



# UNDERSTANDING your meter data

## NEM12 meter data file format guide

The NEM12 data format is determined by the Australian Energy Market Operator (AEMO).

This guide is designed to help you understand your NEM12 data and find the information you need from your meter.

To get you started, we've set out some key things to consider:

- Daily usage is divided into 48 or 96 or 288 interval periods (30, 15 or 5 minute intervals), depending on interval duration.
- Data is presented by time in ascending order.
- Interval times refer to the end of the interval period. For example, the interval value for 01.30 includes usage between 01.00 and 01.30.
- Dates are shown in either YYYYMMDD, YYYYMMDDhhmm or YYYYMMDDhhmmss format. All components of data time fields are given in double digits.

### Want to know more?

For details visit the Australian Energy Market Operator's website at [aemo.com.au](https://aemo.com.au)

# NEM12 data

In this example of NEM12 data you can see the range of information that your meter provides.

Row types	NMI reference	NMI configuration	NMI suffix	Data stream ID	Meter number	Units measured	Interval period	Substitution and quality flags	Updated date and time			
200	QEEEE000000	B1E1K1Q1	E1	N1	00000000	kWh	30					
300	20180101	40.91	41.12	35.39	34.04	35.1	33.24	35.71	35.59	35.25	A	20180100000000
300	20180102	43.59	36.68	34.81	39.32	36.99	36.01	35.75	34.54	34.15	A	20180100000000
300	20180103	38.09	33.6	35.53	33.27	31.31	29.58	31.84	29.02	31.33	A	20180100000000
300	20180104	32.72	36.27	35.77	33.83	33.99	33.02	33.18	33.74	35.89	A	20180100000000
300	20180105	39.33	33.16	31.33	32.29	31.05	33.19	33.81	31.94	30.04	A	20180100000000
300	20180106	33.15	30.27	32.93	34.08	33.48	31.68	31.38	29.6	30.76	V	20180100000000
400	1	6	A									
400	7	48	S14	76	Communications Fault							
300	20180109	34.19	35.91	34.35	35.53	32.81	33.3	35.64	32.3	30.05	A	20180100000000
300	20180110	38.12	37.35	36.33	34.46	32.07	31.84	32.58	31.27	31.04	A	20180100000000
300	20180111	36.41	37.52	38.43	38.72	36.67	34.41	34.15	33.37	32.06	A	20180100000000
300	20180112	41.59	39.97	36.4	36.13	38.52	35.73	37.01	34.45	33.91	A	20180100000000
300	20180113	37.7	42.72	39.68	40.74	41.75	34.18	36.78	36.11	33.26	A	20180100000000
300	20180114	48.14	43.65	44.96	43.19	41.1	44.22	39.93	40.1	36.88	A	20180100000000

## Decoding the data

### NMI data record

Record indicator	200
NMI	National Metering Identifier.
NMI configuration	String of all NMI suffixes relating to the NMI.
Register ID	Meter register identifier.
NMI suffix	NMI suffix for the data set.
Meter number	Serial number of the meter.
Unit measured	Unit of measure for the data.
Interval period	Duration of intervals in minutes.

### Interval data record

Record indicator	300
Interval date	Date of the interval data read. Format yyyyymmdd.
Interval value	Usage measured over the interval period.
Updated date and time	Date and time that records were last updated.
MSATS load date and time	Date and time that data was loaded into MSATS.

### Data issue record

Record indicator	400
Start interval	First interval impacted.
End interval	Last interval impacted.
Reason code	Data issue type.
Reason description	Summary description of the data issue.

## Substitution and quality

Substitution and data quality indicators are used when reads were not available. These are based on your usage in previous periods.

A	Actual data
S	Substituted data
F	Final substituted data
V	Variable data, which may include actual, substituted or final data.
E	Forward estimate
N	No interval data received

## Recording intervals

- For each new NMI data record (type 200), a new record is generated for the associated interval data (type 300).
- Data issue records (type 400) will only be presented where data issues occur.
- NMI data records will apply to multiple interval data and data issue records.

## Calculating demand

- Demand is calculated at 30 min intervals on the half hour. For the purposes of Retail billing, where a tariff has more than one meter, a summation of all meters 30 minute interval data is used.
- For kW demand, multiply the 30 minute kWh interval data by 2. Premises with 5 or 15 minute interval data, sum the two (2) 15 min intervals or six (6) 5 min intervals, then multiply by 2.
- For kVA demand the calculation used is:
 
$$kVA = \sqrt{kW^2 + kVAR^2}$$
 kW is calculated by multiplying the 30 minute kWh interval data by 2. kVAR is calculated by multiplying the 30 minute kVAh interval data by 2.

