

Annual review of the system operator's performance

Summarising the Authority's annual review of system operator performance for the year ending 31 August 2015

7 March 2016

Contents

1	The Authority has reviewed the system operator's performance for the year to 31 August 2015	2
1.2	The system operator has embraced the new joint objective and there continues to be a positive cultural change in the working relationship with the Authority	2
1.3	The Authority was impressed by the system operator's strategy and how this has aided the development of its business plan	3
1.4	The system operator is maintaining a quality supply to consumers and meeting its obligations	3
1.5	The Authority made three recommendations for the system operator	3

1 The Authority has reviewed the system operator's performance for the year to 31 August 2015

- 1.1.1 The Security and Reliability Council (SRC) functions under the Electricity Industry Act 2010 include providing advice to the Electricity Authority (Authority) on the performance of the system operator.
- 1.1.2 The Code requires both the system operator and Authority to perform an annual review of the system operator's performance.¹
- 1.1.3 The system operator's annual self-review for the year ending 31 August 2015 was considered by the SRC at its 22 October 2015 meeting. The SRC did not note any areas of concern with the system operator's performance and so provided no advice to the Authority at that time.
- 1.1.4 The Authority's own review of the system operator's performance ("the review") covers the same period as the system operator's self-review. The inputs to the review included the system operator's self-review and the SRC's positive feedback on the self-review. The review was published on 12 February 2016.
- 1.1.5 The purpose of this paper is to summarise the findings of the review, so as to obtain any feedback from SRC members on the performance of the system operator. This paper is intended to be an extensive summary of the review, reducing the need for SRC members to read the full review. The full review is attached as a reference should there be matters that members wish to delve into in more detail.
- 1.1.6 Continuing the trend of recent years, the Authority's review findings are generally very positive.

1.2 The system operator has embraced the new joint objective and there continues to be a positive cultural change in the working relationship with the Authority

- 1.2.1 As previous reviews have noted, in June 2014 the system operator adopted a joint objective with the Authority. In this review period the Authority was able to see numerous changes associated with this as evidence that there is a widespread positive change happening within the system operator and that this is flowing through to the manner in which the parties interact.
- 1.2.2 The system operator has been meeting its contractual responsibilities to the Authority, as evidenced by:
 - a) that the Authority and the system operator worked together well on maintaining and updating the Joint Development Plan
 - b) the system operator made improvements to its capital expenditure planning process
 - c) that the system operator provided a high quality of professional services to the Authority
 - d) the delivery of Authority projects is generally going smoothly, with the exception of the system operator's PRISM SCADA project that experienced significant issues that affected other projects. The Authority is satisfied with the system operator's management of the issues and is confident that the system operator will undertake a comprehensive review of the project once it is completed
 - e) that the system operator performed well under the system operator's service provider agreement during the period

¹ The requirements of both the system operator and the Authority with respect to the annual processes to review the system operator's performance are specified in clause 7.11 of the Code.

- f) the Authority assessed the system operator as having achieved 97% under the 'at-risk' assessment that is designed to incentivise system operator performance across all of its contractual and core responsibilities.

1.3 The Authority was impressed by the system operator's strategy and how this has aided the development of its business plan

- 1.3.1 The system operator presented its strategic plan to the 1 July 2015 meeting of the SRC. The SRC's comments on the plan were very positive.
- 1.3.2 The Authority was very impressed with the system operator's strategic plan because:
 - a) the content of the plan incorporated the joint objective in a fundamental way
 - b) the writing and presentation of the document did an excellent job of conveying the system operator's thinking about its future directions and its focus on the services it provides to the industry.
- 1.3.3 The system operator's business plan and actions are all showing consistency with its strategic plan, which shows that it is not just a cursory publication, but represents a real change that is filtering into the way the system operator thinks about and performs its activities.

1.4 The system operator is maintaining a quality supply to consumers and meeting its obligations

- 1.4.1 Clause 7.2 of the Code sets out the system operator's principal performance obligations (PPOs). The review concludes that the PPOs have been achieved, namely that the system operator has acted as a "reasonable and prudent system operator" with the objective of:
 - a) dispatching assets made available to avoid cascade failure of the power system
 - b) ensuring frequency remains within prescribed upper and lower limits, that the number and duration of frequency fluctuations (outside the normal band) stay within specified limits
 - c) if requested, identifying the cause of any problem with standards not being met at any point of connection to the grid for harmonic levels, voltage flicker levels or negative sequence voltage, and take reasonable and practical action as requested to resolve the problem.
- 1.4.2 The Authority's review outlines that the system operator:
 - a) had few system events to manage during the review period
 - b) successfully exercised its security of supply role
 - c) completed its five-yearly review of the Credible Event Review
 - d) continued its strong commitment to compliance.

1.5 The Authority made three recommendations for the system operator

- 1.5.1 The Authority made the following three recommendations to the system operator for it to further improve its performance.
 - a) continue to progress alignment with the joint objective, and strive to meet the key performance indicators set in the system operator's business plan
 - b) investigate greater use of procedural oversight (such as process controls like peer review) in manually-intensive procedures in order to reduce instances of human error

- c) continue to identify opportunities for constructive engagement with stakeholders.

