



ENGINEERS  
AUSTRALIA

Dr Kerry Schott AO  
Chair  
Energy Security Board  
C/- COAG Energy Council Secretariat  
Department of the Environment and Energy  
GPO Box 787  
CANBERRA ACT 2601

20 June 2019

Dear Dr Schott,

**Re: Engineers Australia Response to Consultation Paper on Actionable ISP**

Engineers Australia is the peak body of the engineering profession. We are a member-based professional association with about 100,000 individual members. Established in 1919, Engineers Australia is a not-for-profit organisation, constituted by Royal Charter to advance the science and practice of engineering for the benefit of the community.

This submission draws on the advice of member engineers who are committed to a Code of Ethics which defines the values and principles that shape the decisions we make in engineering practice. It includes a commitment to promote sustainability, which encompasses balancing the needs of the present with the needs of future generations.

Engineers Australia supports efforts to meet Paris Accord commitments and believes that the electricity generation sector is most able to make large and immediate gains for national emissions reduction. The transformation that is occurring in the electricity industry is real and there are no indications that the pace of change will slow.

Electricity system policy has been the notable energy policy topic of the past decade. In general, short-term changes to policy have affected the long-term planning cycles in the power system. Electricity planning requires longer time frames, and an inability to do this is currently causing operational issues.

It is in this context that Engineers Australia believes that the Integrated System Plan (ISP) for the National Electricity Market marks a very welcome cost-based engineering optimisation plan for a sector under rapid transition.

Engineers Australia commends the plan for its willingness to entrust specialist technical expertise to not only identify the lowest cost options, but to also deliver energy reliability to consumers and to support stable and secure power systems operation.

Engineers Australia urges the Energy Security Board (ESB) to maintain a focus on technical expertise, because the ISP leans heavily on engineering analysis to identify investments in the power grid that can best unlock the value of existing and new resources in the system. Engineers Australia has consistently raised the issue that increased complexity of the electricity system requires technical expertise to avoid risking unnecessary costs being borne by consumers.

The fundamental problem is that market-based systems cannot balance the instantaneous supply required. It has proven to fail, most notably in events on 1 November 2015, 28 September 2016, and 25 August 2018. The latency in the market dispatch has detuned the dynamic response of the generators' controls which are too little too late, or non-responsive. This view is supported by the fact that AEMO has acknowledged that it cannot adequately model the market impacts on the frequency response of the power system. It is the role of engineers to help ensure that the power system is protected from unintended consequences of market-based systems before it becomes more unstable.

Australia's electricity system has systematically become weaker over the last two decades as good engineering and operational practices have been compromised by conflicting market network methodology. Engineering practice and forethought that allowed essential planning to happen is being increasingly lost. We are in an abnormal scenario where the market controls the system, and most rules are being introduced based on economic decisions, not engineering decisions. Engineering practice and operation should determine the policies in place in the electricity system to ensure system security and reliability for the consumers.

If you wish to discuss these views in greater detail, please contact me via Kiani Warwick, Executive Assistant, on (02) 9410 5621 or by email at [KWarwick@engineersaustralia.org.au](mailto:KWarwick@engineersaustralia.org.au).

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'Peter McIntyre', is positioned above the typed name and title.

Peter McIntyre FIEAust CPEng EngExec  
**Chief Executive Officer**