METERING DATA PROVISION PROCEDURES

~~STRAWMAN FOR CONSULTATION~~

PREPARED BY:	MARKETS
VERSION:	0.2~~1~~
EFFECTIVE DATE:	~~1~~ 6 ~~March~~ July 201~~5~~6
STATUS:	~~STRAWMAN FOR~~ DRAFT CONSULTATION

AEMO
AUSTRALIAN ENERGY MARKET OPERATOR

VERSION RELEASE HISTORY

Version	Effective Date	Summary of Changes
0.1		Strawman
0.2	6 July 2015	Draft Procedure

CONTENTS

1. INTRODUCTION

1.1. Purpose and scope

These Procedures establish minimum requirements for the manner and form in which retailers or Distribution Network Service Providers (DNSPs) must provide *metering data* to a *retail customer*, or their *customer authorised representative*, in response to a request for *metering data* from the *retail customer* or *customer authorised representative*.

~~These are the *Metering Data Provision Procedures* (Procedures) made under clause 7.16 of the National Electricity Rules (NER).~~

~~These Procedures have effect only for the purposes set out in the NER. The NER and the National Electricity Law (NEL) prevail over these Procedures to the extent of any inconsistency. These Procedures relate to requirements in the National Energy Retail Rules (NERR), which are only relevant for jurisdictions participating in the National Energy Customer Framework.~~

These Procedures apply to retailers and *Distribution Network Service Providers (DNSPs)* responding to requests from a *retail customer*, or their *customer authorised representative*, for their *metering data* from the *retail customer's metering installation* made under National Electricity Rules (NER) clause 7.7(a)(7).

These Procedures ~~must~~ specify the:

- Manner and form in which the *retail customer's metering data* must be provided, including:
  1. For *interval metering data*, a detailed data format and summary data format.
  2. For *accumulated~~ion~~ metering data*, a summary data format.
- Timeframes for *retailers* and *DNSPs* to respond to requests made by a:
  1. *Retail customer.*
  2. *Customer authorised representatives*.
- Minimum delivery method for the requested *metering data*.

These are the *Metering Data Provision Procedures* (Procedures) made under clause 7.16 of the NER.

These Procedures have effect only for the purposes set out in the NER. The NER and the National Electricity Law (NEL) prevail over these Procedures to the extent of any inconsistency.

~~These Procedures do not cover retailer and DNSP processes to comply with the *Privacy Act 1988* (Commonwealth) including processes to verify the identity of a retail customer or its customer authorised representative. It is retailers' and DNSPs' responsibility to determine what needs to be done to ensure their *Privacy Act 1988* (Commonwealth) obligations have been met.[1]~~

~~Throughout these Procedures, terms used in the NER – such as *retail customer* – are italicised.~~

1.2. Definitions and interpretation

1.2.1. Glossary

The words, phrases and abbreviations set out in the table below, when used in these Procedures, have the meanings set out opposite them.

Terms defined in the NEL or the NER have the same meanings in these Procedures unless otherwise specified in this clause. Those terms are intended to be identified in these Procedures by italicising them, but failure to italicise a defined term does not affect its meaning.

~~[1] For further information on the *Privacy Act 1988* (Commonwealth) refer to: http://www.comlaw.gov.au.~~

Term	Definition
Accumulated~~ion~~ metering data - summary data	This includes: Total volume of energy ~~volume~~ for each energy flow type for the specified time period. Diagrammatic representation of daily volumes for each energy flow type for the specified time period. Each meter reading date ~~and index read~~ for each energy flow type for the specified period of time. ~~Start~~From Date and ~~End~~Read Date for the specified time period
Controlled load	Controlled load is applicable to electricity usage that is separately metered and controlled by a party other than the customer. It is used for operating storage water heaters, thermal storage space heaters, and other approved fixed wired appliances. Controlled load energy usage values are positive in *metering data* files.
Daily time periods	Time periods during a day when different usage rates are applied to energy usage.~~consumption~~
Demand/Capacity	Is calculated by identifying the highest half hourly interval usage for each "Date" period and is multiplied by two to obtain the maximum demand expressed in kW. For 15 minute intervals, the highest 15 minute interval usage for each "Date" period is identified and multiplied by four to obtain the maximum demand expressed in kW. Maximum demand expressed in kVA is the maximum value determined for each "Date" period as follows: $kVA = 2 \times \sqrt{kW^2 + kVAr^2}$ Where: kW = kilowatts recorded over a 30 minute period. kVAr = kilovolt ampere reactive recorded over a 30minute period.
Energy flow type	Energy flow over a period of time for which there is a separate energy measurement or a separate usage rate.
~~Energy volume or demand~~	~~The energy volume or demand measured over a period of time for each energy flow type.~~
Extent of energy usage	See energy flow type.~~volume or demand~~
Generation	Volume of energy generated by the *retail customer*, i.e. energy flow to the grid from the connection point. Where the generated energy is measured by a net *metering installation*, the generated energy will be combined with energy usage values and energy usage values will be negative when excess generation occurs for a period. Where the generated energy is measured by a gross *metering installation*, the generated energy will be separate from energy usage and will have a positive value.
Interval metering data - summary data	This includes: Total volume of energy ~~volumes~~ for each energy flow type for the specified time period. Diagrammatic representation of daily ~~energy~~ volumes for each energy flow type for the specified time period. ~~Start~~From Date and ~~End~~To Date for the specified time period.
Interval metering data – detailed data	NEM12 file that complies with the Meter Data File Format Specification NEM12 & NEM13.~~This includes:~~ ~~48 (or 96) interval values for each energy flow type for each day of the specified time period.~~ ~~Start Date and End Date for the specified time period~~
Load profile	A diagram~~graph~~ showing a retail customer's energy consumption over the time period as requested by the retail customer or customer authorised representative. This is provided: Monthly for remotely read interval metering data. By Read Date~~Quarterly~~ for manually read accumulated~~ion~~ or interval metering data.
Nature	See energy flow type.
Off-peak	A time period during a day when an off-peak ~~usage~~ rate is applied to energy usage.~~consumption~~
Peak	A time period during a day when a peak ~~usage~~ rate is applied to energy usage.~~consumption~~
Shoulder	A time period during a day when a shoulder ~~usage~~ rate is applied to energy usage.~~consumption~~

Term	Definition
UOM	Unit of Measure (refer to clause 54.1).

