

Large Business Demand Tariffs (Network Charges)

From 1 July 2020, SA Power Networks has made available a more flexible range of network demand tariffs, providing Large Business customers with improved choice in managing their energy costs.

A demand tariff is a charge based on a customer's maximum demand for electricity, both for local connection assets and upstream networks (including transmission), during peak network usage times. These demands tend to drive network costs, so by charging customers in this way, we signal the longer run costs we will incur, and provide an equitable basis for sharing network costs amongst customers.

A Large Business, for network tariff purposes, is defined as using more than 160MWH pa, and/or has generation with a nameplate either approved or installed, of more than 200kVA. Most Large Business customers are charged under a network demand tariff.

Network charges are typically shown separately on the retail electricity bill for Large Business customers.

Demand Tariffs

There are three (3) separate demand tariffs covered by this fact sheet:

1. Annual Demand

Separate tariffs for Adelaide CBD and Rest of SA, for the four (4) different voltage connections. This is a new tariff for 2020–25, and we expect most Large Business customers will use this tariff.

2. Monthly Demand

Separate tariffs for Adelaide CBD and Rest of SA, for the four (4) different voltage connections. This is a new tariff for 2020–2025, and we expect some Large Business customers will use this tariff, typically those with seasonal demand or an ability to avoid the peak demand period.

3. Actual Demand

Similar tariffs for high and low voltage connection. An existing tariff continuing through to 2025 as a transition tariff, with annual price increases to promote transition to the new tariffs. There is **no** CBD or Rest of SA distinction. The tariff is closed to new applicants from 1 July 2020. Existing customers can choose to leave this tariff and opt-in to either the Annual Demand or Monthly Demand tariff. This tariff finishes in 2025.

There are special versions of these tariffs incorporating the same pricing concepts but are aimed at a small niche of customers. These include generators requiring house supplies (and/or battery charging), large business wanting back-up supplies and large businesses connection involving multiple supplies to the same location.

Connection voltages

A Large Business can be connected at different voltages:

Low Voltage

Typically at 415V from one or more distribution transformers (a Large LV Business). There are more than 4,000 large business customers connected at LV;

High Voltage

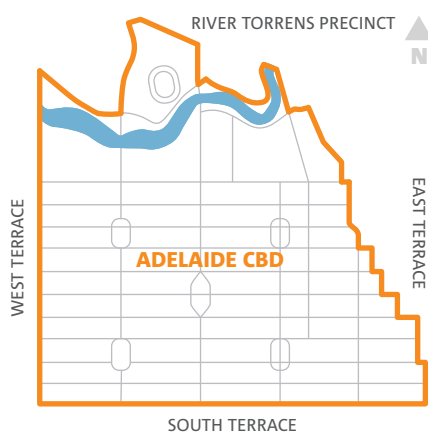
Typically at 11kV from a feeder (an HV Business). There are approx. 200 large business customers connected at HV;

The 11kV bus bar of a Zone Substation

(a Major Business, approx. 12 large business customers); or

Sub-transmission

From either a 33kV or 66kV feeder and/or a transmission exit bus bar (also a Major Business and approx. 12 large businesses).



Location and peak demand

The location of a Large Business is defined as either **CBD** or **Rest of South Australia**.

Each area has a different time when peak demand occurs, so the nature of the peak demand measurement changes to provide the right pricing signal to these customers. Some Large Business legacy tariffs do not have this locational element and have a historically wider window of when peak demand is measured.

The **CBD** is defined as the North/South/East/West Terrace precinct including the River Torrens precinct, extending to just north of the River Torrens in the Adelaide Oval precinct (note that North Adelaide is not part of the CBD).

The CBD is dominated by commercial customers with limited PV, so the summer peak demand continues to occur during business hours on workdays.

The **Rest of South Australia** has significant PV installation and a consequent shifting of the summer demand peak to late afternoon/early evening, which can occur on work and non-workdays.

How is Demand measured?

