

Efficient procurement of extended reserves Code amendment

Final decision

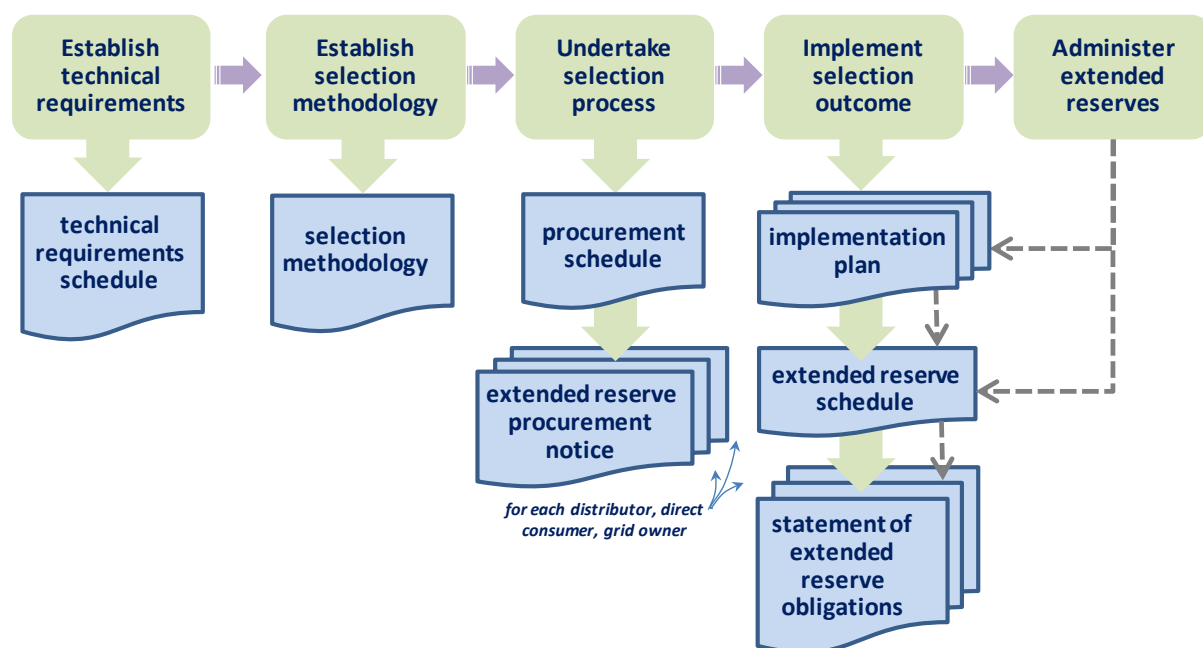
11 June 2014

Authority decision

1. The Authority has proposed a new mechanism to procure extended reserve (including AUFLS). It has developed the design after lengthy dialogue and consultation with industry, and having engaged extensively with the system operator.
2. The Authority considers that the new mechanism will greatly improve the efficiency of AUFLS selection and deliver improved system security. It has decided to amend the Electricity Industry Participation Code 2010 (Code) to give effect to the new arrangements
3. The preferred mechanism combines Code provisions and other documents governed by the Code. This will allow more innovation and flexibility in AUFLS in future, as new technology and systems allow.
4. The new arrangements would initially apply only in the North Island. They will apply (in modified form) to the South Island later.
5. The Authority published its proposed extended reserves arrangements in the paper “Efficient procurement of extended reserves – draft Code amendment” on 8 April 2014. The key aspects of the proposal were:
 - (a) to remove the *detailed technical & procurement specifics* of AUFLS provision from the Code, and replace it with a framework where:
 - (i) the Code *enables and governs* the provision of extended reserves (including AUFLS). The Code requires parties to comply with obligations set out in associated documents created pursuant to the Code. Those documents include the technical requirements schedule (TRS), selection methodology (SM) and each asset owner’s individual statement of extended reserve obligation (SERO)
 - (ii) these associated documents, collectively, set out the *specifics* of: the technical design of AUFLS (and any other extended reserves); the methodology by which it will be procured; and, the on-going terms and conditions for parties to comply with having been selected.
 - (b) to continue to procure AUFLS via an obligation, but through a process the objective of which is to:

- (i) vary the amount of AUFLS parties are obliged to provide, according to their relative suitability
 - (ii) provide some 'flexible' AUFLS which the system operator can call upon to arm or disarm to meet changing circumstances as required.
 - (c) to change the nature of parties' AUFLS obligation to the following:
 - (i) to make loads available for *potential* selection via a central selection process
 - (ii) to provide information to the selection process on the different loads to enable the central selection process to identify those loads which are most suitable
 - (iii) to arm any loads which are selected
 - (iv) to provide updated information on selected loads on an annual basis.
 - (d) to enable parties to be compensated for the provision of AUFLS (and other extended reserves), and for such payments to be recovered from distributors and direct consumers in proportion to their demand
 - (e) to establish a new service provider role, the extended reserves manager (ERM), to manage the process of procuring extended reserves, including developing the methodology that will be used to select participants to provide AUFLS
 - (f) to put in place a transitional approach from the current AUFLS obligations that would enable each asset owner to agree with the system operator an individualised plan to implement that asset owners' obligations arising from the first AUFLS selection process under the new arrangements.
6. The proposed new arrangements are comprised of five steps (shown in green in Figure 1 below). The Authority, the system operator, and a new service provider (the ERM) each have roles in the new arrangements.

Figure 1: Overview of extended reserves arrangements



7. The focus of the third consultation was the Code amendments required to give effect to the Authority's proposed new arrangements for extended reserves – that is, the Code provisions governing the five steps in Figure 1 above.
8. The Authority will consult later this year on two of the key documents that will determine the *specifics* of how much AUFLS each participant must provide. These documents are the extended reserves technical requirements schedule (TRS), and extended reserves selection methodology (SM). The Authority provided indicative examples of these documents in the consultation material to assist affected parties understanding of the proposed arrangements.

Next steps

9. The Authority will amend the Code by publishing a notice in the Gazette. It will take effect as follows:
 - (a) the majority of the new provisions in the Code will come into force in July 2014. The exact date will depend on the publication date of the relevant edition of the Gazette
 - (b) the Code amendment implementing the revised trigger setting for the second AUFLS block in the South Island will come into force on a date specified in the Code to allow a transition period for compliance

- (c) the Code amendments relating to additions to Part 8 (allocation of costs) and to Part 14 (payments) will come into force on 24 March 2015 at the same time as the amendment to the settlement and prudential regime takes effect.
- 10. The Authority has decided to proceed with establishing the ERM role as a market operations service provider with limited liability, including arranging for regulations to be made and amended.
- 11. The Authority, with the system operator, will progress development of the TRS and SM so that they can:
 - (a) consult on the draft TRS around the third quarter of 2014
 - (b) consult on the draft SM around the fourth quarter of 2014.
- 12. The Authority will revisit the transition timeline once the TRS and SM have developed further, and more is known about the likely nature and extent of transition requirements for asset owners and the system operator.

