

## MINUTES

Meeting number: 41

Venue: Runanga, Electricity Authority, Level 7, AON Centre, 1 Willis Street, Wellington

Time and date: 9.00am until 4.00pm, Wednesday 26 October 2022

### Members Present

- Hon Heather Roy (Chair)
- Ben Gerritsen
- Chris Ewers
- Mike Underhill
- Nanette Moreau
- Nathan Strong
- Paula Checketts
- Phil Gibson

### Apologies

- Barbara Elliston

### In attendance

| Name   | Title  | Agenda item # attended                                  |
|--|--|---|
| <b><u>Electricity Authority (Authority):</u></b> |  |   |
| Sarah Gillies                                    | Chief Executive (Acting)                         | #1-2 and #4-17 (from 9.00am-9.05am and 9.15am - 4.05pm) |
| Grant Benvenuti                                  | Principal Advisor, Market Policy                 | #1-2 and #4-17 (from 9.00am-9.05am and 9.15am - 4.05pm) |
| James Blake-Palmer                               | Senior Analyst, Policy (Secretariat)             | #1-2 and #4-17 (from 9.00am-9.05am and 9.15am - 4.05pm) |
| Tim Sparks                                       | Director, Network Pricing                        | #8 (from) 10.00am-10.45am                               |
| Doug Watt  | Manager, Market Monitoring                       | #8 and #14 (from) 10.00am-10.45am and 3.05pm-3.40pm     |
| Peter Taylor                                     | Manager, Commercial                              | #11 and #12 (from) 2.05pm-2.40pm                        |
| Paulo Soares                                     | Quantitative Analyst, Market Monitoring          | #14 (from) 3.05pm-3.40pm                                |
| Roger Miller                                     | Senior Analyst, Market Monitoring                | #14 (from) 3.05pm-3.40pm                                |
|  |  |   |
| <b><u>Other:</u></b>                             |  |   |
| Matthew Clark                                    | Manager, Transpower and Gas, Commerce Commission | #8 (from) 10.00am-10.45am                               |
| Hazet Adam                                       | Chief Advisor, Commerce Commission               | #8 (from) 10.00am-10.45am                               |
| John Clarke                                      | General Manager, Grid Development, Transpower    | #8-9 (from) 10.00am-1.45pm                              |

| Name            | Title  | Agenda item # attended      |
|-----------------|--|-----------------------------|
| Mark Ryall      | GM Grid Delivery, Transpower                       | #9 (from) 10.45am-1.45pm    |
| Malcolm Cleland | Asset Planning Manager, Transpower                 | #9 (from) 10.45am-1.45pm    |
| Julian Morton   | Strategy Performance and Risk Manager, Transpower  | #9 (from) 10.45am-1.45pm    |
| Stephen Jones   | System Planning and Investment Manager, Transpower | #9 (from) 12.15pm-1.45pm    |
| Mark Herring    | Market and Business Manager, Transpower            | #11-12 (from 2.05pm-2.40pm) |
| Ramu Naidoo     | Principal Market Advisor, Transpower               | #11-12 (from 2.05pm-2.40pm) |

*The meeting opened at 9.01am.*

*Sarah Gillies, Grant Benvenuti and James Blake-Palmer joined the meeting at 9.01am.*

### 1. Attendance and apologies

- 1.1. The Chair welcomed members to the 41st meeting of the Security and Reliability Council (SRC). A quorum was established.
- 1.2. The Chair noted the apology from Barbara Elliston

### 2. Changes to disclosure of interests

- 2.1. The Chair reviewed the interests register. There were no further changes disclosed.
- 2.2. The Chair approved members to act despite those declared interests.

*Sarah Gillies, Grant Benvenuti and James Blake-Palmer left the meeting at 9.05am.*

### 3. Members-only session

- 3.1. The members discussed their priorities for the meeting.

*Sarah Gillies, Grant Benvenuti and James Blake-Palmer joined the meeting at 9.15am.*

### 4. Minutes of previous meeting

- 4.1. The minutes of the 10 August 2022 meeting were accepted as a true and accurate record

*Mike Underhill moved. All members approved.*

### 5. Correspondence

- 5.1. The Chair noted the correspondence including the letter sent to the Authority and the Authority's reply.

### 6. Action list and updates

- 6.1. The secretariat provided an update on the action list and members briefly discussed the updates section.
- 6.2. A member commented it would be good to have more information about the Authority's additional objective, as set out in the Electricity Amendment Act 2021.
- 6.3. Members appreciated the background information on recent energy market events in Australia.
- 6.4. Members briefly discussed the Boston Consulting Group (BCG) report, noting its speed of delivery compared to MBIE's energy strategy.

