components of Types 1-6 Metering Installations – Meter Provision	Schedules 1, 2 and 3 combined under section 5 of the Updated Procedure
7	Schedule 3 – Components of Type 6 Metering Installations – Meter Provision	5	Components of Types 1-6 Metering Installations – Meter Provision	Schedules 1, 2 and 3 combined under section 5 of the Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
8	Schedule 4 – Components of Type 1-5 Metering Installations – Energy Data Services			Schedule 4 has been deleted because the components are already included in the Code or the Updated Procedure, or are no longer relevant
9	Schedule 5 – Components of Type 6 Metering Installations – Energy Data Services			Schedule 5 has been deleted because the components are already included in the Code or the Updated Procedure, or are no longer relevant
10	Schedule 6 – Metering Installation Types 1-5 Validation	6	Metering Installation Types 1-5 – Validation	Heading changed
10.1	Requirement to Validate	6.1	Requirement to Validate	Heading unchanged
10.1.1		6.1.1	The energy data from Type 1-5 metering installations ~~of types 1-5~~ is required to be validated, in accordance with ~~clause 3.4.1 of this Metrology Procedure~~this section.	Changes marked-up
10.2	Validation of Energy Data from Types 1-5 Metering Installations with Check Metering	6.2	Validation of Energy Data from Types 1-5 Metering Installations with Check Metering	Heading unchanged
10.2.1	Example from 10.2.1 a) deleted	6.2.1	*6.2.1 – Added Text Highlighted in Red:* The following checks apply to energy data from all metering installations of Types 1-5 which have full check metering. Where discrepancies are identified between the revenue, check and SCADA validation, due to inherent SCADA lower accuracies and technical losses, these discrepancies and validation errors may not be substituted and/or replaced.	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			6.2.1 a) - Unchanged *6.2.1 b) – Added Text Highlighted in Red:* 1. Western Power must construct a validation algorithm that will facilitate comparison of interval data on a per interval basis. 2. Western Power must construct an appropriate validation algorithm as the SCADA data may be derived from a different measurement point, be of different interval collection and/or have a different base unit of measurement ,(e.g. power not energy value) with allowances for a larger error of measurement. 3. Western Power is only required to undertake validation of metering data against the SCADA data on the primary data channel, e.g. only 'B' for generators and 'E' channel validation for loads if applicable. 4. Western Power may conduct an analysis of the historical metering data for each connection point to ascertain what percent error differences between metering data and SCADA data is considered acceptable. Western Power may use this information to refine validation algorithms where applicable. Where discrepancies are identified between revenue and SCADA validation due inherent SCADA lower accuracies and technical losses, higher percentage error differences may occur and result in specifically assigned error percentages per connection point. SCADA Data Algorithm to validate Metering Data - Unchanged	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			6.2.1 c) – Added Text Highlighted in Red: c) Check all interval meter data against nominated maximum value. The value must be less than the registered maximum value of Wh, Varh or VAh for the metering installation data stream. Maximum Varh checks may be performed as follows: 1. For CT metering installations the maximum value is to be initially defined by the applied CT ratio. However, the actual value may exceed the registered maximum value of the CT due to the ability of the CT to be able to accommodate loads in excess of their maximum capacity (i.e. 200%). Where this occurs, Western Power may deem the energy flow as true and correct. When determining data flows on a per installation basis, the maximum value may be increased to cater for situations where it has been confirmed that the CT is overloaded on a short term basis. 2. For whole current meters the maximum value is to be set to the rating of the meter. *6.2.1 d) 2 - Added Text Highlighted in Red:* Check that the number of intervals with zero data is less than a specified number over a period of time that is deemed practicable and in alignment with good electricity industry practice. *6.2.1 e) - Added Text Highlighted in Red:* If an interval has a null value then the reading for that interval will be rejected, placed into exception for review, or substituted.	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
10.2.1 f)		6.2.1 f)	If the meter has registered significant meter alarms over the period since the last successful read, the energy data for the affected intervals ~~will be rejected~~may be validated and placed into exception for review pending an assessment of the significance of the alarm. The list of alarms that will be processed is ~~given in Appendix 1, together with a note of those that are regarded as significant~~provided in Section 10.	Changes marked-up
10.2.1 g)	Note deleted	6.2.1 g)		No wording changes
10.3	Validation of Energy Data from Types 1-5 Metering Installations with Partial Check Metering	6.3	Validation of Energy Data from Types 1-5 Metering Installations with Partial Check Metering	
10.3.1 a)	Example deleted	6.3.1 a)		No wording changes
10.3.1 b)		6.3.1 b)		No wording changes
10.3.1 c)		6.3.1 c)	*Added Text Highlighted in Red:* c) Check all interval meter data against nominated maximum value. The value must be less than the registered maximum value of Wh, Varh or VAh for the metering installation data stream. Maximum Varh checks may be performed as follows: 1. For CT metering installations the maximum value is to be initially defined by the applied CT ratio. However, the actual value may exceed the registered maximum value of the CT due to the ability of the CT to be able to accommodate loads in excess of their maximum capacity (i.e. 200%). Where this occurs, Western Power may deem the energy flow as true and correct.	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			When determining data flows on a per installation basis, the maximum value may be increased to cater for situations where it has been confirmed that the CT is overloaded on a short term basis. 2. For whole current meters the maximum value is to be set to the maximum ampere rating of the meter.	
10.3.1 d) 1.		6.3.1 d) 1.		No wording changes
10.3.1 d) 2.		6.3.1 d) 2.	*Added Text Highlighted in Red:* 2. Check that the number of intervals with zero data is less than a specified number over a period of time that is deemed practicable in alignment with good electricity industry practice.	
10.3.1 e)		6.3.1 e)	*Added Text Highlighted in Red:* If an interval has a null value then the reading for that interval will be rejected, placed in exception for review or substituted.	
10.3.1 f)		6.3.1 f)	If the meter has registered significant meter alarms over the period since the last successful read, the energy data for the affected intervals ~~will be rejected~~may be validated and placed into exception for review pending an assessment of the significance of the alarm. The list of alarms that will be processed is ~~given in Appendix 1 together with a note of those which are registered as significant~~provided in Section 10.	Changes marked-up
10.3.1 g)		6.3.1 g)		No wording changes

