

# Annual review of the system operator's performance

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Performance assessment for the period from  
1 September 2012 to 31 August 2013  
Final report

17 December 2013



## Executive summary

The Electricity Authority (Authority) has produced this review in accordance with Part 7 of the Electricity Industry Participation Code 2010 (Code). It assesses the system operator's performance for the period 1 September 2012 to 31 August 2013.

The key inputs into this review were the system operator's self-review for the same period, feedback from Authority staff who have worked with the system operator during the review period, and feedback from the System Operations Committee of the Authority Board.

Overall, the conclusion of this review is that the system operator is generally achieving good outcomes, and has shown very good improvement in a number of areas that the Authority has previously highlighted as needing work. The principal performance obligations have been met or exceeded and compliance with the Code has been satisfactory.

During the review period, the Authority has been particularly pleased with:

- the system operator's engagement and commitment to joint work planning
- the improvement in project management disciplines, and the positive impact this appears to be having on the progress of most joint projects.

The Authority considers that the Authority and system operator are fostering good relationships and improved understanding in many areas.

During the 2012/13 review period, both the system operator and the Authority have been progressing initiatives leading into a review of the system operator service provider agreement that will enhance the value that the system operator role can provide to the wider industry, and the long-term benefits it can provide to consumers.

The Authority encourages the system operator in its implementation of the findings of its Value for Money review, and looks forward to continuing its work with the system operator on aligning the system operator's objectives and functions with the Authority's statutory objective, with a view to enhancing the overall outcomes for consumers.

The Authority has made a number of recommendations in this review. These recommendations are as follows.

- Consider whether practical opportunities are available to reduce the number of manual errors where there is a potential market impact, such as through implementation of new or changed procedures.
- Ensure that reports are appropriately detailed for their purpose and audience, and have been subject to peer review.
- Work with the Authority to develop better processes around making changes to documents incorporated by reference, and consider whether the system operator could adopt a more formal approach to consultation.
- Ensure that communication is proactive and timely when project issues arise.

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# 1 Introduction

- 1.1 The system operator is a market operation service provider who performs a crucial role for the electricity industry in New Zealand. The system operator must manage the processes required to coordinate generation in order to meet demand at least cost, without overloading grid assets, while employing resources to mitigate specific threats of power supply interruptions.
- 1.2 In recognition of the importance of this service provider role and the relationship between the Authority and the system operator, the Code requires both parties to regularly review how well the system operator is performing its role.
- 1.3 The system operator submitted a review and assessment of its own performance to the Authority on 30 September 2013 for the review period from 1 September 2012 to 31 August 2013.<sup>1</sup>
- 1.4 This report provides the Authority's assessment of the system operator's performance in the same review period.

## 2 Annual performance review is required under the Code

- 2.1 Under clause 7.11 of the Code, the system operator is required to provide to the Authority, by 30 September each year, a review and assessment of its own performance for the previous 12 month period ending 31 August.
- 2.2 Clauses 7.8 and 7.9 of the Code set out the requirement for the Authority to also review the system operator's performance, and the matters that the Authority must consider in its review. Clause 7.8 requires the Authority to concentrate on the system operator's compliance with:
  - (a) its obligations under the Code and the Electricity Industry Act 2010 (Act)
  - (b) the operation of the Code and the Act
  - (c) any performance standards agreed between the system operator and the Authority<sup>2</sup>
  - (d) the provisions of the system operator's service provider agreement (SOSPA) with the Authority.
- 2.3 Clause 7.9 requires the Authority to take into account the following matters when conducting the review:
  - (a) the terms of the SOSPA
  - (b) the reports from the system operator to the Authority
  - (c) the performance of the system operator over time in relation to parts 7 and 8 of the Code
  - (d) the extent to which acts or omissions of other parties have impacted on the system operator's performance and the nature of the task being monitored

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<sup>1</sup> The self-review is available from <http://www.ea.govt.nz/industry/psocg/system-operations/system-operator-reports/system-operator-annual-self-review-assessment/>

<sup>2</sup> No performance standards have been agreed, other than those discussed further in paragraphs 4.10-4.13. The Authority and the system operator expect that performance standards will be established as part of the review of the system operator service provider agreement that is part of the Authority's 2013/14 work programme.