**Action 1:** Secretariat to arrange for the Authority legal team to present on the Authority's additional objective in the amended Act at the Q1 2023 meeting

**Action 2:** Secretariat to check the reference hyperlinks in Diligent to confirm why some of the links did not work in this meetings papers.

## 7. Risk Radar

- 7.1. The Chair explained the basis for the risk radar (previously the risk register) and its purpose to support the SRC's forward work programme and avoid gaps.
- 7.2. The Chair facilitated comments from members and attendees, covering both short-term and longer-term risk.
- 7.3. Members' comments included:
  - a) The need for electricity capacity to meet the decarbonisation challenge – much of the new generation will add energy, but the challenge (especially in the short to medium term) will be a capacity (peak demand) issue
  - b) Concern about the length of time needed for MBIE to create an energy strategy, when clear signals are needed now to obtain investment in the right solutions
  - c) The short and long-term risk that human resources and infrastructure challenges do not adequately support increasing demand across the sector
  - d) The lack of visibility of the new thermal generation build the system operator notes as key to security of supply in the current decade, and concern DER won't be onstream in time to cover the shortfall
  - e) Concern about divergent views across industry as to the pace of change needed, for example the different timeframes noted in Future Security and Resilience (FSR) and Market Development Advisory Group (MDAG) workstreams, compared with the system operator's annual security of supply assessment (SOSA)
  - f) Media attention over BAU market events impacting industry reputation

- g) The ongoing focus on an aspirational target of 100% renewable energy by 2030 is accepted by many consumers so difficult to argue against but is delaying and reducing critical investment in security of supply in the short term
- h) We should not be picking technology winners when considering the significant increase in generation and demand response required to support electrification
- i) The risk there is insufficient capacity to respond to increased demand and uncertainty as to whether industry is prepared and considering non-network solutions, as part of the suite of options. Additionally, as system utilisation increases, there is likely to be larger parts of networks on n-security and consumers may not be aware of this.
- j) There's a significant mismatch between the government's decarbonisation initiatives (eg in transport) compared with the speed of infrastructure development needed to support those initiatives.
- k) The projections of electrification may be too slow, given current trajectories, for example, for EV uptake.
- l) Risk of a funding mismatch in the Government Investment in Decarbonising industry (GIDI) fund between funded customer projects and the investment required by electricity distribution businesses (EDBs) to provide the capacity increase to meet the demand

7.4. Attendees' comments included:

- a) Consensus with the concerns raised by Members, including:
  - i. Ensuring investment is critical
  - ii. Solar installation is slow and may not have the infrastructure support available at grid level at the right time to achieve meaningful levels of generation
  - iii. The war in Ukraine and its impact on the underlying drivers of retail pricing, including infrastructure maintenance and marginal plant fuel
  - iv. Impediments to investment, including reduced incentives, resource consent and overseas investment approval, increase in frequency and scale
- b) The table 'Top security and reliability risks' was discussed, and changes needed are:
  - i. Moving L1 to S1

*Tim Sparks, Matthew Clark, Hazet Adam and John Clarke joined the meeting at 10.00am*

## 8. Transmission – Commerce Commission's process for planning and approving grid investment

- 8.1. The Chair welcomed Matthew Clark and Hazet Adam from the Commerce Commission, Tim Sparks from the Authority, and John Clark from Transpower, to the meeting.
- 8.2. Matthew Clark introduced the Commerce Commission paper, which was taken as read. Points noted include:
  - a) The Commerce Commission provides a process to ensure the right investments are made at the right time, including clear articulation of needs and the options to meet them, selecting the investment that gives the highest net electricity market benefit
  - b) The Commerce Commission takes an evidence-based approach where transparency is needed from Transpower to enable testing of the proposed options
  - c) There is a 6–8-month assessment before a decision; there can be years between some proposals and approval
  - d) Incentive payments strongly encourage Transpower to be efficient and effective in its work
- 8.3. Members discussed the paper. Comments and questions raised included:
  - a) There is a need for a staged approach to investment where iterative investment is enabled while longer term issues are being considered
  - b) How does the Commerce Commission assess priorities and the viability of non-traditional smart solutions? Data and evidence, for example from MBIE's analysis
  - c) How is balance achieved, ensuring least regrets, and providing security without a gold-plated system? The Commerce Commission relies on Transpower's forecasts and does its own analysis into their validity, and lots of projects get deferred after the Commission's investigation
  - d) How does the Commerce Commission 'sense check' Transpower's proposals, for example in the context of what's occurring in overseas systems? The Commerce Commission regularly engages with overseas regulators and incorporates the learnings
  - e) How does the Commerce Commission assess Transpower's role in ensuring energy capacity? Transmission investment is always based on capacity, using information from MBIE forecasts.
  - f) As the RCP is for five years, is there flexibility to make changes and substitutions as time progresses? Generally, for major capital projects, no, but for minor projects there is and for some projects, especially for new approaches such as drone inspections, there is a provision to "reopen" the project
  - g) The Commerce Commission should consider how it could speed up its approval processes.

