

4 November 2022

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

Dear Nicki,

## Advice resulting from the 26 October 2022 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 October SRC meeting

The theme for the October meeting was Transmission. To support this theme, the SRC received presentations from:

- The Commerce Commission, on the process for planning and approving grid investment;
- Authority staff, on the security and reliability implications of the new Transmission Planning Methodology (TPM);
- Transpower, as grid owner, on asset management and resilience planning, and on transmission planning and net zero grid pathways;

The SRC also received the following presentations:

- Transpower, as system operator, on the annual Security of Supply Assessment (SOSA) and the system operator's annual self-review of performance; and
- Authority staff on wind generation forecasting and scenarios.

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

## Transmission

### Commerce Commission

The SRC appreciated receiving an update from the Commerce Commission of its processes, supporting the SRC's understanding of their regulatory role and its interrelationship with the Authority's work.

The SRC notes much of the Commerce Commission's work on assessing Transpower's investment plans occurs in the background and is not published, in part due to sensitivities with the information. The SRC notes the Commerce Commission process deals generally with, and relies on, the information provided by distributors and the grid owner. There are different levels of sophistication of, or intelligence on, projected demand for network infrastructure and capacity. There is therefore some concern that asset planning and the resulting investments may not provide for the country's needs or the approved RCP plans may not be flexible enough to adapt as the industry is still quickly evolving.

The SRC is concerned the existing process is focused on "just in time" investment, whereas in a rapidly electrifying, decarbonisation world it is prudent to consider what can be done to get "ahead of the curve".

The SRC encourages the Authority to work closely with the Commerce Commission in their respective areas of regulatory control to ensure asset management planning, in particular rigorous demand forecasting processes and practices, underpin investment plans, and the approval process occurs at the pace needed. This should be supported by an appropriate level of strategic regulator collaboration, and information sharing.

### **Security and reliability implications of the new TPM**

The SRC acknowledges the Authority's perseverance and delivery of the new TPM. While there are remaining uncertainties as to how participants will respond to the new signals, the new TPM is early in its implementation. A period of experience is needed to determine whether it has successfully achieved its aims of efficiently and effectively allocating the costs of new investments to beneficiaries and increasing input from market participants on the need for new investment.

It is assuring the Authority's analysis to date indicates the absence of the Regional Coincident Peak Demand (RCPD) charge has not had a material effect on system security. However, the SRC heard conflicting views on the effects of removing the RCPD and recommends the Authority ensures there is clarity around the effects of removal and include this in any review. The option of a transitional congestion charge provides a further safeguard but will require the support of industry, and need to ensure the time the process takes to complete minimises the risks of issues that may arise ahead of implementation.

The SRC strongly encourages the Authority to conduct an implementation review (considerably prior to a full post-implementation review) to ensure an appropriate lens on this issue, both in terms of security and consumer confidence. Such a review should draw on experiences and information from participants and the system operator. This may help address some industry concern that it is difficult to predict transmission prices when analysing new generation siting options, and may make decarbonisation more difficult.

### **Grid owner asset management and resilience planning**

The SRC appreciated the work the grid owner has put into the transmission papers for the October meeting. The readability and focus on critical areas was welcome and enabled good debate. Members also appreciated the grid owner team's receptiveness to feedback and questions at the meeting.

The grid owner's comprehensive work on resilience planning and engagement with industry in particular, instils confidence. The SRC encourages the grid owner to apply the learnings from experiences overseas and factor these into its planning.

### **Grid owner transmission planning and net zero grid pathways**

The SRC acknowledges the productive work the grid owner is putting into net zero grid pathways. It is positive to see there are robust processes in place to address the challenges that lie ahead in the transition to decarbonisation. The SRC urges caution for the grid owner to avoid picking technology winners and reducing potential investment in its approach to Net Zero Grid Pathways and strengthening the core grid.

The SRC recommends the Authority and the Commerce Commission consider whether the appropriate mechanisms are in place to ensure the right level of information is available from distributors to inform the grid owner's transmission planning in time to meet increased demand from the power system.

The Authority may also wish to consider, in its current review of regulatory settings for distributors, whether a framework is in place to adequately support distributors' understanding of the true changes in demand on their networks. This is critical, as the level of Distributed Energy Resources (DER) increases and new technology and products are established.

### **The system operator's annual security of supply assessment (SOSA)**

The SRC consider the 2022 SOSA provides a serious warning to the industry and regulators there are likely capacity issues in the short to medium term.

There is a need to strengthen market signals, arrangements and participation from a range of technologies (including thermal, demand response, ripple control etc) to encourage products to support our peak capacity challenge going forward.