The adjacent chart and table show the half-hour load profile of a mythical Large Business customer on a single day. The derivation of the demand measurement for each of the four tariffs is shown in the table. The power factor (ratio of kW to kVA) is a credible 0.90. The customer has a flat profile for most of the day, but demand dips after 4pm and goes briefly into export after 5pm for one hour – possibly due to battery discharge.

1. Annual Demand

Rest of SA: The window is four (4) hours from 5pm to 9pm on any day from November to March. The daily measure is the average of the eight half-hour intervals. Any interval showing only export kW will be treated as showing zero. The Annual Demand is the highest daily measure for the last year, unless otherwise agreed. Six (6) intervals at 1100kVA and two (2) null intervals (due to export) equals 825kVA as that day's measure.

CBD: As per Rest of SA, but for the six (6) hours from 11am to 5pm from November to March, workdays only. Ten (10) intervals at 1000kVA and two (2) intervals at 600 kVA averages out at 933kVA as that day's measure.

2. Monthly Demand

The daily measure is calculated the same as the Annual Demand daily measure. The charge for the month is the highest daily measure for the month. Note that the Monthly Demand is effectively priced at 1.5X the Annual Demand price for the year, so the average of the five monthly demands needs to be less than two-thirds of the highest month (the annual demand) for the customer to benefit from this option over a 12 month period.

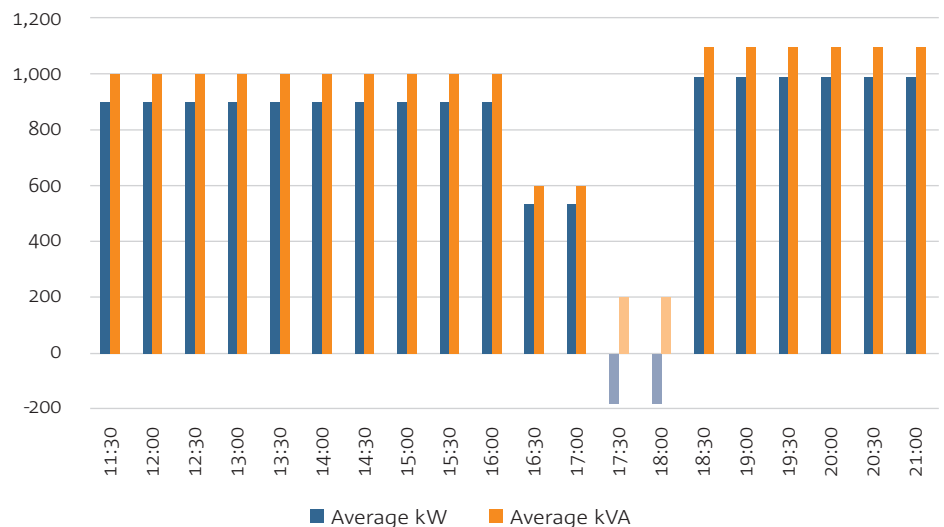
3. Actual Demand

Peak Actual Demand: The highest half hour for the month for November to March on workdays only, in the five (5) hours from 4pm to 9pm (SA local time). 1100kVA in the example.

Shoulder Actual Demand: The highest half hour for the month, for all 12 months of the year on workdays only, in the four (4) hours from 12 noon to 4pm (SA local time). 1000kVA in the example.

