

# METERING DATA FILE FORMAT

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# AGENDA SLIDE

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# SCOPE AND ASSUMPTIONS



All the analysis in these slides is based on:

- The Metering Competition Rule change (mainly chapter 7) that becomes effective on 1 December 2017.
- The draft WA Rules as at 10 October 2016.
- The procedures and instruments amended and created as a consequence of this Rule change become effective on 1 December 2017.

# OBJECTIVE OF THE MDFF



- A consistent and well understood file format for provision of metering data from Metering Data Providers to Service Providers and Registered Participant, this improves operational and market efficiency.
- To achieve this, Metering Data Providers (MDPs) are required to collect, process and deliver metering data to participants in the Metering Data File Format (MDFF).
- The energy data is critical to settle the market.

- Electricity Industry (Metering) Code (2012) includes the head of power for the network operator to establish the communication rules.
- The SWIS Communication Rules (Part 3) identifies the communication methods and protocols used by the Network Operator and Code Participants, one of these is XML based B2B transactions.
- One of the protocols is the NEM12 and NEM13 file formats for historical consumption of data.

- The Western Power (WP) Build Pack sets out the meter data process.
- In WA, meter data is provided as set out in the MDFF (based on version 0.7) and the data is included in an ase:MeterDataNotification transaction that goes through the WA B2B Hub.
- NEM12 and NEM13 file formats are used in WA, NEM12 file format used for all contestable customers (<50MW) and NEM13 for non-contestable customers.

- National Electricity Rules (NER) sets out requirements for the collection and provision of metering data and B2B data.
- Under the NER:
  - AEMO is responsible for establishing and maintaining the B2B Procedures and providing a B2B e-hub for B2B communications.
  - Retailers, Market Customers and Distributors, Metering Providers (MP) and Metering Data Providers (MDPs) must comply with the B2B Procedures.

# CURRENT NEM ARRANGEMENTS (CONT.)



- The B2B Procedure Meter Data Process requires participants to use aseXML to deliver transactions and describes the business processes regarding the process for:
  - Provision of the MDFF data, via an MeterDataNotification.
  - Requesting the MDFF data, via a ProvideMeterDataRequest.
  - Verification or queries of the MDFF data, via a VerifyMeterDataRequest.



# POWER OF CHOICE (PACKAGE 1)

## – UPDATES TO MDFF



- Updated to incorporate Metering Competition, Embedded Networks and Meter Replacement Processes rule changes.
- At a high level, changes included:
  - Amendments to simplify, correct minor errors, eliminate superfluous language and align with Glossary and Framework document.
  - Remove specific references to the retailer and make it more generic, i.e. in the 500 record – RetServiceOrder.
  - Amendments to include type 4A metering installations.
  - Update relevant website links to related AEMO documents.

# MDFF CONTENT – GENERAL RULES AND INFORMATION



- The MDFF must:
  - Be in a CSV format.
  - Contain one Header (100) record.
  - Contain one End (900) record.
  - Contain either NEM12 or NEM13 formatted data.
- The 100 header record identifies the file format in:
  - NEM12 – interval metering data.
  - NEM13 – accumulation metering data.
- The MDFF can be delivered as standalone files or via aseXML B2B transactions.
- Participants must use reasonable endeavours to ensure that all NMI suffixes associated with a NMI for a single read event/date are included in the same 100-900 event block.

# MDPP CONTENT – FILE DELIVERY AND CONSTRUCTION



- **File Delivery:**
  - For delivery via the B2B e-Hub – refer to the B2B Technical Specifications.
  - For alternative delivery – the MDPP specifies the file naming standard and the compression of files. Refer to section 4.2.2 of the MDPP.
- **File Construction:**
  - The values in a field are not case sensitive, except where allowed values are specified as an enumerated list in the record definition tables (refer sections 5 and 6 of the MDPP).
  - All record lines must end in a carriage return and line feed (CRLF).

# MDPP CONTENT – FILE DELIVERY AND CONSTRUCTION (CONT.)



- File construction:
  - Fields must not include leading or trailing spaces.
  - Where there's no interval value the:
    - *IntervalValue* field must include "0".
    - *QualityFlag* field must have a value of "N".
  - Comma needed between all fields.
  - No commas allowed in any data field.
- *DateTime* components are two-digits and reverse notation, for example:
  - *Date*(8) – CCYYMMDD, i.e., 20161118
  - *Date*(12) – CCYYMMDDhhmm, i.e., 201611180910
  - *Date*(14) – CCYYMMDDhhmmss, i.e., 20161118091045.
- Noting, the time standard for the end of the *day* is 00:00 of the following *day*.