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
10.3.1 h)		6.3.1 h)		No wording changes
10.4	Validation of Energy Data from Types 1-5 Metering Installations without Check Metering	6.4	Validation of Energy Data from Types 1-5 Metering Installations without Check Metering	Heading unchanged
10.4.1 a)		6.4.1 a)	~~a) The value must be less than the registered maximum value of Wh, Varh or Vah for the metering installation~~ a) Check all interval meter data against nominated maximum value. The value must be less than the registered maximum value of Wh, Varh or VAh for the metering installation. Maximum Varh checks may be performed as follows: 1. For CT metering installations the maximum value is to be initially defined by the applied CT ratio. However, the actual value may exceed the registered maximum value of the CT due to the ability of the CT to be able to accommodate loads in excess of their maximum capacity (i.e. 200%). Where this occurs, Western Power may deem the energy flow as true and correct. When determining data flows on a per installation basis, the maximum value may be increased to cater for situations where it has been confirmed that the CT is overloaded on a short term basis. 2. For whole current meters the maximum value is to be set to the maximum ampere rating of the meter.	Changes marked-up
10.4.1 b) 1.		6.4.1 b) 1.		No wording changes
10.4.1 b) 2.		6.4.1 b) 2.	*Added Text Highlighted in Red:* 2) Check that the number of intervals with zero data is less than a specified number over a period of time that is deemed practicable in alignment with good electricity	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			industry practice.	
10.4.1 c)		6.4.1 c)	*Added Text Highlighted in Red:* c) If an interval has a null value then the reading for that interval will be rejected, placed into an exception for review or *substituted*.	
10.4.1 d)		6.4.1 d)	d) If the meter has registered significant meter alarms over the period since the last successful read, the energy data for the affected intervals ~~will be rejected~~may be validated and placed into exception for review pending an assessment of the significance of the alarm. The list of alarms that will be processed is ~~given in Appendix 1 together with a note of those which are regarded as significant~~provided in Section 10.	Changes marked-up
11	Schedule 7 - Metering Installation Types 1-5 – Accumulation, Substitution and Estimation	7	Metering Installation Types 1-5 – Accumulation, Substitution and Estimation	Heading changed
11.1	Note deleted			Note deleted, so heading no longer required
11.1.1	Deleted			General comment addressed in section 7
11.2	Requirement to Accumulate Energy data to Trading Intervals	7.1	Requirement to Accumulate Energy data to Trading Intervals	Heading unchanged
11.2.1		7.1.1		No wording changes
11.3	Network Operator Obligations – ***deleted***			Heading not required