SRC members discussed options, which included maintaining existing thermal capacity or building new (only for the transition); promoting and utilising demand response; and maximising the contribution of intermittent renewable generation.

The 2022 SOSA reference case shows that supply will fall below North Island capacity margin by mid-2024 but worst-case sensitivities fall below the margin in 2023. The New Zealand Winter Energy Margin during 2027, and supply margins will fall sooner if the Taranaki Combined Cycle station closes. There is also considerable doubt that there will be new gas peakers committed, which are needed to maintain margins past 2027.

As noted in the 2022 SOSA, the ability of projected renewable generation projects to maintain system security in the short and medium term requires a "step change in the rates of project consenting and construction". The SRC is concerned the decarbonisation incentives for participants may not be matched by the pace of the approval process, reducing the timeliness of change, and negatively impacting consumers.

The SRC is also concerned the level of DER coming into the system is not, based on available data, at the levels the SOSA indicates are needed. Consideration should be given to additional information disclosure from distributors, so the system operator can include this in their modelling.

## The system operator's annual self-review of performance

The SRC received the system operator's annual self-review of performance, together with comments from Authority staff, as part of maintaining the SRC's lens on system operator performance.

Members appreciated the focus on ensuring the report is concise and readable. The inclusion of *further opportunities* sections is also a useful addition. Information about lessons learnt is not separated out in this year's self-review. From the SRC's perspective reinstatement of lessons learnt would be a welcome addition in future reports, to demonstrate an understanding of the difference between the feedback received (lessons learnt) and supporting continuous improvement (opportunities).

The system operator's engagement with industry is being positively received and the SRC acknowledges the system operator scored well in its annual survey. It is pleasing to hear the system operator will include transactional feedback in future self-review cycles. The SRC recommends the Authority include these commitments in the current review of performance metrics to apply from July 2023, as a further opportunity to increase trust and confidence in the system operator and sector generally.

The low distributor response to the annual survey is of concern. This highlights the need for the system operator to prioritise engagement with distributors to ensure a system-wide approach to security and ensure focus is on the right risks at the right time.

The SRC appreciates the system operator's acknowledgement of its shortcomings as the cause of the 9 August 2021 event. However, the SRC is concerned the system operator is still including generation shortfall as the cause of this event and subsequent events. The SRC considers it was unnecessary to add this statement when system operator modelling, and communications were the primary contributors to the event. The SRC believes reference to the '9 August event' without additional qualification or cause is all that was required in the report.

## Wind generation forecasting

The SRC received a presentation from Authority staff on wind generation forecasting and scenarios. Members appreciated the opportunity to review the analysis and give feedback prior to publication.

The presentation demonstrated the risks inherent in increasing the level of intermittent renewable generation in the mix, and in this case, the risk around the accuracy of wind forecasting.

While the work highlights a focus on the need for tools to support greater prediction accuracy, the SRC would like to see a greater understanding of the portfolio benefit of improved wind generation forecasting. This could include information to enable a greater understanding of wind generation's contribution to peak demand management and support the work needed to address areas of low accuracy.

The SRC would welcome further updates on this work, as the Authority's approach is refined, and further guidance is available.

## The SRC's next meeting

The theme for the SRC's Q1 meeting for 2023 is *demand response*. The purpose is to provide the SRC with information on the current state of demand response regulation and management, and initiatives to support an increase in the services available and the experience of participants engaging in demand response.

The SRC secretariat will seek input from Authority staff on relevant workstreams, together with presentations from industry participants.

Yours sincerely,

A handwritten signature in dark ink, appearing to read 'H Roy', is positioned above the printed name.

Hon Heather Roy  
**Chair of the SRC**

cc: SRC members, Grant Benvenuti (Authority)

22 December 2022

Hon Heather Roy  
Chair  
Security and Reliability Council (SRC)

By email: [heatherjroy@gmail.com](mailto:heatherjroy@gmail.com)

Dear Heather,

**Response to your letter of 4 November 2022**

Thank you for your letter of 4 November 2022 that gives the SRC's advice arising from its 26 October 2022 meeting. The Authority Board considered all the advice at its 13 December 2022 meeting and has asked me to write to you with their response.

**Transmission**

The Authority appreciates the SRC's focus on transmission at its October meeting and the different perspective the SRC brings to grid resilience and areas of risk.

**Commerce Commission**

The Authority acknowledges the SRC's concerns regarding whether asset planning and resulting investments will provide for New Zealand's needs and whether the approved RCP plans will be sufficiently flexible. While these matters are within the Commerce Commission's areas of regulatory control, the Authority engages regularly with the Commission and will ensure staff pass on the feedback relevant to the Commission's work. This includes the importance of ensuring suitable headroom in the infrastructure for future electrification growth as well as catering for short term forecasts.

