

Values of Customer Reliability 2024

We have now updated the values of customer reliability (VCR) using our reviewed methodology that we finalised on 30 August 2024.

What are VCR and why are they important?

VCR seek to reflect the value different types of customers place on reliable electricity supply and are expressed in dollars per kilowatt hour (\$/kWh).

Improving reliability usually requires additional (capital or operating) expenditure in relation to energy supply. These costs form a portion of customer bills. So, it is important that the right balance is struck between the costs and benefits of greater reliability. Knowing how different customers value having a reliable electricity supply helps electricity planners, asset owners, and regulators to identify the efficient level of investment to deliver reliable electricity services to customers.

The VCR have the following uses:

- as an input into the cost-benefit analysis for network planning and the assessment of future network expenditure for capital projects
- setting transmission and distribution reliability standards and targets
- informing reviews of the wholesale market reliability standard and settings
- informing reviews of the system restart standard
- informing reliability and emergency reserve trader procurement
- informing the assessment of requests to declare certain risks as protected events
- as the key measure for linking outcome performance with service target performance incentive schemes incentives.

The AER's VCR surveys

The AER is required to review and update the VCR methodology, and then update the VCR according to that methodology, at a minimum every 5 years. This was done in 2019 and we have now concluded our 2024 review. For the 2024 VCR update, we used the same survey-based methodology as in 2019, but we changed one of the data inputs to use more detailed consumption data based on meter readings for individual customers. This allowed for more detailed and accurate residential consumption data to be used to calculate the VCR.

The VCR are derived by estimating three key inputs: the dollar value for each outage scenario, the expected unserved energy estimate for each outage scenario, and outage frequency for each outage scenario. These inputs are derived slightly differently for each customer cohort – residential, business and very large business – but the dollar values are estimated from surveys.

To determine the VCR we surveyed nearly 6,000 residential and business customers of various sizes and industries across eastern and southeastern Australia, and the Northern

Territory. We sought to understand customer preferences across a range of outage situations, such as (unexpected) outages of different durations and timing.

For very large businesses (reaching above 10 MVA peak demand) we used a different survey technique, asking them to estimate the cost they would incur for outages of different durations. We have identified only around 200 business sites across the relevant regions that met the criteria to be included in this survey, and received 37 responses that met our criteria for inclusion in our VCR calculations.

What do our results show?

We calculate and publish VCR for different customer groups (residential, businesses and very large businesses) and for different segments within each customer group. For residential customers we calculate VCR based on where they live and the associated climate and remoteness characteristics. For businesses we calculate VCR based on industry classification. We also report more granular values, such as for each of our 32 outage scenarios (based on outage duration and timing). This allows flexibility of selecting the most appropriate value or combination of values for a wide range of applications.

Our 2024 VCR show:

- The 2024 residential VCR are higher than the 2019 VCR for nearly all residential segments, but not uniformly so. One driver of this is that residential customers, on average, appear to be willing to pay more for reliability, while overall energy consumption decreased. Taken together this led to higher residential VCR. The specific VCR outcomes are a result of movements in all the underlying inputs (willingness to pay, unserved energy and outage frequencies) across a range of different outage scenarios.
- The 2024 business VCR are significantly lower than the 2019 VCR, with the largest decline occurring in the industrial business segment. This change is primarily driven by business customers, on average, willing to pay less for reliability as a proportion of their electricity bill.
- The 2024 very large business VCR are significantly lower than the 2019 VCR, with only the services segment VCR increasing between 2019 and 2024. While we have a similar survey sample size in 2024 to the 2019 sample size, the sample composition for each segment in 2024 is substantially different. The consumption levels and reported outage costs have also changed, including for the respondents that participated in both 2019 and 2024 surveys. We relied on similar number of responses in 2019 and 2024 (40 and 37, respectively). However, only around 20% of the respondents in the 2024 sample were also in the 2019 sample.
- We also developed area specific aggregate VCR to reflect a broader range of customers in the electricity market. We calculate them at a state level, as well as for the National Electricity Market as a whole. They are computed by combining VCR for all three customer cohorts. Customer VCR are weighted according to their share in the overall electricity consumption. As business customers' overall consumption is much greater than that of residential customers, the 2024 aggregate VCR are lower than the 2019 aggregate VCR – just like the VCR for most categories of business customers.

We note the NEM and state-wide VCR have limited applications in practice because these VCR will often not be reflective of the customer composition relevant to many uses of the

VCR. Further, a set of relevant outage scenarios can also vary between applications. Given this, users of the VCR are more likely to apply the more granular VCR, suitable to their circumstances.

Consistent with our advice in various guidelines and guidance, businesses will generally use the VCR that best align with the reliability preferences of the customers who are affected by a proposed investment and the characteristics of the outage(s) the investment is seeking to address.

