Office of the CEO

31 July 2019

Mr Jeremy Conway
Chief Executive
Infrastructure SA
Level 15
Wakefield House
30 Wakefield Street
ADELAIDE SA 5000

Dear Mr Conway

20-Year State Infrastructure Strategy – Discussion Paper

SA Power Networks welcomes the opportunity to comment on Infrastructure SA's discussion paper.

As the operator of the State's electricity distribution network, we support Infrastructure SA's intent to take a long-term, strategic and integrated approach to infrastructure development in SA.

In this submission we have provided comments on those questions in the discussion paper we consider most relevant to SA Power Networks and our role in managing the State's electricity distribution network assets to ensure South Australians continue to enjoy safe and reliable supply of electricity as the State grows and prospers over the next 20 years.

How would Adelaide's infrastructure need to change if its population hit two million?

The State's electricity distribution network has the capability to support future population growth and there is significant latent capacity in many parts of the network outside of times of peak demand. As the supply side of the energy system continues to transition to intermittent renewable generation, enabling and encouraging more flexibility on the demand side will be key to unlocking this latent capacity to support population growth without over-investment in new network assets. In particular, effectively managing the ongoing integration of new rooftop solar PV and other distributed energy resources such as batteries and electric vehicles (EVs) to enable a true 'two-way' electricity network will deliver more value to the community from the existing electricity network infrastructure.

How can South Australia best prepare its infrastructure to be able to adapt to and embrace future technological disruptions?

In a time of rapid and unpredictable change it will be important to identify 'no regrets' strategies that are robust to a wide range of possible futures and to avoid 'picking winners' too early which can lead to stranded investments.

How can infrastructure provide resilience against, bushfires, drought, flooding, sea level rises and the like?

The Australian Energy Market Operator (AEMO) has identified that the forecast uptake of distributed energy resources (DER) in South Australia will pose challenges over the next decade to electricity system security during "emergency conditions" (bushfires, severe weather, network outages), when flows on the network must be reduced to remain secure. More active management of both large- and small-scale DER will be needed to avoid these issues, and SA Power Networks is working actively with industry to develop the technical standards and capabilities to enable this.

Electricity network infrastructure presents a fire-start risk that requires ongoing investment in bushfire risk mitigation measures, including ensuring adequate clearance between vegetation and power lines in high bushfire risk areas. The challenge is to balance the cost of bushfire risk mitigation against the associated impact on electricity prices; in our 2020-25 Regulatory Proposal, which is currently being assessed by the Australian Energy Regulator, the scope and cost of our bushfire risk mitigation plan were reduced from our Draft Plan following stakeholder feedback due to affordability concerns.

What strategies should the Government adopt to ensure the necessary infrastructure is in place so our regions can thrive?

Regional communities and industries require a safe and reliable supply of electricity. In addition to bushfire risk mitigation, as extreme weather events become more prevalent we will need ongoing investments to harden the electricity network against storm damage in order to ensure that customers, in particular in regional areas served by long radial lines, are not exposed to extended outages when major storms occur.

How can South Australia better manage demand on current infrastructure?

As we move forwards, the new challenge in managing demand on the State's electricity infrastructure is the emerging 'reverse peak' during the middle of the day, when high levels of rooftop solar output are starting to reach the capacity of the network infrastructure at certain times. As noted above, the key to managing this issue will be to enable and promote greater flexibility in energy use and smarter DER. South Australia is at the forefront of the transition to distributed energy globally and hence must be a leader in developing real-world solutions to the challenges of operating a high-DER electricity network. As such, Government schemes such as the Home Battery scheme, Grid-Scale Storage Fund and Demand Management grant funding have a key role to play in supporting the development of enabling technologies, business processes and rules required to enable this transition, and there will be an ongoing role for Government in supporting innovation in this area in coming years. The SA Government also has a role in setting appropriate minimum technical standards to ensure that distributed energy resources are able to be integrated effectively with the broader energy system, and managed appropriately if required to protect the system during emergency events.

Through the recently-formed SA Energy Transition Steering Group, SA Power Networks is currently working with SA Government Department of Energy and Mining, AEMO, Electranet, ESCoSA and the Office of the Technical Regulator to develop an Action Plan that coordinates efforts to manage reliability and security of the State's electricity system through the rapid transition to distributed energy.

How will technology change the transport system in South Australia?

The transition to electric vehicles is inevitable. There is considerable latent demand in the community for EVs, with high up-front costs and a lack of public charging infrastructure as the two main factors holding back the market today. The range of electric models from all major automakers is now expanding rapidly as the EV market begins to mature in other jurisdictions, so there is the potential for the market to develop rapidly in South Australia once trigger conditions are met.

How can South Australia take the lead on reducing emissions from transport?

In terms of reducing carbon emissions, South Australia is ideally placed to benefit from the electrification of transport given the high – and increasing – proportion of renewable energy in the generation mix. There is also significant latent capacity in many parts of the existing electricity network infrastructure to support EV charging, given that the majority of charging is expected to occur outside of traditional peak demand times, e.g. overnight or, for workplace and destination charging, during the

middle of the solar day. The Government could accelerate the decarbonisation of the transport sector by stimulating the local EV market through modest incentives for EV owners and Government support for public charging infrastructure.

What options are there to establish a reliable, decarbonised energy system that presents export opportunities?

South Australia has the opportunity to lead the world in the development of the expertise and technologies required to transition to a sustainable, efficient, de-carbonised energy system. The SA Government can support this through continued collaboration with the electricity sector and ongoing support for the technology and innovation in distributed energy, virtual power plants, new energy services markets, hydrogen production and related technologies.

If you wish to discuss any of our comments further, please contact Mark Vincent on 0427 580 119

Yours sincerely
Doug Schmidt
Acting Chief Executive Officer