The SRC may wish to consider the following questions.

- | | |
|------------|--|
| Q1. | What further information, if any, does the SRC wish to have provided to it by the secretariat? |
| Q2. | What advice, if any, does the SRC wish to provide to the Authority? |

Annual review of the system operator's performance

For the period from 1 September 2014
to 31 August 2015
Final report

11 February 2016



Executive summary

The Electricity Authority (Authority) has produced this report in accordance with Part 7 of the Electricity Industry Participation Code 2010 (Code). The report reviews the system operator's performance for the 12-month period ending 31 August 2015.

The scope of the review includes the performance of the system operator under both the Code and the system operator service provider agreement (SOSPA).

In carrying out the review, the Authority took into account the system operator's self-assessment for the same period, comments from Authority staff, comments from the Security and Reliability Council, comments from the System Operations Committee of the Authority Board, and comments from the system operator on a draft version of this report.

Overall, the conclusion of this report is that the review period has been one of strong performance and growth for the system operator. The system operator has clearly developed its thinking about its role and how to deliver on it, and has made changes that will enhance its value to the industry.

The Authority notes the large number of initiatives that the system operator has pursued during the review period to improve its business practices. The volume of activity is evident from the system operator's self-review, and appears to be having observable positive impacts. In particular, the Authority commends:

- the system operator's continued steps to improve its alignment with the joint objective it previously agreed with the Authority in the relationship charter. The system operator appears to have embraced the new joint objective, and there has been a positive cultural shift in the manner in which the Authority and system operator interact
- the system operator's strategy development, which is closely aligned with the joint objective. The system operator's business plan and actions showed consistency with its strategy, which illustrates that real change is filtering into the way the system operator thinks about and performs its activities
- the effort the system operator has put into being more transparent about its operations, and in engaging constructively with industry stakeholders – both to take on feedback, as well as to help inform and educate. The Authority has been especially impressed with how the system operator has engaged with stakeholders through meetings of the Reserves and Frequency Management forum and engagement group, which have been well received and attended.

The review period was characterised by few system events. The system operator handled challenges associated with the introduction of the Frequency Keeping Control operations of the new HVDC well, and was proactive in responding to changes in the security of supply outlook. The system operator continues to maintain a high level of commitment to, and professionalism in, ensuring it complies with its regulatory and contractual requirements.

The effectiveness of the system operator's communication underpins every facet of its performance. Accordingly, the Authority is pleased to have observed improvements in both the interpersonal and written communication skills of the system operator's staff.

The system operator has been proactive and engaged in managing joint projects and developing the associated processes, and most projects under the Technical Advisory Services Contract are progressing well. While delivery of Authority projects is generally going smoothly, there are significant issues with one system operator project that are affecting other projects. The Authority is satisfied with the system operator's management of the issues and is confident that the system operator will undertake a comprehensive review of the project once it is completed.

The system operator has identified a number of initiatives that it intends to undertake in the coming year to build on its performance. The Authority supports the system operator in these pursuits, and in responding to the recommendations included in this review, which are:

Recommendation 1: Continue to progress alignment with the joint objective, and strive to meet the KPIs

Recommendation 2: Investigate greater use of procedural oversight (such as process controls like peer review) in manually-intensive procedures in order to reduce instances of human error

Recommendation 3: Continue to identify opportunities for constructive engagement with stakeholders

Contents

1	Introduction	5
	The Code requires an annual performance review	5
	Structure of this document	6
2	The system operator is actively enhancing its value to the industry	7
	The Authority and system operator have a joint objective	7
	The system operator has been investing in change	7
	These developments are having observable effects on performance	8
3	Management of the system	9
	The system operator managed system events well	9
	The system operator has successfully introduced FKC	9
	The system operator was proactive in responding to security of supply issues	10
4	Compliance outcomes	10
	The principal performance obligations have been achieved	10
	Compliance is acceptable but there are opportunities to improve	11
	Requirements to review documents and provide reports are actively managed	12
	The system operator has performed well under the terms of the SOSPA	13
5	Supporting industry development	13
	The system operator has contributed effectively to development planning	13
	The system operator provides quality services under the TASC	14
	Project delivery has generally been satisfactory, though one project has experienced significant problems	16
6	Collaborating with stakeholders	17
	The system operator is demonstrating improved transparency and engagement	17
	The system operator is improving its communication	17
7	Overall the 2014-15 review period has been a period of strong performance and growth	18

1 Introduction

- 1.1 The system operator is a market operation service provider that performs a crucial role for the electricity industry in New Zealand. The system operator must manage the processes required to coordinate resources (mainly dispatchable 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 The system operator and Authority work together in a number of ways, to support and facilitate industry development and day-to-day operations that promote competition, ensure reliable supply, and promote efficient operation of the electricity industry, for the long-term benefit of consumers.¹
- 1.3 Recognising 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.
- 1.4 This review relates to the 12-month review period ending 31 August 2015.
- 1.5 In carrying out the review, the Authority took into account :
 - (a) the system operator's self-assessment for the same period (self-assessment)²
 - (b) comments from Authority staff who have worked with the system operator during the review period
 - (c) comments from the Security and Reliability Council (SRC)
 - (d) comments from the System Operations Committee of the Authority Board
 - (e) comments from the system operator on a draft version of this report.