1.2.2. Interpretation

The following principles of interpretation apply to these Procedures unless otherwise expressly indicated:

1. These Procedures are subject to the principles of interpretation set out in Schedule 2 of the NEL.
2. References to time are references to Australian *Eastern Standard Time*.

1.3. Related AEMO procedures

Additional information relevant for these Procedures can be found in the documents listed below. These documents Stakeholders can find additional relevant information in these documents, which are available on AEMO's website[2]:

I. Standing Data for MSATS.

II. Metering Data File Format Specification NEM12 & NEM13.

III. National Metering Identifier Procedure.

2. OBJECTIVE

The objective of these Procedures is to establish the minimum requirements for the manner and form in which retailers or DNSPs must provide *metering data* to a *retail customer*, or their *customer authorised representative*, in response to a request for *metering data* from the *retail customer* or *customer authorised representative*.

[2] http://www.aemo.com.au.

2. IDENTITY VERIFICATION AND DATA DELIVERY TIMEFRAMES

(a) *Retailers* and *DNSPs* must verify customer identity and use reasonable endeavours to provide *metering data* to *retail customers* and *customer authorised representatives* within the delivery timeframes detailed in clauses 2.2 and 2.3.

2.1. Verifying the identity of a retail customer or customer authorised representative

(a) *Retailers* and *DNSPs* must identify and publish, at a minimum, the information below required from a *retail customer* or *customer authorised representative* who requests *metering data*.

I. Sufficient information to verify identity and relevant consents from *retail customers* and *customer authorised representatives*.

II. The way in which a request for *metering data* can be made, e.g. email, writing, telephone, etc.

III. The form in which the *metering data* will be provided by the *retailer* or *DNSP*, e.g. electronic, physical copy, etc.

(b) It is the responsibility of *retailers* and *DNSPs* to determine what needs to be done to ensure their Privacy Act 1988 (Commonwealth) obligations have been met.

(c) Where a *retailer* or *DNSP* determines it cannot verify the identity or relevant consents of a *retail customer* or *customer authorised representative*, the *retailer* or *DNSP* must advise the *retail customer* or *customer authorised representative* within three *business days* of receiving the request for *metering data* that insufficient verification information has been provided.

(d) The *retailer* or *DNSP* notification, issued in accordance with clause 2.1~~3.3~~(c), must:

I. Provide detail of where the verification information was insufficient.

II. Advise that the request for *metering data* is closed.

III. Advise that a new *metering data* request with complete verification information must be provided.

(e) A new *metering data* request is deemed to exist when a *retail customer* or *customer authorised representative* provides the complete verification information to the *retailer* or *DNSP*, in accordance with clause 3.3(a).

2.2. Retail customer request

(a) Where a *retail customer* requests their *metering data, Retailers* and *DNSPs* must use reasonable endeavours to deliver the *metering data* to the *retail customer* within 10 *business days*. This delivery timeframe commences from the date the request is received by the *retailer* or *DNSP*.

2.3. Customer authorised representative

(a) Where a *customer authorised representative* requests *metering data* for one *retail customer, retailers* and *DNSPs* must use reasonable endeavours to deliver the *metering data* to the *customer authorised representative* within 10 *business days*. This delivery timeframe commences from the date the request is received by the *retailer* or *DNSP*.

(b) Where a *customer authorised representative* requests *metering data* for more than one but less that 100 *retail customers* in a single request, *Retailers* and *DNSPs* must use reasonable endeavours to deliver the *metering data* to the *customer authorised representative* within 20 *business days*. This delivery timeframe commences from the date the request is received by the *retailer* or *DNSP*.

(c) Where a *customer authorised representative* requests *metering data* for more than 100 *retail customers* in a single request, the delivery timeframe must be agreed between the *retailer* or *DNSP* and the *customer authorised representative*.

3. DATA DELIVERY METHOD

(a) *Retail customers* or *customer authorised representatives* may request detailed *metering data* for analysis or summary *metering data*.

3.1. Delivering summary data

(a) The *retailer* or *DNSP* must provide the summary data electronically or physically to the *retail customer* or *customer authorised representative*, whichever is requested by the *retail customer* or *customer authorised representative*.

(b) The summary data must be provided in a Portable Document Format (PDF), unless otherwise agreed with the *retail customer* or *customer authorised representative*.

3.2. Delivering detailed data

(a) The *retailer* or *DNSP* must provide the detailed data electronically to the *retail customer* or *customer authorised representative*.

(b) The detailed data must be constructed in a CSV format, unless otherwise agreed with the *retail customer* or *customer authorised representative*.

(c) Detailed data constructed in a CSV format may be delivered as a compressed file with a ".zip" extension if needed to manage file size of delivered data.

3.3. File naming conventions

(a) PDF summary data file name must follow the convention detailed below and in clause 3.3(c).