Half hour interval data profile of a Large Business

Illustrates demand measurements



Half hour interval data profile of a Large Business

Half hour ending SA Local	Summer WD or NWD		Summer Work Day		Any WD Yr			
	Ave kW	Ave kVA	Rest of SA Annual Demand	Rest of SA Monthly Demand	CBD Annual Demand	CBD Monthly Demand	Actual Demand Peak	Actual Demand Shoulder
11:30	900	1,000			1,000	1,000		
12:00	900	1,000			1,000	1,000		
12:30	900	1,000			1,000	1,000		1,000
13:00	900	1,000			1,000	1,000		1,000
13:30	900	1,000			1,000	1,000		1,000
14:00	900	1,000			1,000	1,000		1,000
14:30	900	1,000			1,000	1,000		1,000
15:00	900	1,000			1,000	1,000		1,000
15:30	900	1,000			1,000	1,000		1,000
16:00	900	1,000			1,000	1,000		1,000
16:30	540	600			600	600	600	
17:00	540	600			600	600	600	
17:30	-180	200	0	0			0	
18:00	-180	200	0	0			0	
18:30	990	1,100	1,100	1,100			1,100	
19:00	990	1,100	1,100	1,100			1,100	
19:30	990	1,100	1,100	1,100			1,100	
20:00	990	1,100	1,100	1,100			1,100	
20:30	990	1,100	1,100	1,100			1,100	
21:00	990	1,100	1,100	1,100			1,100	
			Average	Average	Average	Average	Maximum	Maximum
			825	825	933	933	1,100	1,000

How is Anytime Demand measured?

Anytime Demand measures the maximum demand for electricity, typically measured over a half hour interval. It reflects the size of connection equipment being used by the customer. In some situations, higher instantaneous demands might need to be reflected in what is agreed for this measure, but they are exceptional situations. In 2022, when interval meters move to five-minute intervals, the Anytime Demand measurement could shift to the shorter interval, but the difference in outcome should not be material.

The detailed measurement for Anytime Demand for the three tariffs is set out below.

1. Annual Demand

Unless otherwise agreed, the highest half-hour interval's average kVA (from load, not generation) over the last 12 months. This includes all months of the year, work and non-workdays and all 24 hours of each day.

2. Monthly Demand

As per Annual Demand.

3. Actual Demand

There is no anytime demand measure for Actual Demand. There is an off-peak demand (for those half-hours each month that are neither peak nor shoulder) but the price is \$0/kVA, so the demand measure is theoretical only.

A generator can export energy back to the grid at a higher level than the Anytime Demand measure. This is quite common, especially for dedicated generation equipment with load comprising of house supplies only. A higher anytime demand will occur if battery storage is being charged from the Grid. Any level of import and export must be managed within the limits specified in the connection agreement for that site, including any instantaneous levels of demand.

Usage Charges

The Large Business tariffs recover nearly half of the network charges from usage charges (cents/kWh). Where a peak and off-peak designation is used, this endeavours to follow the same time periods used by retailers for energy charges. The Usage Charges for the three tariffs are set out below.

1. Annual Demand

Peak energy is workdays from 7am to 9pm (14 hours). Off peak energy is all other energy, ie the other 10 hours on workdays, plus all hours on non-workdays.

2. Monthly Demand

As per Annual Demand.

3. Actual Demand

As per Annual Demand.

Supplies with back-up

Some supply arrangements have a back-up supply in addition to the main supply. For example, a customer needing nearly 1000kVA of supply using two 1000kVA transformers from the one HV connection to provide more secure LV supply than a single 1000kVA transformer would have provided. The operational arrangements might be that one transformer is used, unless the back-up is required (eg maintenance or failure of the first transformer). It may be that supply is provided simultaneously from both transformers with the combined load not exceeding the capacity of a single transformer.

Previous connection arrangements for such supplies have been to have a single meter with an additional fixed charge covering the back-up costs, or to have two meters (and 2 NMIs) with one being the normal supply and the other the back-up supply (different tariff).

From July 2020, we propose to standardise the approach and use a tariff which includes the supply plus back-up. The price build-up will be the same as that using two NMIs (including a separate back-up tariff) and should be the same as the one meter with a fixed supply charge.

Please note that the arrangements will work equally whether supply A is the main supply, supply B is or the general arrangement is to use part of A and part of B to supply. The peak demand and anytime demand will be calculated after adding the two meters together.

Furthermore, these Back-Up supply arrangements require Annual Demand or Monthly Demand. Where Actual Demand is elected, other arrangements such as an additional fixed charge are required for the back-up supply.