The Code requires an annual performance review

- 1.6 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.
- 1.7 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 Authority³
 - (d) the provisions of the system operator's service provider agreement (SOSPA) with the Authority.

¹ See <https://www.ea.govt.nz/dmsdocument/18258>

² The self-assessment is available from <http://www.ea.govt.nz/operations/market-operation-service-providers/system-operator/annual-system-operator-reviews-and-assessments/>

³ No performance standards have been agreed, other than those discussed in paragraphs 4.19-4.25. The Authority and the system operator expect that performance standards will be established as part of the renegotiation of the SOSPA (refer to paragraph 2.6(d)).

- 1.8 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
 - (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 to assess the system operator's performance.
- 1.9 Clause 7.11(4) requires the Authority to publish its review and assessment of the system operator no later than 10 business days after the Authority completes the review and assessment.
- 1.10 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.

Structure of this document

- 1.11 This document is structured as outlined in Table 1:

Table 1: Structure of document

Section number	Topic	Broad overview
Section 2	The system operator is actively enhancing its value to the industry	The Authority and system operator have a joint objective
		The system operator has been investing in change
		These developments are having observable effects on performance
Section 3	Management of the system	The system operator managed system events well
		The system operator has successfully managed the introduction of FKC
		The system operator was proactive in responding to security of supply issues
Section 4	Compliance outcomes	The principal performance obligations have been achieved
		Compliance is acceptable but there are opportunities to improve
		Requirements to review documents and provide reports are actively managed
		The system operator has performed well under the terms of the SOSPA
Section 5	Supporting	The system operator has contributed effectively to

	industry development	development planning
		The system operator provides quality services under the TASC
		There have been mixed outcomes on project delivery
Section 6	Collaborating with stakeholders	The system operator is demonstrating improved transparency and engagement
		The system operator is improving its communication
Section 7	Overall summary	Overall has been a period of strong performance and growth

2 The system operator is actively enhancing its value to the industry

- 2.1 The Authority notes the large number of initiatives that the system operator has pursued during the review period to improve its business practices. The volume of activity is evident from the system operator's self-review, and appears to be having observable positive effects.

The Authority and system operator have a joint objective

- 2.2 The Authority and the system operator agreed a relationship charter two months before the start of this review period. The charter sets a joint objective for the two organisations, to promote competition, ensure reliable supply, and promote efficient operation of the industry, for the long-term benefit of consumers.
- 2.3 The system operator has taken significant steps towards aligning itself with the Authority's statutory objectives during the review period. The system operator appears to have embraced the new joint objective, and there has been a positive cultural shift in the manner in which the Authority and system operator interact.
- 2.4 The system operator has set a number of Key Performance Indicators for its alignment with the joint objective. In particular, it aims to apply the "competition, reliability and efficiency" objective to 25% of its policies and procedures and release \$1 million worth of benefits to the market through the application of the joint objective by 30 June 2016.
- 2.5 Stakeholders can be confident that the two organisations are working together and collaborating toward a shared goal.

The system operator has been investing in change

- 2.6 The system operator's self-review identified a number of changes the system operator has made to the way it thinks about its role and how to deliver it. Specifically, the Authority acknowledges the value being generated by:
- (a) the independent review of the system operator's operations that was initiated by the Transpower Board in 2013, which identified a number of opportunities for improvement, which have clearly been acted upon through various initiatives during this review period. These opportunities were
 - (i) forming a clearer strategic direction for the system operator (including taking account of the Authority's statutory objective)
 - (ii) improving the relationship with the Authority and industry

- (iii) changing Transpower's management and business operations to reflect the new strategic direction for the system operator service
- (b) the system operator's strategy development, and publication of the strategy document. The joint objective is reflected in the strategic plan, which outlines the system operator's five strategic goals, which are aligned with the Authority's outputs. The system operator's business plan and actions are all showing consistency with its strategy, which shows that it is not just a cursory publication, but represents a real change that is filtering into the way they think about and perform their activities
- (c) the system operator's restructure of its organisation, which it concluded in the first half of the review period. The restructure was intended to provide a greater focus on delivering a system operator service that represents value-for-money and reflects the joint objective. The system operator has become more focused under its new management structure, and the Authority considers the changes to be positive
- (d) the system operator and Authority have been in negotiations into a revised SOSPA during the review period. The negotiations are ongoing, and are expected to be concluded in the next review period
- (e) the system operator completed Project Aardwolf, which considered and assessed the most efficient capital spend required to support ongoing delivery of the system operator service over the next ten years. This long-term view of the system operator service, indicates a more considered and strategic approach to developing the market system, and how it can best provide value for the long-term benefit of consumers.