I. *NMI_MeteringDataStartDate_MeteringDataEndDate_FileProvisionDate_FileType.pdf*

II. Example:

8000000000_20140301_20160301_20160305130000_SUMMARY.pdf

(b) CSV detailed data file name must follow the convention detailed below and in clause 3.3(c).

IV. *NMI_MeteringDataStartDate_MeteringDataEndDate_FileProvisionDate_FileType.csv*

V. Example

8000000000_20140301_20160301_20160305130000_DETAILED.csv

(c) File naming fields must use the following format.

Field Name	Description	Format
NMI	NMI for the connection point. Does not include check digit or NMI Suffix.	Char(10)
MeteringDataStartDate	Date at the start of the requested metering data period.	Date(8) (i.e. CCYYMMDD)
MeteringDataEndDate	Date at the end of the requested metering data period.	Date(8) (i.e. CCYYMMDD
FileProvisionDate	Date and time when metering data file is produced.	DateTime(14) (i.e. CCYYMMDDhhmmss)

Field Name	Description	Format
FileType	"SUMMARY" for both accumulated and interval summary files. "DETAILED" for interval detailed file.	VarChar(10) (not case sensitive)

3.4. Number of metering data files to be provided

(a) *Retailers* and *DNSPs* must provide a single *metering data* file in relation to a *retail customer's metering installation* for the requested period.

(b) Where there has been a change of *metering installation* configuration during the period for which *metering data* is requested, the *retailer* or *DNSP* may provide a separate *metering data* file for each *metering installation* configuration period. A *metering installation* configuration change includes a change of tariff and a change from *accumulated metering* to *interval metering*.

4. DATA FILE CONTENT~~ORMATS~~

(a) *Retailers* and *DNSPs* must provide the following content for each *metering data* file.

~~2.1. General National Energy Retail Rules (NERR) requirements~~

~~(a) Under clauses 56A and 86A of the NERR, following a *retail customer* or *customer authorised representative's* request, a *retailer* or *DNSP*:~~

~~I. Must provide up to two years information about that *retail customer's energy* consumption~~
~~II. Must provide this information without charge for up to four requests in any 12-month period. Thereafter the *retailer* and *DNSP* can charge a reasonable fee~~
~~III. May charge a reasonable charge if the information has been requested:~~
~~a. More than four times in the 12-month period~~
~~b. In a different manner or form than the Procedures specify~~
~~c. By a customer authorised representative as a part of a request for information about more than one small customer (or customer).[3]~~

~~(b) Where a *retail customer* has been with a *retailer* for less than two years, a *retail customer* or *customer authorised representative* may request their *metering data* from a previous *retailer*. The *retailer* must provide the requested information and can charge a reasonable fee for providing the service.~~

~~2.2.~~4.1. Field details – format and unit of measure

(a) Data fields for detailed and summary *metering data* files must use these permitted values (a subset of units of measure detailed in the Metering Data File Format Specification NEM12 & NEM13). Note that the permitted values for unit of measure are not case sensitive.

Permitted values	Description	Format	Character length
kWh	Kilowatt hour (energy usage)	Numeric	15.3
~~MW~~	~~Megawatt~~	~~Numeric~~	~~15.6~~
kW	Kilowatt (demand/capacity)	Numeric	15.3
~~MVA~~	~~Megavolt ampere~~	~~Numeric~~	~~15.6~~
kVA	Kilovolt ampere (demand/capacity)	Numeric	15.3

~~[3] Small customer and customer are NERR defined terms. The NERR can be found at: http//:aemc.gov.au.~~

2.3. Summary data format

the summary data format for *interval* and *accumulation metering data* must include the following information:

I. National Metering Identifier *(NMI)*

II. Meter Serial Number

III. Unit of Measure (UOM) for the Energy Flow Type

IV. Data quality indication

V. Read Date, monthly for *interval metering data* or when read for *accumulation metering data*

VI. Energy Flow Types:

A. Peak

B. Shoulder, Off-Peak, Controlled Load and/or Generation (only if applicable).

Conditions that apply to all summary data files are:

I. File must be based on validated *metering data.*

II. File must not contain any blank rows or columns.

III. File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.

2.4.4.2. Accumulatedion metering data summary format

(a) The *accumulatedion metering data* summary must, at a minimum, include:

I. The nature and extent of energy usage.

II. A diagrammatic and numerical representation of the usage information.

(b) Conditions that apply to all summary *accumulated metering data* files are:

I. File must be based on validated *metering data.*

II. File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.

(c) Appendix A contains the *accumulatedion metering data* summary format, including the required file conditions, and an examples of an accumulation file and diagrammatic representation of energy usage.

Conditions that apply to all summary data files are:

File must be based on validated *metering data.*

File must not contain any blank rows or columns.

File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.

(d) The summary data format for *accumulatedion metering data* provided by a *retailer* must include the following information:

I. National Metering Identifier *(NMI),*

II. Meter Serial Number,

III. Unit of Measure (UOM) for the Energy Flow Type,

IV. Data quality indication,

V. Read Date~~, monthly for *interval metering data* or when read~~ for *accumulated~~ion~~ metering data* (i.e. end of meter reading period),

VI. From Date (i.e. start of meter reading period),

VII. Energy Flow Types:

A. Total usage or billing-related components, e.g. Peak, Shoulder, Off-Peak usage, etc.

B. Controlled Load usage (only if applicable),

C. Generation (only if applicable).

(e) The summary data format for *accumulated~~ion~~ metering data* provided by a *DNSP* must include the following information:

I. National Metering Identifier *(NMI)*,

II. Meter Serial Number,

III. Unit of Measure (UOM) for the Energy Flow Type,

IV. Data quality indication,

V. Read Date~~, monthly for *interval metering data* or when read~~ for *accumulated~~ion~~ metering data* (i.e. end of meter reading period),

VI. From Date (i.e. start of meter reading period).

VII. Energy Flow Types:

A. Total usage,

B. Controlled Load usage (only if applicable),

C. Generation (only if applicable).

~~2.5.~~4.3. Interval metering data summary format

(a) The *interval metering data* summary ~~format~~ to be provided by a *retailer* and *DNSP* must, at minimum, include:

I. The nature and extent of energy usage for daily time periods
II. Usage or *load* profile over a specified period
III. A diagrammatic representation of the information in (I) above.