We will monitor the use of the published VCR to check they are being applied correctly. We encourage those using VCR values to contact us to support the correct application.

Next steps and more information

- The VCR will be available for use by stakeholders and the AER in a variety of processes including in electricity network pricing reviews.
- We will be engaging with stakeholders on the next steps associated with our VCR work early in 2025. This will include seeking feedback on:
 - the lessons from 2024 VCR process
 - our approach to the annual adjustment mechanism
 - what further VCR related analysis or approaches may support the next VCR review
 - the timing of the next VCR review.

Further information about our 2024 VCR review and update can be found on our [website](#).

For further information please contact: aerinquiry@aer.gov.au.

2024 VCR values

Table 1 Residential VCR values (\$2024)

Residential customer segment	Applicable state and territory	Aggregate residential VCR (\$/kWh)
Northern Territory	Northern Territory	30.69
Climate Zone 1 Regional	Queensland	35.69
Climate Zone 2 CBD & Suburban	Queensland, New South Wales	36.69
Climate Zone 2 Regional	Queensland, New South Wales	35.35
Climate Zone 3&4 Regional	Queensland, New South Wales, Victoria, South Australia	24.86
Climate Zone 5 CBD & Suburban NSW	New South Wales	35.37
Climate Zone 5 CBD & Suburban SA	South Australia	53.65
Climate Zone 5 Regional	New South Wales, South Australia, Queensland	42.14
Climate Zone 6 CBD & Suburban	Victoria, New South Wales, South Australia, Australian Capital Territory	55.10
Climate Zone 6 Regional	Victoria, New South Wales, South Australia	38.90
Climate Zone 7 CBD & Suburban	Australian Capital Territory, Victoria	50.72
Climate Zone 7 Regional	Tasmania, Victoria, New South Wales	35.69

Table 2 Residential VCR values by state/territory – comparison with 2019 VCR values

Applicable State and territory	2024 Residential VCR (\$/kWh)	2019 VCR (\$/kWh)	2019 VCR, real* (\$/kWh)
NEM	41.48	24.08	29.02

Applicable State and territory	2024 Residential VCR (\$/kWh)	2019 VCR (\$/kWh)	2019 VCR, real* (\$/kWh)
New South Wales	38.53	25.85	31.16
Victoria	49.23	21.43	25.84
Queensland	36.09	23.76	28.64
South Australia	48.52	30.31	36.53
Australian Capital Territory	50.70	21.38	25.77
Tasmania	35.69	16.96	20.45
Northern Territory	30.69	18.31	22.07
New South Wales + Australian Capital Territory	39.13	25.58	30.83

Note: The 2019 VCR, real (\$2024), have been calculated consistent with our annual adjustment mechanism (nominal 2019 VCR multiplied by a ratio of CPI for September 2024 and CPI for September 2019).

Table 3 Business VCR values by segment – comparison with 2019 VCR values

Business customer segment	2024 VCR (\$/kWh)	2019 VCR (\$/kWh)	2019 VCR, real* (\$/kWh)
Agriculture – Overall	22.25	37.87	45.65
Agriculture – Small and medium	33.15	57.64	69.48
Agriculture – Large	19.45	33.69	40.61
Commercial – Overall	34.39	44.52	53.66
Commercial – Small and medium	52.63	68.29	82.32
Commercial – Large	30.88	39.92	48.12
Industrial – Overall	33.49	63.79	76.89
Industrial – Small and medium	55.96	79.37	95.67
Industrial – Large	32.83	62.86	75.77

Note: The 2019 VCR, real (\$2024), have been calculated consistent with our annual adjustment mechanism (nominal 2019 VCR multiplied by a ratio of CPI for September 2024 and CPI for September 2019).

Note: businesses with less than 10 MVA peak demand.

Table 4 Very large business VCR values by segment – comparison with 2019 VCR values

Business customer segment	2024 VCR (\$/kWh)	2019 VCR (\$/kWh)	2019 VCR, real* (\$/kWh)
Services	33.10	10.54	12.70
Industrial	12.22	117.99	142.22
Metals	5.38	19.86	23.94
Mines	10.63	35.16	42.38

Note: The 2019 VCR, real (\$2024), have been calculated consistent with our annual adjustment mechanism (nominal 2019 VCR multiplied by a ratio of CPI for September 2024 and CPI for September 2019).

Note: businesses with more than or equal to 10 MVA peak demand.

Table 5 Very large business VCR values – for transmission/distribution

Business customer segment	2024 Residential VCR (\$/kWh)
Transmission	10.88
Distribution	7.04

Note: businesses with more than or equal to 10 MVA peak demand.

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