These developments are having observable effects on performance

- 2.7 Generally the Authority found that the system operator's performance has improved over the review period, with the alignment review, signing of the relationship charter, and system operator restructure having observable effects in many areas. In particular:
- (a) The system operator has shown strong engagement on joint planning with the Authority, and Authority staff cite multiple examples where working relationships have improved, and are resulting in better outcomes. For example
 - (i) the system operator identifies high-risk matters and frustrations earlier, and the system operator's new structure facilitates more effective escalation
 - (ii) the system operator gives Authority staff an opportunity to comment on issues and documents before they are published
 - (iii) there have been a lot of early meetings and brainstorming on how to approach projects, and a willingness to share ideas.
 - (b) The system operator has demonstrated improvements in transparency (such as the reporting discussed later in paragraph 3.3), and a strong willingness to engage with industry stakeholders (such as the engagement discussed later in paragraph 3.7).
- 2.8 The Authority considers it is inevitable that tension will occasionally arise, and that relationships will not always be plain sailing. Accordingly, the relationship charter does anticipate that there will be challenges, and a measure of performance is in how those challenges are addressed. In this regard, resolution of issues is constructive and remains positive.
- 2.9 Overall, Authority staff consider that there appears to have been a real positive change in how the system operator thinks about its role in the industry, and how it works with the Authority. While there is room to go, and a further development in terms of the system operator thinking about

things from a 'competition, reliability and efficiency' perspective, improvements have been clear to observe.

Recommendation 1: Continue to progress alignment with the joint objective, and strive to meet the KPIs

3 Management of the system

The system operator managed system events well

- 3.1 The Authority notes that it was a relatively quiet year for system events, with just three under frequency events early in the review period. This compares to six in the previous review period. The new Frequency Keeping Control functionality of the HVDC appears to be resulting in more stable frequency, and better system security outcomes.
- 3.2 The most significant event during the review period was the fire at the Penrose substation on 5 October 2014, which resulted in outages affecting large numbers of Auckland households and businesses. The Minister of Energy and Resources requested that the Authority undertake an inquiry into the event. That inquiry has been completed and provided back to the Minister. The findings of that inquiry focus on the relevant asset owners and do not raise any concerns with the performance of the system operator.
- 3.3 The Authority considers that the system operator's post-event response to the outage scheduling for the earth wire replacement of several transmission circuits that connect to Manapouri in May 2015 was highly commendable. The system operator showed a strong commitment to transparency and the joint objective in commissioning an independent review of the outage, and making the report publically available despite the findings including robust criticism of the system operator's actions leading up to and during the outage.
- 3.4 Generally speaking, the system operator's reporting on system events has been proactive and timely. The system operator released a report within a month after the 19 September 2014 event in which the system operator had to manage a shortage of energy and reserve offers. This was a new approach by the system operator, which the Authority was pleased with.
- 3.5 Late in the review period, the Authority raised some security-related concerns about the system operator's policy of setting the reserve adjustment factor to zero in the scheduling pricing and dispatch software, following an under-frequency event. The system operator's engagement was open-minded and constructive. Next year's review period will be better able to assess the system operator's response to the Authority's concerns.

The system operator has successfully introduced FKC

- 3.6 The Authority acknowledges the significant amount of work that the system operator has been putting into introducing the frequency keeping control (FKC) function of the new HVDC controls. FKC introduces a lot of change to the operation of the power system, which the system operator generally appears to be managing well.
- 3.7 The system operator's communication of the outcomes of the trial of FKC was commendable. The system operator's report on the trial's outcomes was well received by the Authority and participants, and comprehensively identified the implications of its testing for the National Frequency Keeping Market and Normal Frequency Asset Owner Performance Obligation projects. This has resulted in a wider project about frequency strategy being established.

- 3.8 The system operator's security tools project is identifying some challenges that will have implications for the electricity market. For example, the time delay in switching the direction of round-power when FKC is turned off creates a short period of heightened reserve risk, which may prove impractical to manage through dispatch. Further, stakeholders want the system operator to automate notifications about the FKC status via WITS, instead of through CANs. FKC relies on the system operator using a lot of manual processes, which the system operator suggests are complex, and these have caused some market issues when not performed correctly. Many of these manual processes will be automated as part of the 'security tools' project during the next review period.

The system operator was proactive in responding to security of supply issues

- 3.9 The Authority considers that the system operator is working effectively in the security of supply area, particularly following the recent announcements of retirement of thermal generation.
- 3.10 The system operator has been analysing the impacts of decommissioning thermal generation on the power system and security of supply. In the review period, the system operator prepared such analysis at short notice to present to the SOC. The quality of the analysis and associated document was commendable considering the short lead time available.
- 3.11 The system operator also proactively published additional information in response to the dry hydro situation early in 2015. The Authority commends the system operator for having identified and implemented further improvements around its supply and emergency management response.