- (e) reports or complaints from any person
  - (f) the fact that the real time coordination of the power system involves a number of complex judgments and inter-related incidents
  - (g) any disparity of information between the Authority and the system operator
  - (h) any other matter the Authority considers relevant.
- 2.4 Clause 7.11(4) requires the Authority to publish its review and assessment of the system operator within 10 business days after the meeting at which the Authority completes its review and assessment.
- 2.5 The review process aims to cover all aspects, both positive and negative, of the system operator's performance and provide constructive feedback, wherever possible, for the purpose of continuous improvement in performance.
- 2.6 In conducting this review, Authority staff preparing this report have:
- (a) considered the system operator's self-review of its performance
  - (b) sought feedback from the different Authority groups that regularly work with the system operator
  - (c) sought feedback from the System Operations Committee<sup>3</sup>
  - (d) sought feedback from the system operator on a draft version of this review.

### **3 System operator to adopt a shared objective**

- 3.1 During the 2012/13 review period, both the system operator and the Authority have been progressing initiatives that will enhance the value that the system operator role can provide to the wider industry, and the long-term benefits it can provide to consumers.
- 3.2 In early 2013, the Transpower Board initiated an independent review of the system operator's efficiency and effectiveness (Value for Money review). The Authority participated in the review as part of the project steering committee, and also provided its perspectives as a key stakeholder in the system operator's activities.
- 3.3 The Authority highly commends the system operator's initiative in undertaking this Value for Money review, and welcomes the system operator's development program to implement the review's findings.
- 3.4 The Authority is also progressing discussions with the system operator regarding a renegotiation of the SOSPA, including:
- (a) a review to ensure that the objectives and functions of the system operator in the Code and in the SOSPA are consistent with the Authority's statutory objective<sup>4</sup>
  - (b) agreeing a set of formal performance standards against which the system operator's performance will be assessed in future years.
- 3.5 The Authority looks forward to the system operator's proactive participation in the SOSPA review.

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<sup>3</sup> The System Operations Committee is a Committee of the Authority Board that oversees the performance management of the system operator, identifies any emerging system security risks and addresses any other matters relating to the system operator's obligations under the Code.

<sup>4</sup> The review of the SOSPA is project B12 on the Authority's 2013/14 work programme (the work programme is available from <http://www.ea.govt.nz/about-us/documents-publications/work-programme/>).

3.6 This year's system operator performance review has been drafted with this future outlook in mind.

## 4 The system operator is meeting its obligations

### **The Authority is satisfied with the system operator's Code compliance**

4.1 As a key service provider to the electricity industry, the system operator has many obligations placed on it under the Code and Act.

4.2 The Authority is generally satisfied with the system operator's compliance with its regulatory obligations. It considers the system operator to have complied with all of its review and audit obligations under the Code, as well as its obligations under the SOSPA.

4.3 The system operator self-reported 37 Code breaches during the review period, compared with 26 in the previous year. It is difficult to gauge whether there has been any long-term trend in the number or severity of breaches. The Authority considers that the system operator may have been fortunate that circumstances were such that some breaches did not have more serious consequences.

4.4 A number of the breaches by the system operator were associated with manual errors during commissioning. For the future, the Authority suggests that the system operator consider whether there may be practical opportunities available to reduce the number of manual errors where there is a potential market impact, perhaps by having procedures in place that assist in avoiding manual errors.

***Recommendation 1: Consider whether practical opportunities are available to reduce the number of manual errors where there is a potential market impact, such as through implementation of new or changed procedures***

4.5 The Authority considers that the system operator is very proactive, and very good at identifying compliance breaches and reporting them to Authority staff. The Authority suggests that the system operator provide the Authority with early notification of potential breaches, particularly where the effects could be significant. For example, a long-running breach that was known by the system operator in April 2013 wasn't reported to the Authority until August.

