
Network Vision Stakeholder Forum

2 February 2021

Meeting Notes

BACKGROUND

On 2 February 2021, we commenced consultation on our 2021 Network Vision with the release of a Network Vision Discussion Paper and a Stakeholder Webinar, attended by around 50 stakeholders.

The development of the Network Vision provides customers and stakeholders with a key opportunity to provide input to help shape our priorities for developing and operating the transmission network to deliver the electricity transmission services required by customers.

The Stakeholder Webinar covered the following.

1) **Presentation**

- What is the role of the Network Vision?
- What has changed since the Vision was previously published in 2016?
- How do changes impact on our directions and priorities?
- The PowerPoint Presentation can be accessed [here](#).

2) **Discussion Forum** – participants broke into four virtual breakout rooms to discuss:

- What is the role of the transmission network in providing services customers value into the future?
- What are the key trends and changes since the 2016 Network Vision that should be considered?
- What are the most important priorities for the transmission network over the coming 5-10 years?

A consolidated set of meeting notes from the discussion of these question follows.

DISCUSSION ROOM NOTES

1. What is the role of the transmission network in providing services customers value into the future?

The discussion paper presents a largely supply-side view, but what is happening on the demand side, and how is industry expected to change over the next 10 years? Potential influences on future demand levels include:

- Space industry

- Lower manufacturing in metropolitan area
- Large mining loads
- Eyre Peninsula with the upgraded transmission network

The transmission network is also seen as an enabler of jobs.

ElectraNet noted that it relies on demand forecasts sourced independently from AEMO, SA Power Networks and large customers in its planning and operation of the network.

Will customer PV systems be replaced in the future when they come to end of life, or not in which case will this drive increased demand?

ElectraNet noted this will depend on factors such as the future costs of PV systems and customer preferences.

SA is at the leading edge of changes to the national power system. As other regions catch up, and see growing levels of Distributed Energy Resources (DER), will this lessen the need for transmission investment or result in stranded assets, especially with long asset lives?

ElectraNet noted that the value of diversity across and between regions appears to persist into the future as the generation mix changes and levels of DER increase.

It was recognised that ElectraNet and SA Power Networks are playing a key leadership role, with SA being at the global forefront of installed solar PV and wind generation levels, and this leadership should continue.

It's important to actively seek out available technology that could provide innovative service solutions.

Are there new services that could be identified?

- Data interface to get transmission system data that would be useful for consumers, generators
- Data interface/ guidelines on system strength indications for potential connection points

Customer expectations of service reliability and quality of supply seem to be increasing.

Customers have more devices and applications that rely on the power to always be on, increasing the focus on reliability.

How much do customers value resilience. The challenge to quantify the value of network resilience was recognised. Local resilience has a role to play, e.g. battery backup at the customer premises.

There are various ways to deliver reliability and resilience, e.g. network investment or generation and storage technologies.

The transmission network facilitates Government (as well as customer) climate change action. The transmission network should facilitate connecting the cheapest form of generation to the market and the development of Renewable Energy Zones.

A wide range of stakeholders have an interest in connecting renewable generators.

There is an expectation from renewable generators that TNSPs should pro-actively provide system strength.

There is also a general expectation that TNSPs make efficient investment decisions and deliver a network with adequate capacity and resilience.

What the unique contribution of the Network Vision as opposed to other documents like the ISP and TAPR? What is the distinct value it is adding?

ElectraNet's role is to deliver power to end users in the most cost-effective way. Find the way to keep the cost down.

Cost of expansion of the transmission network to be borne by those who need it expanded.

Decision on the location of hydrogen facilities should be driven by developers. Don't be proactive on expansion of the transmission network.

Rapid uptake of rooftop PV. Focus on reliability and affordable price. Reliability should not go backwards. But that does not mean accommodating endless PV.

ElectraNet noted for example, if transmission helps expand the ability of rooftop PV to connect, should that cost be shared or born by the PV investor (through additional investment or curtailment)?

Does this problem lie with the distribution network?

Expanding transmission for PV is a "white elephant".

Responsibility should be with PV owner if their PV is spilled.

One take away was that stakeholders are holding to a 'causer pays' framework rather than 'most efficient overall' framework. There was a strong position presented relating to big customers and new generators that the causer should pay.

Most participants in the discussion agreed this was mostly a problem for SA Power Networks but did accept there could be some pockets where this would be an issue for transmission. However, that did not override the point on causer pays.

2. What are the key trends and changes since the 2016 Network Vision that should be considered?

What will the take up of hydrogen mean for the operation of the transmission network?

Does it have greater implications for the gas network?

ElectraNet noted that the impacts of hydrogen are uncertain, and could potentially increase the role of the network to the extent this results in additional load on the system to produce hydrogen for the export market, but equally could reduce the role of the network if hydrogen plays a greater role as an alternative fuel and power source.

The changing nature of technology and innovation is a key factor and is a source of both uncertainty and opportunity. How is ElectraNet applying technologies at the appropriate times, and ensuring customers are brought along with new technologies?

ElectraNet noted a number of examples of innovative technology being applied in the way transmission services are delivered, including the Dalrymple battery system, provision of new system services such as system strength and inertia, use of drone technology and digital imagery in managing the network, and installation of Smart Wires technology, control schemes and emergency management schemes to safeguard and improve the operation of the network.

At the edge of grid, will local area networks become more important and see some geographic contraction of the grid over time? For example, if hydrogen production occurs via locally connected resources, instead of transmission connected.

The cyber security threat, data security for the network and customer data rights are growing in importance.

Increased automation and associated data requirements were noted as another trend.