## 9. Transmission – Security and reliability implications for the new Transmission Pricing Methodology (TPM)

- 9.1. Tim Sparks introduced the Authority's paper on security and reliability implications from the new TPM, which was taken as read. Points noted include:
- a) The Authority considers that wholesale electricity market nodal prices provide the best signal of the cost of using the transmission grid
  - b) Analysis of the past 15 months shows the removal of the Regional Coincident Peak Demand (RCPD) charge signal more than 12 months ago has not in any material way impacted on system security and reliability to date, including through winter
  - c) The RCPD resulted in participant behaviours that avoided the charge, meaning the cost was spread across other participants. The benefit-based charge (BBC) more fairly apportions cost based on use, rather than contribution to peaks, which often do not occur during grid congestion. The BBC requires the grid owner to consider the impact on end consumers
  - d) The Authority's review of the RCPD charge showed nodal pricing was working as intended, and is a better way to signal the price for higher peaks
  - e) Transpower retains the option to propose and Transitional Congestion Charge (TCC) if it considers that a targeted pricing signal would be the most effective way to respond to specific areas of grid congestion
  - f) The development of flexibility markets, and better demand side participation in the wholesale market, will play a critical role in efficiently maintaining system security and reliability
  - g) The new TPM will improve the quality of signals and despatch notifications, with a level of uncertainty about how the industry will react
- 9.2. Members discussed the paper. Comments and questions raised included:
- a) It is difficult to gauge the pricing incentive for analysing new generation siting options, when attempting to predict the charges going forward
  - b) Ripple control is helpful, but it would be good to have an automatic market mechanism responding to nodal prices.
  - c) Vector is considering similar market-based options using new technology instead of ripple control.
  - d) A post-implementation review and its findings would be helpful for industry.

*Tim Sparks, Matthew Clark, and Hazet Adam left the meeting at 10.45am*

*Mark Ryall, Malcolm Cleland, and Julian Morton joined the meeting at 10.45am*

## 9. Transmission – Asset Management and Resilience Planning at Transpower

- 9.3. The Chair introduced Transpower's grid owner team to the meeting. John Clarke introduced the grid owner papers and, with Mark Ryall, took members through the presentation including:
- a) Background on the grid owner's role, including as a lifeline utility and its focus on the four R's (reduction, readiness, response and recovery) and extracting the maximum potential from existing assets
  - b) The challenges of increasing grid reliability in a time of uncertainty and complexity
  - c) The grid owner's approach to producing its plan for the next RCP now includes an independent verification process
  - d) Transpower is seeking additional funding in RCP4 to support resilience and electrification at the customer end
  - e) Transpower are looking to add an "energy unserved" performance measure in RCP4 to better measure the impact of outages on consumers
  - f) The grid owner intends to 'harden' the HVDC system, as a critical asset ensuring security and reliability
  - g) Transpower has not noted a significant drop-off in capability arising from Covid-19 impacts on personnel. Transpower were flexible with the work to take advantage of circumstances such as factory closures during lockdowns. Transpower are looking at better coordinating maintenance and capital project work to better utilise resources.
- 9.4. Members discussed the paper. Comments and questions raised included:
- a) Are the regulators slowing things down? The Commerce Commission's review of input methodologies helps ensure codes, standards etc are capable of providing support. The grid owner needs to show the Commerce Commission it can deliver on its RCP4 proposals
  - b) Does increased data and better modelling lift prioritisation? Yes, and is supported by regulators, as Transpower is incentivised to improve under existing regulatory settings and policies.
  - c) Examples of working smarter include use of drones, defect modelling and analytics modelling, lidar-based vegetation programmes and cyber preparedness
  - d) How can the grid owner ensure there is sufficient flex in the next 1-5 years? By focusing early, and allowing for flex in base capex and how Transpower manages it
  - e) Does the grid owner understand consumer demand? Transpower takes a top-down approach, with a range of inputs to ensure it keeps pace with a quickly evolving issue. However, there is a need for many distributors to do better forecasting and asset planning over the

medium term for the demand increase and the impact of DER, to enable Transpower to incorporate this in its planning, especially if new GXPs will be needed