4.6 The Authority finds the system operator staff to be very helpful when it comes to advising on breaches by other parties.

### **The principal performance obligations are consistently being met**

4.7 Clause 7.2 of the Code sets out the system operator's principal performance obligations (PPOs), which require it to:

- (a) act as a "reasonable and prudent system operator" with the objective of dispatching assets made available to avoid cascade failure of the power system
- (b) ensure frequency remains within prescribed upper and lower limits and that the number and duration of frequency fluctuations (outside the normal band) stay within specified limits.

4.8 The Authority acknowledges that the system operator has met all of its PPOs, with frequency excursions within target limits, and no voltage violations or instances of time error during the review period. This was achieved despite challenges introduced from a number of assets being commissioned, including Pole 3 of the HVDC.

- 4.9 Good progress is being made on the under-frequency management project, and the Authority looks forward to the future outcomes of the project, which aims to provide for a reliable and cost-effective under-frequency management regime that allows the system operator to maintain compliance with its PPOs.

### **The system operator has performed well under the terms of the SOSPA**

- 4.10 Although there are no formal performance standards agreed between the system operator and the Authority to be assessed during the review period, the SOSPA provides for a component of the annual fee payable to the system operator to be dependent on the system operator's performance, as measured against criteria established by the Authority, in consultation with the system operator.
- 4.11 The purpose of this is to:
- (a) incentivise acceptable performance by the system operator across all of its contractual responsibilities including the core functions, and the areas the Authority wishes the system operator to particularly focus on when carrying out its duties under the SOSPA over the 12 month assessment period
  - (b) define a standard for what constitutes good performance in those areas
  - (c) incentivise the system operator to perform to that standard.
- 4.12 The assessment of the system operator's performance in the year to 30 June 2013 was based on three key areas:
- (a) Part 7 of Code joint planning requirements including capex and business planning (SOSPA schedule 4 and clause 2.7, respectively)
  - (b) service delivery (in general across the contract, and particularly in relation to provision of data and the additional services under clause 14 of the SOSPA)
  - (c) meeting agreed project deliverables for selected items on the Joint Development Programme.
- 4.13 The amount of the system operator's payment that is at risk each year ending 30 June is set at \$250,000.
- 4.14 The Authority's assessment of the system operator's performance against these criteria resulted in the system operator retaining 94% of the at risk amount.

## **5 The system operator is achieving good security management outcomes**

### **Challenges to system security have been well managed**

- 5.1 The system operator faced a number of difficult system security challenges during the review period, including storms, earthquakes and volcanic eruptions, which it has managed competently.
- 5.2 Furthermore, a significant number of major grid upgrades and generator assets were successfully commissioned during the review period. Commissioning of pole 3 of the HVDC was a particularly significant achievement, as low lake levels in early 2013 increased the expected need for the asset in the build-up to winter, but also hindered the ability for the system operator to conduct the required tests.

- 5.3 The system operator showed good initiative in forming a dedicated, specialised team (known as the SORTed team) to coordinate the system operator's commissioning operations, and communicate with industry on the commissioning requirements and impacts. The Authority notes that there were no major incidents associated with any of the commissioning, and that the slight increase in frequency deviations is acceptable under the circumstances.
- 5.4 The Authority commends the system operator on its open communication on security matters. When problems arise, the system operator has been very cooperative and proactive in responding to issues and reporting them to the Authority.
- 5.5 The Authority conducted market performance reviews during the period on resolving multiple feasibilities, HVDC reversal, and secondary risk. The focus of these reviews was not on the system operator, though they included recommendations for the system operator to consider. The Authority did not receive any written response, either outlining when the recommendations may be implemented, or why the recommendations may not be suitable. The Authority encourages the system operator to follow up on these recommendations.