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
AOPO	Asset Owner Performance Obligation means a performance obligation specified in subpart 2 of Part 8 that an asset owner must comply with so that the system operator can plan to comply and comply with its PPOs
AUFLS	Automatic Under-Frequency Load Shedding, an extended reserve service that is a 'last resort' mechanism by which large blocks of load are shed to prevent system collapse in the event of a (rare) failure of major parts of the supply system
Authority	Electricity Authority
CBA	Cost-benefit analysis
CBD	Central business district
Code	Electricity Industry Participation Code 2010
Consultation paper	The Authority's paper entitled ""Efficient procurement of extended reserves – draft Code amendment" published 3 April 2014
CRE	Competition, reliability, and efficiency. The three components of the Authority's statutory objective under the Act (to promote competition in, reliable supply by, and the efficient operation of, the New Zealand electricity industry for the long-term benefit of consumers)
Decision paper	This paper, published by the Authority having considered submissions on its consultation paper entitled "Efficient procurement of extended reserves – draft Code amendment" (3 April 2014)
Direct consumer	An electricity consumer with a point of connection to the national grid
Distributor	A party who conveys electricity on lines other than lines that are part of the national grid (the term distributor includes direct consumers for the purposes of Part 8 of the Code)
DR	Demand response, a generic term that encompasses a variety of responses from the demand-side including interruptible load, control of hot-water heating load by distributors and peak period load control
Extended reserves	Services provided by selected asset owners to restore frequency to the normal band after disturbances of a magnitude that makes it impracticable or uneconomic to restore frequency using ancillary services (currently AUFLS is the only extended reserves service)

ERM	Extended reserve manager, a proposed new service provider that will establish the selection methodology and undertake the selection process
Extended reserve procurement notice	The notice given to an asset owner by the ERM following completion of the selection process and approval by the Authority of the extended reserves procurement schedule
Extended reserve procurement schedule	The schedule, approved by the Authority following consultation, that sets out the outcomes of the selection process
Extended reserve provider	An asset owner required to provide extended reserves under Schedule 8.3, Technical Code B, clause 7 of the Code
Extended reserve selection methodology	The methodology by which extended reserves will be procured, developed by the ERM and approved, following consultation, by the Authority
Extended reserve schedule	The schedule that sets out all current extended reserves obligations, maintained and published by the system operator
Extended reserve technical requirements report	A report prepared and published by the system operator at least every five years reflecting its most recent review and analysis of the technical requirements for extended reserves
Extended reserve technical requirements schedule	The technical requirements schedule prepared and published by the system operator (and reviewed at least every five years), setting out the technical requirements for extended reserves (including AUFLS) as indicated in the extended reserves technical requirements report
Frequency collapse	Significant reduction in frequency, generally caused when the failure of one part of the system triggers the failure of successive parts (a significant increase in frequency can also result in frequency collapse)
GXP	Grid exit point, typically a point of connection on the grid at which electricity predominantly flows out of the grid
Hz	Hertz, the unit of measure for frequency
IL	Interruptible Load, a form of IR

IR	Instantaneous reserve, an ancillary service the system operator contracts for to assist in managing frequency disturbances outside the normal band
Load	A consumer's demand for electricity, or the collective demand across a group of consumers
Lines company	An alternative term for distributor
Normal band	The frequency band between 49.8 Hertz and 50.2 Hertz
NPV	Net present value
PPOs	Principal performance obligations, the system operator obligations in Clause 7.2 of the Code
PROPs	Participant rolling outage plans, required under Part 9 of the Code as part of the arrangements for management and co-ordination of planned outages as an emergency measure during energy shortages
Regulations	Electricity Industry (Enforcement) Regulations 2010
SERO	Statement of extended reserves obligations prepared by the system operator setting out, for each relevant asset owner, that party's specific obligations, terms and conditions for extended reserves
system operator	Transpower NZ Ltd, in its role as the service provider under the Act and Code responsible for ensuring the real-time co-ordination of the electricity system
system collapse	Failure in the interconnected electricity system, generally caused when the failure of one part of the system triggers the failure of successive parts
TRS	Extended reserves technical requirements schedule
UFM	Under-frequency management
UoSA	Use of system agreement
VoLL	Value of lost load

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1. Introduction

- 1.1.1 Electrical systems around the world are subject to the risk of rare and extreme events that, if not appropriately planned for, could lead to catastrophic power failure. The current principal means of addressing such risks is through dropping large blocks of load as AUFLS.
- 1.1.2 Several events have recently occurred in New Zealand that put these 'last resort' systems to the test. While the system stayed on for these events, Transpower has identified that there is room to improve the current AUFLS scheme to reduce the risk of non-performance for a wider range of events than considered when the AUFLS scheme was first designed. It has proposed a revised technical design to address this risk.
- 1.1.3 In parallel, the Authority identified significant inefficiencies in the current mechanisms for determining which loads should provide AUFLS to meet the overall system requirement. As well as economic costs arising from inappropriate load assigned to provide AUFLS, the current procurement approach is also exacerbating system reliability risks.
- 1.1.4 After multiple sets of industry dialogue and consultation, and having engaged extensively and in an ongoing way with the system operator, the Authority developed a mechanism that it considers greatly improves the efficiency of selection and delivers improved system security.
- 1.1.5 The preferred mechanism combines provisions in the Code provisions and other documents governed by the Code. This allows more innovation and flexibility AUFLS, and enables the development of additional resources other than AUFLS as new technology and systems allow in future.
- 1.1.6 One change will be to introduce a new term, 'extended reserves'. Extended reserves will consist of AUFLS and any other related resources introduced in the future (AUFLS is currently the only type of extended reserve).
- 1.1.7 The Authority released a consultation paper on 8 April 2014 that described the Authority's preferred mechanism and set out the Code amendments required to give effect to the proposal.
- 1.1.8 The Authority received 12 submissions on its proposal. This decision paper summarises the main issues raised by the submissions and sets out the Authority's response.

2. Submissions

2.1 Submissions received

- 2.1.1 Table 1 lists the stakeholder who made submissions. The submissions are available in full on the Authority's website.¹ The Authority thanks submitters for their engagement on this issue.