4 Compliance outcomes

The principal performance obligations have been achieved

- 4.1 Clause 7.2 of the Code sets out the system operator's principal performance objectives (PPOs). In summary, the PPOs require the system operator to act as a "reasonable and prudent system operator" with the objective of:
- (a) dispatching assets made available to avoid cascade failure of the power system
 - (b) ensuring frequency remains within prescribed upper and lower limits, that the number and duration of frequency fluctuations (outside the normal band) stay within specified limits
 - (c) if requested, identifying the cause of any problem with standards not being met at any point of connection to the grid for harmonic levels, voltage flicker levels or negative sequence voltage, and take reasonable and practical action as requested to resolve the problem.
- 4.2 The Authority is satisfied that the system operator appears to have met all of its PPOs during the period, noting that:
- (a) the system operator has avoided cascade failure of the power system
 - (b) the number of frequency excursions and time error were within the prescribed limits.
 - (c) the system operator did not receive any requests from participants relating to harmonic levels, voltage flicker levels, and negative sequence voltage were received in the review period.
- 4.3 The system operator is required to eliminate time error at least once a day. It is not explicit in the system operator's self-review whether this was done, though the system operator has separately confirmed to the Authority that it was. Therefore, the system operator achieved the requirements for management of time error.

- 4.4 In its 2013-14 review of the system operator's performance, the Authority recommended that the system operator specify in its self-review whether frequency time error was eliminated at least once every day, and if not, why not. In its 2014-15 self-review, the system operator reported that it had addressed this recommendation. However, while the self-review now states that time error is kept within limits, it is not explicit as to whether time error has been eliminated once every day.

Compliance is acceptable but there are opportunities to improve

- 4.5 The Code imposes a number of compliance obligations on the system operator, including in documents incorporated into the Code by reference.
- 4.6 The Authority considers that the system operator has a good attitude toward compliance. The system operator is open and proactive in reporting breaches, and in communicating with the Authority to discuss compliance matters, and issues of market behaviour. The system operator also engages well with the industry on compliance matters, and encourages reporting of breaches.
- 4.7 The system operator's breach reports are very good quality and are provided without delay, with a prompt follow-up to any questions that arise. Reports contain good information, and the system operator has recently added value through enhancing its analysis of the market impacts of breaches.
- 4.8 In its self-review, the system operator noted that it breached the Code 30 times during the review period, compared with 18 in the previous review period. No other parties alleged Code breaches by the system operator during the review period. The Authority also notes an increase in the number of pricing errors reported during the review period.
- 4.9 The system operator states that the increase in breaches was a result of introducing new functionalities on the power system, and that the associated changes had been challenging to incorporate.
- 4.10 The Authority acknowledges that system upgrades can introduce errors, because the system operator necessarily relies on more manual processes than it otherwise might, which creates the opportunity for human error. However, the system operator should ensure that the issue of human error does not underlie a broader need for greater procedural oversight. The Authority suspects that greater oversight (such as process controls) might avoid simple errors such as those during the review period that were associated with re-naming the Bunnythorpe transmission circuit in the system operator's market system. To this end, the Authority commends the system operator for its internal work to better understand and categorise the sources of errors, and encourages improved error prevention.

Recommendation 2: Investigate greater use of procedural oversight (such as process controls like peer review) in manually-intensive procedures in order to reduce instances of human error

- 4.11 In its 2013-14 review of the system operator's performance, the Authority recommended that the system operator consider categorising self-reported breaches in more detail and use the results in future self-assessments. In its self-review the system operator said it was not yet in a position to do this, but that its work to understand and categorise the sources of errors would allow it to address the Authority's recommendation during the next review period. The Authority looks forward to that enhancement in the system operator's next self-review.

Requirements to review documents and provide reports are actively managed

- 4.12 The Code requires the system operator to prepare and publish a number of documents.⁴ This includes several documents that are incorporated into the Code by reference, and which must be reviewed or updated at specified intervals.
- 4.13 The system operator has met its requirements for reviewing documents incorporated by reference, and is active in managing its obligations around this. During the performance review period, the system operator:
- (a) completed a five-yearly review of the Credible Event Review (CER)⁵
 - (b) undertook two updates of, and commenced a review of, the System Security Forecast
 - (c) initiated a review of the Procurement Plan, but opted to defer the review given minor changes at that time, and the potential for substantive changes in the near future
 - (d) commenced reviews of the Policy Statement, System Operator Rolling Outage Plan (SOROP) and Emergency Management Policy (EMP).
- 4.14 The Authority's review of the system operator's performance for 2012-13 included three recommendations relating to documents incorporated into the Code by reference. These were:
- (a) that the system operator *"work with the Authority to develop better processes around making changes to documents incorporated by reference"*
 - (b) that the system operator consider whether it could adopt a more formal approach to consultation
 - (c) that these documents are assessed for consistency against the Authority's statutory objective.
- 4.15 During the previous review period, there were no changes made to documents incorporated by reference that gave the system operator an opportunity to respond to these recommendations. However, the Authority did observe that the system operator had undertaken to engage with the Authority on a more in-depth basis at an early stage in its reviews, was turning its mind to the joint objective, and had demonstrated an improved process through other unrelated consultations.⁶
- 4.16 This review period did provide an opportunity to identify improvements in the system operator's approach to reviewing documents incorporated by reference. The Authority:
- (a) is pleased to have been involved in early discussions on the reviews of the CER, SOROP, EMP, and policy statement
 - (b) considers it a positive development that the system operator sought information on the Authority's processes for approving documents incorporated by reference, in order to incorporate them into its own planning. This will help to ensure a more seamless process
 - (c) considers that the system operator's approach to consulting on the CER review (the only document that was consulted on during the period) was generally satisfactory, and showed improvement over its previous approach. The Authority encourages the system operator to ensure its consultations include adequate discussion of the assessment against the joint objective.