Environmental responsibility for businesses and meeting customer expectations is important.

The grid must adapt and continue to change – distributed energy resources are reducing load on the grid, while the steady growth in centralised renewable energy sources connected to the transmission network increase the role of the grid.

Industrial customers are becoming more responsive to public pressure for zero emissions, driving ongoing increases in renewable generation.

The uptake of electric vehicles and public transport could be much faster than expected.

The impact of electrification more generally (e.g. natural gas appliances and industrial applications such as heating) could have a material impact.

Tariff structures can play an important role in driving the timing of energy use. Electric vehicles could for example improve or worsen network utilisation, depending on the incentives to charge at different times, with implications for required network investment.

It's important that the transmission system does not become the limiting factor (both intra- and inter-regional) during the energy transition.

The transmission system must be planned to avoid market intervention, e.g. by ensuring enough system strength is available.

Need to deliver the most reliable network that is affordable – taking customers willingness to pay for reliability into consideration.

EV might not be a key trend within the next 5-7 years in Australia. Required infrastructure and infrastructure program is not there yet (has not had strong Government support). So, EVs may not have a short-term impact on the transmission network.

Growth of EV is not that great in demand forecasts (cost of EV, charge cost will dampen uptake). Maybe in the next decade, not now

ElectraNet noted that because EV is mobile it can charge/ discharge anywhere. If it happens, it could happen very quickly.

Long-term customer payback plans for EV (like PV) might increase the uptake of EV rapidly.

There were a broad range of views on the likely timing of stronger EV development.

EV is more a problem for SA Power Networks than ElectraNet. SA Power Networks must deal with this first.

ElectraNet noted if managed properly, EV can solve a lot of network problems (with V2G).

One take away from this discussion was that PV is here to stay. Views on EVs are strongly divergent. However, there was an expectation that ElectraNet plan to address any emerging issues. This discussion also reiterated that this is mostly SA Power Network's problem and causer pays is key.

There was strong interest that ElectraNet engage and identify new opportunities for service providers if EVs can solve problems as well as create them. ElectraNet was encouraged to explore this thinking.

3. What are the most important priorities for the transmission network over the coming 5-10 years?

ElectraNet needs to keep a strong focus on consumer and stakeholder engagement.

It is important to build flexibility for development into the network, including the ability to respond to trends that are difficult to forecast (such as changing power flows on the network).

How do we respond to increased risk and how is this shared? Mechanisms such as contingent project funding and cost pass-throughs can put risk back on customers. Flexibility is the key.

The transmission network plays a key role in facilitating the energy transition and needs to be flexible and adaptable to deal with minimum and peak demand.

Working with technology providers to assist the transition is also important.

It is also important to consider opportunities to reduce operational expenditure through more effective use of technology (e.g. use of digital twins).

How do we optimise assets that can help bring down electricity prices? Are consumers getting in front? Are the interests of consumers and operators aligned? What are the trade-offs?

Reliability and power quality remain important.

4. Closing observations

Closing observations included:

- The group appreciated the useful discussion and opportunity to participate
- The pace of change has never been greater!
- Trends can move faster than expected and there is a need to be proactive rather than reactive in our planning.

Attendees (including partial attendance)

First Name	Surname	Organisation
Ross	Anderson	Clutch Consulting
Shelley	Ashe	ECA
Carl	Badenhorst	Aurecon
Maja	Barnett	Tilt Renewables
Leon	Benn	Hitachi ABB Power Grids
Bruce	Bennett	AGL
Jarrold	Bielby	RDA
Marino	Bolzon	Department of Energy and Mining
Jacqui	Bridge	AusNet
Jennifer	Brownie	QLD Electricity Users Network
Thomas	Daly	Neoen
Ric	Darley	Aurecon
Nicholas	Finch	Engie
Paul	Harrington	Smartwires
David	Headberry	ECCSA
Mark	Henley	Uniting Communities
Chantal	Hopwood	TasNetworks
Stephen	Jarvis	TasNetworks
Vikram	Kenjle	University of Adelaide
Shariq	Khan	Hitachi ABB Power Grids
Aidan	Lawlor	Smartwires
Trevor	Lim	Total Eren
Grant	Lindner	ABB Australia
Ron	Logan	ERMpower
Duncan	MacKinnon	Energy Council
Stephanie	McDougall	TransGrid
Connor	McLeod	Enel Green Power
David	Monk	AER
Andrew	Nance	The Energy Project
Lars	Narushevich	AEMO
Michael	Nezic	Department of Treasury and Finance
Elijah	Pack	AEMO
Tom	Parkinson	Clean Energy Council

First Name	Surname	Organisation
Jinny	Pavanello	Department of Energy and Mining
Attilio	Pigneri	Hydrogen Utility
Jason	Pollock	AEMO
Steve	Redhead	Aurecon
Nick	Ruane	ABB Australia
Natasha	Sinclair	AEMO
Jesse	Steinfeld	TransGrid
Dev	Tayal	Tesla
Dave	Thomas	Epic Energy
Kathryn	Walker	PiperAlderman
Catherine	Way	DP Energy
Ellen	Wei Liu	Vestas
David	Whatmough	Clough Projects
Juergen	Zimmermann	Hitachi ABB Power Grids

ElectraNet Attendees

Abu	Abdullah
Simon	Appleby
Travis	Crozier
Simon	Emms
Bradley	Harrison
Hugo	Klingenberg
Rainer	Korte
Sathya	Lawson
Megan	Lloyd
Henry	Nguyen Tho
Olan	Olubre
Matthew	Peake
Natalie	Phelps
Christopher	Tansell
Jeremy	Tustin