TABLE 1: LIST OF SUBMITTERS

Generator /retailers	Lines companies	Consumers	Other
• Meridian Energy • Trustpower	• Transpower (grid owner) • Northpower • Orion • Powerco • Vector • Electricity Networks Association (ENA)	• NZ Steel • Pacific Aluminium • Major Electricity Users' Group (MEUG)	• System operator

2.2 Summary of key issues raised

- 2.2.1 Some of the matters that submitters raised were also raised in earlier consultations. Others are relevant to matters still being developed (particularly the TRS and the SM) and which will be consulted on later in the year.
- 2.2.2 During the consultation process the Authority held a workshop on the extended reserves arrangement proposed in the consultation paper. The Authority has drawn on discussions at the workshop where they augment the points raised in submissions.
- 2.2.3 The Authority considers that the key issues raised can be collated into the following areas:

¹ <http://www.ea.govt.nz/development/work-programme/wholesale/efficient-procurement-extended-reserves/consultations/?show=12197>

- (a) overall design of the proposed extended reserves arrangements
- (b) timing and approach to finalising the Code amendment
- (c) transition to the new arrangements
- (d) allocation of roles and appointing the extended reserve manager
- (e) selection methodology and selection tool
- (f) key documents, carrying out the selection and implementing selection results
- (g) compensation and allocating costs
- (h) implications of the Commerce Commission regime
- (i) interface with interruptible load, rolling outages, and other forms of demand response
- (j) publishing key documents
- (k) equivalence and dispensation arrangements
- (l) other drafting matters.

2.2.4 The next section of this decision paper addresses each of these key issues.

2.2.5 Appendix 1 of this decision paper includes a table summarising submissions. Submissions are available in full on the Authority's website.²

² <http://www.ea.govt.nz/development/work-programme/wholesale/efficient-procurement-extended-reserves/consultations/#c12197>

3. Issues raised and Authority decisions

3.1.1 This section provides a high-level response to the key issues that submitters raised, and outlines the Authority's decisions.

3.2 Overall design of the proposed extended reserves arrangements

3.2.1 The consultation paper set out the Authority's preferred approach for the procurement of extended reserves.

3.2.2 The Authority noted in the consultation paper that:

- (a) the specifics of the selection methodology would continue to be developed, including through consultation with stakeholders
- (b) the framework was sufficiently flexible to accommodate variations on the preferred selection methodology.

3.2.3 The consultation paper also made it clear that the proposed new arrangements would initially apply only in the North Island, and later to the South Island. The proposed Code amendment did, however, include provisions to amend the trigger setting for the second block in the South Island from 45.5 Hz to 46.5 Hz, in accordance with the system operator's technical review of AUFLS.^{3 4 5}

Submitters' views

3.2.4 The majority of submitters supported the overall design in general terms, although some raised issues with certain aspects.

3.2.5 Of those not supporting the overall design:

- (a) one considered that "*the inadequacies of the current AUFLS arrangements do not pose significant risks to system security, nor do they lead to manifestly unreasonable cost allocation outcomes*". The submitter recommended that the Authority "*does not proceed further*

³ <http://www.systemoperator.co.nz/market/development/current-projects/automatic-under-frequency-load-shedding-aufls-review>

⁴ <http://www.systemoperator.co.nz/sites/default/files/bulk-upload/documents/AUFLS-III-RoCoF-testing-summary.pdf>

⁵ <http://www.systemoperator.co.nz/sites/default/files/bulk-upload/documents/AUFLS-III-Appendix-D-high-level-SI-CBA.pdf>

with the extended reserves proposals but instead promotes a consultative process, involving the System Operator and distributors, to identify problems and seek solutions to technical shortcomings associated with the provision of AUFLS.”

- (b) some were not convinced that the Authority’s preferred approach will deliver the benefits expected. They were not convinced it was the best approach, particularly the proposal to compensate providers and recover costs. They generally acknowledged, however, that the proposed Code amendment can accommodate more than one approach.
- (c) one submitter was *“concerned that as a result of the Authority’s indications that this is a North Island issue only at this stage that South Island distributors are may not be fully engaged and this could result in inadequate consultation in the South Island”*.

3.2.6 Some submitters queried aspects of the Authority’s cost-benefit analysis (CBA) set out in the consultation paper.

3.2.7 There was a reasonably strong measure of support for the proposed mix of Code provisions and other documents governed by the Code. Submitters acknowledged the flexibility the package would provide to incorporate innovations in extended reserves, following a Code-prescribed consultation process but without the need for a Code amendment.

3.2.8 One submitter, however, expressed concern that key documents (notably the TRS, SM and procurement schedule) place obligations on participants and could be altered without the necessary checks and balances of consultation. This submitter considered that the Authority should at least incorporate these documents into the Code by reference, and further proposed that it should include the TRS as a Technical Code under Schedule 8.3 of Part 8.

3.2.9 No submitters objected to the Authority’s proposal to amend the trigger setting for the second block in the South Island from 45.5 Hz to 46.5 Hz.

Authority response

3.2.10 In response to submitters’ views, the Authority considers that:

- (a) contrary to the statement by one submitter, the current AUFLS arrangements:
 - (i) do pose significant risks to system security (particularly the poor targeting (and monitoring) of load to deliver the optimum level of load under AUFLS)

- (ii) do result in inefficient procurement outcomes
- (b) the Authority's preferred approach addresses these matters, and will deliver material improvements in competition, reliability, and efficiency
- (c) the Authority does not consider that any of the issues raised in relation to the CBA would:
 - (i) alter the ranking of the options described in Table 1 of the consultation paper
 - (ii) cause the Authority to amend its preferred approach to extended reserve procurement⁶
- (d) a number of the concerns raised by those not supporting the overall approach were focussed on the SM rather than the governing Code. These concerns can be considered during consultation on the SM. The framework established by the Code amendment can accommodate a number of variations in the SM, including a regime with no compensation.

3.2.11 The Authority considers that the framework established by the proposed Code amendment is flexible enough to:

- (a) accommodate variations on the Authority's preferred procurement approach, in particular for different North Island and South Island arrangements
- (b) adopt alternative compensation regimes now or in the future.

3.2.12 The Authority does not consider it necessary to incorporate documents into the Code by reference. Nor does the Authority consider that the technical requirements schedule should be included as a Technical Code in Part 8 of the Code. To do either would significantly reduce the flexibility of the arrangements.

3.2.13 The Authority acknowledges that the TRS, SM and SEROs will impose obligations on certain participants. The Authority does not agree, however, that these documents can be altered "*without the necessary checks and balances of a consultation*". The proposed Code amendment contains processes for consultation and approval. Failure to follow these processes would be a breach of the Code.

⁶ Submitters' comments on the CBA are addressed in Appendix 1 of this Decision Paper.