### **Security of supply situations have been managed proficiently**

- 5.6 During the review period there were periods of both high and low lake levels. The drought that occurred in the early part of 2013, affecting the North Island and parts of the South Island, was a particular concern with regard to security of supply. The Authority considers that the system operator handled the situation well, and appears very engaged in monitoring and responding to the hydro storage situation as it evolves.
- 5.7 The Authority has some concern that security of supply and emergency management preparedness may not be regarded as a high enough priority for the system operator at a management level, noting that:
- (a) while the system operator has reviewed the security of supply forecasting and information policy (SOSFIP) and the Authority has approved it, the review process took some time and would have benefitted from an earlier examination of some details (discussed further in paragraphs 6.16(a) and 6.17)
  - (b) progress on establishing arrangements for special funding for the system operator during security of supply emergencies has been rather slow-moving.

## **6 The system operator is engaging constructively with stakeholders**

### **There has been a strong collaborative effort on the joint development programme**

- 6.1 Clause 7.7 of the Code requires the system operator and the Authority to agree and publish a joint development programme that coordinates and prioritises:
- (a) the items on the Authority's industry development work plan on which the Authority intends to liaise with the system operator
  - (b) the system operator's capital expenditure plan provided to the Authority under the system operator market operation service provider agreement.
- 6.2 The Authority has found the system operator to be very engaged and committed to working on the joint project planning processes. Good progress has been made on the integrated project life

cycle, processes to improve budgetary cost estimates, and the processes for prioritising projects within the Joint Development Plan.

- 6.3 Authority staff find the documentation that the system operator has been providing on its capital projects very useful, and the walkthroughs of infrastructure projects are also valuable.
- 6.4 The Authority considers that there is still room for improvement in some areas: processes around change management, capex plan updates, and the sharing of capex plans with industry require further development. However, progress to date has been more than satisfactory. The Authority looks forward to working with the system operator on the continued development of the processes around the joint planning programme, and the further cohesion of the joint planning team.

### **Engagement with Authority staff and other service providers has been positive**

- 6.5 The Authority considers that the system operator's communication with the Authority has been open and effective. The Authority and the system operator are fostering good relationships and improved understanding in many areas.
- 6.6 In its 2011/12 review of the system operator's performance, the Authority recommended that the system operator ensure that collaboration on projects with other service providers is cooperative and productive.
- 6.7 The Authority considers that the system operator's communication and engagement with other service providers has improved since last year. In particular, there appears to have been good coordination with NZX on the modified design and implementation of dispatchable demand.
- 6.8 The Authority encourages the system operator to continue building on its relationships with other service providers.

### **Good relationships are being built with wider industry**

- 6.9 The system operator has been involved in a number of workshops during the review period. The Authority considers that the system operator's enthusiasm for using these forums to engage and inform the wider industry on its developments and initiatives has been valuable.
- 6.10 In general, the system operator's relationship with the wider industry appears to be positive, as demonstrated by many of the service factors gauged in the Customer Satisfaction Survey. The Authority encourages the system operator to continue building on the service factors for which it regularly receives low scores in the survey, particularly "understanding your needs", and continue developing its value to the industry.

### **The quality of written reports could be improved**

- 6.11 Authority staff have found that some of the system operator's reports have:
- (a) been difficult to understand and required clarification
  - (b) contained spelling, grammatical and other simple errors that have required re-work
  - (c) included data errors
  - (d) been in an inappropriate format, for instance presentations instead of reports.
- 6.12 The Authority also notes that some of the system operator's reports have been too high-level, and lacked sufficient detail for the intended audience.