(b) Conditions that apply to all summary *interval metering data* files are:

I. File must be based on validated *metering data.*

II. File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.

(c) Appendix B contains the *interval metering data* summary format~~, the~~ required file conditions and an example~~s~~ of a~~n interval file and~~ diagrammatic representation of energy usage.

~~Conditions that apply to all summary files are:~~

~~File must be based on validated *metering data.*~~

~~File must not contain any blank rows or columns.~~

~~File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.~~

(d) The summary data format for *interval metering data* provided by a *retailer* must include the following information:

I. National Metering Identifier *(NMI)*,

II. Meter Serial Number,

III. Unit of Measure (UOM) for the Energy Flow Type,

IV. Data quality indication,

V. ~~Read~~ Date, monthly for remotely read *interval metering data* or To Date for manually read *interval metering data* (i.e. end of meter reading period),

VI. From Date (i.e. start of meter reading period).

VII. Energy Flow Types:

A. Total usage or billing related components, e.g. Peak, Shoulder, Off-Peak usage, etc.,

B. Controlled Load (only if applicable),

C. Generation (only if applicable).

VIII. Demand/Capacity (if applicable for billing or if requested by a *retail customer*, or *customer authorised representative*, and is available).

(e) The summary data format for *interval metering data* provided by a *DNSP* must include the following information:

I. National Metering Identifier *(NMI)*,

II. Meter Serial Number,

III. Unit of Measure (UOM) for the Energy Flow Type,

IV. Data quality indication,

V. ~~Read~~ Date, monthly for remotely read *interval metering data* or To Date for manually read *interval metering data* (i.e. end of meter reading period,

VI. From Date (i.e. start of meter reading period).

VII. Energy Flow Types:

A. Total usage,

B. Controlled load (only if applicable),

C. Generation (only if applicable).

~~2.6.~~4.4. Detailed data format

(a) The detailed data format for *interval metering data* provided by a *retailer* or *DNSP* must be the NEM12 file that complies with the Meter Data File Format Specification NEM12 & NEM13.

(b) *Retailers* and *DNSPs* must make a NEM 12 customer guide available to assist *retail customers* to understand and interpret the data included in the NEM 12 file.

(c) The NEM 12 customer guide must, at a minimum, explain how usage, generation or controlled load is represented in a NEM 12 file in an understandable manner and how to load and open the NEM12 file.

~~(a) The detailed data format for *interval metering data* must include the following information:~~

~~I. *NMI*~~

~~II. Meter Serial Number~~

~~III. UOM for the Energy Flow Type~~

~~IV. Data quality indication~~

~~V. Read Date~~

~~VI. Energy Flow Types:~~

~~A. Peak~~

~~B. Shoulder, Off-Peak, Controlled Load Generation (only if applicable).~~

~~(b) Conditions that apply to all summary data files are:~~

~~I. File must be based on validated *metering data*~~

~~II. File must not contain any blank rows or columns~~

~~III. File ordered by Date – oldest date at the top of the file and most recent date at the bottom of the file.~~

~~(c) The *interval metering data* detailed format must be provided as a horizontal format.~~

~~Appendix C contains the *interval metering data* detailed format, including the file conditions and example files.~~

4.5. Ability to offer~~provide~~ alternative metering data formats

(a) For either a summary or detailed *metering data* format, where a *retail customer* or *customer authorised representative* requests an alternative *metering data* format that does not meet the minimum *metering data* requirements specified in these Procedures, a *retailer* or *DNSP* may offer~~provide~~ a *retail customer* and/or a *customer authorised representative* an alternative *metering data* format.

(b) *Retailers* and *DNSPs* must make a customer guide available to assist *retail customers* understand and interpret the data included in the alternative file.

(c) The customer guide must, at a minimum, explain in an understandable manner how usage, generation or controlled load is represented in an alternative file, and how to load and open the alternative file.

(d) *Retailers* and *DNSPs* must obtain informed consent from a *retail customer* or *customer authorised representative* before providing an alternative *metering data* file.

~~3. DELIVERY TIMEFRAMES~~

~~Retail customer request~~

~~*Retailers* and *DNSPs* must use reasonable endeavours to deliver a *retail customer's* requested *metering data* within 10 *business days*. This delivery timeframe commences from the date the request is received by the *retailer* or *DNSP*.~~

~~Customer authorised representative~~

~~Where a *customer authorised representative* requests more than one retail customer's metering data, the delivery timeframe must be agreed between the *retailer* or *DNSP* and the *customer authorised representative*.~~

Verifying the identity of a retail customer or customer authorised representative

4. DELIVERY METHOD

4.1. Summary Data Format

The *retailer* or *DNSP* must provide the summary data format electronically and/or physically to the *retail customer* or *customer authorised representative*.

This must be able to be offered in a Portable Document Format (PDF) and/or Comma Separated Values (CSV) format, unless otherwise agreed with the *retail customer* or *customer authorised representative*.