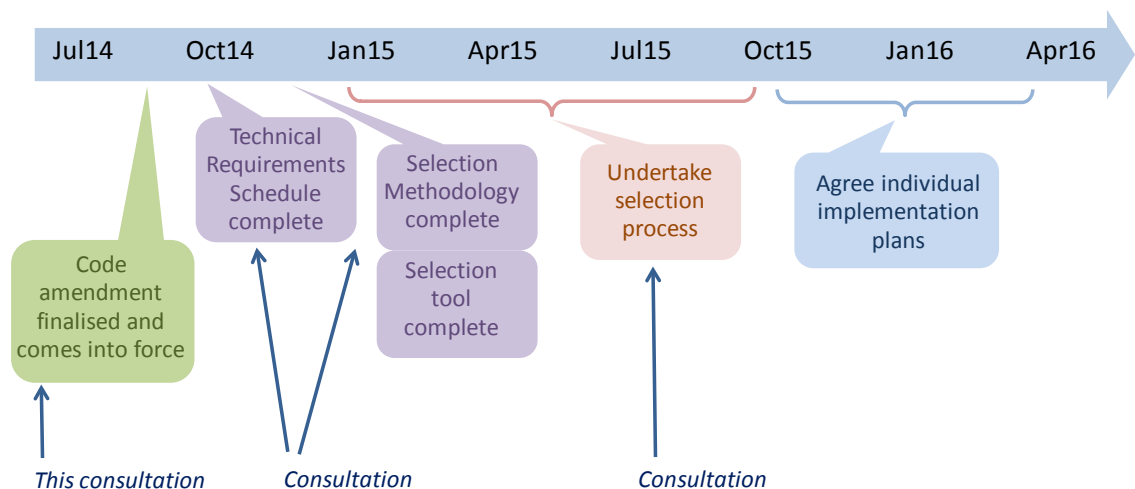
Authority decision

- 3.2.14 The Authority remains of the view that the procurement approach set out in the consultation paper remains its preferred procurement approach for extended reserves.
- 3.2.15 The Authority intends making some minor changes to some of the consultation and approval processes, in response to submissions. Section 3.7 of this decision paper discusses these changes further. The Authority also intends revising some aspects of the transitional provisions (particularly for South Island arrangements) and Section 3.4 discusses the revisions.

3.3 Timing and approach to finalising the Code amendment

- 3.3.1 The consultation paper invited comment on an indicative timeline for implementing the proposed arrangements, as shown in Figure 2.

Figure 2: Indicative timeline for implementing proposed arrangements



- 3.3.2 The Authority proposed to finalise the Code amendment and publish a notice in the Gazette in July 2014. The consultation paper stated that the majority of the Code amendments would come into force on the date in the Gazette notice. The exceptions would be the amendments relating to allocating the costs (Part 8) and making payments (Part 14). These will

come into force at the same time as other changes to Part 14 and Part 14A of the Code, on 24 March 2015.⁷

- 3.3.3 The consultation paper noted that the TRS and the SM were still in development and would be consulted on later in 2014.

Submitters' views

- 3.3.4 Some submitters strongly advocated putting the Code amendment on hold pending further development of the TRS or SM or both. For instance:
- (a) one submitter considered that the final SM could identify the need for further changes to the Code, leading to a further round of consultation which would be avoided if the SM was developed first or in parallel
 - (b) another submitter did not consider that the rush to implement Code is required. It did not support the Authority's approach to consult and gazette proposed Code amendments before it has properly developed, consulted and tested its selection methodology and technical standards with stakeholders. In particular, it did not consider that the Authority needs to implement Code in relation to charges and payments at this time. It recommended instead that the Authority not gazette Code changes until the SM has been finalised.
- 3.3.5 Some submitters also stated that they could not meaningfully make submissions on the Code at this time given the uncertainty over the TRS or the SM, or both. For instance:
- (a) one submitter stated that it did not consider the consultation had provided *"sufficient information for stakeholders to make meaningful comments on the proposed approach for procuring AUFLS"*
 - (b) the same submitter referred to the Authority's Consultation Charter⁸ and stated that *"without reviewing a fully developed selection methodology, stakeholders do not have sufficient information and cannot be considered adequately informed and able to make intelligent and useful comments on the proposed Code changes."*

⁷ The likely timeline to implement the new extended reserves arrangements extends well into 2015, which is after the new Part 14 and 14A of the Code comes into force on 24 March 2015.

⁸ Clause 2.1(d).

- 3.3.6 Other submitters, however, did comment on the proposed Code amendment, or did not suggest that the Authority to halt the Code amendment.

Authority response

- 3.3.7 The consultation paper acknowledged the link between Code amendments and TRS/SM, and therefore included indicative drafts of each *“to enable submitters to make informed submissions on the proposed Code amendments”*. The Authority considers that the indicative drafts were sufficient to fulfil this purpose.
- 3.3.8 The Authority has considered whether to:
- (a) publish the decision and revised Code now, but suspend gazetting the Code amendment pending further progress on TRS and SM; or
 - (b) publish the decision and gazette the Code amendment now, and consider additional Code amendments later if required, following further progress on TRS and SM.
- 3.3.9 The Authority intends to finalise and gazette the Code amendment now, because:
- (a) the process by which it developed the Code amendment has been robust and rigorous. It has involved a team of Authority and system operator staff, augmented by expertise from the Authority’s legal advisers and consultants. It comes at the end of a series of consultations and discussions with industry participants
 - (b) the Authority provided a comprehensive package of information as part of the Code amendment consultation, including indicative examples of the TRS and SM
 - (c) the Authority held a workshop part way through the consultation period to provide an opportunity for interested parties to clarify aspects of the proposed design and Code amendment
 - (d) the proposed Code allows for a broad range of different TRS and SM approaches.
- 3.3.10 The Authority considers that that the extended reserves project has progressed to the point where it is able to publish a firm decision and gazette the Code amendment.
- 3.3.11 The Authority acknowledges though that it may identify further Code amendments as it refines the arrangements for transition and

implementation. The indicative timetable (Figure 2) can accommodate further Code amendment and consultation if required.