Supplies with more than one meter

There are exceptional circumstances where a single NMI has multiple meters adjacent to each other on continuous property all fed from the same HV Feeder but from individual transformers. It can occur that demand is high at one supply and low at another whilst on another day the outcome reverses. The configuration can also enable optimal configuration of DER investments (eg local generation including PV and/or batteries). The desired outcome is to levy charges for all the connection assets on a stand-alone basis to determine the upstream network impact from peak demand after allowing for diversity across the individual supplies.

In instances where this configuration is used, an individual customer tariff will be created (from July 2020) to ensure that the correct quantity of supply charges and anytime demand charges are levied for the individual supplies. Usage can be measured across the supplies, but the customer's retailer needs to arrange special additional meter data provision for SAPN. Otherwise usage will be the sum of the supplies' usage. Peak demand will be measured on the net load of the combined supplies.

The tariff selected (Annual Demand or Monthly Demand) will generally be that for LV Large Business, as the individual supplies generally involve a distribution transformer supplying at LV.

When can I switch tariffs?

Large Business will be able to choose to remain on existing tariffs or to change tariffs during 2020–25.

There is a general rule that tariff switching should not occur twice within 12 months. Exceptions will be allowed in 2020/21 for customers who opt-in to the new tariffs Annual Demand or Monthly Demand.

Customers can switch between the three (3) Demand Tariffs as follows:

- Opt-in to Monthly Demand from Actual Demand at any time during 2020–25.
- Opt-in to Annual Demand from Monthly Demand or Actual Demand on 1 July or 1 January during 2020–25.

A customer can remain on Actual Demand through to 30 June 2025, noting that there are annual price increases for this tariff that promote transition to Annual Demand and Monthly Demand.

A customer will arrange the network tariff selection through their retailer, who will then advise SA Power Networks. Changes will typically apply from the start of the next calendar month, although any switching between annual and monthly tariffs will typically commence at the next half-year start (1 January or 1 July).

How do I lower my demand charge?

Firstly, you need to have done something that will reduce your demand. If your demand temporarily changes, there is little point in lowering the demand. Where a lowering of demand is agreed but a higher demand occurs within the next 12 months, then the higher demand will apply for those 12 months.

With the new Annual Demand and Monthly Demand tariffs, the Anytime Demand component is determined by the highest half-hour kVA interval over the preceding 12 months, unless a higher number has been agreed (eg for a new supply where the customer has nominated a connection capacity. This level of demand typically applies for three years, unless a higher demand occurs).

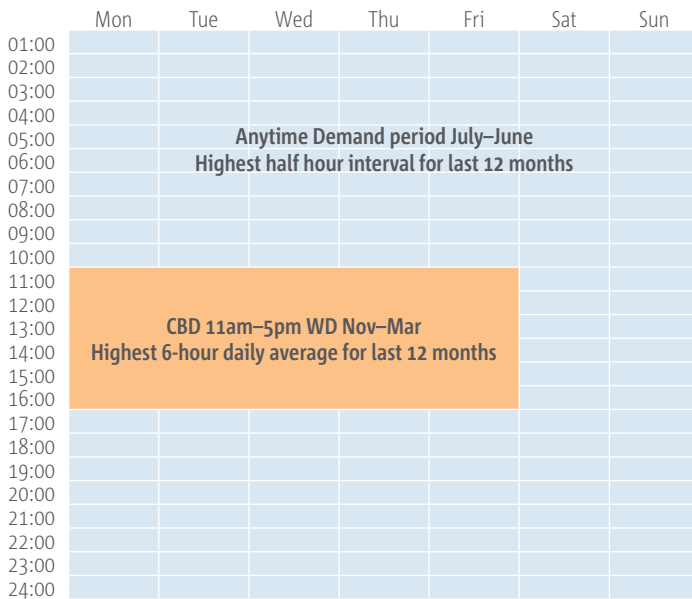
If a customer has undertaken an initiative which will lower that demand and that reduction can be demonstrated to our satisfaction, a lower demand can be set. If a higher demand occurs within the next 12 months, then that demand will be backdated and applied to all charges since the lowered demand was agreed.