⁴ 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 SOSFIP and emergency management policy, policy statement, procurement plan, and system operator rolling outage plan (respectively).

⁵ The CER is not a document incorporated by reference, it is a requirement of the policy statement (which is a document incorporated by reference).

⁶ See paragraph 6.9 of <http://www.ea.govt.nz/dmsdocument/19904>

- 4.17 The system operator has met its requirement under the Code to undertake a monthly self-review and report the results to the Authority. The system operator made some changes to the monthly reports in order to explain variances in month-to-month ancillary service costs, and to report on the alignment with the statutory objective. These changes have been appreciated.
- 4.18 The Authority notes that the system operator met its obligations around auditing the scheduling, pricing and dispatch (SPD) software, and reserves management tool (RMT) software. The Authority encourages the system operator to ensure the software documentation is consistent with the model, to aid those using the virtual SPD software.

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

- 4.19 The SOSPA sets out the terms under which Transpower will perform the role of system operator.
- 4.20 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.
- 4.21 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 review period
 - (b) define a standard for what constitutes good performance in those areas
 - (c) incentivise the system operator to perform to that standard.
- 4.22 The assessment of the system operator's performance under the SOSPA in the year to 30 June 2015 was based on three key areas:
- (a) Part 7 of Code joint planning requirements including capital expenditure 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 Authority and system operator's Joint Development Programme.
- 4.23 The amount of the system operator's payment that is at risk each year ending 30 June is set at \$250,000 plus an annual adjustment in line with the Consumer Price Index.
- 4.24 The Authority's assessment of the system operator's performance against these criteria resulted in the system operator retaining 97% of the at-risk amount.
- 4.25 The at-risk assessment process is being reviewed as part of the SOSPA renegotiation.

5 Supporting industry development

The system operator has contributed effectively to development planning

- 5.1 Authority staff observe that the system operator has been proactive and engaged in managing and further developing joint planning processes during the review period. System operator and Authority staff are working together well, achieving good results, and working through any issues

as they arise. This is resulting in improved testing of priorities and identification of resource constraints.

- 5.2 This collaboration culminated in the publication of an updated Joint Development Plan (JDP) in November 2014, with a further update made in August 2015. The JDP coordinates and prioritises Authority and system operator projects (including joint projects) in a way that will best contribute to competition, reliability and efficiency. It represents a very full programme of work with some significant investments.
- 5.3 The two organisations have developed good processes around reviewing and publishing the JDP. Given its complexity and timeframes, reaching out to 2017/18 and beyond, the two organisations have agreed that the JDP should be reviewed regularly, and updated as planning assumptions become more certain.
- 5.4 The Authority and system operator have also developed a strong appreciation for the value that the JDP provides in support of joint work planning. The system operator has been proactive in alerting the Authority to issues affecting joint projects. For example, it has liaised well on the results of its Frequency Keeping Controller trials, which affected a number of projects and resulted in the Authority reviewing its overall frequency-management strategy.
- 5.5 The Authority is keen to work with the system operator during the next review period to make some incremental improvements around the Integrated Project Life Cycle (IPLC) framework. The IPLC sets out the joint project processes between the Authority and system operator. The Authority considers that the IPLC works very well and is consistent with the agreed processes. Training courses have been valuable in keeping staff 'fresh' on the IPLC. However, the framework could better account for the different ownership in projects, and provide greater detail around the processes around the interaction between the Authority and system operator, and the Authority's internal processes.
- 5.6 There has been positive progress with regard to capital expenditure planning processes. The system operator prepared a new capital expenditure plan during the review period, which has seen improvements in transparency, and increases to the amount of information included to justify expenditure. The system operator clearly put a lot of work into its capital expenditure plan, and Authority staff found it to be an insightful document. It was very well-considered, and demonstrated robust thinking.
- 5.7 It is also apparent from the system operator's own planning activity that it is taking a much more proactive and forward-looking approach to industry development. For example, its Environment Scan reflects an identified need to look ahead given uncertainty created by new technologies and industry arrangements. Similarly, its Project Aardwolf demonstrated a commitment to thinking about competition, reliability and efficiency, as it considers the options for the market system that are likely to provide the greatest net benefits.