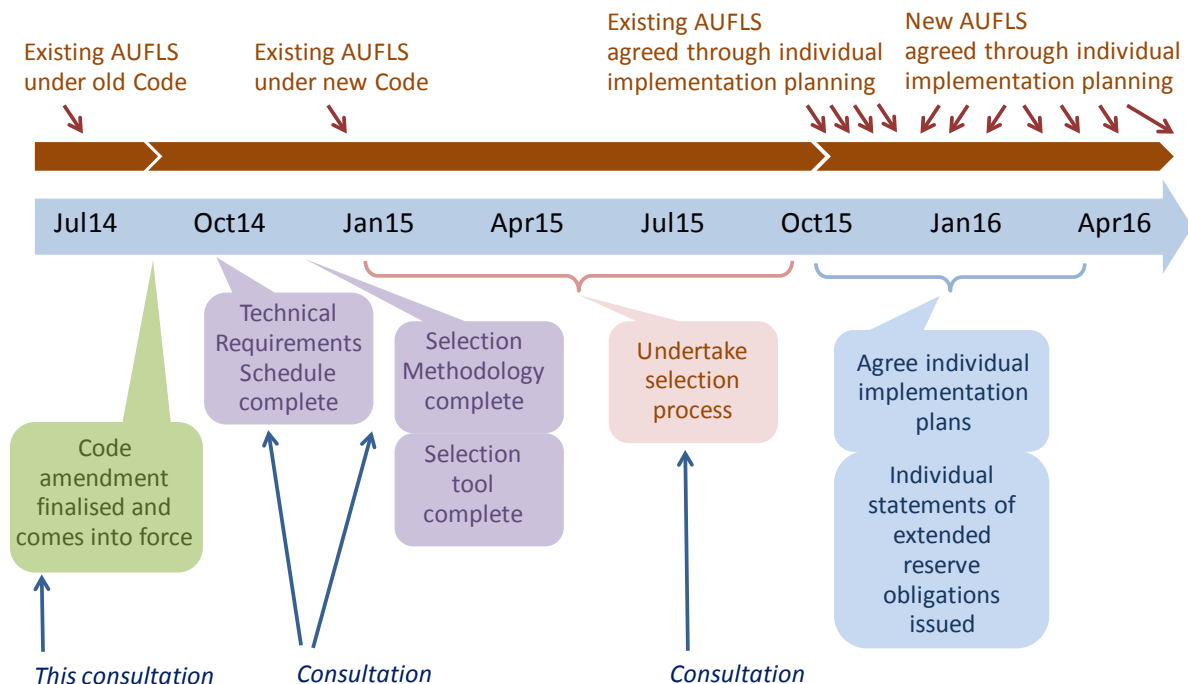
Authority decision

- 3.3.12 The Authority has decided to revise the Code provisions proposed in its consultation paper, having considered submissions received, and to gazette the revised Code amendment in July 2014.
- 3.3.13 The majority of the new provisions in the Code will come into force in July 2014.
- 3.3.14 The Code amendment implementing the revised trigger setting for the second AUFLS block in the South Island will come into force on a date specified in the Code to allow a transition period for compliance (refer next section).
- 3.3.15 The Code amendments relating to additions to Part 8 (allocation of costs) and to Part 14 (payments) will come into force on 24 March 2015.

3.4 Transition to the new arrangements

- 3.4.1 The proposed approach and timing for transitioning from the existing to the new arrangements was as follows:
 - (a) transitional provisions in Part 17 of the Code would take effect once the Code amendment is in force
 - (b) the transitional provisions would require each party to continue to comply with current North Island AUFLS obligations that were in force before the amendment came into effect. This would continue until the earlier of:
 - (i) the date that party's implementation plan agreed under the new arrangements came into force; or
 - (ii) a specified date
 - (c) the specified date would allow sufficient time for all providers to put their implementation plans into effect.
- 3.4.2 Figure 3 shows the proposed transition from the existing to the new AUFLS obligations in the North Island.

Figure 3: Proposed transition from existing to new AUFLS arrangements



- 3.4.3 The transitional provisions included a similar set of provisions for South Island AUFLS, but with two differences:
- (a) the Authority does not propose to change the procurement arrangements for AUFLS in the South Island at this time, because the situation there is very different situation from in the North Island⁹
 - (b) the Authority will change the trigger setting for the second block in the South Island in accordance with the system operator's technical review of AUFLS.
- 3.4.4 The transitional provisions will change the trigger setting for the second block in the South Island from 45.5 Hz to 46.5 Hz. This would come into effect on a date that the Authority will specify under the Code.

⁹ The situation in the North Island is giving rise to a strong system security driver to change the AUFLS arrangements. However, the system operator has determined that the current wide frequency envelope in the South Island (45 to 55 Hz, versus 47 to 52 Hz in the North Island) makes the risk of under- or over-frequency collapse in an AUFLS event significantly less in the South Island. This makes the changing of AUFLS arrangements a much less pressing issue in the South Island.

Submitters' views

- 3.4.5 No submitters raised concerns with the overall transition mechanism proposed.¹⁰
- 3.4.6 A number of submitters commented on aspects of the transition arrangements and indicative timeline. Submissions included the following comments:
- (a) *“...it is difficult to finalise the implementation timeframe until the design of the new scheme has been agreed, the new technical requirements are finalised, and the arrangements to procure new relays have been discussed between participants and finalised. Without knowing the scope of the changes required and the availability of resources it is impractical to comment. Finalising the arrangements and fully implementing the scheme in one year from publication of the technical requirements would appear to be over-optimistic.”*
 - (b) *“...the indicative timeline is not achievable. Commencing relay resets or replacement cannot commence until after the first selection result. Completing the work is estimated to take two to four years.”*
 - (c) *“...the drafting of the transitional provisions is unclear, in particular the approach of referencing Code that has been replaced as if it had not. As well as those provisions identified in the drafting, certain additional existing AUFLS provisions (e.g. providing annual AUFLS load profile information) need to remain in effect during the transition.”*
 - (d) *“...the effect of the transitional provisions on South Island AUFLS arrangements is unclear, and should be amended to more explicitly exclude South Island distributors from the new North Island procurement arrangements.”*

Authority response

- 3.4.7 The Authority acknowledges that the proposed new arrangements for extended reserves represent significant change from the status quo, and that the transition process and timeline need to reflect this. Nevertheless, the Authority is mindful of the competition, reliability, and efficiency

¹⁰ That is, using each asset owner's first implementation plan agreed under the new arrangements as the transition mechanism, thereby allowing different implementation dates tailored to different asset owners and their circumstances

benefits that the new arrangements will deliver. It therefore intends to progress with development of the TRS and SM this year. The Authority acknowledges that there are close links between these documents and that more than one iteration may be required.

- 3.4.8 The Authority also acknowledges that until the TRS and SM are finalised and the first selection process completed, there is some uncertainty about the transition activities for each asset owner. For some there may be little or no change. Others may need to purchase and install new relays and reset existing ones.
- 3.4.9 The Authority considers that the process for transition is flexible enough to accommodate the different circumstances of different asset owners while still ensuring the system operator can be confident it can meet system security requirements during the changeover period.
- 3.4.10 Further, the Authority considers that the Code amendment is flexible enough to accommodate a range of approaches to the SM.

Authority decision

- 3.4.11 The Authority has decided to progress development of the TRS and SM. It plans to consult on:
- the draft TRS around the third quarter of 2014
 - the draft SM around the fourth quarter of 2014
- 3.4.12 Once the transition activities for asset owners and the system operator are clearer, Authority will revisit the transition timeline.
- 3.4.13 The Authority has changed the Code drafting for transitional provisions as follows:
- all transitional provisions have been consolidated in Part 17 of the Code
 - the Statement of Extended Reserve Obligation (SERO) will specify the date that obligations for each North Island party come into force. The SERO is issued by the system operator once it has agreed an implementation plan with that party
 - some existing provisions (clauses 6 and 7 of Technical Code A, Appendix B (Schedule 8.3)) will remain in force during the transition for the North Island and for the South Island

- South Island grid owners must give the system operator a plan (by a date yet to be agreed) for complying with the (amended) relay trigger setting, and the system operator must approve the plan subject to any changes it considers necessary. A South Island grid owner does not breach Schedule 8.3, Technical Code B, clause 7(6)(d)(ii) if it complies with a plan approved by the system operator
- making it clear that a selection methodology must specify how the methodology applies to each island, including, if appropriate, specifying that the methodology does not apply to an island.