If a customer is switching from Actual Demand to either Annual Demand or Monthly Demand, then the demands will be reset according to the highest measurement seen in the last 12 months. If a different level of demand is expected to be needed by the customer (lower or higher) then that should be discussed with us as an exception for consideration.

Large Business Annual Demand Tariff Periods

CBD

Annual Demand Tariff period November to end of March

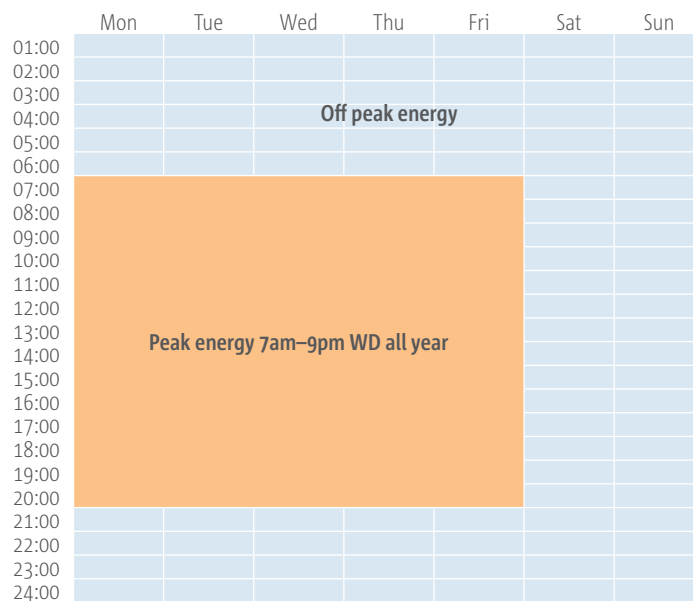


Rest of SA

Annual Demand Tariff period November to end of March



Energy usage all year



CBD Large Business Annual Demand Tariff

Fixed	\$/customer/day	Fixed supply charge per annum
Usage – Peak	\$/kWh	7:00am to 9:00pm workdays
Usage – Off peak	\$/kWh	At all other times outside the peak window
Peak Demand	\$/kVa/pa	Highest 6-hour daily average for last 12 months CBD 11:00am to 5:00pm only workdays
Anytime Demand	\$/kVa/pa	Highest half hour interval for last 12 months Anytime Demand period July–June

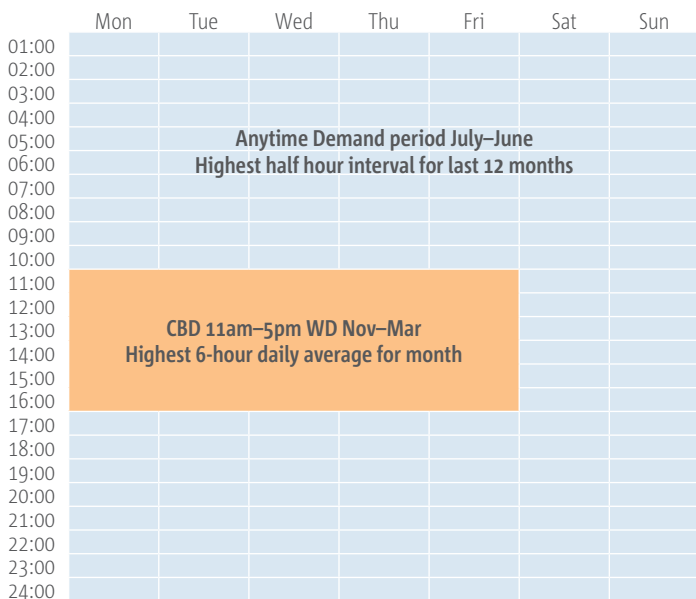
Non-CBD Large Business Annual Demand Tariff