Summary data formats constructed in a CSV format may be delivered as a compressed file with a ".zip" extension if needed to manage file compression.

4.2. Detailed Data Format

The *retailer* or *DNSP* must provide the detailed data format electronically to the *retail customer* or *customer authorised representative*.

This must be constructed in an CSV format, unless otherwise agreed with the *retail customer* or *customer authorised representative*.

Detailed data formats constructed in an CSV format may be delivered as a compressed file with a ".zip" extension if needed to manage file compression.

APPENDIX A. ACCUMULATED~~ION~~ METERING DATA SUMMARY FORMAT

A.1 File conditions

File conditions detail the requirements for the information that must be provided in accordance with clauses 4.2(d) and 4.2(e).

File component	Parameters
File Type	PDF ~~and/or CSV~~
~~Header Record~~	~~NMI, Meter Serial Number, UOM, Estimated?, Read Date, Peak, Shoulder, Off-Peak, Controlled Load, Generation~~
National Metering Identifier (NMI)	NMI for the connection point. Does not include check-digit or NMI suffix.
Meter Serial Number	Multiple meters indicated by their respective meter serial numbers. Energy values from each meter are to be ~~collectively~~ published by Read Date.
Energy Flow Type	Total usage, Peak, Shoulder, Off-Peak, Controlled Load and Generation energy flows, where applicable, to be provided by *retailers*. Total usage, Cotrolled Load (if applicable) and Generation(if applicable) to be provided by *DNSPs*.
Energy Value	kWh value identifies the consumption for the associated Energy Flow Type. Usage~~Load~~ means ~~that~~ energy flows to the connection point from the grid. Generation means energy flows to the grid from the connection point.
UOM	kWh
Read Date	The date the meter ing data was collected, i.e. the end of~~(s) were read, for an estimate (Estimated = "Y"), when the reading event should have happened. Measured in EST~~
~~To~~From Date	The start~~end~~ date of the ~~reporting~~meter reading period. ~~Measured in EST~~
Date Format	DD/MM/YYYY
Data Quality	Provide a statement indicating whether the metering data file contains estimated data and specify which reading period(s) contain estimated data.~~Metering data estimated? Y or N. Note this is the plain English use of the term estimate~~ ~~Field value is Y if any of the elements on the associated row have been estimated~~
File Order	File ordered by date. Ordered by oldest date at the top of the file and most recent date at the bottom of the file.

~~A.1~~A.2 Example: accumulated~~ion~~ file

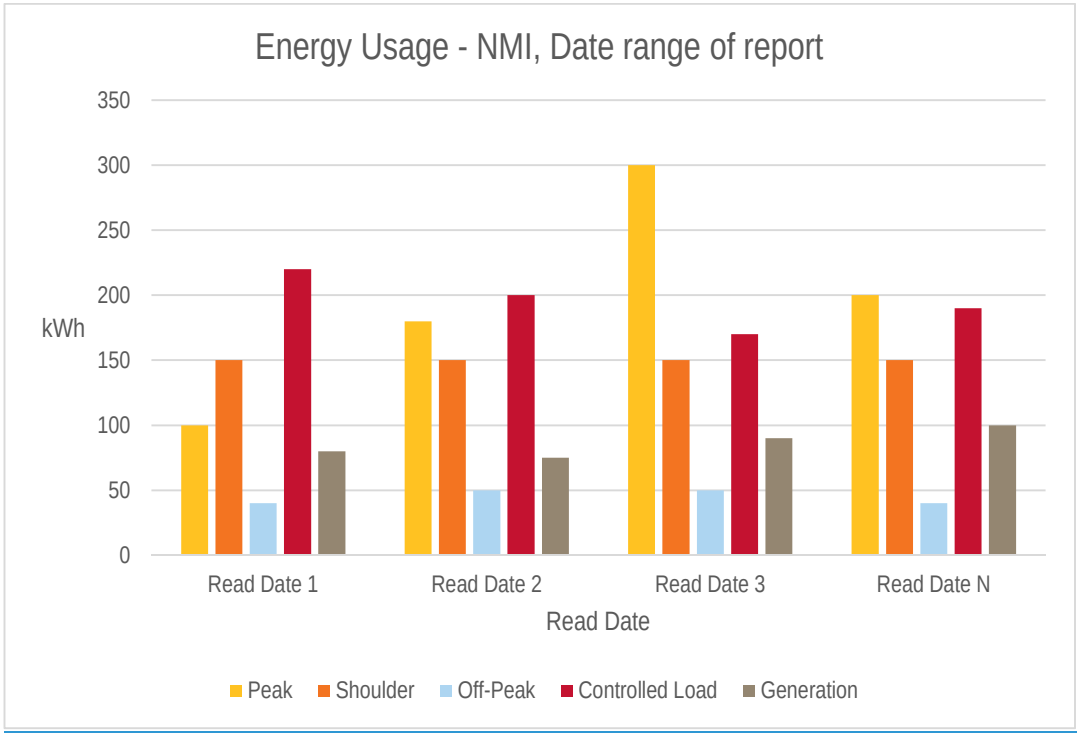
Example of data tabulation that could be provided by a *retailer* for a connection point with peak, shoulder, off-peak and controlled load energy usage and gross metered generation.