3.5 Allocating roles and appointing the extended reserve manager

- 3.5.1 The consultation paper set out the roles proposed for the Authority, the system operator and a new service provider role – the extended reserve manager (ERM).
- 3.5.2 The consultation paper also noted that to establish the ERM would require:
- (a) a new market operations service provider to be identified in regulations¹¹
 - (b) amendments to the Electricity Industry (Enforcement) Regulations 2010 (Regulations) to limit the liability of the ERM, as is the case for most other market operations service providers.
- 3.5.3 The Authority estimated that it could take from 12 to 18 months from making the Code amendments to having regulations in place, to appoint a new service provider, and for that new service provider to be ready to carry out its functions. Accordingly, the draft Code amendment allowed the Authority to carry out the functions of the ERM on a temporary basis until the regulations were in place.
- 3.5.4 Because it could not be certain how long this would take, the Authority proposed that it would develop the first selection methodology and selection tool, and carry out the first procurement process if necessary. In that way it was more likely that it could meet the timetable in section 4.2 of the consultation paper (refer Figure 2 of this decision paper).

¹¹ Paragraph (g) of the definition of 'market operation service provider' in the Act (section 5)

- 3.5.5 If the Authority were to act as ERM it would engage an external agent to carry out the day-to-day functions until it appoints a service provider. Once appointed, the ERM would take over finalising the SM and selection tool (if not completed) and undertake the selection process.

Submitters' views

- 3.5.6 Most submitters supported the Authority's proposed allocation of roles, although one submitter was not convinced of the need for a separate ERM because it saw the role as an extension of the system operator's role.
- 3.5.7 Some submitters raised concerns about the timing of the ERM appointment and in particular the appropriateness of the Authority carrying out that role in the interim. Of those submissions:
- (a) several supported the Authority taking on the role if necessary but expressed a firm preference for the ERM role to be established and filled as soon as possible to avoid this or minimise its effect
 - (b) a submitter was concerned about the legality of the Authority taking on the role of the ERM
 - (c) some submitters appeared to prefer that the Authority amend the implementation timetable to allow for the ERM role to be established and a service provider appointed, thereby removing the need for the Authority to perform the role
 - (d) two submitters suggested that the system operator is an appropriate candidate for the ERM role given its existing heavy involvement in the proposed arrangements, noting that this *"would also help prevent any data and technical requirements being 'lost in translation' if (potentially) passed between multiple parties."*
 - (e) one submitter considered that a regulator is not a suitable entity to undertake this role suggesting:
 - (i) it would expose the Authority to claims in tort while acting as ERM before regulations marked the role as a market operations service provider, because of the effect of section 55(3) of the Act¹²

¹² Section 55(3) provides that 'No industry participant may bring an action in tort or against a market operation service provider that arises out of, or relates to, any matter, or thing done, or required or omitted to be done, by the market operation service provider in the course of it providing market operation services, provided that the act or omission is not a fraudulent act or omission by the market operation service provider'.

- (ii) the Authority "*will not be a participant and not subject to complaints to the Rulings Panel for breach of the Code*", meaning a participant's only recourse in the event of a dispute would be to the courts.

Authority response

- 3.5.8 The Authority remains of the view that it should establish the ERM as a separate service provider role. This will allow the Authority to:
 - (a) define the role and identify the skills required
 - (b) appoint a suitable party to fulfil the role, either by direct negotiation with one of the current service providers (such as NZX or Transpower) or after carrying out a competitive tender process
 - (c) set out the terms and conditions for the ERM services in a service provider contract.
- 3.5.9 It will also allow the Authority to consider factors such as:
 - (a) the type of skills required to undertake the ERM role
 - (b) whether it is important for the ERM role to be undertaken by a current or a new service provider
 - (c) the size and duration of the ERM role¹³
 - (d) the cost of appointing and remunerating a new service provider.
- 3.5.10 The Authority has further considered the role of the ERM and in particular the possibility of the Authority acting as the ERM on a temporary basis.
- 3.5.11 The Authority will start the process of identifying a suitable ERM service provider, so that it can make an appointment as soon as possible after regulations are in place.
- 3.5.12 As for the Authority undertaking the ERM role in the interim, the Authority considers this option will allow it to continue to develop other elements of the new regime while it looks for a suitable permanent appointee.
- 3.5.13 The Authority does not consider that the effect of section 55(3) of the Act is a persuasive reason to decline performing the ERM role if necessary.

¹³ For example, whether the ERM is required to develop a new selection methodology, or whether the ERM will be required to carry out a full or partial extended reserves selection process

- 3.5.14 The Authority disagrees with the analysis of the submitter that suggested the Authority was not an appropriate body to perform the role of ERM. Section 7(3) of the Act states that the Authority is not an industry participant, "except to the extent that it performs functions as an industry service provider." The Act defines "industry service provider" as a person who provides a service or performs a role in the electricity industry that is recognised in the Code. In acting as the ERM, the Authority would be performing a role in the electricity industry under the Code, and therefore would be an industry participant. Accordingly, the Authority would be subject to complaints to the Rulings Panel.

Authority decision

- 3.5.15 The Authority has decided to confirm the allocation of roles across the system operator, ERM and the Authority, as set out in the consultation paper.
- 3.5.16 The Authority will begin the process of identifying and selecting an appropriate appointee, and seek to have regulations made to create the role of the ERM as a market operations service provider.

3.6 Selection methodology and selection tool

- 3.6.1 At a high-level, the draft selection methodology in the consultation paper methodology will:
- (a) require parties to offer their load for potential selection for AUFLS, and provide information for this selection process including:
 - (i) historical load patterns
 - (ii) the extent to which load may be used for IL (and potentially other alternative uses)
 - (iii) information on the type of load at each feeder (for example residential, business, and critical loads)
 - (b) use a central optimisation tool to identify which loads are most suitable to provide AUFLS
 - (c) require that parties which are selected must arm their loads as instructed
 - (d) compensate parties for providing AUFLS, with the compensation covering both the costs of the AUFLS equipment and the expected interruption costs of load during AUFLS events

- (e) recover the compensation payments from all loads pro-rata to their annual MWh.
- 3.6.2 The selection methodology is yet to be finalised. The Authority will consult industry stakeholders about the selection methodology later in the year.
- 3.6.3 Nonetheless, the Authority has set out its views on the matters raised by submitters as part of this process of on-going engagement to finalise the proposed selection methodology.

