

RETAIL CUSTOMER METERING DATA GUIDE

This guide details the manner and form in which metering data is provided to our retail customers or customer authorised representatives.

How to request data?

Stanwell Energy's retail customers can request meter data by emailing retail@stanwell.com or downloading the data directly from Stanwell Energy's online portal MyAccount (<https://myaccount.stanwellenergy.com>).

Retail customers requesting meter data must be verified by Stanwell Energy before data can be issued. Third party representatives must have a valid Letter of Authority from the Contracted Client as part of the verification process.

Data Formats and conventions

Meter data reports are available in Microsoft Excel (.xlsx) or NEM12 format (.csv). The details of these formats are outlined in the remaining sections of this guide.

Throughout the data formats, and the remainder of this guide, there is the concept of "export" and "import".

Stanwell Energy adheres to the conventions used by AEMO where energy flow is reference to their direction to the market (AEMO, 2023). Therefore:

1. **Export:** All energy from the market is considered export (i.e. energy consumed by an end user is export).
2. **Import:** All energy into the market is considered import (i.e. the energy generated into the market is import).

How to understand Meter Data Formats

Example – Excel report

The Excel format will contain data in 5-minute intervals. This format displays data in a summary as well as kWh, kVA, Power Factor, and separate E (export) and B (import) channels.

Details below explain how to understand your Excel meter data file.

Summary Worksheet

Summarises the consumption (in kWh), peak demand (in kVA) and power factor at time of peak demand, for the entire period requested.

- Peak (kWh) – total kWh consumption in time of use “Peak”
- Off-Peak (kWh) – total kWh consumption in time of use “Off Peak”
- Peak – Export (kWh) – total kWh consumption on E channel in time of use “Peak”
- Off Peak – Export (kWh) – total kWh consumption on E channel in time of use “Off Peak”
- Peak – Import (kWh) – total kWh consumption on B channel in time of use “Peak”
- Off Peak – Import (kWh) – total kWh consumption on B channel in time of use “Off Peak”
- Total Consumption – total kWh consumption over all time periods
- Peak Demand (kVA) – maximum kVA demand
- Time of Peak Demand – Date and time of Peak Demand kVA
- PF at Peak Demand – Power Factor at interval of Peak Demand

From	1/07/2023										
To	31/07/2023										
NMI	Peak (kWh)	Off-peak (kWh)	Peak - Export (kWh)	Off-peak - Export (kWh)	Peak - Import (kWh)	Off-peak - Import (kWh)	Total consumption (kWh)	Peak Demand (kVA)	Time of Peak Demand	PF at	
QXXXXXXXXXX	221,556.29	308,661.30	221,556.29	308,661.30	3,079,929.71	4,905,499.37	530,217.58	13,722.05	23/07/2023 17:50		
	221,556.29	308,661.30	221,556.29	308,661.30	3,079,929.71	4,905,499.37	530,217.58				

Real Energy (kWh) Worksheet

- Details total kWh consumption at each 5-minute interval.

Time Ending	TOU	QXXXXXXXXXX	Total consumption (kWh)
1/07/2023 0:05	Off-peak	0.00	0.00
1/07/2023 0:10	Off-peak	0.00	0.00
1/07/2023 0:15	Off-peak	0.00	0.00
1/07/2023 0:20	Off-peak	0.00	0.00
1/07/2023 0:25	Off-peak	0.00	0.00
1/07/2023 0:30	Off-peak	0.00	0.00
1/07/2023 0:35	Off-peak	0.00	0.00

kVA Worksheet

- Details total kVA at each 5-minute interval.

Time Ending	TOU	QXXXXXXXXXX
1/07/2023 0:05	Off-peak	0.00
1/07/2023 0:10	Off-peak	0.00
1/07/2023 0:15	Off-peak	0.00
1/07/2023 0:20	Off-peak	0.00
1/07/2023 0:25	Off-peak	0.00
1/07/2023 0:30	Off-peak	0.00
1/07/2023 0:35	Off-peak	0.00

Power Factor Worksheet

- Details Power Factor at each 5-minute interval.

Time Ending	TOU	QXXXXXXXXXX
1/07/2023 0:05	Off-peak	1.00
1/07/2023 0:10	Off-peak	1.00
1/07/2023 0:15	Off-peak	1.00
1/07/2023 0:20	Off-peak	1.00
1/07/2023 0:25	Off-peak	1.00
1/07/2023 0:30	Off-peak	1.00
1/07/2023 0:35	Off-peak	1.00

Real Energy (kWh) – Export Worksheet

- Details E channel data at each 5-minute interval.