- (a) The system operator's self-review doesn't provide a very good critical assessment of the system operator's performance, as would be expected from a performance review. Future self-reviews should incorporate comments on areas where the system operator considers that it performed well, and why, and areas where it thinks it could improve. In the absence of agreed performance measures, the system operator will need to provide a subjective assessment of performance.
  - (b) Business cases have generally been good at making the case for investment. However some business cases lacked the detailed breakdown of estimates required for informed discussion of the design options. It is noted that this will improve now that the Integrated Project Life Cycle has been finalised.
  - (c) Some papers to the Security and Reliability Council have erred on the side of being too high-level to provide those groups with sufficient information for them to make decisions and/or provide meaningful advice. However, the Authority acknowledges that it must assist with this issue by being more specific when requesting papers from the system operator.
- 6.13 The Authority therefore considers that the system operator should focus on improving the quality of its reports during the next review period, by ensuring that reports are appropriately detailed given their purpose and respective audience, and that they have been subject to peer review. This will provide for clear and precise communication, and ensure that that the requirement for rework and additional clarification is minimised.
- 6.14 The system operator is encouraged to seek clarification from the Authority on its expectations if they are not sufficiently clear.

***Recommendation 2: Ensure that reports are appropriately detailed for their purpose and audience, and have been subject to peer review***

### **There is scope for improved processes around changes to documents incorporated by reference**

- 6.15 Clauses 7.5(3), 8.10A, 8.42A, and 9.5(3) of the Code require the system operator to consult on revisions to the documents it owns that are incorporated by reference in the Code - i.e. the SOSFIP and emergency management policy, policy statement, procurement plan, and system operator rolling outage plan (respectively).
- 6.16 The Authority notes that there have been some difficulties with the adoption of some of these documents during the review period.
- (a) The draft SOSFIP that was originally put forward by the system operator included an approach to dealing with contingent storage in the hydro risk curve framework that had implications that were not fully appreciated by the system operator, and its initial consultation on the draft failed to bring this issue to light.
  - (b) The Authority identified a number of issues about proposed changes to the procurement plan that had to be worked through with the system operator, including changes being included in the revised procurement plan document that had not been marked up or signalled.
- 6.17 The Authority questions whether both parties may be able to work together to develop the processes around reviewing documents incorporated by reference, in order to avoid these sorts of outcomes. Specifically, it suggests that:
- (a) the Authority should be invited to engage in more in-depth discussions with the system operator about the changes being proposed before they are submitted to the Authority

- (b) the system operator could consider adopting a more formalised consultation process, whereby it outlined an assessment of the changes it proposed, and highlighted areas of risk or uncertainty for participants in a document accompanying its request for submissions.
- 6.18 Improving the Authority and system operator's processes around reviewing documents incorporate by reference in these ways may:
- (a) help to identify potential issues at an earlier stage
  - (b) make it easier for participants and the Authority to provide meaningful feedback on the system operator's proposed changes
  - (c) ensure that the changes can be finalised in the most efficient manner.

***Recommendation 3: Work with the Authority to develop better processes around making changes to documents incorporated by reference, and consider whether the system operator could adopt a more formal approach to consultation***

## **7 The system operator is managing projects and developments effectively**

### **Project management disciplines have improved across the board**

- 7.1 In its 2011/12 review of the system operator's performance, the Authority noted that the quality of project management by the system operator had been unsatisfactory, observing that detailed planning documentation, risk management, and progress reporting were generally lacking. At that time, the system operator had just established the 'system operator project management framework' as the platform for enhancing its medium- and long-term project capability.
- 7.2 The Authority considers that the system operator's programme and project management capabilities have significantly improved over this review period.
- 7.3 Authority project staff have all expressed satisfaction with the system operator's project management performance during the period. System operator project managers have been in regular contact without prompting from Authority staff, and reporting has been regular, reliable, and of a suitable quality.
- 7.4 The project management on the dispatchable demand, AUFLS and UFM projects received particularly high praise from Authority staff.
- 7.5 The system operator's investment in its project and programme management capabilities appears to be paying dividends and the Authority looks forward to further improvements as the system operator's project management framework continues to improve.
- 7.6 Projected increases in capital expenditure mean that effective project management will be all the more crucial for the system operator to be able to deliver projects and developments in a way that maximises the long-term benefit of consumers.

