

11 September 2023

Anna Kominik
Electricity Authority Chair
Electricity Authority
PO Box 10041
Wellington 6143

Dear Anna,

Advice resulting from the 16 August 2023 meeting of the Security and Reliability Council

The Security and Reliability Council (SRC) is tasked with providing the Electricity Authority (Authority) with independent advice on the performance of the electricity system and the system operator, and reliability of supply issues.

At the August SRC meeting

The theme for the August SRC meeting was *workforce management and its role in supporting security and reliability in the power system*. To support this theme, the SRC received presentations from:

- New Zealand Infrastructure Commission Te Waihanga,
- Transpower (in its roles as grid owner and system operator),
- The Electricity Engineers' Association (EEA),
- BusinessNZ Energy Council and Young Energy Professionals Network (BEC/YEPN),
- University of Auckland, and University of Canterbury's Power Engineering Excellence Trust (PEET).

The SRC also held their annual facilitated risk and strategy session.

This letter is the SRC's advice arising from the meeting.

The SRC's strategic focus

The SRC engaged John Hancock of Signature Consulting to facilitate its annual risk and strategy session. The aim for the session was for the SRC to identify and prioritise key areas to include in its forward work programme and ensure it is fulfilling its role to provide the Authority with meaningful actionable advice. Notable risks and areas of focus include:

New threats to electricity security in the strategic environment

- Climate change events increasingly affect the power system, with concern our assumptions and perceived levels of resilience will not avoid major impacts on assets and processes

- Climate change action is combining with global electrification to soak up talent worldwide, both professional and operational. New Zealand may not be able to access the human resources it will need to manage security of supply
- China dominates supply for electrical resource inputs (EVs, wind turbines, magnets, rare earth metals etc) and may become a bottleneck for global and New Zealand access to capital goods for infrastructure build

New opportunities to manage electricity security in the strategic environment

- Emerging new technologies will be commercial in future. We need to ensure we are not putting regulatory roadblocks in the way of development and commercialisation while managing security
- Artificial Intelligence (AI) may be more of a help than a threat
- Exponential EV uptake will mean large scale V2G potential within a decade

Potential future themes and topics include:

- Future Power System Architecture - to reflect on general assumptions held in the sector which may no longer be relevant and how any changes will assist or impact security and reliability.
- Factor input shocks and potential for disruption – have we anticipated potential disruptors to how we build, manage and operate the power system (capital, materials, labour...) and what are we doing about it?
- Resource management - consenting (for new) and re consenting (for existing) issues increase with competing opportunities for uses of water and other natural resources (water rights, new investment)

The SRC will include these issues, and others that arise, in its forward work programme. We welcome feedback from the Authority on these risk and focus areas.

Workforce Management – ensuring the future talent pool

The SRC appreciated hearing from a range of entities about their approach to workforce management. To guide their material, presenters were asked to consider a range of issues, including an aging workforce, diversity, loss of younger talent to other sectors or countries, and where they see the biggest risks to system reliability and security.

Members saw real value in the work the New Zealand Infrastructure Commission Te Waihanga is doing on the National Infrastructure Pipeline (NIP)¹. This work is an important building block for an overall energy strategy, addressing assumptions and offering real clarity, as to what's achievable by whom and when.

The SRC strongly encourages participants, and the Authority, where appropriate, to engage with the New Zealand Infrastructure Commission and share data and insights for everyone's benefit. The Authority should consider what appropriate Code amendments may be needed to support broad engagement and ensure opportunities are maximised.

¹ [The Pipeline | Te Waihanga](#)

Members were pleased to see Transpower's approach included training initiatives to promote diversity and leverage the sector's sustainability aspirations and career development opportunities.

A theme across presentations was the electricity industry is invisible to many young people and is not being considered as a career option. Additionally, because of the need for STEM subjects as pre-requisites to further study, students are not considering the industry early enough to ensure they take the necessary subjects at secondary level. The SRC strongly encourages industry participants to consider engaging with young people and schools to increase their (and the industry's) brand awareness as this is key to attracting diverse talent.

