

11 June 2021

Dr Nicki Crauford
Electricity Authority Chair
Electricity Authority
PO Box 10041
Wellington 6143

Dear Nicki

Advice resulting from the 27 May 2021 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 its 27 May meeting, the SRC received updates from the system operator and Authority on recent security of supply issues. The SRC also considered and discussed five substantive papers, reviewing the fitness-for-purpose of regulation and monitoring for generation, transmission, distribution, consumer premises equipment, and security of supply forecasting and official conservation campaigns. This letter is the SRC's advice arising from those updates and papers.

Security of supply situation and dry-year risk

The SRC was pleased to hear the Authority will conduct a post-event review of security of supply event, and how the market responded to reduced hydro storage and reduced fuel availability for thermal generation.

Given potential for future dry years, the SRC considers the review's scope should include an assessment of whether the Authority and system operator have the necessary information to accurately predict the level of fuel supply risk (specifically thermal fuels – gas, diesel and coal) and ensure the market is sending the right signals to enable the industry to react and minimise adverse impacts on consumers.

The SRC considers the Authority should ensure the information obtained is only used for the purposes of ensuring security of supply. This work could be included in the Authority's current work on wholesale market information disclosure or as a standalone review.

The SRC strongly encourages the Authority to engage widely as part of the review. The SRC recommends the Authority coordinate this work with the Gas Industry Co (GIC), in its role as gas industry regulator.

At the 27 May meeting, the system operator offered to investigate whether further analysis is required on the issue of how the power system operates with low and uneven lake levels and the impact on the triggering of any official conservation campaign if the various lakes are depleting at different rates. The SRC encourages the Authority to monitor progress of this work through its post-event review and existing monitoring arrangements.

Role for Authority in providing clarity about security of supply situations and addressing misperceptions

The SRC acknowledges the Authority's recent efforts to address misperceptions in the public on high wholesale prices and security of supply and encourages the Authority to take similar steps again in future when required.

Fit-for-purpose review of regulation and monitoring is broadly satisfactory

The SRC is satisfied the current regulation and monitoring arrangements for generation, transmission, distribution, consumer premises equipment, and security of supply forecasting and official conservation campaigns are broadly fit-for-purpose. Set out below are some specific comments and suggestions.

Fit-for-purpose review of regulation and monitoring – controlling the risk of supply emergencies using security of supply forecasting and official conservation campaigns

The SRC received assurances from the system operator about the assumptions they use to assess security of supply risks. While broadly satisfied, as noted above, the SRC considers it prudent for the Authority to look at whether changes need to be made to the level of information available to it on thermal fuel supply for electricity generation.

The SRC considers the current triggers for official conservation campaigns appear effective however, as noted above, a review of the effect of individual lakes depleting at different rates will be done by the system operator.

The SRC recommends the Authority include in its post-event review whether changes made to the grid since the current arrangements were implemented in 2011 (especially the improved HVDC capacity) mean the provisions for South-Island-only official conservation campaigns remain fit-for-purpose.

Fit-for-purpose review of regulation and monitoring - Generation

The SRC is pleased to see the Authority has identified underfrequency events and voltage excursions as significant risks and that work is underway by the Ministry of Business,

Innovation and Employment (MBIE), with input from WorkSafe, to review performance aspects of inverter standards for distributed generation.

The SRC considers it would be prudent of the Authority to consider whether the design of ancillary services arrangements is likely to remain fit-for-purpose in the short to medium term. The SRC believes it is important to ensure system inertia remains at appropriate levels as the mix of synchronous and non-synchronous generation continues to change.

Fit-for-purpose review of regulation and monitoring – Transmission and Distribution

Grid reliability standards

Grid reliability standards, and the definition of the “core grid” is one area the Authority may wish to review. The time may now be right to undertake this work, as the core grid definition has not been reviewed since it came into effect in 2005 and the outage protocol has not been reviewed since it came into effect in 2008. The SRC recommends any outcome ought to provide a broad range of measures.

Promoting secure transmission investment

Regarding distribution asset planning, the SRC recommends the Authority consider what regulatory or other changes may be appropriate to network planning to incorporate probabilistic approaches to assessing the value of network investment to consumers. Probabilistic approaches take account of local circumstances and are well established, for example in Australia, where they are regulated into expenditure planning.

Fit-for-purpose review of regulation and monitoring – Consumer premises equipment

The SRC considers the risks of under-frequency events impacting the grid will increase over time with greater penetration of distributed energy resources (DER). As noted above, the SRC supports the Authority’s efforts to encourage MBIE to ensure performance aspects of inverters are appropriately covered.

The SRC considers the cyber-security risk associated with DER needs to be carefully monitored to avoid increasing the distribution-level and consumer-level information available to ‘bad actors’. The SRC recommends further assessment by specialists before the Authority considers whether Code amendments may be required.