The Authority maintains positive, open communication channels with the Commerce Commission at a variety of levels, to ensure coordination between respective workstreams to avoid overlaps and deal with emerging issues. The Authority welcomes further strategic collaboration at senior-management levels with the Commerce Commission where needed, recognising our different regulatory remits.

The Commerce Commission published its decision-making framework for input methodologies in October but has indicated it is open to ongoing dialogue and engagement with the Commerce Commission throughout the Input Methodology (IM) review period, which the Commerce Commission expects to complete by the end of December 2022.

Authority work to support understanding of projected demand for network infrastructure and capacity is covered in the grid owner and resilience planning section below.

## **Security and reliability implications of the new TPM**

The Authority appreciates the SRC's advice with respect to the new TPM. The Authority agrees it is still early in the implementation of the new TPM, and that some time will be required to elapse before its full effects can be observed. In response to the SRC's advice, Authority staff have initiated a review into the effects of the removal of the RCPD charge. This is intended to determine if peak demand has increased due to the removal of the RCPD charge or due to other factors. More generally, the Authority will continue to monitor the implementation of the new TPM and will conduct further reviews as appropriate, which may include engaging with the sector.

The Authority appreciates the concern expressed by some in the industry that it will be difficult to predict transmission prices when analysing new generation siting options. The Authority considered this issue in making its April 2022 decision on the new TPM. The Authority is confident the new TPM will not be a barrier to future electricity-related investments or to decarbonisation.

The Authority expects that there will initially be some uncertainty about future transmission charges, driven by stakeholders' initial unfamiliarity with a new TPM during the transitional period. Over time though, the Authority considers the new TPM will increasingly support reasonable forecasts of charges, as the sector becomes more familiar with the methodology, and repeatedly engages with Transpower about TPM allocations for proposed new investments. This is a matter that the Authority will continue to monitor as implementation progresses, including encouraging Transpower to publish further information to help stakeholders better understand the new TPM.

The Authority notes that uncertainty about the location, timing and size of transmission investments will continue to impact on participant predictions about future network charges. This reflects the lumpy and uncertain nature of major future investments in this type of infrastructure, ie, uncertainty would exist regardless of the TPM that was in place.

## **Grid owner (asset management and resilience planning; transmission planning and net zero grid pathways)**

The Authority appreciates the SRC's feedback on the information provided by the grid owner for the October meeting. It is pleasing to hear of positive engagement between the SRC and the grid owner and to know the grid owner's approach supports the SRC's advice and instils confidence. Authority staff will pass the feedback on to the grid owner.

The Authority acknowledges the SRC's concern to ensure there are no impediments to securing the necessary investment to support grid stability during the transition. The grid owner has submitted their funding proposals to the Commerce Commission for the fourth regulatory control period (RCP4) for independent verification but will be consulting again with customers and interested stakeholders in May and June 2023. This may provide a further opportunity for SRC advice on any relevant grid-related issues arising from its Q1 meeting.

As part of the review of regulatory settings for distributors, the Authority will shortly propose changes to the Code and data template to allow merging of data sets, to strengthen the requirement to provide consumption data, and to ensure this occurs at a reasonable cost.

The Authority supports equal access to data and information and the need to improve visibility of consumption, power quality and network congestion data. This includes the flow of information from retailers/MEPs to distributors and flexibility traders and forms part of the Authority's review.

In addition, changes to the Registry will be proposed, so there is greater visibility of Distributed Energy Resource (DER) on networks and DER is able to connect more readily to support network resilience. The review will also consider ways to address data privacy concerns.

The Authority will also propose a working group to identify steps to digitise New Zealand's energy system. This would involve intensive cross-sector work to identify data needs, now and in the future, and how this data should be made available.



The review will recognise the respective roles of the Authority and the Commerce Commission, including opportunities for active industry engagement, particularly with distributors.

### **The system operator's annual security of supply assessment (SOSA)**

The Authority appreciates the SRC's focus on the annual SOSA and resulting advice.

The tightening supply situation in the coming years, when certain sensitivities are applied, is of concern. In recent weeks the system operator has refined its analysis<sup>1</sup> and confirmed that the winter capacity margin is not at risk of being breached until 2024<sup>2</sup>. However, there is still risk that the power system will experience periods of "tight supply" during winter 2023 during peak demand periods.

