

2019 Transmission Network Forum Summary





It's an exciting time to be working in our industry and have the opportunity to empower our customers through the transition to the new energy future.

Kevin Kehl said.

Powerlink hosted its annual Transmission Network Forum on Friday 6 September 2019 with more than 160 customer, industry and government representatives discussing the role that transmission will play in a power system experiencing unprecedented change.

The record level of interest in the forum reinforced the important role the transmission network will play in the future of energy in Queensland and the wider market.

Interim Chief Executive Kevin Kehl delivered a 'State of the Network' address to discuss how the future transmission network will evolve to meet changing customer needs and support renewable connections in the transition to a lower carbon future.

Two interactive breakout sessions were then to discuss:

- Using non-network solutions to reduce short-term demand peaks
- Renewable connections and the future transmission network.

The feedback from interactive workshops at the forum will be factored into Powerlink's ongoing network planning and decision making.

To view the forum presentations visit www.powerlink.com.au/engagement-forums.
For more information on business development opportunities and connections, please contact businessdevelopment@powerlink.com.au.

Session

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Using non-network
solutions to
reduce short-term
demand peaks

Breakout session I



Using non-network solutions to reduce short-term demand peaks

This session discussed how non-network solutions could address the trend of peak demand moving to early evening for a shorter duration. Utilising ideation processes, the session identified barriers and opportunities for non-network solutions to better manage network utilisation.

Attendees were invited to provide input into the following questions:

- What is preventing customers from playing a more active role in dealing with network peaks?
- What can Powerlink (individually, or with others) do to overcome these barriers?

The following provides a high-level summary of the key themes discussed.



Question

What is preventing customers from playing a more active role in dealing with network peaks?

Awareness and education

Need to generate better awareness and education of the opportunities to participate to non-network solutions.

Available financial incentives and benefits

- For those financial incentives that were available to customers, there were a number of issues raised including:
 - in-sufficient benefits for customers to change behaviour
 - transparency of load and signal prices to allow a response to be considered
 - general trust in network business to appropriately manage responses.

Pricing structures and signals are not fit-for-purpose

The current range of tariffs do not reflect desired customer response, are not time of day specific or tailored to the customer's cost profile.

Lack of supporting technology

- There is a need for better supporting technology (e.g. smart meters, residential battery storage) installed in homes to enable a coordinated response to peak or minimum demand
- The cost of this technology needs to reduce to allow more customers to participate.

Question 2



What can Powerlink (individually, or with others) do to overcome these barriers?

In the second part of the workshop, participants worked in their table groups to develop ideas to address the issues identified in Question 1.

The tables were challenged to broaden their thinking using a range of ideation tools.

The ideas have been themed into the issues identified in Question 1:

Awareness and education

- Better collaboration with demand response providers to defer potential reinvestment in network assets, including investigation of use of mobile generators.
- Use appropriate channels, including social media, to drive appropriate messaging so both households and directly-connected customers understand demand response and what actions they need to take.
- Use real life examples, such as benefits of smart meters, and compare to potential alternates which may include building more network – resulting in greater cost.

Available financial incentives and benefits

- Investigate separating sunk costs of past investments which contribute to increased prices. Marginalising pricing, would mean that usage of the network would be cost reflective.
- Investigate viability of subscription-based energy products, including bundle product offerings and flat fee models.
- Differentiate the Regulatory Investment Test for Transmission (RIT-Ts) to better identify which could be solved with demand response or other

non-network solutions. Provide better clarity on criteria that non-network solutions will be evaluated against as part of RIT-T.

- Provide more detailed network constraint data to non-network providers to support modelling of non-network solutions in RIT-T processes.
- Investigate if customer bills can reflect asset utilisation levels.

Pricing structure and signals are not fit-for-purpose

- Need to introduce technology to make a 'seamless interface' for customers where they are contributing to demand management without having to take any action themselves. This technology will automatically control air-conditioning, pool pumps and other high energy devices to reduce network peaks.
- Give customers better visibility of key metrics including utilisation rates, pricing and direct impacts.
- Review current Regulated Asset Base and determine whether assets that are not currently meeting network requirements can be written down.
- Seek to develop short-term pricing that reflects network conditions, with changes to National Electricity Rules to drive greater incentives across the industry.

Lack of supporting technology

Need to take a consistent approach to adoption of technology, with greater collaboration across the power system to drive commonality and economies of scale.

Session 2

Renewable connections and the future transmission network



Interactive breakout session 2

Renewable connections and the future transmission network

This session looked at current opportunities and challenges, including system strength, of large-scale renewable connections to the transmission network. A presentation outlined what has occurred in the renewable connection space over the past 12 months, insights into the current environment and potential future opportunities.

This was followed by a panel session involving Powerlink experts in the connection process answering questions from the floor.

Questions were asked on a range of topics including the power system modelling process, how the network is going to be planned to cater for future renewable growth, the role of the Integrated System Plan (ISP) and grid-level system strength solutions.

Attendees were invited to provide input into the following question:

- How can we continue to help proponents and plan our future network to assist renewable connections?

The following provides a high-level summary of the key themes discussed.



Question

How can we continue to help proponents and plan our future network to assist renewable connections?

Provide more detailed information on network operations and capacity

- Need for greater detail on network performance and capacity for existing renewable projects, including insights into:
 - Load flows
 - Losses for transmission lines
 - Capacity and current loads of transmission lines and substations
 - End of life forecasts for transmission assets.
 - Arrange for Australian Renewable Energy Mapping Infrastructure (AREMI) map to be updated with full Powerlink network.

Provide better 'locational signals' to allow for more informed project decisions

- Investigate maps with renewable resources overlaid on transmission network
- Be clear on the areas renewable projects should not locate, as much as the areas they should locate. Advise customers as early as possible if a project is not viable.

- Rethink Transmission Use of System (TUOS) charges to send better price signals
- Build on the Confidentiality Rule Change by increasing transparency of project pipeline over the next three to five years:
 - Constraint and performance impacts
 - Number of projects currently undergoing Full Impact Assessments (FIA)
 - Current system strength offering from synchronous plant
 - Available system strength headroom in the local area.



Question

Optimise risk sharing between Powerlink, regulated and non-regulated customers

- Determine the optimal way to share the risk between Powerlink, regulated customers and renewable proponents. Should there be varied reliability standards that customers are happy to pay for more reliability.
- Look at what components within the price provided by Powerlink could be 'fixed' and not subject to 90 day viability offer.
- Investigate if Powerlink can take risk on creation of Renewable Energy Zones (REZs), with more of a 'build it and they will come' model.

Strong support for grid-level system strength services

- Strong support for the provision of grid-level system strength services to help reduce cost to customers seeking to connect. Suggestion that funding from Australian Renewable Energy Agency (ARENA) and the Clean Energy Finance Corporation (CEFC) should also be investigated to help support these services.
- Customers would value more detailed information on size of synchronous condensers to be used to provide grid-level system strength services.

- Powerlink needs to investigate options for system strength other than synchronous condensers. Need to investigate what new technology can provide similar benefit.
- The creation of an inertia market was also identified as value opportunity.

Greater insights into network outages

- Need to provide better understanding to renewable proponents of the potential impacts of planned outages, particularly with introduction of five minute settlements.
- For unplanned outages, investigate how we can provide greater transparency on causes, investigations and corrective actions taken.

More streamlining and education of connection process

- Look at opportunities to standardise the Connection & Access Agreement (C&AA) further.
- Run regular education seminars on the Generator Performance Standards process for customers and consultants, incorporating learnings from recent connections.
- Explain what value customers received from the enquiry and application fees.

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