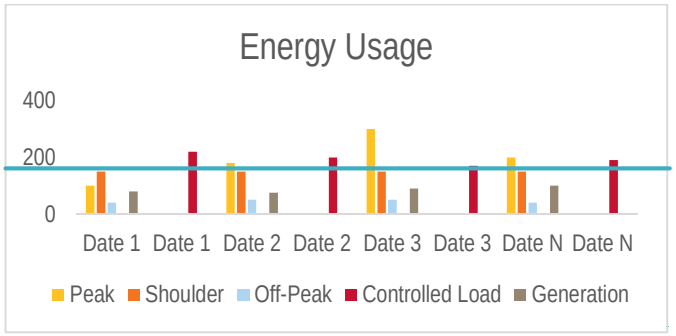
NMI	Meter Serial Number	UOM	From Date	Read Date	Peak	Shoulder	Off-Peak	Controlled Load	Generation
6xxxxxxxxx	123xxxx	kWh	From Date 1	Read Date 1	100	150	40	220	80
6xxxxxxxxx	123xxxx	kWh	From Date 2	Read Date 2	180	150	50	200	75

6xxxxxxxxx	123xxxx	kWh	From Date 3	Read Date 3	300	150	50	170	90
6xxxxxxxxx	123xxxx	kWh	From Date N	Read Date N	200	150	40	190	100

~~A.2~~A.3 Example: diagrammatic representation of energy usage

~~Note that this example does not include demand. This issue is addressed in the Metering Data Provision Procedures Consultation Paper circulated to stakeholders.~~ Example of diagrammatic representation of data that could be provided by a *retailer* for a connection point with peak, shoulder, off-peak and controlled load energy usage and gross metered generation.




Energy Usage
400
200
0
Date 1
Date 1
Date 2
Date 2
Date 3
Date 3
Date N
Date N
Peak
Shoulder
Off-Peak
Controlled Load
Generation

APPENDIX B. INTERVAL METERING DATA SUMMARY FORMAT

B.1 File conditions

File conditions detail the requirements for the information that must be provided in accordance with clauses 4.3(d) and 4.3(e).

File component	Parameters
File Type	PDF, ~~and/or CSV~~
~~Header Record~~	~~NMI, Meter Serial Number, UOM, Estimated?, Read Date, Peak, Shoulder, Off-Peak, Controlled Load, Generation, Demand, Demand UOM~~
National Metering Identifier (NMI)	NMI for the connection point. Does not include check-digit or NMI suffix.
Meter Serial Number	Multiple meters indicated by their respective meter serial numbers. Energy values from each meter are to be ~~collectively~~ published by Read Date when manually read *interval metering data* and monthly for remotely read *interval metering data*.
Energy Flow Type	Total usage, Peak, Shoulder, Off-Peak, Controlled Load, Generation energy flows, where applicable, to be provided by *retailers*. ~~and Demand~~ Demand/Capacity (if applicable for billing or if requested by a *retail customer*, or *customer authorised representative*, and is available). Total usage, Cotrolled Load (if applicable) and Generation(if applicable) to be provided by *DNSPs*. ~~Time of use (Peak, Shoulder, Off-Peak) are as per the retail tariff definition~~
Energy Value	kWh value identifies the consumption and kW or kVA value identifies demand for the associated Energy Flow Type. Summation is data between the "From Date" and "To Date" inclusive of intervals on both calendar days. Reporting period boundary is midnight EST. Usage~~Load~~ means that energy flows to the connection point from the grid. Generation means energy flows to the grid from the connection point.
UOM	kWh (energy usage), kW or kVA (demand).
From Date	The start date of the meter reading~~reporting~~ period for a manually read meter. ~~Measured in EST~~
To Date	The end date of the meter reading period for a manually read meter~~Date meter(s) read~~ ~~The end date of the reporting period. Measured in EST~~
Date (remotely read meters only)	Month in which energy usage or demand occurred.
Date Format	DD/MM/YYYY
Data Quality	Provide a statement indicating whether the metering data file contains estimated data and specify which reading period(s) contain estimated data.~~Metering data estimated? Y or N. Note this is the plain English use of the term estimate.~~ ~~Field value is Y if any of the elements on the associated row have been estimated~~
File Order	File ordered by date. Ordered by oldest date at the top of the file and most recent date at the bottom of the file.