Another theme across presentations was the approach of enabling incremental upskilling through micro-credentialling for workers. Training entities are using this as a way to bring in new talent, develop existing talent and support broader pathways to careers in the sector. Aligned with this was the general view there needs to be earlier targeting of schools to ensure students are receiving accurate and timely information about the sector and what it can offer, from trusted sources. Given their regional coverage and community presence, distributors may be well placed to support this work, with leadership from Electricity Networks Aotearoa (ENA).

Members are concerned there is a lack of sector-specific initiatives in current immigration policy. Current settings may be inadequate to provide the labour force needed for the transition and beyond. An approach similar to Canada's parental pass initiative could offer incentives for potential immigrants. Agencies like the Authority can support this through engagement with Immigration NZ and provision of relevant sector information. The Authority should also consider Code changes to support greater information flow.

Presenters noted the well-publicised decline over recent decades in general standards of reading, writing and maths in New Zealand. This foundational learning is critical in supporting people into further education and training needed for the electricity sector. This issue is highlighted as core engineering and trade skillsets are increasingly combined with critical thinking, fact checking, bias awareness, and communications to meet the future needs of managing the future-state power system. For the sector to ensure an appropriate talent pipeline, meeting these needs will be critical to support security and reliability.

While the Authority does not have a specific educative function, it should consider how it too can support the talent pipeline and visibility of sector career opportunities. This could be aligned with the Authority's outreach initiatives and information sharing provisions under the Code. The Authority should continue to engage with universities and training entities and the Electricity Engineers' Association (EEA), to support its understanding of their work and initiatives overseas they are involved in.

The SRC encourages the Authority to consider whether workforce challenges are a contributing factor in any reviews or consultations around system security and reliability going forward. This may yield insights over time.

The SRC notes there is no coordination across the industry to ensure the industry's workforce needs are in focus across all the enabling organisations (such as the education sector, immigration, careers/school advisors, etc). The SRC strongly encourages the Authority to initiate pan-regulator discussions to agree which entity (or combination) will

take the lead in driving this coordination. It would be important in any initiatives to not lose sight of competition between participants having a key role in attracting new talent.

Authority Board and SRC annual engagement - August

SRC members again appreciated the opportunity to attend and engage with the Board at the Board's August meeting. This annual engagement is an informal but important way to discuss areas of alignment as well as concerns and differences of opinion.

It was valuable, for example, to hear the Board's concerns about a lack of connectedness and cohesion in the industry's approach to planning for the transition. This aligns with the SRC's concerns, as an area of focus for both sector regulators and participants.

Given recent weather-related events, it was positive to hear the Board talk about the need to consider possible risks, rather than reducing the focus to credible risks and past experience. Capturing and utilising experiences from overseas remains a challenge that needs constant attention from all parts of the sector.

It was useful to discuss the SRC's approach and how the SRC can best advise the Board on relevant issues within its legislative remit of security and reliability. The SRC welcomes ongoing feedback from the Board, to factor into future meetings.

If the Board has any particular focus areas for the SRC ahead of next year's annual engagement, it can let the SRC know through its Chair or the secretariat.

As Chair, I welcome the opportunity, if requested, to attend the Board meetings when the Board is discussing the SRC's minutes and letter of advice and give further informal feedback on how we're working together for New Zealand consumers.

The SRC's next meeting

The theme for the SRC's Q4 (October) meeting for 2023 is *Technology and Information Security*. This theme builds on the SRC's previous work in this area, including the cyber-security surveys and analysis it commissioned in 2020 and 2021.

A related theme for the October meeting is the *system operator's support of industry evolution*. This will include a presentation from Transpower on how they are meeting sector needs through the transition and evolving to meet the needs of a more decentralised power system with greater direct consumer input.

The system operator will also present on its annual self-review of performance, giving an opportunity for the SRC to give feedback that can inform the Authority's final response.

Yours sincerely,



Hon Heather Roy
Chair of the SRC

cc: SRC members, Grant Benvenuti and James Blake-Palmer (Authority)

5 October 2023

Hon Heather Roy
Chair
Security and Reliability Council (SRC)

By email: heatherjroy@gmail.com

Dear Heather,

Response to your letter of 11 September 2023

Thank you for your letter of 11 September 2023 that gives the SRC's advice arising from its 16 August 2023 meeting. The Electricity Authority Te Mana Hiko (Electricity Authority) considered all the advice at our 19 September 2023 meeting.