The system operator provides quality services under the TASC

- 5.8 The Authority procures the system operator's advice on development projects under the Technical Advisory Service Contract (TASC). Activity under the TASC involves significant elements of project management and project delivery, and involves projects both big and small.
- 5.9 The Authority:
 - (a) values the changes made to refine and further develop the process documentation associated with TASCs, as it encourages greater efficiency and communication between the organisations

- (b) appreciates the ability to engage early with the system operator to brainstorm and test ideas on how to approach projects, which helps the Authority formulate its thinking and scope out the work it requires. The system operator has become much more open to engaging at an early stage, and involving people with the detailed knowledge necessary to aid the Authority's thinking
 - (c) considers that there has been good process improvement around establishing TASC projects and getting agreement about doing work. This means that work gets underway much faster. The Authority generally considers that the system operator responds to TASC requests appropriately, as per the agreed processes, and that briefs are of an acceptable quality. However, the Authority is disappointed at the length of time taken to finalise the draft Integrated Project Lifecycle (IPLC). The draft was received on 9 April 2015 and comments were provided by the Authority on 13 April 2015, but as at the review date a finalised IPLC has yet to be received. The Authority reiterates its interest in further developing the IPLC framework to provide greater clarity around the processes for interaction around projects
 - (d) has been satisfied with project management. Project updates and monthly reporting on TASC projects has generally been good. The reporting format has improved and reports are received regularly. The relevant system operator staff interact well and are very efficient. Communication on projects and escalation of any issues is more effective under the system operator's new structure.
- 5.10 There were some opportunities to further improve the operation and management of TASC projects during the review period. Next year's review will assess the broader joint engagement around TASC management and any associated changes made near the end of this review period such as:
- (a) the inclusion of budget forecasting in monthly reports
 - (b) ensuring that briefs can be easily understood by parties that are not steeped in the details
 - (c) use of clear assumptions in forming cost estimates.
- 5.11 In terms of TASC outputs during the review period, the Authority was generally pleased with most projects. TASC projects relating to extended reserves, the improved market modelling of losses projects, and the fault ride-through project received a quick turn-around while maintaining quality and cost control. A TASC project relating to gate closure was of a high quality – easily readable and contained good information as per the agreed scope - but was delivered late. The investigation of real-time pricing is going well, with the Authority valuing the level of engagement towards analysing and thinking through the issues.
- 5.12 The Authority considers two TASC projects require particular mention:
- (a) the Frequency Strategy project. The Authority is very pleased with the system operator's work on the Frequency Strategy project, noting
 - (i) the system operator had a good process for acknowledging the outcomes of the FKC trial, which led to the Frequency Strategy project being established in place of a number of smaller projects. The system operator has shown initiative and flexibility in its approach to the project
 - (ii) good progress is being made, noting that it is challenging work. The system operator has approached it in a logical way, considering broad options and then evaluating them against a framework it developed
 - (iii) there are no budget concerns for the project, and the wider review is unlikely to affect timing of the National Frequency Keeping Market. The National Frequency Keeping

delivery date is conservative, but seems to be an acceptable approach as it provides delivery certainty

- (iv) the system operator's coordination of the reserves and frequency management forum and engagement group has been excellent. It developed terms of reference for the groups early and has done a great job of running them. The groups are a practical and effective mechanism to get industry feedback, and are proving extremely successful
- (b) the Review of Instantaneous Reserve Markets. The Authority has experienced some issues with the Review of Instantaneous Reserve Markets project. The report from the first TASC request under the project didn't demonstrate the forward thinking the Authority would have liked. This was due to some misunderstanding around the scope of the TASC request. Authority staff are satisfied that the system operator has taken on board comments provided on the TASC project and established a way forward.

Project delivery has generally been satisfactory, though one project has experienced significant problems

- 5.13 The Authority is generally satisfied with the system operator's track record on delivering projects. The system operator consistently meets timelines – making a particular effort to do so - and generally delivers high quality outputs.
- 5.14 This was the case with the South Island Multiple Frequency Keeping Project, which was delivered on time, went according to the programme, and has operated without issue. The system operator showed flexibility in its management of the end stages of the project, which was delivered slightly below the revised budget.
- 5.15 The National Instantaneous Reserve Market project is also running very smoothly. While there have been a couple of issues, active management by the system operator has helped ensure the issues have not jeopardised timelines.
- 5.16 Under the re-established Dispatchable Demand project, the system operator has been helpful in coming up with ideas and cost estimates, and outputs have been of satisfactory quality.
- 5.17 However:
 - (a) The Authority notes the significant issues the system operator has been having with its PRISM SCADA update. The project is running behind schedule and is over budget, and this is affecting the costs and timing for other projects. The system operator has demonstrated that it is taking this cost and time overrun extremely seriously, with senior management time being devoted to actively managing the relevant third party vendor. The system operator has committed to a comprehensive review of the project once the immediate concerns are resolved. The Authority encourages the system operator to have that review, ensuring that the scope covers the contracting arrangements with the third party vendor.
 - (b) The Authority was disappointed that software-related problems arose following delivery of the Dispatchable Demand project. While it was disappointing that the system operator's software testing did not prevent these problems from arising, the Authority acknowledges that such testing can never provide complete quality assurance.