Fixed	\$/customer/day	Fixed supply charge per annum
Usage – Peak	\$/kWh	7:00am to 9:00pm workdays
Usage – Off peak	\$/kWh	At all other times outside the peak window
Peak Demand	\$/kVa/pa	Highest 4-hour daily average for last 12 months Rest of SA 5:00pm to 9:00pm all days
Anytime Demand	\$/kVa/pa	Highest half hour interval for last 12 months Anytime Demand period July–June

Large Business Monthly Demand Tariff Periods

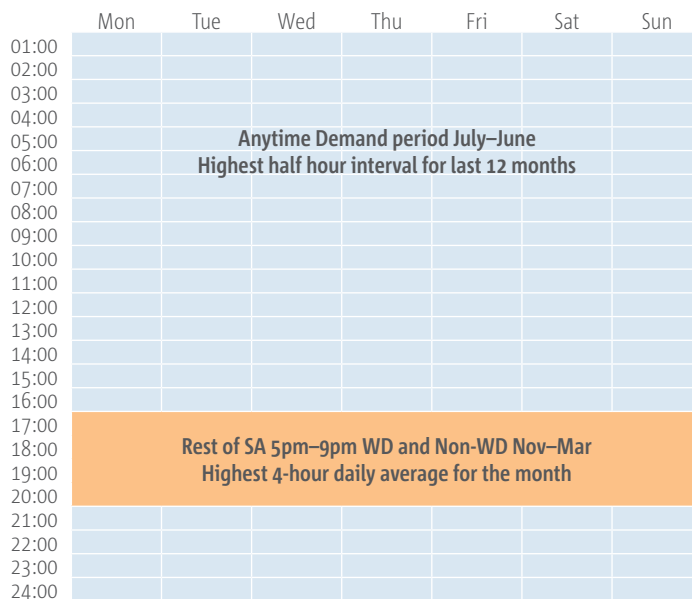
CBD

Monthly Demand Tariff period November to end of March

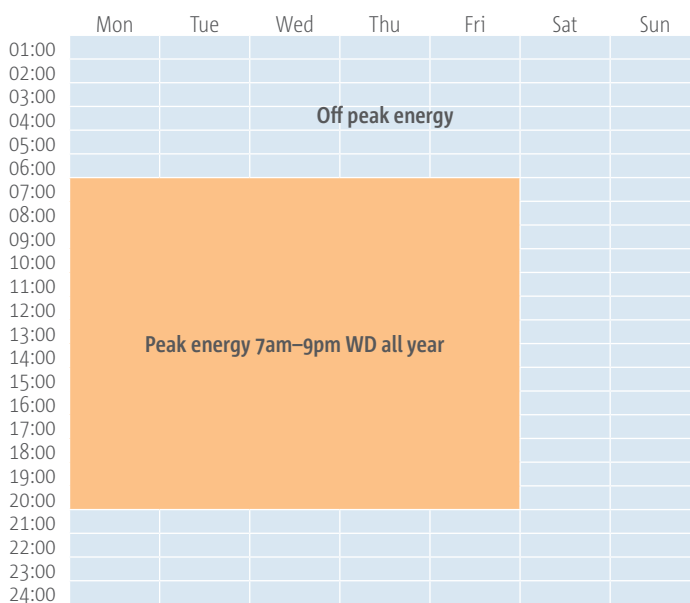


Rest of SA

Monthly Demand Tariff period November to end of March



Energy usage all year



CBD Monthly Demand Tariff

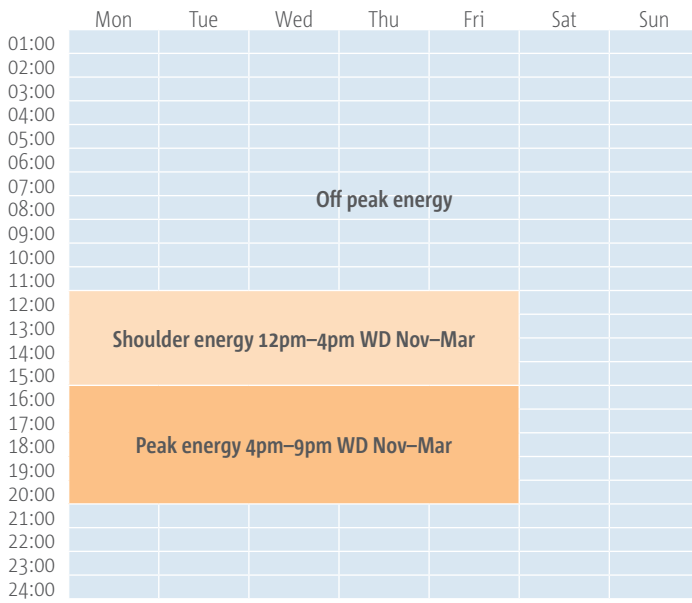
Fixed	\$/customer/day	Fixed supply charge per annum
Usage – Peak	\$/kWh	7:00am to 9:00pm workdays
Usage – Off peak	\$/kWh	At all other times outside the peak window
Peak Demand	\$/kVa/pa	Highest 6-hour daily average for the month Nov-Mar at 150% annual price CBD 11:00am to 5:00pm only workdays
Anytime Demand	\$/kVa/pa	Highest half hour interval for last 12 months Anytime Demand period July-June

