

Powerlink Queensland

Transmission Network Forum



2017

Powerlink hosted its annual Transmission Network Forum in August 2017 with a record attendance of more than 110 customer, consumer, government and industry representatives.

Interest in the forum has grown each year, with stakeholders valuing the opportunity to provide insights and participating in key discussions on the future of the transmission network.

The forum is part of Powerlink's collaborative approach of working together with key stakeholders to provide the best solutions for electricity consumers.

Chief Executive Merryn York presented on the importance of being customer focused, how consumer behaviour and renewable energy targets are changing the electricity supply chain and how Powerlink is responding to changes in its operating environment.

This was followed by a presentation on the 2017 Transmission Annual Planning Report (TAPR), outlining Powerlink's energy and demand forecasts, network development and future investments.

Three breakout sessions were then held to discuss:

- Delivering clean energy hubs in Queensland
- How can transmission deliver secure, affordable and sustainable electricity in the future?
- A new approach to transmission network connections.

Attendee feedback was positive, acknowledging Powerlink's efforts to increase engagement with stakeholders to not only share information, but seek insights to develop innovative solutions to the challenges ahead.

For more information on the forum presentations and Powerlink's Transmission Annual Planning Report, please visit www.powerlink.com.au, or contact us on 1800 635 369. For more information on business development opportunities and connections, please contact Powerlink at businessdevelopment@powerlink.com.au.

Session

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Delivering clean energy hubs in Queensland





Breakout session 1 – Delivering clean energy hubs in Queensland

This session provided an introduction into the potential development of a North Queensland Clean Energy Hub (CEH) - a key action of the Powering Queensland Plan.

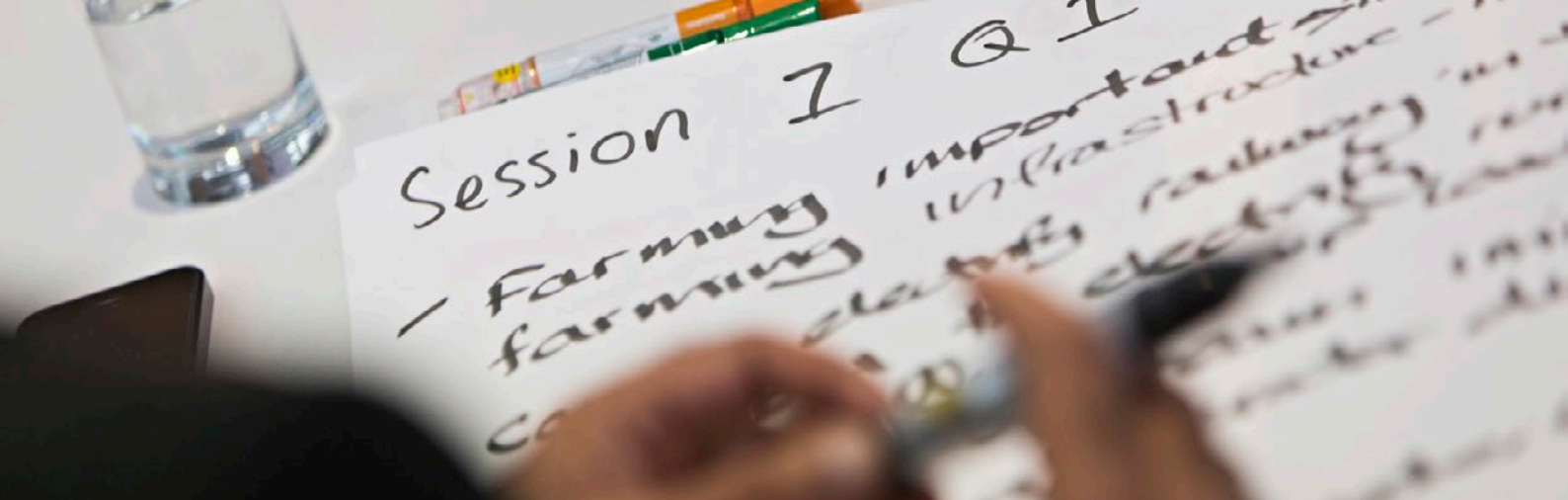
As part of the feasibility study into the CEH, discussions focused on connection options, technical and environmental considerations and operating models. Discussions also considered how the model could be replicated across Queensland.

Attendees were invited to provide input into each of the following questions:

- What factors do we need to consider for CEH configuration and route?
- What other market participants should be considered and how do we attract them?
- What type of commercial arrangements could be used to enhance the CEH and support diversity?
- Who else should we speak to as part of the feasibility study?
- How can this model be replicated?

Attendees who registered for this session were provided with a copy of the Powering Queensland Plan released by the Queensland Government.

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



Question 1

What factors do we need to consider for CEH configuration and route?