6 Collaborating with stakeholders

The system operator is demonstrating improved transparency and engagement

- 6.1 The system operator appears to be making an effort to be more transparent in its operations. The primary example of this that the Authority identifies is the system operator's approach to reporting on the May 2015 Manapouri outage. A transmission outage at Manapouri resulted in planning timing issues affecting participants' ability to plan for and secure alternative supply at lowest cost. The system operator initiated an external independent review of its actions, and made the resulting report publically available. The report was also provided to the SOC, and the system operator provided a response to the issues raised.
- 6.2 This showed a particularly strong commitment to transparency and the "competition, reliability and efficiency" objective, as the system operator took a risk in publishing the report, and showed a willingness to accept any criticism, and learn from what occurred. The Authority considers that the system operator deserves credit for its approach to reporting on the outage.
- 6.3 The system operator's self-review for this review period, as well as its strategic plan, also show an increased level of self-reflection, and a willingness to work with and for the industry.
- 6.4 The system operator has also been making a distinct effort to engage with industry stakeholders, to take on feedback, as well as help inform and educate. Its engagement with the SRC has been positive and mutually informative. The SRC has not identified any areas of concern with the performance of the system operator.
- 6.5 In particular, the Authority has been impressed with how the system operator has engaged with stakeholders through the Reserves and Frequency Management forum and engagement group. These have been well received and attended by stakeholders, and stand out as a particular example where the system operator has been proactive and effective at communicating, setting agendas, getting material prepared on time, and involving the Authority at an appropriate level.
- 6.6 The Authority recognises that 100% of respondents to the system operator's customer satisfaction survey rated the system operator's service as "good" or higher, that there were improvements against various service factors, and that respondents perceived there were now more frequent opportunities for dialogue and involvement. "Communication" and "knowing the customer" continue to be areas that can be a focus for improvement, and respondents identified some specific developments they would value – including around Customer Advice Notices, the ability to help shape proposals, and a need for continued development of the relationship with the Authority.
- 6.7 The Authority is confident that the system operator's next survey will highlight further improvements, and supports the system operator's continued efforts to build relationships with stakeholders, such as those the system operator identified in its self-review.

Recommendation 3: Continue to identify opportunities for constructive engagement with stakeholders

The system operator is improving its communication

- 6.8 The Authority noted improvements in the system operator's communication with the Authority over the review period. Early in the period there were occasional instances of correspondence falling through the cracks, and lapses in communication in some areas. In particular, there was – perhaps inevitably - some disruption to service delivery and overall engagement during the system operator's restructure, given various staff and role changes.

- 6.9 However, by the end of the review period there were very few communication issues. Authority staff generally suggested that the system operator works hard to communicate effectively, and provided multiple examples where communication channels are working well, and consistent with the relationship charter.
- 6.10 Particular examples of communication that Authority staff value include that:
- (a) the two organisations are building good working relationships, with regular meetings being held at various levels, which provide for good open dialogue and regular communication channels
 - (b) high-risk matters and frustrations are identified early, and escalation is more effective under the system operator's new structure. Discussions are happening earlier and resulting in better outcomes
 - (c) Authority staff are reliably given an opportunity to comment on issues and documents before they are published
 - (d) system operator staff are helpful in walking Authority staff through issues/analysis, and respond quickly to data requests
 - (e) the system operator has been helpful in integrating new members of Authority staff into projects and processes, which those individuals have appreciated.
- 6.11 The system operator also appeared to have been making deliberate efforts during the review period to improve the clarity of its written communication. Numerous documents of various types were received – including regular reports and TASC deliverables – which were all well written, and appropriate for the intended audience. The system operator has also taken on board feedback, as well as taken its own initiative, to improve the presentation and material included in various reports.
- 6.12 Some documents prepared during the review period were particularly well received:
- (a) The service strategy document was well received by a number of different audiences – including the SRC, Authority, and industry stakeholders.
 - (b) The gate closure TASC report was of high quality, as it was easily readable, and contained information as per the agreed scope.
 - (c) Authority staff are very pleased with the system operator's new approach to its self-assessment of its performance, as it is much more self-reflective than previous self-assessments.
 - (d) Reports that were received by the SRC and SOC all received high praise – including reports on black start and system restoration, thermal decommissioning, and the Manapouri outage.

7 Overall the 2014-15 review period has been a period of strong performance and growth

- 7.1 Overall, the Authority considers that the system operator has performed well during the review period, and looks forward to that performance being maintained and enhanced through the next year. The system operator has clearly developed its thinking about its role and how to deliver it. In particular, it has engaged very well with the Authority and has been making changes that enhance its value to all stakeholders.

- 7.2 In its self-review, the system operator identifies a number of initiatives that it intends to undertake in the coming year to build on its performance. The Authority supports the system operator in these pursuits, and in responding to the recommendations included in this review, as summarised below.

Recommendation 1: Continue to progress alignment with the joint objective, and strive to meet the KPIs

Recommendation 2: Investigate greater use of procedural oversight (such as process controls like peer review) in manually-intensive procedures in order to reduce instances of human error

Recommendation 3: Continue to identify opportunities for constructive engagement with stakeholders