Rest of SA Monthly Demand Tariff

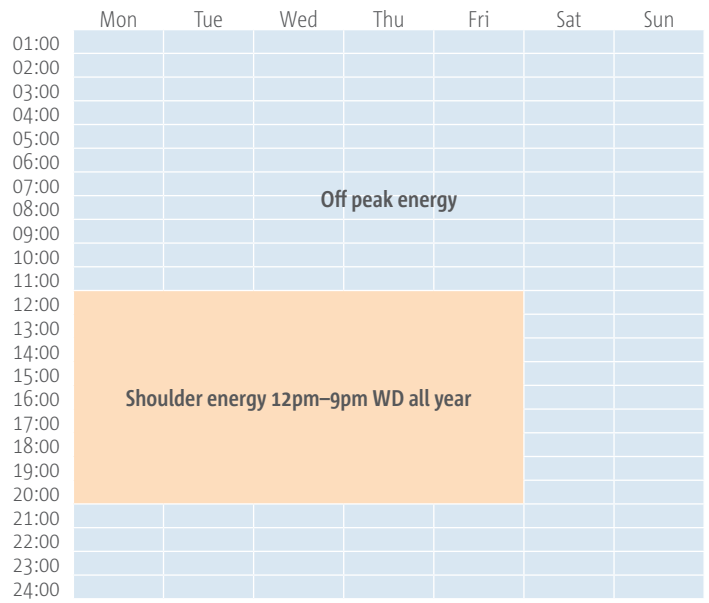
Fixed	\$/customer/day	Fixed supply charge per annum
Usage – Peak	\$/kWh	7:00am to 9:00pm workdays
Usage – Off peak	\$/kWh	At all other times outside the peak window
Peak Demand	\$/kVa/pa	Highest 4-hour daily average for the month Nov-Mar at 150% annual price Rest of SA 5:00pm to 9:00pm all days
Anytime Demand	\$/kVa/pa	Highest half hour interval for last 12 months Anytime Demand period July-June

Large Business Actual Demand Tariff Periods

Actual Demand Tariff period November to end of March



Energy usage all year



Actual Demand Tariff

Fixed	\$/customer/day	Fixed supply charge per annum
Usage – Peak	\$/kWh	4:00pm to 9:00pm workdays Nov–Mar
Usage – Shoulder	\$/kWh	12:00pm to 4:00pm workdays Nov–Mar 12:00pm to 9:00pm workdays rest of year
Usage – Off peak	\$/kWh	At all other times outside the peak window
Peak Demand	\$/kVa/pa	Highest half hour for the month Nov–Mar at 150% annual price 4:00pm to 9:00pm only workdays
Anytime Demand	\$/kVa/pa	Highest half hour interval for last 12 months Anytime Demand period July–June