The Authority agrees there is a need for sector-wide focus on ensuring appropriate levels of electricity supply capacity to maintain the margins. On 25 November, the Authority published a consultation on *Driving efficient solutions to promote consumer interests through winter 2023*. This paper proposes 11 options to address short duration supply concerns. The proposals range from short term operational changes to enhance information availability ahead of Winter 2023 to more extensive policy enhancements requiring market tools and Code changes that will take 1-2 years to implement if approved.

Another area of focus is the potential use of electric vehicles for load shifting (demand response). In its recent consultation, the Energy Efficiency and Conservation Authority (EECA) posed the question as to whether EV chargers should be regulated. The Authority looks forward to receiving a summary of submissions from EECA ahead of making decisions around future work and working with EECA these issues going forward.

Hot water remote management (via ripple control) has less potential than it has historically, but certain distributors are looking at smart hot water technologies in addition to ripple control. EECA regulates energy performance of appliances including potential for smart hot water in future.

The Authority strongly supports the uptake of DER and there is a workstream considering potential changes to part 6 of the Code to support increased uptake, in combination with additional information disclosure to improve modelling.

To enable the co-ordinated use of DER and demand response in the distribution sector, the Authority will be consulting on *updating the regulatory settings for the distribution sector* from 19 December 2022. This issues paper will discuss the issues associated with flexibility services and competition in the distribution networks as well as the settings for DER in Part 6 of the Code.

Finally, to enable better co-ordination and visibility of DER and demand response in the wholesale market, phase 4 of the Authority's real-time pricing project will go-live in April 2023. This final market systems release will see the implementation of enhancements to the dispatchable demand regime for large industrial consumers. Alongside the dispatchable demand enhancements, the phase 4 release will also introduce dispatch notification participation to the wholesale market. Dispatch notification is designed as a low-cost method of participation for DER and demand response aggregators. This will enable flexible resources to signal their price sensitivity in the wholesale market and participate in the price discovery process. This will improve visibility of these resources to the wholesale market and enhance system security.

### **The system operator's annual self-review of performance**

The Authority appreciates the SRC's approach to its role of considering system operator performance. The SRC's timely input into the annual review helps to ensure focus on the key risk areas and drive continuous improvement in this critical component of the sector.

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<sup>1</sup> [In this recently released system operator winter review paper](#)

<sup>2</sup> Revised SOSA: <https://www.transpower.co.nz/system-operator/planning-future/security-supply-annual-assessment>



The Authority aims to finalise its review of system operator performance in the first quarter of 2023, including giving an opportunity for the system operator to comment. The SRC's advice will help inform the Authority's recommendations and support the system operator's need to demonstrate continuous improvement and leadership in its work.

It is pleasing to hear the SRC's positive feedback about the system operator's engagement with the sector. The Authority will consider whether this aspect of the system operator's role needs to be included in future performance metrics.

The Authority agrees with the SRC's concerns about the level of system operator/distributor engagement and will consider how to address this in the review, together with the SRC's concerns around the system operator's characterisation of the 9 August 2021 event.

Authority staff will ensure the finalised Authority review is available for the SRC for its Q1 2023 meeting. That will provide the SRC with a further opportunity to give thoughts on the approach for next year's system operator self-review and Authority review.

### **Wind generation scenarios and wind power forecasting**

The Authority appreciated the SRC including this item on the October agenda. Staff noted the discussion and feedback was useful and has resulted in positive changes to how the information is presented, including the use of more familiar generation-duration curves.

The Authority anticipates this work will provide insights about the performance of generation output compared to capacity, correlation between generators, seasonal and daily wind variability, and limitations of available data. This will help the Authority to raise the standard of modelling and forecasting to support system stability with increased use of intermittent generation.

The Authority will be consulting on this work in the first quarter of 2023.

### **The SRC's next meeting**

The Authority acknowledges the SRC's inclusion of Demand Response (DR) as its next theme, given the increasing importance of DR to ensuring a secure supply of electricity to New Zealanders.

The Authority's work program has a number of projects that aim to promote increased DR and DER participation in both the distribution sector and the wholesale market. The Authority is keen to receive insights from the SRC as to how these workstreams could be further strengthened. This would be particularly useful in the areas of promoting DR and DER in the distribution sector and enhancing the value proposition for aggregators in providing additional services to the power system.

The Authority will ensure Authority staff provide the SRC with appropriate information to support the SRC to provide meaningful advice on key areas of both risk and opportunity.

Yours sincerely,

A handwritten signature in black ink, appearing to read 'Nicki Crauford', written in a cursive style.

Dr Nicki Crauford  
**Chair**  
Electricity Authority