

Consumer Data Right

Applying energy data standards to large energy customers



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EnergyAustralia
LIGHT THE WAY

Data for commercial & industrial energy customers

Even for small C&I customers, major changes to the CDR data standards would be necessary for DHs to provide sensible or complete data

All data sets are more complex for C&I customers. This pack outlines the most common issues affecting:

- Billing data
- Tailored tariff data
- Meter data

For very large customers, account and NMI (meter) standing data will also often be too complex to fit into the data standards as they are currently set up

In these cases, if Data Holders attempted to fit the customer's data into the data standards, the ADR would receive incomplete and misleading data that would be almost entirely useless

Billing data

C&I customer bills often have the ‘unbundled’ structure shown here

The values shown in red would not be able to be passed to the ADR unless the data standards are updated

The ADR would receive the bill total and enough information to calculate about half of the bill amount

But for use cases relating to providing future bill estimates or savings (e.g. if switching or saving energy), the ADR would have nowhere near enough information to do this adequately

The capacity charge (last row) relies on meter data information that isn’t passed through in data standards, also this amount (85kW) is the maximum for the last year so may not be in the meter data file for this billing period

	Contracted Rate x (DLF x MLF)	Metered Rate	Quantity	Cost
Energy Charges				
Peak Energy	15.3381 c/kWh 1.0453 1.0025	16.0730 c/kWh	1,567.22 kWh	\$ 251.90
Shoulder Energy	10.4862 c/kWh 1.0453 1.0025	10.9886 c/kWh	6,124.72 kWh	\$ 673.02
Off Peak Energy	4.0034 c/kWh 1.0453 1.0025	4.1952 c/kWh	5,936.90 kWh	\$ 249.07
Total Consumption Charges			13,628.84 kWh	\$1,173.99
Market Charges				
Participant Charges	1.0453	0.0226 c/kWh	13,628.84 kWh	\$ 3.22
Ancillary Services	1.0453	0.1982 c/kWh	13,628.84 kWh	\$ 28.24
				\$ 31.46
Metering and Other Charges				
Meter Charge		2,620.00 \$/pa	31 days	\$ 222.52
Retail Supply Charge		200.00 \$/pa	31 days	\$ 16.99
				\$ 239.51
Environmental Charges				
LRET Charge	1.0453	1.2670 c/kWh	13,628.84 kWh	\$ 180.50
NSW Energy Saving Scheme	1.0453	0.8455 c/kWh	13,628.84 kWh	\$ 120.45
SRES Charge	1.0453	0.3583 c/kWh	13,628.84 kWh	\$ 51.04
				\$ 352.00
Network Charges (EA302)				
Network Access Charge		535.6080 c/day	31 days	\$ 166.04
Peak Energy		5.1718 c/kWh	3,675.51 kWh	\$ 190.09
Shoulder Energy		1.9569 c/kWh	5,296.03 kWh	\$ 103.64
Off Peak Energy		0.8826 c/kWh	4,657.30 kWh	\$ 41.11
Capacity kW		36.9001 c/kW/day	85.00 kW	\$ 972.32
				\$1,473.19

Note: values are made up. DLF/MLF: Distribution/Marginal Loss Factor

Tailored tariff data

The customer has signed up to a retail offer (for one or more years) in this case with (shown in blue):

- Peak, off peak & shoulder usage rates
- Retail supply charge
- Annual meter charge

These retail components could be provided using the current standards, but they make up only about half of the bill

The other charges are more complex and don't fit into the current data standards. They can change without notice and differ substantially between retailers

C&I customers have bespoke retail pricing based on wholesale market prices at the time they contract and their usage patterns. Generic tariff data doesn't apply

	Contracted Rate x (DLF x MLF)		Metered Rate	Quantity	Cost
Energy Charges					
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Shoulder Energy	10.4862 c/kWh	1.0453 1.0025	10.9886 c/kWh	6,124.72 kWh	\$ 673.02
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Meter data

$$x2 \quad kVA = \sqrt{((Q*2)^2 + (E*2)^2)}$$



NMI	Meter	Period	ReadingDateTime	E	B	Q	K	kW	kVA	Quality
4#####0	1	1	27/08/2021 0:00	1.464	0	0.585	0	2.928	3.153107	Actual
4#####0	1	2	27/08/2021 0:30	1.353	0	0.597	0	2.706	2.957714	Actual
4#####0	1	3	27/08/2021 1:00	1.536	0	0.615	0	3.072	3.309091	Actual
4#####0	1	4	27/08/2021 1:30	1.401	0	0.615	0	2.802	3.060082	Actual
4#####0	1	5	27/08/2021 2:00	1.305	0	0.621	0	2.61	2.890444	Actual

Allowed Values	Description
MWh	megawatt hour
kWh	kilowatt hour
Wh	watt hour
MVAh	megavolt ampere reactive hour (megavar hour)
kVAh	kilovolt ampere reactive hour
VAh	volt ampere reactive hour
MVA	megavolt ampere reactive
kVA	kilovolt ampere reactive
VA	volt ampere reactive
MW	megawatt
kW	kilowatt
W	watt
MVAh	megavolt ampere hour
kVAh	kilovolt ampere hour
VAh	volt ampere hour
MVA	megavolt ampere
kVA	kilovolt ampere
VA	volt ampere
kV	kilovolt
V	volt
kA	kiloampere
A	ampere
pf	Power Factor

C&I customer meter data often contains demand reads in various units of measure not supported by the current data standards

Some values can be calculated, but the E and Q values (shown in this example) are independent readings that are essential to understanding the customer’s usage patterns and bill

Table 1 Datastream Suffixes for Interval Metering Data

	First character			
	Ave	Master	Check	Net ¹
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	

https://www.aemo.com.au/-/media/files/electricity/nem/retail_and_metering/metering-procedures/2018/mdff-specification-nem12--nem13-v106.pdf?la=en
https://www.aemo.com.au/-/media/files/stakeholder_consultation/consultations/nem-consultations/2019/5ms-metering-package-2/final-determination/msats-procedures-national-metering-identifier-v70-final-determination-clean.pdf?la=en&hash=AFE5F72379282DA58EF97F99FF9B08F7