Strategic focus

The Authority acknowledges the SRC's focus on annually refining its strategic approach and deciding where it should direct its efforts. This will help to ensure the SRC is on top of the issues most impacting the sector. It will also help the SRC to align its advice to impact the Authority's work programme most effectively.

One area the Authority would like the SRC to include in its workstreams is *resilience*. The Authority considers resilience as part of the SRC's function and an important component of the power system's ability to both withstand and recover from disruptive events. The SRC's inclusion of technology and information security is a good example of why this is the case, given the impact of, for example, cyber security events on the power system's ability to manage through events and recover normal operation following them. Resilience should be considered as part of reliability in its strategic focus and when forming and providing its advice for the Authority.

The Authority looks forward to an update on the SRC's forward work programme, when available, and to further advice on the focus areas you have outlined. The SRC, through its secretariat, is welcome to approach the Authority for any additional support needed to ensure it has the information to support the work.

Workforce Management – ensuring the future talent pool

The Authority appreciates the SRC's focus on workforce management. The insights will inform further conversations the Board is committed to having on where it can best focus its stakeholder engagement to influence and support progress in this critical area.

The Authority supports initiatives that will help to achieve greater visibility of electricity workforce needs across the sector. The National Infrastructure pipeline (NIP) is an example of a key input into an overall energy strategy and should be supported by relevant agencies engaging to provide essential data on the pipeline of projects. We already engage collaboratively with agencies to support a joined-up approach across the industry. It is also positive to hear some of these connections are already being made as a result of the SRC's involvement.

The Authority is also keen to promote key messages, as part of its kaitiaki role, and is open to further discussion on how to explicitly include workforce management in specific workstreams and engagements across the sector.

We agree that a stable and capable workforce and a pipeline of talent and career advancement are all essential for power system security and reliability. The existing pressures of ageing workforce and alternative career paths are combining with electrification and decarbonisation efforts around the world, putting pressure on an already-limited resource.

Although the Authority is not responsible for regulation in relation to sector workforce needs, we recognise the importance of the issues and are committed to advancing the topic with electricity sector participants via supporting agencies, such as the Ministry of Business, Innovation and Employment (MBIE), Electricity Networks Aotearoa (ENA), the Electricity Retailers Association (ERANZ) and other regulators. One suggestion could be for the SRC to engage with the Council of Energy Regulators on this issue – we are happy to raise it at the next council meeting. We also note your suggestion to engage with training providers and the Electricity Engineers' Association (EEA). We do engage with the EEA from time to time and can explore further discussions. If the SRC has further suggestions, they are welcome to raise these on an ongoing basis, through the secretariat.

Authority Board and SRC annual engagement - August

The Electricity Authority Board again appreciated the opportunity to meet with SRC members and discuss how we work together for New Zealand consumers.

Board members discussed other ways to actively engage the SRC on issues impacting the sector. For example, the Authority may call on the SRC for input on specific issues, such as providing feedback on the Customer Advice Notice (CAN) process, as used by the system operator and the operation of the Automatic Under-Frequency Load Shedding (AUFLS) regime.

The nature and frequency of this potentially out-of-cycle work will depend on the Authority's workstreams and can be managed through the SRC's secretariat. The resulting advice will support the Authority's work programme.

The SRC's next meeting

The Authority acknowledges the SRC's continued focus on technology and information security and welcomes insights from the SRC on this important theme.

The Authority looks forward to receiving the SRC's feedback on the system operator's annual self-review of performance. This will be an important opportunity for the SRC to consider how the revised metrics are operating and whether they are doing so as intended.

The Authority would like Authority member, Lana Stockman to attend the SRC item on *system operator support for industry evolution*, as Chair of the Board's Market Operations Committee. This would enable discussion of the respective SRC/Authority functions and how they can effectively share information and most efficiently operate together to best support the Authority's work.

Yours sincerely,



Anna Kominik
Chair
Electricity Authority Te Mana Hiko