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
11.3.1		7.2.1	*Added Text Highlighted in Red:* a) 11, 12, 13, 14, 15, 16, 17 and 18 for metering installation Types 1-4 b) 51, 52, 53, 54, 55 and 56 for Type 5 metering installations, c) 61,62,63,64,65 for Type 6 metering installations, and d) 71,72,73,74 for Type 7 metering installation.	Reformatted and additional text added
		7.2.2	*Added Text Highlighted in Red:* For connection points classed as generators: a) Western Power may directly undertake type 11, 12 or 13 substitutions as a consequence of missing or erroneous metering data that has failed validation b) Western Power may undertake type 16 and 18 substitutions (agreed/alternate method) following consultation and agreement with the generator participant to ensure that the substituted data is an accurate reflection of the energy intervals concerned c) In any instance where SCADA data is to be used for substitution, both the E and B channel must be used.	New section in Updated Procedure
11.3.2	Deleted			Not required to highlight 'generating plant'
11.3.3		7.2.3	~~The Network Operator~~Western Power must not perform substitution of type 18, ~~16~~, 55, ~~or~~ 56, 64 and 74 without the prior agreement of the affected parties.	Changes marked-up
11.3.4		7.2.4		No wording changes
11.3.5		7.2.5		No wording changes

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
11.3.6		7.2.6	~~The Network Operator~~Western Power will notify affected Code Participants of errors and alarms associated with the energy data via the reason code as listed in ~~Appendix 1~~Section 10 in the data file format.	Changes marked-up
11.3.7	Note deleted	7.2.7	Where one or more of the readings making up the interval energy data in accordance with section ~~3.3.16~~3.1.8 has failed validation and been substituted, this will be reflected in the reason code, quality flags, and, where relevant, method flags of the interval energy data reported under ~~11.3.4~~section 7.2.5. ~~and the status reported will reflect the most serious of the statuses associated with the constituent data. Appendix 1 lists the status and defines the order of severity.~~ The alarm status will be reported in accordance with Section 10.	Changes marked-up
11.3.8		7.2.8		No wording changes
11.3.9	Example deleted	7.2.9		No wording changes
11.4 and 11.4.1	Accumulation of Data to Trading Intervals	7.3 and 7.3.1	Accumulation of Data to Trading Intervals	HH Apparent Energy in Table – Note deleted
11.5	Substitution and Estimation Types for Metering Installation Types 1-4	7.4	Substitution and Estimation Types for Metering Installation Types 1-4	Heading unchanged
11.5.1		7.4.1		No wording changes
11.5.2	Note deleted	7.4.2		No other change
11.5.3		7.4.3		No wording changes
11.5.4		7.4.4		No wording changes

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
11.5.5		7.4.5		No wording changes
11.5.6		7.4.6	(a) Where data substitution is required for any period greater than 7 days, consideration, consultation and agreement ~~must~~ may take place between the affected parties to resolve any abnormal equivalent days that may be applicable. In the interests of practicality, Western Power may use other substitution methods without consultation for periods greater than 7 days in alignment with good electricity industry practice. Where a code participant identifies discrepancies in the substitution method used, it may request Western Power to resolve those discrepancies or request an alternative substitution method is used. (b) Method 16 substitutions are: i. data substitutions of any format for periods greater than 7 days that are based on an agreement between all the affected parties; ii. changes to existing substitutions for any period that are carried out where the affected parties have directed that as a result of site or customer specific information, the original substitutions are in error.	Changes marked-up
11.5.7		7.4.7		No wording changes
11.5.8		7.4.8	This substitution method covers the situation where an alternate method of substitution has been agreed with the Code Participant, the applicable user and the Network Operator. This may be a globally applied method or a site specific method where an adjusted profile is used to take into account local conditions which affect consumption (e.g. local holiday, not energised connection point or	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			customer shutdown), or where alternate data may be able to be used for quality checks and minor adjustments of an estimated profile such as using meter register data.	
		7.4.9	Substitution Method 18 – Not Energised Metering Points This substitution method covers the situation where a metering point is in the status of Not Energised. Substitution method 18, in conjunction with reason code, zero consumption, will be used.	New section in Updated Procedure
11.6	Substitution and Estimation Types for Metering Installation Type 5	7.5	Substitution and Estimation Types for Metering Installation Type 5	Heading unchanged
11.6.1		7.5.1		No wording changes
11.6.2		7.5.2		No wording changes
11.6.3		7.5.3	*Added Text Highlighted in Red:* (a) Where data substitution is required for any period greater than 7 days, consideration, consultation and agreement must take place between the affected parties to resolve any abnormal equivalent days that may be applicable**.** In the interests of practicality, Western Power may use other substitution methods without consultation for periods greater than 7 days in alignment with good electricity industry practice. Where a code participant identifies discrepancies in the substitution method used, it may request Western Power to resolve those discrepancies or request an alternative substitution method is used.	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
11.6.4		7.5.4		No wording changes
11.6.5		7.5.5		No wording changes
11.6.6		7.5.6		No wording changes
		7.5.7	Substitution Method 57 – Not Energised Metering Points This substitution method covers the situation where a metering point is in the status of Not Energised. Substitution method 55, in conjunction with reason code zero consumption will be used.	New section in Updated Procedure
12	Schedule 8 – Metering Installation Type 6 – Validation, Substitution and Estimation	8	Metering Installation Type 6 – Validation, Substitution and Estimation	Heading changed
12.1.1	Example removed	8.1.1		No other change
12.2.1	Note deleted	8.2.1		No other change
12.3.1		8.3.1	When the energy data is required to be substituted or estimated, ~~the Network Operator~~Western Power may use Substitution Types 61, 62, 63, 64 or 65, as defined in section ~~12.4~~8.4.	Changes marked-up
12.3.2		8.3.2		No wording changes
12.3.3		8.3.4	~~The Network Operator must ensure that for all Substitution Types, substituted energy data is based on an actual meter reading, and is not based on energy data that has previously been estimated or substituted.~~ Western Power may substitute or estimate readings in	Changes marked-up