Cohesive energy strategy for the future

The SRC was pleased to receive an update about the government’s commitment to a national energy strategy, as it moves toward decarbonisation of the electricity sector. The SRC notes two risk areas the Authority should consider during the transition to a carbon-free energy sector:

1. it is important to ensure decarbonisation policies do not result in insufficient reserve generation by exacerbating thermal fuel supply constraints during periods of low hydro inflow. The SRC considers one way to achieve this is to ensure the regulatory framework is technology neutral.
2. the long-term impact of the 100% renewables target may encourage inefficient investment and lead to medium term market distortion of generation investment signals. The SRC considers the industry needs to come together and consider the solutions. Because of the potential for the perception of collusion, this may be best facilitated by the Authority.

The SRC would welcome any guidance from the Authority, as to how it could further assist in this critical work.

Yours sincerely

A handwritten signature in black ink, appearing to read 'H Roy', is centered below the text 'Yours sincerely'.

Hon Heather Roy
Chair of the SRC

cc: SRC members, Grant Benvenuti (Authority)

22 June 2021

Hon Heather Roy
Chair
Security and Reliability Council (SRC)

By email: heatherjroy@gmail.com

Dear Heather

Response to your letter of 11 June 2021

Thank you for your letter of 11 June 2021 that gives the SRC's advice arising from its 27 May 2021 meeting. The Authority Board considered all of the advice at its 15 June 2021 meeting and have asked me to write to you with their response.

Security of supply situation and dry-year risk

The Board acknowledges the SRC's support of a post-event review of recent security of supply issues. This work will commence once the current situation is substantially over.

The Authority appreciates the commercial sensitivities associated with generation fuel supply arrangements. The SRC can be assured the scope of the review will be sufficiently broad to encompass the SRC's concerns about the level of information being made available and the market's response, without undue interference with generators' fuel supply contracts.

While it would be premature to discuss potential outcomes from the post-event review, the Authority would like to assure the SRC of the importance of the work and will consider the SRC's suggestions about what aspects of regulation and monitoring may be included.

The Authority appreciates the role that the SRC can play in helping to guide, advise and act as a critical friend in the review of the performance of the electricity sector (including the Authority and Transpower as the System Operator). I am eager for staff to engage with you in more detail to develop a shared scope and terms of reference for the SRC.

Role for Authority in providing clarity about security of supply situations and addressing misperceptions

The Authority appreciates the SRC's support of its commitments to ensure clarity of messaging around security and reliability issues. The importance of this work is reflected in the Authority's strategic aims of consumer centricity and building trust and confidence.

The recently published Authority paper is just one example, and the SRC can be assured open communication is a key component of the Authority's role as kaitiaki of electricity into the future.

Fit-for-purpose reviews of regulation and monitoring

The Board acknowledges the important work the SRC does reviewing the fitness-for-purpose of regulatory and monitoring arrangements. The Board is pleased to hear the SRC is broadly satisfied the existing arrangements are fit-for-purpose.

As new technologies and services become available to consumers, any increased risk to the sector and the communities it supports is a key focus for the industry, with input from the Authority where necessary to ensure both market and regulatory mechanisms are effective.

The Authority appreciates some of the key security of supply levers, such as island-specific official conservation campaigns, may over time reduce in value. This issue is on the Authority's Code review programme list and will be addressed, as priorities allow. I will ask the secretariat to keep you informed of any progress.

Performance aspects of inverter standards

The Authority is pleased to see MBIE and WorkSafe's project on inverter standards progress to consultation. The Code had previously been updated to include the new version of AS/NZS 4777.2 at the time it became current, and the Authority had previously prompted MBIE that the Standards updates to the Electricity Safety Regulations 2010 were necessary.

Ancillary services arrangements – system inertia

The Authority recognises the importance of system inertia in the power system. The system operator conducted a monitoring trial in 2020, concluding that existing tools are currently sufficient to manage system frequency. The system operator assures us they will continue to monitor the power system to ensure system inertia does not drop below the level that would compromise their ability to manage system frequency effectively.

Grid reliability standards

The Authority acknowledges the core grid definition has not been reviewed since its inception and could benefit from review. The core grid determination is on the Authority's Code review programme list and will be addressed, as priorities allow. I will ask the secretariat to keep you informed of any progress.

Regarding the outage protocol I have asked staff to discuss the review with Transpower, with a view to updating the protocol in accordance with the Code requirements in part 12.

Distribution asset planning

The Authority acknowledges the SRCs suggestion to investigate whether regulatory or other change is needed to incorporate probabilistic approaches to asset planning. I will ensure staff pass this suggestion on to the Commerce Commission.

Cohesive energy strategy for the future

The Authority appreciates the SRC's interest in this area and is considering the Climate Change Commission's final report, given its potential impact on the Authority's strategy. The Authority will continue working on the transition and will call out any inefficiencies, as we engage with stakeholders and the Ministry of Business, Innovation and Employment on any arising policy changes and their implications.

Regarding the SRC's suggestion the approach to decarbonisation ought to be technology neutral, part of the Authority's work programme is to investigate and report on the impacts of technology on the long-term security and resilience of New Zealand's electricity supply. A consultation paper is expected to be released this quarter on batteries offering reserve when injecting in the power system. Advice from the system operator will also feed into this work.

I will ask the secretariat to keep you informed of any progress, including where further input from the SRC could assist.

Yours sincerely



Dr Nicki Crauford
Chair