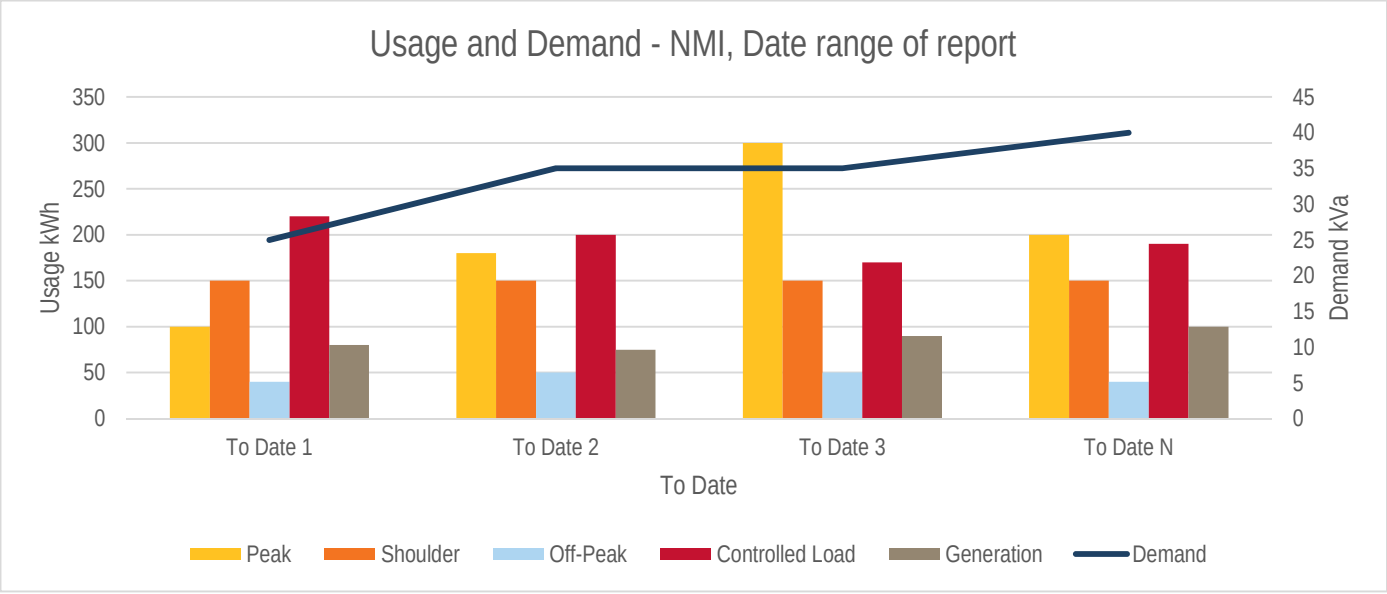
~~B.1~~B.2 Example: interval file

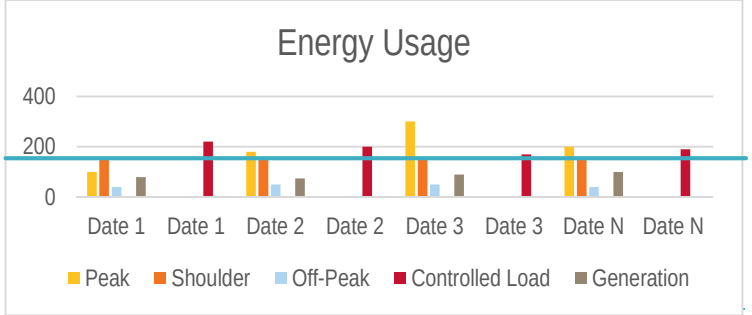
Example of data tabulation that could be provided by a *retailer* for a connection point with peak, shoulder, off-peak and controlled load energy usage, gross metered generation and demand.

NMI	Meter Serial Number	From Date	To Date	Peak	Shoulder	Off-Peak	Controlled Load	Generation	UOM	Demand	UOM
6xxxxxxxxx	123xxxx	From Date 1	To Date 1	100	150	40	0	80	kWh	25	kVA
6xxxxxxxxx	456xxxx	From Date 1	To Date 1	0	0	0	220	0	kWh	0	kVA
6xxxxxxxxx	123xxxx	From Date 2	To Date 2	180	150	50	0	75	kWh	35	kVA
6xxxxxxxxx	456xxxx	From Date 2	To Date 2	0	0	0	200	0	kWh	0	kVA
6xxxxxxxxx	123xxxx	From Date 3	To Date 3	300	150	50	0	90	kWh	35	kVA
6xxxxxxxxx	456xxxx	From Date 3	To Date 3	0	0	0	170	0	kWh	0	kVA
6xxxxxxxxx	123xxxx	From Date N	To Date N	200	150	40	0	100	kWh	40	kVA
6xxxxxxxxx	456xxxx	From Date N	To Date N	0	0	0	190	0	kWh	0	kVA

~~B.2~~B.3 Example: diagrammatic representation of energy usage

~~Note that this example does not include demand. This issue is addressed in the Metering Data Provision Procedures Consultation Paper circulated to stakeholders.~~ Example of diagrammatic representation of data that could be provided by a *retailer* for a connection point with peak, shoulder, off-peak and controlled load energy usage, gross metered generation and demand.




Energy Usage
400
200
0
Date 1
Date 1
Date 2
Date 2
Date 3
Date 3
Date N
Date N
Peak
Shoulder
Off-Peak
Controlled Load
Generation