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			conjunction with an actual read to determine the point of reference to enable calculation of the average daily consumption for a new substitution reading. Western Power may apply an actual read as a reference point for substitution to ensure any substitution applied is not based on a prior substituted or estimated reading.	
12.3.4	Example deleted	8.3.5		No other change
		8.3.3	Western Power will as far as reasonably practicable, ensure that for all Substitution Types for Type 6 metering installations, substituted energy data is not based on energy data that has previously been estimated or substituted.	New section in Updated Procedure
12.4.1		8.4.1		No wording changes
12.4.2		8.4.2	c) Western Power may define additional internal procedures to reflect a more accurate assessment of the customer's consumption.	New section in Updated Procedure
12.4.3		8.4.3		No wording changes
12.4.4		8.4.4	c) The code participant, applicable user and Western Power may agree to use a globally applied substitution method in advance of its application. d) The code participant, applicable user and Western Power may agree to amend a site-specific substitution method upon receipt of more accurate information relating to the site. e) For metering points that are active but in the status of "Not Energised", Western Power will apply substituted readings of zero for any day(s) the metering point has "Not	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			Energised" status. Substitution method 64, in conjunction with the appropriate reason code will be provided by Western Power.	
12.4.5		8.4.5		No wording changes
		9	Metering Installations Type 7 – Validation, Substitution and Estimation	New section in Updated Procedure
			9.1 Requirements to Validate 9.1.1 The substitution and estimation types detailed in clauses A3.6 and A3.7 of Appendix 3 of the Code are to be undertaken by Western Power for the calculation, substitution and delivery of metering data from a metering installation Type 7. **9.2 Type 7 Substitution Rules** 9.2.1 Western Power must carry out all metering data substitutions and estimations in accordance with this Metrology Procedure. 9.2.2 Western Power must obtain clear and concise identification as to the cause of any missing or erroneous calculated metering data for which metering data substitutions are required. 9.2.3 Western Power must ensure that all metering data substitutions and estimations are based on calculated metering data and not on any previous substitutions. 9.2.4 Western Power must base calculated metering data for Type 7 metering installations in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents: a) Where the specification has not been updated for	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			the period concerned, calculated metering data must be based on the most recent available information and provided as an estimated value; and b) Where the specification is correct for the period concerned, the calculated metering data must be provided as an actual value; and c) Where the specification in (b) above has a subsequent update for the period concerned, the calculated metering data must be provided as a substituted value. 9.2.5 Subject to clause A3.7 of Appendix 3 of the Code, Western Power may apply the following substitution and estimations types: a) Substitutions may be type 71, 72, 73, or 74. b) Estimations must be type 75. 9.2.6 Western Power must notify the retailer for the connection point of any calculated metering data substitution within 2 business days of the calculated metering data substitution being carried out. Notification is achieved via the participant metering data file as detailed in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents. 9.2.7 Western Power must flag all calculated metering data substitutions as final (F). **9.3 Substitution and Estimation Types** 9.3.1 Type 71 - Recalculation Western Power must substitute calculated metering data with the calculated metering data obtained by a recalculation based on the current specification in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			Specification documents. 9.3.2 Type 72 - Revised Specification Where the error in the calculated metering data is due to errors in the specification outlined in the Communication Rules Build Pack or the UMS Data CSV File Specification documents Western Power must substitute calculated metering data obtained by a recalculation based on the most recent inventory tables, load tables and on/off tables in which there were no errors. 9.3.3 Type 73 - Revised Algorithm Where the error in the calculated metering data is due to an error in the algorithm, Western Power must substitute the most recent calculated metering data for which there was no error. 9.3.4 Type 74 - Agreed Method Western Power has agreed this method of calculating metering data substitution (which may be a modification of an existing substitution type), in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents. **9.4 Validation for Type 7 – Registration Process** 9.4.1 Western Power must validate the calculated metering data on registration of all Type 7 metered sites to verify consistency with the specifications in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents. **9.5 Validation of Type 7 Metering Data** 9.5.1 Western Power must undertake the following validations on calculated metering data within the metering data services database:	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			a) Check against a nominated maximum calculated metering data value. b) Calculated metering data value is numeric and greater than or equal to zero. c) Check for null (no values) calculated metering data in the metering data services database for all metering data streams. i. The aim of this check is to ensure that there is a 100% calculated metering data set (and substitution for any missing calculated metering data has been undertaken) d) Check the specifications in accordance with the Communication Rules Build Pack and specifically the Streetlights and UMS Data CSV File Specification documents. e) Check against a nominated minimum value or alternatively a ”zero‟ check which tests for an acceptable number of zero interval values over a period of time that is deemed practicable in alignment with good electricity industry practice and this Metrology Procedure. f) Calculated metering data date is greater than the previous calculated metering data date.	
Appendix 1	Metering Statuses – deleted			Not required in metrology procedure as the metering statuses are only used for internal Western Power purposes
		10	Metering Alarms **10.1 Validation of interval metering data alarms for installations types 1-5**	New section in Updated Procedure