Cost and funding model

- Need to minimise the capital and access costs to maximise appeal to proponents.
- The funding model will be important to deliver best outcomes for proponents and consumers.

Diversity of generation and storage

- Diversity of generation is crucial, particularly the opportunity to unlock more wind resource.
- The implications on pump storage for existing and potential pump storage locations should also be taken into consideration.

System strength

- Need to understand and mitigate potential impacts of the CEH on the distribution network.
- The configuration of the CEH should ensure the network is not constrained or generate any access issues.
- It should be technology neutral with both AC and DC infrastructure options considered.

Market considerations

- Will the CEH promote retail competition in the region?
- Ensure the Marginal Loss Factors are included in the assessment for both generators and loads.

Existing infrastructure

- Route of the CEH should take into account proximity to existing network infrastructure, easements and roads – as well as the value of any affected land, e.g. agriculture.

Delivery approach

- Delivery of the CEH probably needs to be done in a staged approach. The challenge will be to manage first mover advantages and disadvantages.



Environment

- Environmental constraints need to be managed as the route of the CEH has the potential to go through sensitive areas, including farming and agricultural land.
- As North Queensland is prone to cyclones, how will the CEH route minimise risk from extreme weather events?

Location of major loads

- Logical to route the CEH near existing major customer loads, including mining and resource loads, creating the opportunity to share infrastructure and cost.
- The location of loads needs to be considered from a marginal loss factor perspective.

Question 2

What other market participants should be considered and how do we attract them?

Participants identified a wide range of stakeholders to engage with as part of the CEH, including:

- Energy Queensland
- Existing directly-connected customers to determine future expansion plans
- Key resource industry groups including Queensland Resources Council and Minerals Council
- Existing generators
- Trade & Investment Queensland and Austrade to connect with foreign investors and potential proponents
- Pumped storage developers
- Australian Energy Market Operator (AEMO)
- Australian Energy Regulator (AER)
- Super funds and other equity providers
- Local Councils.



Question 3

What type of commercial arrangements could be used to enhance the CEH and support diversity?

Need to provide certainty

- Commercial arrangements need to provide certainty in terms of connection timings, delivery costs and capacity to incentivise proponents.
- Key way to provide certainty is for more information to be put out to the market as early as possible in the process to assist with proponents' decision-making.

Partnership models

- Investigate partnering models including joint venture syndicates and public private partnerships.
- Investigate partnering with other distribution and transmission network businesses to build capacity.

Non-regulated v regulated

- There were diverse views with regard to whether the CEH should be delivered as a regulated, non-regulated or a hybrid model. Some participants supported end-use customers not paying (non-regulated).
- Further investigation as part of the feasibility study needs to be undertaken to determine the best delivery model.

Leverage off existing funding sources

- Need to investigate existing funding sources including Australian Renewable Energy Agency (ARENA), Clean Energy Finance Corporation (CEFC) and the Northern Australia Infrastructure Fund (NAIF).

Question 4

Who else should we speak to as part of the feasibility study?

Forum participants identified a number of stakeholders to engage with as part of the feasibility study including:

- Existing directly-connected customers
- Clean Energy Council
- Energy Queensland
- Queensland Resources Council
- AEMO and AER
- ARENA
- Consumer advocacy groups
- Network businesses in Europe and the US that have done similar projects
- Austrade and Trade & Investment Queensland
- Townsville Enterprise
- Universities – innovation looking outside Australia
- Environmental and cultural heritage groups
- Aggregators
- Landholders
- Local Councils.

Question 5

How can this model be replicated?

Make first CEH successful

- Many stakeholders indicated the CEH model being replicated in other parts of Queensland will depend on the success of the first one in North Queensland. If the model is viable it will be replicated.

Identify areas of diverse generation

- Need to identify other areas of diverse generation, wind in particular.

Simple and repeatable commercial structure

- The commercial structure needs to be simple and repeatable – commercial templates.
- Set clear timelines with investment milestones for other potential hub projects to provide investment certainty.

Identify areas of the network that have capacity

- Need to identify other parts of Powerlink's network where capacity exists to allow potential development of a clean energy hub.

Session
2

How can transmission deliver secure, affordable and sustainable electricity in the future?





Breakout Session 2

How can transmission deliver secure, affordable and sustainable electricity in the future?

This session included a presentation exploring the role of Powerlink's network in delivering secure and affordable electricity in a lower carbon future.

Discussions focused on the Finkel Review and the ENA/CSIRO Electricity Network Transformation Roadmap. It also explored strategies to help flatten demand and reduce the need to build new network to meet short-term peak demand.