Issues raised by submitters

- 3.6.4 Many submitters supported the proposed approach. Some submitters expressed reservations, including those who strongly opposed the approach.
- 3.6.5 Several submitters suggested that the proposed arrangements were overly complex.
- 3.6.6 A number of submitters were concerned about the potential burden of providing customer-type information at each feeder so that the optimisation tool would not select high interruption cost (VoLL) customers.
- 3.6.7 Some also suggested that retailers may need to be required to provide information to lines companies to allow them to estimate what types of customers are on particular feeders.
- 3.6.8 Two submitters raised concerns about their ability to provide load in particular sized blocks within tight tolerances. That is, having a maximum and minimum compliance requirement.
- 3.6.9 A number of parties asked how the new arrangements would treat embedded generation in terms of providing information on the likely load on a feeder. They raised the point that disconnecting embedded generation under an AUFLS feeder could exacerbate an event.

Authority response

- 3.6.10 The Authority is very aware that what is proposed is significantly more complex than the current approach. However, AUFLS is an inherently complex issue requiring trade-offs between multiple different objectives.
- 3.6.11 The Authority has evaluated a range of options from simple one-size-fits-all common obligation approaches through to sophisticated markets for AUFLS. The costs to participants from implementing these different options have been included in the cost-benefit evaluations, with more

complex options assumed to incur greater implementation and operation costs.

- 3.6.12 The preferred SM is based on these cost-benefit evaluations. The analysis shows that the increased benefits of improved security, reduced IL costs, and reduced VoLL costs outweigh the costs of the greater complexity of this option when compared to the status quo and some of the other options.
- 3.6.13 Nonetheless, the Authority will continue to work with stakeholders to test these assumptions, and identify aspects that it can simplify.
- 3.6.14 As for the burden of providing VOLL-based estimates, it is not the intention to require participants to provide customer-type information to such a high level of detail. The transaction costs associated with such complexity would likely significantly outweigh the savings in interruption costs from better targeting of low-VoLL consumers.
- 3.6.15 Instead, the Authority wishes to implement a 'reasonable endeavours' approach to identifying the types of customers on different feeders. The intent is to have pragmatic arrangements (potentially drawing upon the similar exercise that lines companies are already required to undertake for assigning feeder priority for rolling outages) which can:
- (a) avoid specific highly sensitive loads (for example critical civil defence infrastructure, very large high VoLL loads, dairy factories)
 - (b) *generally*, target residential areas, and avoid CBDs, commercial districts, and the like.
- 3.6.16 The Authority does not consider that its preferred approach will impose onerous compliance burdens on parties. Some of the other options considered but not favoured (particularly 1d) would result in such a burden.
- 3.6.17 The intent of the preferred option is to take away from participants the 'heavy lifting' of targeting load to achieve a desired amount of load under AUFLS to within tight tolerances. Instead, this burden is borne by the central optimisation (selection) tool.
- 3.6.18 Participants will be required to make loads available for selection (including providing information to support this selection process), and arm feeders if selected. If a feeder is selected and armed, participants do not then have a compliance burden to ensure the load on that feeder is within specific levels.
- 3.6.19 The cost-benefit analysis identified that this central optimisation approach:

- (a) can take advantage of the diversity of hundreds of different potential feeders
 - (b) can therefore achieve *better* targeting of desired quantities of AUFLS than an approach which imposed a compliance burden on individual parties to deliver specific quantities of AUFLS at different times.
- 3.6.20 In considering the treatment of embedded generation, the Authority notes that embedded generation will assist during an AUFLS event only if it is likely to remain connected if frequency drops below 48 Hz, and as far down as 47 Hz. Many embedded generators would not perform in such a manner and would trip off as frequency drops below 48 Hz.
- 3.6.21 The Authority is also mindful that de-minimis considerations are likely to be relevant here. For example, it could be appropriate to specifically capture information about a very large embedded generator (for example 10 MW in size), but not worthwhile to capture information about individual micro-scale embedded generators of a few kW in size.
- 3.6.22 Accordingly, the Authority will continue to work with the system operator and other stakeholders on the most appropriate means to capture information about embedded generation and how to treat it in the selection approach.
- 3.6.23 The Authority acknowledges that the selection tool, which implements the selection methodology, is a critical aspect of the procurement arrangements. The Authority, system operator, ERM, asset owners and other interested parties all need confidence that the selection tool meets the requirements of the selection methodology and delivers selection outcomes that are reasonable, repeatable and consistent with expectations.
- 3.6.24 As with other information systems and models, the Authority will ensure suitable auditing arrangements are in place for the selection tool.

Authority decision

- 3.6.25 The selection methodology that the Authority provided with the consultation paper was an indicative draft. No decision has yet been made as to its final form.
- 3.6.26 Participants will have a further opportunity to make comments on the proposed selection methodology when it is further developed later in 2014.

3.7 Key documents, carrying out the selection and implementing selection results

3.7.1 The Code amendment sets out how to:

- (a) develop, consult on and approve the TRS and SM
- (b) carry out the selection process to produce the extended reserve procurement schedule and individual procurement notices
- (c) implement the selection outcomes. This includes agreeing individual parties implementation plans, establishing the extended reserve schedule, and issuing each parties' statement of extended reserve obligations.

Issues raised by submitters

3.7.2 One submitter expressed the view that, to ensure an efficient outcome, the development of the initial TRS and SM should be iterative.

3.7.3 Several submitters suggested that the selection process include a number of 'trial' or 'dummy' selection runs after the SM is finalised but before the actual selection process is undertaken. This would help participants understand the kind of inputs required and the outcomes. They would gain experience of the process before the ERM finalises the results.

3.7.4 A submitter asked why a full selection process would not be undertaken every year, rather than every five years, saying *"having developed the algorithm and obtained the data from various parties, it should be simple enough to request lines companies for a notification of 'any changes', and rerun the model on an annual basis"*.

3.7.5 Each asset owner must prepare its own implementation plan. The plan must specify how the asset owner will implement the extended reserve obligations in the procurement notice from the ERM. The system operator approves the implementation plan, but can first request that asset owners make changes to the plan.

3.7.6 One submitter expressed the view that the ERM or the system operator is in the best place to draft an implementation plan,¹⁴ noting that the role requires oversight of the actions of all asset owners.

¹⁴ The submitter used the term 'transition plan' in the submission, but the Authority assumes 'implementation plan' was intended as this is the term used in the drafting clause the submitters refers to.