# MDPP CONTENT– FILE DELIVERY AND CONSTRUCTION (CONT.)



- Interval metering data is presented in sequence order, for example:
  - For 15 minute intervals – 00:15,00:30,00.45,...00:00
  - For 30 minute intervals – 00:30,01:00,01:30,...00:00
- IndexRead for type 5 meters:
  - Must be provided for active energy data streams (Wh).
  - Registered Participants must not raise a validation query with the MDP regarding any IndexRead value.
  - The IndexRead must be exclusive of meter multipliers. This value must be in the format displayed on the meter and, where available, include any leading or trailing zeros.
  - The provision of an IndexRead for any time other than the current reading event must be agreed between the relevant Registered Participant and Service Provider.

# MDPP CONTENT – FILE DELIVERY AND CONSTRUCTION (CONT.)



- Some rules for Reasoncodes include:
  - The MDP must supply the most accurate ReasonCode.
  - It must be supplied for all intervals and consumption values where the quality flag is “S” (substituted) or “F” (final substituted).
  - Where the meter has recorded a power outage or time reset, a ReasonCode must be supplied.
  - A *ReasonCode* must be provided for actual reads (*QualityFlag* value of “A”) for all intervals where the *meter* has recorded a power outage (reason code 79) or time reset (reason code 89).
- For a complete list of ReasonCode rules see section 4.3.5 and Appendix for the reason codes and descriptions.

# MDPP CONTENT – FILE DELIVERY AND CONSTRUCTION (CONT.)



- Sections 5 and 6 of the MDPP include details of all header records, including the field, format, field requirement, and definition. Participants should review these.
- Keys used in the “Field Requirement” column for all record data tables:
  - M = Mandatory (must be provided in all situations).
  - R = Required (must be provided if this information is available).
  - N = Not required (unless specified, can be provided but may be ignored by the recipient).

# MDPP CONTENT – FILE DELIVERY AND CONSTRUCTION (CONT.)

- NEM13 Header Record (100) example:

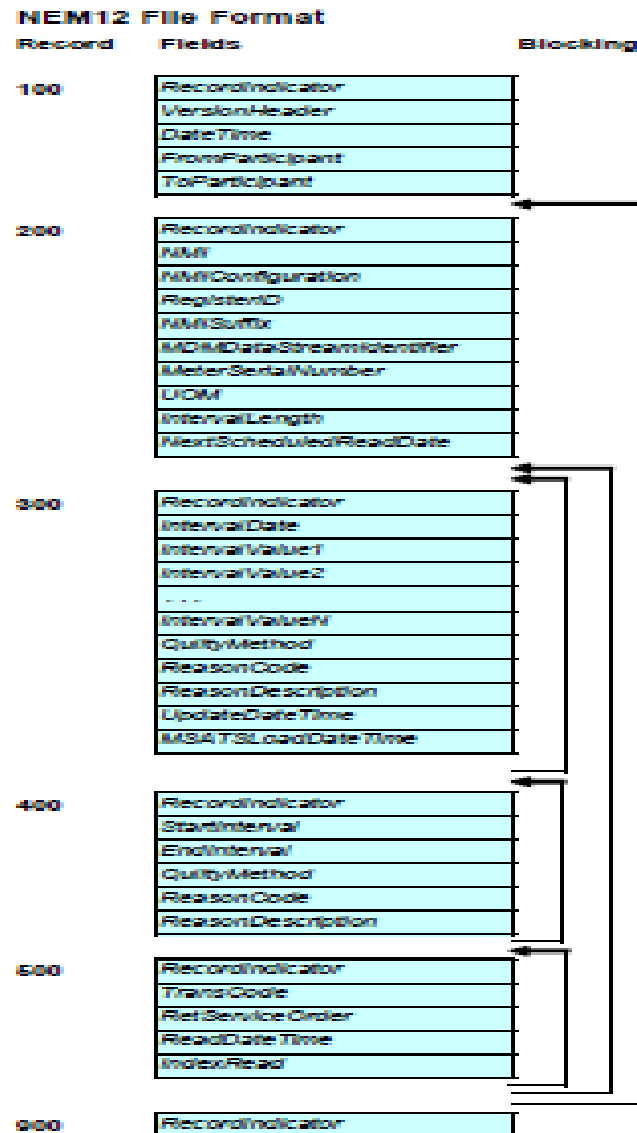
Example: RecordIndicator,VersionHeader,DateTime,FromParticipant,ToParticipant

100,NEM13,200301011534,MDP1,Retailer1

Field	Format	Field Requirement	Definition
<u>RecordIndicator</u>	Numeric(3)	M	Header record indicator. 1 per file (100-900 record set). A 100 record must have a matching 900 record. Allowed value: 100.
<u>VersionHeader</u>	VarChar(5)	M	Version identifier. Details the version of the data block and hence its format. Allowed value: NEM13.
<u>DateTime</u>	DateTime (12)	M	File creation date / time.
<u>FromParticipant</u>	VarChar(10)	M	The MSATS Participant ID of the MDP that generates the file.
<u>ToParticipant</u>	VarChar(10)	M	The MSATS Participant ID of the intended <i>Registered Participant</i> or <i>Service Provider</i> .