- f) How does the grid owner manage the more vulnerable sites? Work closely with the relevant EDBs and gauge a range of inputs through a criticality lens, including medically dependent consumers, seismic information, and having governance over EDB kit at grid owner sites
- g) Does a probabilistic approach to asset management fit with N-1 security, or would a probabilistic approach potentially lead to loss of supply? Transpower are using new technology and analysis (drones, defect modelling etc) for planning and this is likely to reduce outages.
- h) The grid owner papers provide a good run-through of the risks and how they're being managed, but how can we ensure its affordable for consumers? The grid owner is reducing increases in maintenance costs through use of different approaches, such as consulting earlier, getting feedback, using drone programmes to reduce maintenance costs
- i) Is the grid owner comfortable with the cashflow and borrowing needed to achieve future reliability? Transpower have the balance sheet to manage the forecast work, However, the NZ Battery project will involve an approximate \$4b HVDC spend, so Transpower will need to assess new ways to fund this if it goes ahead.

*Nathan Strong left the meeting at 11.00am and returned at 12.00pm*

*The meeting broke for lunch at 12.10pm and reconvened at 12.35pm*

*Mark Ryall, Julian Morton and Malcolm Cleland left following the lunch break, at 12.35pm*

*Stephen Jones joined the meeting at 12.15pm*

## **9. Transmission – Transmission planning and net zero grid pathways**

- 9.5. The Chair welcomed Stephen Jones to the meeting and introduced the grid owner paper.
- 9.6. John Clarke and Stephen Jones took members through the presentation including:
  - a) How *Whakamana I Te Mauri Hiko – Empowering our energy future*, provides the context for the grid owner's purpose and guides their strategy
  - b) The 'massive' increase in electricity's proportion of total energy (from 25% to 56%) noted in *Te Mauri Hiko* is illustrated by the significant increase in both generation and demand enquiries from new and existing participants
  - c) The grid owner uses EDB forecasts, which have increased estimates from 150MW to 700MW. This includes some EDBs that haven't previously sought increases for decades



- d) The Transmission Planning Report (TPR) shows customer connection changes, whether upgrades are needed and the basis for additional funding and use of reopeners.
  - e) The *Envision* Tool (a flexible system of criteria and performance objectives to aid decision makers and help project teams identify sustainable approaches during planning) helps navigate the TPR
  - f) The proposed Renewable Energy Zones (REZ) are driven by issues such as providing the necessary grid support for generation in areas of lower transmission security
- 9.7. Members discussed the paper. Comments and questions raised included:
- a) Is there a risk that aggregating forecasts may not be accurate? Transpower relies on information from EDBs so there is risk it is inaccurate to a degree, which is difficult to predict. Many EDBs need to get better at medium term forecasting and planning
  - b) With the Boston Consulting Group (BCG) report indicating investment of \$8b required for transmission infrastructure and \$22b for distribution infrastructure, how can the grid owner ensure security? The grid owner puts up scenarios for consultation and then refines its approach based on feedback
  - c) Is the 'net market benefit' test suitable for determining grid upgrades, given, for example, the cost benefit analysis did not stack up for roads of national significance, but they were pursued.
  - d) A proposed REZ in Taranaki appears to be contributing to chilling of investment
  - e) Is there an area of the grid that causes concern to the grid owner? The level of response to the GIDI fund is uncertain and difficult to model
  - f) What is the role of Distributed Energy Resource (DER) and other non-network solutions in supporting the transition? The grid owner is being told 30-40% of increased demand can be handled by DER. It needs to see it starting to happen before planning for it
  - g) Concern the Resource Management Act (RMA) will impact investment and we'll run out of time. With new lines, engineering is about 20% of the planning, the rest is consenting and stakeholder relationships. Transpower are flexing their approach to try to shorten the consenting process

*Nathan Strong left the meeting at 1.00pm*

*John Clarke and Stephen Jones left the meeting at 2.00pm*

## **10. Wrap Up discussion on Transmission**

- 10.1. Members discussed the Transmission papers and presentations and considered what advice to provide to the Authority