Appendix C. INTERVAL METERING DATA DETAILED FORMAT

C.1 File conditions

File component	Parameters
File Type	CSV
Header Record (30-minute interval metering data)	NMI, Meter Serial Number, Read Date, UOM, Estimated?, Energy Flow Type, Consumption Date, 00:00 - 00:30, 00:30 - 01:00, 01:00 - 01:30,01:30 - 02:00, 02:00 - 02:30, 02:30 -03:00, 03:00 - 03:30, 03:30 - 04:00, 04:00 - 04:30, 04:30 - 05:00, 05:00 - 05:30, 05:30 - 06:00, 06:00 - 06:30, 06:30 - 07:00, 07:00 - 07:30, 07:30- 08:00, 08:00 - 08:30,08:30 - 09:00,09:00 - 09:30, 09:30 - 10:00, 10:00 - 10:30, 10:30 - 11:00, 11:00 - 11:30, 11:30 - 12:00, 12:00 - 12:30, 12:30- 13:00, 13:00 - 13:30, 13:30 - 14:00, 14:00 - 14:30, 14:30 - 15:00, 15:00 - 15:30, 15:30 - 16:00, 16:00 - 16:30, 16:30 - 17:00, 17:00 - 17:30,17:30 - 18:00, 18:00 - 18:30, 18:30 - 19:00, 19:00 - 19:30, 19:30 - 20:00, 20:00 - 20:30, 20:30 - 21:00, 21:00 - 21:30, 21:30 - 22:00, 22:00 - 22:30, 22:30 - 23:00, 23:00 - 23:30, 23:30 - 00:00
Header Record (15-minute interval metering data)	NMI, Meter Serial Number, Read Date, UOM, Estimated?, Energy Flow Type, Consumption Date, 00:00 – 00:15, 00:15 – 00:30, 00:30 – 00:45, 00:45 – 01:00, 01:00 – 01:15, 01:15 – 01:30, 01:30 – 01:45, 01:45 – 02:00, 02:00 – 02:15, 02:15 – 02:30, 02:30 – 02:45, 02:45 – 03:00, 03:00 – 03:15, 03:15 – 03:30, 03:30 – 03:45, 03:45 – 04:00, 04:00 – 04:15, 04:15 – 04:30, 04:30 – 04:45, 04:45 – 05:00, 05:00 – 05:15, 05:15 – 05:30, 05:30 – 05:45, 05:45 – 06:00, 06:00 – 06:15, 06:15 – 06:30, 06:30 – 06:45, 06:45 – 07:00, 07:00 – 07:15, 07:15 – 07:30, 07:30 – 07:45, 07:45 – 08:00, 08:00 – 08:15, 08:15 – 08:30, 08:30 – 08:45, 08:45 – 09:00, 09:00 – 09:15, 09:15 – 09:30, 09:30 – 09:45, 09:45 – 10:00, 10:00 – 10:15, 10:15 – 10:30, 10:30 – 10:45, 10:45 – 11:00, 11:00 – 11:15, 11:15 – 11:30, 11:30 – 11:45, 11:45 – 12:00, 12:00 – 12:15, 12:15 – 12:30, 12:30 – 12:45, 12:45 – 13:00, 13:00 – 13:15, 13:15 – 13:30, 13:30 – 13:45, 13:45 – 14:00, 14:00 – 14:15, 14:15 – 14:30, 14:30 – 14:45, 14:45 – 15:00, 15:00 – 15:15, 15:15 – 15:30, 15:30 – 15:45, 15:45 – 16:00, 16:00 – 16:15, 16:15 – 16:30, 16:30 – 16:45, 16:45 – 17:00, 17:00 – 17:15, 17:15 – 17:30, 17:30 – 17:45, 17:45 – 18:00, 18:00 – 18:15, 18:15 – 18:30, 18:30 – 18:45, 18:45 – 19:00, 19:00 – 19:15, 19:15 – 19:30, 19:30 – 19:45, 19:45 – 20:00, 20:00 – 20:15, 20:15 – 20:30, 20:30 – 20:45, 20:45 – 21:00, 21:00 – 21:15, 21:15 – 21:30, 21:30 – 21:45, 21:45 – 22:00, 22:00 – 22:15, 22:15 – 22:30, 22:30 – 22:45, 22:45 – 23:00, 23:00 – 23:15, 23:15 – 23:30, 23:30 – 23:45, 23:45 – 00:00
National Metering Identifier (NMI)	NMI for the connection point. Does not include check-digit or NMI suffix.
Meter Serial Number	Multiple meters indicated by their respective meter serial numbers. Energy values from each meter are to be collectively published by Consumption Date
Energy Flow Type	Consumption, Controlled Load and Generation energy flows
Energy Value	kWh value identifies the consumption and kW or kVA value identifies demand for the associated Energy Flow Type Load means that energy flows to the connection point from the grid Generation means energy flows to the grid from the connection point
UOM	kWh
Date	Date energy flow occurred or to which estimation occurred. Measured in EST.
Date Format	DD/MM/YYYY

File component	Parameters
Data Quality	Metering data estimated? Y or N. Note this is the plain English use of the term estimate Metering data estimated? Y or N. Note this is the plain English use of the term estimate. Field value is Y if any of the elements on the associated row have been estimated
File Order	File ordered by date. Ordered by oldest date at the top of the file and most recent date at the bottom of the file

C.2 Example: 30-minute interval file

NMI	Meter Serial Number	Read Date	UOM	Estimated?	Energy Flow Type	Consumption Date	00:00 – 00:30	00:30 – 01:00	01:00 – 01:30	01:30 – 02:00	X	X	X		X	X	X	22:00 – 22:30	22:30 – 23:00	23:00 – 23:30	23:30 – 00:00
6xxxxxxxxx			kWh	N	Consumption	Date 1															
6xxxxxxxxx			kWh	N	Controlled Load	Date 1															
6xxxxxxxxx			kWh	N	Generation	Date 1															
6xxxxxxxxx			kWh	N	Consumption	Date 2															
6xxxxxxxxx			kWh	N	Controlled Load	Date 2															
6xxxxxxxxx			kWh	N	Generation	Date 2															
6xxxxxxxxx			kWh	N	Consumption	Date 3															
6xxxxxxxxx			kWh	N	Controlled Load	Date 3															
6xxxxxxxxx			kWh	N	Generation	Date 3															

C.3 Example: 15-minute interval file

NMI	Meter Serial Number	Read Date	UOM	Estimated?	Energy Flow Type	Consumption Date	00:00 – 00:15	00:15 – 00:30	00:30 – 00:45	00:45 – 01:00	X	X	X		X	X	X	23:00 – 23:15	23:15 – 23:30	23:30 – 23:45	23:45 – 00:00
6xxxxxxxxx			kWh	N	Consumption	Date 1															
6xxxxxxxxx			kWh	N	Controlled Load	Date 1															
6xxxxxxxxx			kWh	N	Generation	Date 1															
6xxxxxxxxx			kWh	N	Consumption	Date 2															
6xxxxxxxxx			kWh	N	Controlled Load	Date 2															
6xxxxxxxxx			kWh	N	Generation	Date 2															
6xxxxxxxxx			kWh	N	Consumption	Date 3															
6xxxxxxxxx			kWh	N	Controlled Load	Date 3															
6xxxxxxxxx			kWh	N	Generation	Date 3															