Following the presentation, participants were invited to provide input into each of the following questions:

- What system security initiatives will deliver best value for customers?
- What is the most effective way Powerlink can contribute to downward pressure on electricity prices?
- How should Powerlink inform and engage with customers to ensure the network continues to meet their future needs? Who else should Powerlink engage with?

A high-level summary of key themes is provided below.



Question 1

What system security initiatives will deliver best value for customers?

Diversity of generation and storage solutions

- Attracting the right mix of renewable energy and strong generation performance standards can improve system security.
- Pumped storage is a proven technology and more economic compared to other storage solutions.
- Need to take a national perspective with regards to renewable energy.

Provide better information on new connections, generation and constraints

- Deliver better data that provides a longer-term view to market participants on new connections, generation and network constraints to allow for better long-term decision making.
- Benefit in working with existing directly-connected customers to better understand how they can help with system security issues.

Inertia

- Need to continue to monitor inertia levels across the network and implement special protection schemes to take corrective actions as required.
- Call for development of inertia policies and frameworks within regions.

Better education and engagement on demand side management

- There is an opportunity to better engage and educate the market about demand side management and how it can improve network reliability.



Question 2

What is the most effective way Powerlink can contribute to downward pressure on electricity prices?

Better asset management

- Rather than build new assets, focus should be on reducing, reusing and recycling the existing asset base.
- Important to look at the financial treatment of existing asset base. Investigate the use of total expenditure (TOTEX) and other methods of depreciation.
- Need to understand that different customers want different asset lives. Can no longer take a one size fits all approach.

Better network planning

- Need to move towards integrated grid planning for the entire National Electricity Market (NEM), rather than at a state-by-state level.
- How can Powerlink work more closely with distribution businesses to undertake joint planning to deliver better outcomes?

Greater transparency on connection enquiries

- Strong value associated with transparency around connection enquiries, with a call for a 'dynamic' Transmission Annual Planning Report, rather than a version that is updated annually.
- Call for more detailed information on connection enquiries, including regional breakdown and updates about connection enquiries progress.

Improve network utilisation

- Seek to increase network utilisation by better exploring non-network options with customers.

Review benefits of interconnector

- Further investigation should occur into interconnectors to identify benefits to consumers. More interconnection may reduce the price of electricity.

Session

3

A new approach to transmission network connections





Breakout session 3

A new approach to transmission network connections

This session focused on the transmission network connection process in Queensland. The presentation provided an overview of the upcoming National Electricity Rule (NER) changes and wider regulatory framework. Technical standards were discussed for parties looking to connect to Powerlink's transmission network.

Following the presentation, participants were invited to provide input into each of the following questions:

- What other information can Powerlink provide that would benefit connection applicants?
- How detailed should the functional specification be?
- How detailed should the Network Operation Agreement be, particularly with respect to operations and maintenance?

A high-level summary is provided of key themes from the discussions.



Question 1

What other information can Powerlink provide that would benefit connection applicants?

Greater transparency

- Provide greater clarity on what can and can't be shared with regards to other proponents and connection enquiries.
- Consider having a queuing policy to provide more visibility on the potential number of applicants, where they are in the process and the size or cumulative size of potential generation.
- Give greater visibility on where capacity exists in the network. Can real time SCADA be made available or future prediction on marginal loss factors?
- Publish functional specifications and preferred supplier list to help facilitate early procurement processes.

Simplify or standardise information

- Can standard terms and conditions be published?
- Can numbering and nomenclature be provided for standard drawing, equipment and substations?
- See value in a dictionary with common terminology being made available to connection applicants.

Clarification on timeframes

- Applicants are seeking more specifics on application timeframes which can range from six to 18 months.
- Gain value from understanding Powerlink's internal approval processes for connection applications including Board interactions.



Question 2

How detailed should the functional specification be?

Upfront information

- As much information as the rules allow should be provided up-front so connection applicants can then use it for their own specific requirements.
- More information provides certainty for applicants, lowers risk and helps achieve Final Investment Decision (FID).
- Need to consider the type of connection, as the level of detail required may depend on generation type.

Type of information valued in specification

- Participants identified the following as information they would value in the functional specification:
 - > Typical layouts and footprints
 - > Test plans for meeting connection requirements
 - > Details on Australian Standards
 - > Liability periods and warranties
 - > Clarity on treatment of shared assets.

Question 3

How detailed should the Network Operation Agreement be, particularly with respect to operations and maintenance?

- There was support for a high-level or standardised Network Operation Agreement to be made publicly available with indicative costings to allow better planning from applicants.
- Value in providing Service Level Agreement (SLA) or performance guarantee for connection in-line with historical performance of the network in that region.
- Other information identified as adding value in the Network Operation Agreement included:
 - > Details on response time and frequency of site attendance
 - > Schedule of charges
 - > Switching procedures
 - > Spares
 - > Access rights
 - > Site inductions
 - > Land access protocols.



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