# MDFF CONTENT – NEM12 FILE FORMAT HEADER RECORDS



# MDFF CONTENT – NEM13 FILE FORMAT HEADER RECORDS

## NEM13 File Format

Record	Fields	Blocking
100	RecordIndicator VersionHeader DateTime FromParticipant ToParticipant	
250	RecordIndicator NM NMConfiguration RegisterID NMSuffix MDMDataStreamIdentifier MeterSerialNumber DirectionIndicator PreviousRegisterRead PreviousRegisterReadDateTime PreviousQualityMethod PreviousReasonCode PreviousReasonDescription CurrentRegisterRead CurrentRegisterReadDateTime CurrentQualityMethod CurrentReasonCode CurrentReasonDescription Quantity UOM NextScheduledReadDate UpdateDateTime MSATSLoadDateTime	
550	RecordIndicator PreviousTransCode PreviousRetServiceOrder CurrentTransCode CurrentRetServiceOrder	
900	RecordIndicator	

- Suggest reviewing Appendices for further information, see:
  - Appendix A – transaction code flags for ServiceOrderRequest. For example, “A” – alteration, “G” – re-energisation, “D” – de-energisation, “S” – special read.
  - Appendix B – format and unit of measure fields
  - Appendix C – quality flags. For example, “A” – actual data, “E” – forward estimated data, “F” – final estimated data, “S” – substituted data.
  - Appendix D – method flags.
  - Appendix E – reason codes.
  - Appendix F – obsolete reason codes.
  - Appendix G – Summary of file format and blocking.
  - Appendix H and I, examples of consumption data files, NEM12 and NEM 13, respectively.
  - Appendix J – Example of use of the register read fields.

# MDFF CONTENT

- The MDFF is available at:  
<http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1>.

# RELATED DOCUMENTS

- MDFF related procedures include:

Procedure Title	Location
Service Level Procedures	<a href="http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1">http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1</a>
Metrology Procedure: Part B	<a href="http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1">http://www.aemo.com.au/Stakeholder-Consultation/Consultations/Power-of-Choice---AEMO-Procedure-Changes-Package-1</a>
National Metering Identifier (NMI) Procedure	<a href="http://www.aemo.com.au/-/media/Files/PDF/0610-0008-pdf.pdf">http://www.aemo.com.au/-/media/Files/PDF/0610-0008-pdf.pdf</a>
Standing Data for MSATS	<a href="http://www.aemo.com.au/-/media/Files/PDF/AEMOStandingDataforMSATSV42.pdf">http://www.aemo.com.au/-/media/Files/PDF/AEMOStandingDataforMSATSV42.pdf</a>
B2B Procedure: Meter Data Process	<a href="http://www.aemo.com.au/-/media/Files/PDF/B2B-Procedure-Meter-Data-Process-v22--Final-Determination-Clean.pdf">http://www.aemo.com.au/-/media/Files/PDF/B2B-Procedure-Meter-Data-Process-v22--Final-Determination-Clean.pdf</a>
B2B Procedure: Technical Delivery Specification	<a href="http://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail_and_Metering/B2B/B2B-Procedure-Technical-Delivery-Specification-v22--Final-Determination-Clean.pdf">http://www.aemo.com.au/-/media/Files/Electricity/NEM/Retail_and_Metering/B2B/B2B-Procedure-Technical-Delivery-Specification-v22--Final-Determination-Clean.pdf</a>

# ASSUMPTIONS AND NEXT STEPS



- Based on the WA draft Rules as at 10 October 2016, WA adopts the MDFF.
- Meter data provision in WA participants currently use the MDFF.
- To date, and based on the draft Rules received, we do not anticipate material changes to the MDFF to incorporate WA.
- Participants to assess the MDFF and identify to AEMO whether there are any concerns adopting the latest version of the MDFF.
- AEMO expects to commence consultation on this Procedure in March 2017.

# QUESTIONS



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