Time Ending	TOU	QXXXXXXXXXX	Total consumption (kWh)
1/07/2023 0:05	Off-peak	0.00	0.00
1/07/2023 0:10	Off-peak	0.00	0.00
1/07/2023 0:15	Off-peak	0.00	0.00
1/07/2023 0:20	Off-peak	0.00	0.00
1/07/2023 0:25	Off-peak	0.00	0.00
1/07/2023 0:30	Off-peak	0.00	0.00
1/07/2023 0:35	Off-peak	0.00	0.00

Real Energy (kWh) – Import Worksheet

- Details B channel data at each 5-minute interval.

Time Ending	TOU	QXXXXXXXXXX	Total consumption (kWh)
1/07/2023 0:05	Off-peak	2,272.50	2,272.50
1/07/2023 0:10	Off-peak	2,249.02	2,249.02
1/07/2023 0:15	Off-peak	2,225.47	2,225.47
1/07/2023 0:20	Off-peak	2,217.73	2,217.73
1/07/2023 0:25	Off-peak	2,296.30	2,296.30
1/07/2023 0:30	Off-peak	2,303.72	2,303.72
1/07/2023 0:35	Off-peak	2,294.63	2,294.63

NEM12 File – Interval Metering Detailed Data

The NEM12 file is the industry standard for representing meter data. It contains meter data for one or more NMIs (National Meter Identifiers) and is a CSV text file that can be opened in a spreadsheet program or text editor.

A NEM12 file contains meter data in blocks:

- 200 – contains NMI data details, information about the NMI, meter configuration, register and meter including the unit of measure, interval length etc. Multiple 300-500 record blocks are allowed per 200 block.
- 300 – interval data records, data quality (i.e. actual, final or substitute). These records are presented in sequential date order and align with the intervals noted in the 200 record.
- 400 – interval event record. This record is required if the quality method in the 300 record is set to “V” (variable).

A NEM12 file can contain one 200 record or multiple 200 records if the NMI has multiple meters or your meter has multiple registers configured and active. Each 200 record can have multiple 300 records – one for each day the report covers.

If any of the 300 records have a mixture of actual, final, or substituted meter reads there will also be a corresponding 400 record. If the 300 record has the same quality flag (actual, final or substitute) for all intervals, there will be no corresponding 400 block.

The NMI Suffix⁸ identifies the energy stream and the direction of energy flow. Table 1, which is taken from AEMO’s National Metering Identification Procedure (AEMO, 2023), shows all possible data stream suffixes that can appear in a NEM12 file.

Table 1 Datastream Suffixes for Interval Metering Data

	First character				Second character
	Ave	Master	Check	Net ¹	Meter numbers or measuring elements are 1-9 then A-H, J-N, F
IMPORT kWh	A	B	C	N	
EXPORT kWh	D	E	F		
IMPORT kvarh	J	K	L	X	
EXPORT kvarh	P	Q	R		
KVAh	S	T	U		
Power Factor pF		G			
Q Metering Qh		H	Y		
Par Metering parh		M	W		
VOLTS (or V ² h) or Amps (A ² h)		V	Z		

Example of NEM12 file

Below is an example of the data contained in a NEM23 file.

100 ¹	NEM12 ²	20230815084250 ³	MDYMD P ⁴	STANRET ⁵								
200	QXXXXXXXXX ⁶	E1B1Q1K1 ⁷	E1 ⁸		N1 ⁹	250149365 ¹⁰	kWh ¹¹	5 ¹²				
300	20230701 ¹³	72.300003 ¹⁴	70.599999	69.300003	71.2	70.5	70.900002	71.6	71	...	A ¹⁵	20230815084250 ¹⁶
900 ¹⁷												

- 1 Row Type ID
- 2 Meter Data report format
- 3 Report creation date/time
- 4 Meter Data Provider
- 5 Retailer
- 6 NMI

- 7 NMI suffixes applicable to NMI
- 8 NMI Suffix
- 9 Data Stream Identifier
- 10 Meter Serial Number
- 11 Unit of Measure
- 12 Interval length (minutes)
- 13 Date of interval (YYMMDD)
- 14 Total amount of energy in Unit of Measure (200)
- 15 Data Quality Flag :
 - A = Actual Metering Data
 - E = Forward estimated data
 - F = Final substituted data
 - N = Null data
 - S = Substituted data
 - V = Variable data (requires a 400 record)
- 16 Data Last Updated date/time
- 17 End record

For more information regarding the format and content of the NEM12, refer to the AEMO specification “Meter Data File Format Specification NEM12 & NEM13”¹.

Bibliography

AEMO. (2023, June 1). *MSATS Procedures National Metering Identifier*. Retrieved from:

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AEMO. (2019, March 22). *Metering Data Provision Procedures*. Retrieved from AEMO:

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¹ Available at: <https://aemo.com.au/en/energy-systems/electricity/national-electricity-market-nem/market-operations/retail-and-metering/metering-procedures-guidelines-and-processes>.

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