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
			10.1.1 Western Power must validate interval metering data against significant metering data alarms when these are provided in the meter as per the code the following alarms • Power failure • VT or phase failure • Pulse over flow • CRC Error • Time Tolerance a) Where a metering installation types 1 -5 assigns alarms to the meter data channel or the interval reading status ,Western Power may process the alarm along with the Metering data as part of the required validation process b) As a minimum Western Power must have systems and processes in place that capture metering data alarms c) Western Power must retain all metering data alarms as part of the data audit trail d) For instances where Interval data was found to be corrupted, Western Power may provide replacement data in alignment with the Code and good electricity industry practice and with this Metrology procedure e) Western Power may apply processes where data alarms may take precedence of certain types based on a priority. Channel Status codes may be deemed more serious than interval status codes and may take priority however substitution may take priority over an alarm raised in the meter. **10.2 Metering Installations Type 1 -5 Metering Data Alarm definitions** Refer to the Table in Attachment 1 below for details.	

Section	Section of the 2006 Metrology Procedure	Section	Section of the 2014 Metrology Procedure	Comments
Appendix 2	Default Metering Installation Settings	Appendix 1	Default Metering Installation Settings	No wording changes
		Appendix 2	Meter Compliance Testing and Sampling Plan	New Appendix

Attachment 1: 10.2 Metering Installations Type 1 -5 Metering Data Alarm definitions

Description	Code	Definition	Type
Power Failure (Power Outage)	PO	This status occurs when the meter detects loss of power. During the meter data retrieval process, collection system, flags each load profile interval value between the AC Power Down and AC Power Up events with a Power Outage status bit.	Interval Status
Alarm/Error	LR	This status is based on the meter manufacturer's documentation of alarm conditions. It can reflect a field device channel status such as power drop on a phase, harmonics, or a field device interval status such as program malfunction or test mode.	Channel Status
Over Flow of Channel Data	OV	This status indicates that the actual demand value collected from the meter was beyond the range of the Demand High/Low Limits.	Channel Status
CRC Checksum Error	CR	This status occurs during an internal status check or an internal read/write function within the meter. This error condition is dependent on the meter hardware.	Interval Status
Time Reset occurred	TR	This status occurs when any time change, including DST, occurs in the meter.	Interval Status