*Mark Herring and Ramu Naidoo joined the meeting at 2.05pm*

*Peter Taylor joined the meeting at 2.07pm*

*Nathan Strong re-joined the meeting at 2.25pm*

## **11. System Operator's annual security of supply assessment (SOSA)**

- 11.1. The Chair welcomed Mark Herring, Ramu Naidoo and Peter Taylor to the meeting and noted the system operator papers were taken as read.
- 11.2. Members discussed the papers. Comments and questions included:
  - a) Has there been consideration of changing the security standards? They were reviewed by the Authority within the last five years and considered fit for purpose
  - b) Concern that the averaging of demand and using capacity factors is masking potential capacity issues in worst case peaks. Does the capacity factor used to reduce the contribution of intermittent generation give the right signals? It sends the signal the mix is changing. There is a question whether it is as good as it can be, but it is doing a reasonable job. It is not the only signal of investment needed
  - c) What was the basis for the change in approach from four scenarios to the reference case and sensitivities? Increasing uncertainty prompted the system operator to provide the fullest possible picture. Using a single reference case and then providing a range of sensitivities, and providing the underlying data so users can select different combinations gives the greatest flexibility
  - d) How is industry to gauge the seriousness of any particular scenario? The system operator uses publicly available information enabling others to inject information from their knowledge base for further analysis
  - e) Is there a concern around timeliness, for example the reference case assumes 300MW of peaking thermal being built by 2024, but there is a two-year lag to get initiatives to market? This shows a serious warning that there is a peak capacity issue for the industry
  - f) Concern that ongoing focus on an aspirational target of 100% renewable energy by 2030 is negatively impacting the generation investment needed to maintain security margins. The Chair asked the two members who raised this issue to articulate their concerns in a separate paper for members to consider.

## **12. System operator annual self-review of performance**

- 12.1. The Chair introduced the paper. Members discussed the system operator self-review. Questions and comments included:
  - a) The two-weekly forums have been well received, with positive attendance. It is good to see engagement outside the formal notices issues by the system operator

- b) The system operator scored well in the annual survey; has feedback suggested other ways to assess performance? The system operator is considering other ways of engaging, including webinars, additional forums, who else to engage with
- c) The system operator is working with the Authority on KPIs and performance metrics for 1 July 2023. They also seek transactional feedback to apply in future cycles
- d) There was a low EDB response. Does the system operator have any suggestions to address this? It presents a further opportunity to engage with them to test assumptions, assess gaps in knowledge and remove misunderstandings
- e) Members noted it was a good report and appreciated its concision and readability

*Peter Taylor, Mark Herring and Ramu Naidoo left the meeting at 2.40pm*

### **13. Wrap Up discussion on SOSA and SO annual self-review**

- 13.1. Members discussed the system operator papers and presentations and considered what advice to provide to the Authority

*Doug Watt, Paulo Soares and Roger Miller joined the meeting at 3.05 pm*

### **14. Wind generation forecasting and scenarios**

- 14.1. The Chair introduced the Authority paper on wind generation forecasting and scenarios.
- 14.2. Paulo Soares and Roger Miller took members through the presentations including
  - a) The driver of the work arose out of forecast concerns highlighted by the events of 9 August 2021
  - b) At the time when thermal generators need to decide whether to offer thermal generation to the market, the wind data contains inaccuracies
  - c) The work is being published in the coming weeks and consideration is being given to conducting similar analysis for solar generation
- 14.3. Member questions and comments included:
  - a) What incentives were there for wind generators to submit accurate forecasts? There are currently no Code obligations. As most wind generators also own other generation, there is a portfolio incentive to ensure all generation is appropriately dispatched to maximise available fuel
  - b) What are the next steps? This work will be published and further developed.

*Paula Checketts left the meeting at 3.25*

*Doug Watt, Paulo Soares and Roger Miller left the meeting at 3.40 pm*

### **15. Wrap Up discussion on Wind generation forecasting and scenarios**

- 15.1. Members discussed the wind generation papers and presentations and considered what advice to provide to the Authority

### **16. Next meeting's substantive papers**

- 16.1. The Chair introduced the item and outlined the proposed themes for the Q1 and Q2 2023 meetings.
- 16.2. Members noted the number of proposed groups to present at the Q1 meeting may be too many for a single meeting. Members agreed to focus on Demand Response for the Q1 meeting. The Chair proposed to work with the Secretariat and circulate a proposal regarding presentations for the Q1 meeting to members. All members agreed.

### **17. Forward work programme**

- 17.1. The Chair introduced this item, noting there had been no changes to the themes pillars as a result of the August meeting risk and strategy session, and seeking member views on whether the existing summaries remained fit for purpose.
- 17.2. The Secretariat proposed updating the paragraphs beneath each theme pillar to provide further clarity and ensure any points arising from the SRC's August risk and strategy session were appropriately captured.
- 17.3. A member asked if there was enough reference to consumers in the pillars? The meeting agreed the purpose statement provided an overarching consumer focus.

*The meeting ended at 4.05pm*