## **A strong commitment to established projects and investigations has been demonstrated**

- 7.7 During the review period, the Authority has generally found that the system operator has been engaged on all projects and investigations, and has been working constructively to identify issues, options and creative design solutions.
- 7.8 The system operator has shown strong commitment to project timelines, with nearly all projects progressing well and on track to meet their planned milestones.
- 7.9 The system operator's improved project management appears to be feeding through into good outcomes on projects generally, including positive interactions with Authority staff, and deliverables of a generally good quality. However, there is still room for further development, as highlighted by issues arising with the Multiple Frequency Keeping (MFK) project.

## **Dispatchable demand**

- 7.10 The Authority has been impressed with the system operator's dedication to the dispatchable demand project during this review period. The system operator worked creatively and diligently to identify and progress the modified design solution.
- 7.11 Now into the implementation phase, the system operator has shown very good commitment to deadlines, and has taken a very professional approach to managing the project.

## **Scarcity pricing**

- 7.12 The scarcity pricing project was concluded during the review period, and most of the work during the period was focussed on the implementation phase. The Authority observed the system operator to have shown strong commitment to completing the scarcity pricing project on time and within budget.

## **Multiple Frequency Keeping**

- 7.13 The MFK project has progressed well during the review period. The system operator put a significant amount of work into meeting the 1 July 2013 delivery date for the first stage of the project while under considerable pressure. MFK has operated reliably in the North Island since it was first commissioned on 1 July, despite a number of challenges on this technically complex project.
- 7.14 However, the Authority considers that there have been some problems with the system operator's escalation of a financial matter on stage one of this project and this is an issue that the system operator needs to address. This matter is subject to further discussions between the Authority and system operator.
- 7.15 The Authority is also concerned that stage two of the project may be starting to run behind schedule.

***Recommendation 4: Ensure that communication is proactive and timely when project issues arise***

## **Project establishment processes have improved**

- 7.16 In the 2011/12 review, the Authority noted that the system operator's business processes for establishing and signing off on new projects were awkward, and recommended the system operator consider reviewing its business processes relating to the establishment of projects.
- 7.17 During this review period the Authority has observed an improvement in the dynamics around project establishment and getting early engagement from the system operator.

- 7.18 The Authority also notes that a number of recent developments mean further improvement is likely in the near future. Specifically:
- (a) it is understood that the system operator has recently begun using Project Advisory Teams. As that process becomes better established, project sign-off processes are likely to improve
  - (b) the Authority and the system operator have recently finalised the Integrated Project Life Cycle. This will ensure that both parties share a common view of:
    - (i) the processes and standards required for establishing and managing joint projects
    - (ii) the planned stages and delivery of projects within the Joint Development Plan.
- 7.19 Further improvement on project establishment processes could likely be achieved by the system operator ensuring that its response to Technical Advisory Services Contract (TASC) requests is prompt, and that requests are acknowledged in a timely fashion. For example, the Authority found it difficult to engage the system operator in the initial stages of the 'reserves adjustment factor to zero' investigation due to poor communication from the system operator.
- 7.20 The Authority acknowledges that project establishment processes would also be improved by it providing the system operator with higher quality information at the outset, as this would reduce the number of delays associated with the system operator having to seek additional information and clarification.
- 7.21 The Authority therefore looks forward to both parties working toward continued progress in this area over the coming year.

## **8 Overall the system operator has performed well**

- 8.1 Overall, the conclusion of this review is that the system operator has generally achieved good outcomes during the review period, and has shown very good improvement in a number of areas that the Authority has previously highlighted as needing work. The Authority welcomes this improvement and encourages the system operator to continue building on this strong performance going forward.
- 8.2 During the review period, the Authority has been particularly pleased with:
- (a) the system operator's engagement and commitment to joint work planning
  - (b) the improvement in project management disciplines, and the positive impact this appears to be having on the progress of most joint projects.
- 8.3 The Authority considers that the Authority and system operator are fostering good relationships and improved understanding in many areas, and encourages the system operator in its implementation of the findings of its Value for Money review.
- 8.4 The Authority looks forward to continuing to work with the system operator on aligning the system operator's objectives and functions with the Authority's statutory objective, with a view to enhancing the overall outcomes for consumers.