Value of Customer Reliability

EDPR Consumer Forum – 17 April 2018

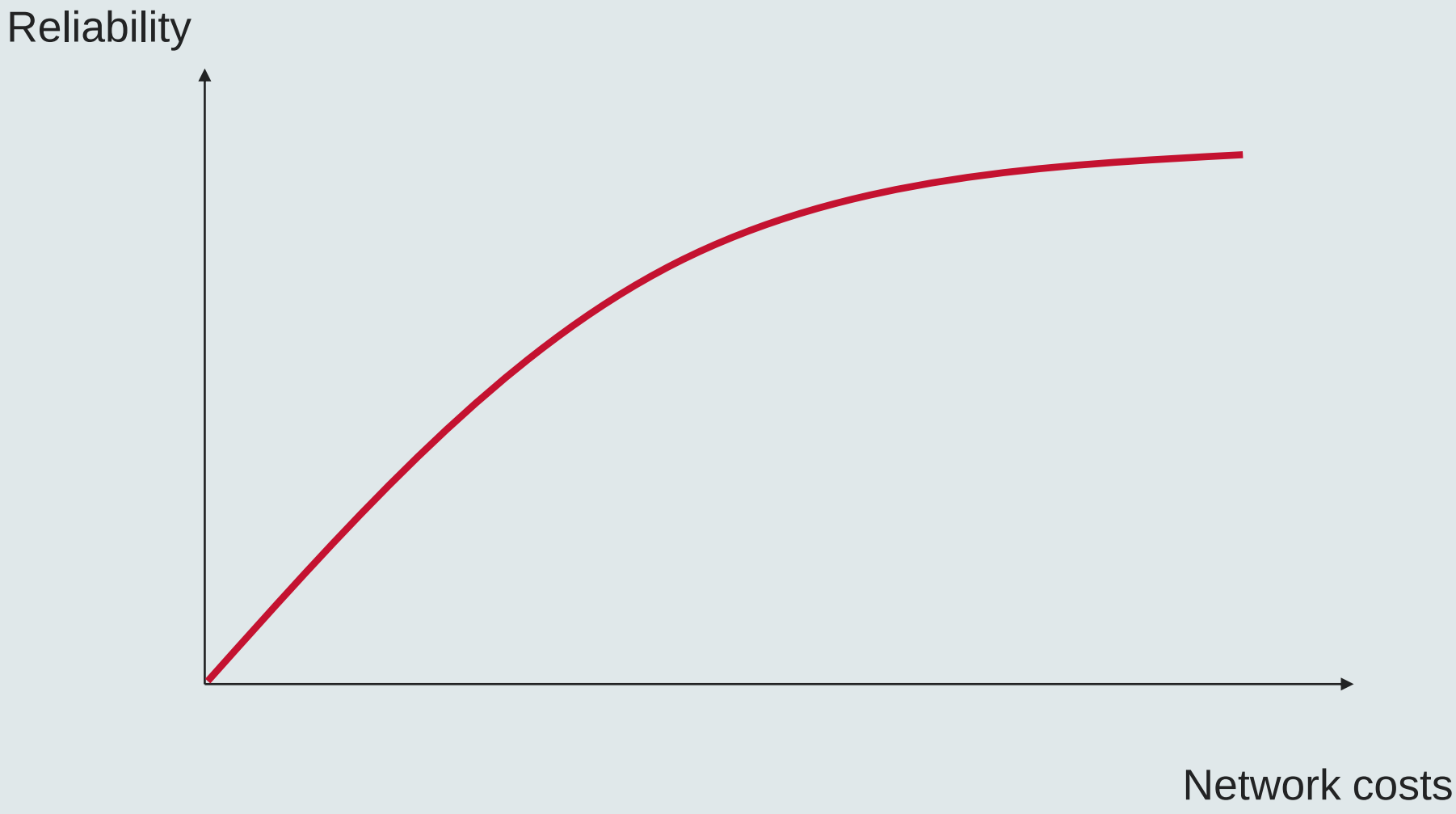
Agenda

1. What is Value of Customer Reliability (VCR)?
2. How is it defined and measured?
3. Key VCR values
4. How is the VCR used in network planning?

What is Value of Customer Reliability (VCR)?

- VCR values, estimated in dollars per kilowatt hour (kWh), represent customers' willingness to pay for reliable electricity supply.
- The VCRs represent the value different customers place on reliable electricity supplies across a range of outage scenarios.
- VCR values are applied to assist planners, asset owners, and regulators in balancing the cost of electricity with the value customers place on electricity.
- This is consistent with the National Electricity Objective - delivering outcomes in the long-term interests of consumers.

The trade-off



How is the VCR determined?

- Based on a customer survey that involved a range of residential and business customers across eastern and south-eastern Australia.
- The survey sought to understand customer preferences across a range of use and outage scenarios.
- From this, AEMO estimated a range of VCR values that reflect the diversity of customer responses.
- The last VCR review was completed by AEMO in 2014 with the publication of the final VCR report and application guide.

The customer survey

- Survey used choice modelling with contingency valuation to reveal customer preferences across a range of variables, including:
  - **Severity** of outage (how widespread it is)
  - **Duration** of outage (how long it lasts)
  - **Time** of outage (peak or off-peak?)
  - **Season** when outage occurs (summer or winter)
  - **Frequency** of outage (how often an outage occurs)
  - **Day** of outage (weekday or weekend)
- Different surveys were developed for residential and business customers, testing a similar range of variables.
- A direct measurement survey approach was utilised for direct-connect customers.

Key VCR Values

Residential customers

State	NEM	NSW	VIC	QLD	SA	TAS
VCR ($/kWh)	27.74	28.36	26.47	27.17	28.73	30.55

Business customers

Sector	Agriculture	Commercial	Industrial
VCR ($/kWh)	50.96	47.81	47.1

Directly-connected customers

Sector	Weighted Avg	Metals	Wood, pulp, paper	Mining
VCR ($/kWh)	6.47	5.66	1.54	15.99

Application to Network Planning

Application by AEMO

- VCRs are applied in Victoria, where probabilistic planning approach is mandated. For a reliability driven constraint:

Energy not supplied (kWh) x Probability of a plant outage = Expected energy not supplied (kWh)

Value of removing constraint ($) = Expected energy not supplied (kWh) x VCR ($/kWh)

- The expected cost of a potential network or non-network investment are then assessed against the value of removing the constraint, in order to strike an economic balance between network cost and reliability.

Application to Network Planning

Application by AEMO

- Locational VCR values can be determined where there is sufficient customer composition data and the area of the unserved energy in Victoria can be identified.
- Otherwise, aggregate VCRs will be used in most instances.
- Outage-specific VCR values can also be used – where only a subset of outage scenarios create load at risk.

Aggregate VCRs	$/kWh
Victoria including direct connects	34.87
Victoria excluding direct connects	42.23
Direct connects	6.47

Key VCR Report Links

- **VCR final report:**

https://www.aemo.com.au/-/media/Files/PDF/VCR-final-report--PDF-update-27-Nov-14.pdf

- **VCR application guide:**

https://www.aemo.com.au/-/media/Files/PDF/VCR-Application-Guide--Final-report.pdf

- **VCR Fact Sheet:**

https://www.aemo.com.au/-/media/Files/PDF/AEMO_FactSheet_ValueOfCustomerReliability_2015.pdf

Questions?