Authority response

- 3.7.7 The Authority considers that the processes set out in the Code allow it to adopt an iterative approach. It intends to develop the TRS, SM and selection tool in parallel, working closely with the system operator and asset owners.
- 3.7.8 The Authority sees merit in the suggestion the selection process include a number of 'trial' or 'dummy' selection runs before the actual selection process is undertaken. It considers that the amendment already allows the ERM to carry out one or more trial runs in the lead up to a selection process. However, the Authority will leave this decision up to the ERM.
- 3.7.9 The requirement to undertake a full selection at least every five years balances the desire for stability with the need to reflect changes in system configuration, policies, and technology over time. It also notes that the Code allows a full selection more frequently than every five years, and that the Authority can direct the ERM to carry out a partial selection process.
- 3.7.10 The Authority acknowledges the need for co-ordination, and considers that the process proposed in the Code allows for this.¹⁵ The system operator will consider all the implementation plans, and can request changes to individual implementation plans if required.
- 3.7.11 The Authority remains of the view that the party who has the best information about the implementation plan, and who it most affects, should develop it in the first instance. That party is the asset owner concerned.

Authority decision

- 3.7.12 The Authority has amended the Code drafting to clarify the processes for developing the SM. In particular, the Authority can ask the ERM to amend the SM as it is developed, and again after the ERM produces the first draft procurement schedule.
- 3.7.13 The proposed drafting now specifically provides (new text underlined):
- (a) if the Authority declines the SM submitted by the ERM following consultation, the Authority may either:
 - (i) publish the changes it wishes the ERM to make (which then triggers further consultation)

¹⁵ Clause 8.54M

- (ii) or require the ERM to prepare a new draft methodology
- (b) if the Authority declines the procurement schedule submitted by the ERM after undertaking the selection process and consulting on the draft procurement schedule that results, the Authority may either:
 - (i) publish the changes it wishes the ERM to make (which then triggers further consultation)
 - (ii) or require the ERM to prepare a new draft procurement schedule.

3.7.14 The Code also now includes an obligation on the ERM to publish an indicative timeframe for completing the selection process.

3.7.15 In response to submissions, the Authority has altered the draft amendment so that it will be required to:

- (a) notify the system operator of any proposed technical and non-controversial changes to the SM proposed by the ERM.
- (b) notify the system operator (as well as the ERM) of a decision to approve or decline the SM or procurement schedule, including any drafts of those two documents.

3.8 Compensation and allocating costs

3.8.1 The Authority considered whether the regime should compensate providers and, if so, how to allocate costs to recover compensation payments.

3.8.2 The Authority concluded that a compensation regime was likely to deliver the greatest net benefit. It has provided for a flexible framework that allows a variety of compensation regimes, or no compensation regime at all. If there is a compensation regime, then a beneficiaries-pay approach to recovering the costs of such compensation payments would deliver the greatest net benefits.

3.8.3 The framework provides that:

- (a) the compensation regime is set out in the SM, not in the Code. The SM is developed after consulting with industry participants and is approved by the Authority

- (b) although the Code does not prescribe the compensation regime,¹⁶ it prescribes the process to recover the costs of compensation payments, if there are any
- (c) the basis for allocating costs is the same as for recovering ancillary service costs and will not vary according to the content of the SM.

Submitters' views

- 3.8.4 Submitters raised two substantive issues with the Authority's proposed payments and compensation mechanism:
- (a) some argue that the payments should be based on an exacerbators-pay approach rather than a beneficiaries-pay approach
 - (b) others are concerned that the benefits of the compensation and payments system may not be sufficient to justify the cost.
- 3.8.5 Other issues raised in relation to the compensation and cost allocation regime are set out in Appendix 1.

Authority response

Cost allocation regime

- 3.8.6 Either a beneficiary or exacerbator approach could be taken in allocating the costs of extended reserve. The beneficiaries-pay approach was chosen because:
- (a) there would be significant costs arising from an exacerbators-pay approach and very little (if any) benefit
 - (b) there would be some potential risk of unintended economic cost and a risk of misaligned incentives for direct users to provide accurate estimates of their VoLL costs.
- 3.8.7 The matters raised in submissions do not change this conclusion.
- 3.8.8 Extended reserves are the last line of protection before system collapse. They cover very low probability and highly unpredictable risks such as simultaneous multiple failures, natural disasters, cascade tripping as a result of unpredictable network effects, which are beyond any individual company's control. These risks have such a low probability that it is not

¹⁶ In response to submissions, the Authority has made minor amendments to the Code to make this even clearer.

economic to protect against them by having stand-by generation reserves and/or duplicate facilities. Extended reserves are there to provide controlled partial load shedding in these rare events rather than incur the much higher cost of full system collapse.

- 3.8.9 In the consultation paper the Authority concluded that an exacerbators-pay approach would not likely affect either:
- (a) the level of AUFLS required
 - (b) the frequency of AUFLS events.
- 3.8.10 Submitters have not directly challenged these conclusions but some point out that there might possibly be an impact, and the benefit of this would be lost if a beneficiaries-pay approach is taken.
- 3.8.11 Some submitters have argued that a “causer” event charge would be required for there to be any significant chance of an exacerbators-pay approach impacting (a) or (b). The Authority considers the indirect costs of having such an event charge would be certain and relatively high. There would be some cost to design and setup a methodology to apportion “cause” in an event.
- 3.8.12 Although AUFLS events are rare, the costs per event could be very high. For example although the expected cost might be around \$5m once in five years, it is possible for cost in an extreme event to be as high as \$55m. With this amount at stake, potential “causers” would each have to take out insurance. The cost of duplicate levels of insurance required is likely to be high.
- 3.8.13 Further, legal and other costs arising from disputes over the assignment of “cause” could easily be up to 5-10% of the amounts involved (\$0.3m to \$0.5m every five years on average, or up to \$1m in the case of a \$55m event). Most of these extra costs will flow through to customers in the long run.
- 3.8.14 In addition, there is the risk of unintended economic costs in terms of creating perverse incentives on owners of supply assets to inefficiently withdraw capacity. Some submitters argue that this risk is no longer significant, however the Authority notes that this has occurred in the past and could recur in the future.
- 3.8.15 Finally, by adopting a beneficiaries-pay cost allocation, there is an additional benefit from aligning incentives for direct connect customers to provide realistic estimates of their own VoLL costs without the need for heavy handed administrative approaches such as audits. One submitter

argues that these costs would be minimal, however experience with the AUFLS exemptions in the past indicates that these costs can be material.

- 3.8.16 One submitter included in its submission advice it sought from NZIER on the Authority's proposed cost allocation regime. NZIER has argued for 50:50 availability and event charge because the CBA identified 50% of the total benefits arise from non-excludable system security benefits.
- 3.8.17 However, 100% of the benefits identified in the CBA (system security and other economic benefits) relate to better targeted and more efficient extended reserve procurement and not to the assumed risk of AUFLS events. In that sense, all of the assessed benefit is a non-excludable system benefit, not related to the incidence of AUFLS events.
- 3.8.18 On balance, the Authority remains of the view that the potential benefits from a possible (but unlikely) reduction in the incidence of AUFLS events arising from an exacerbators-pay cost allocation are outweighed by:
- (a) the certain and significant costs (including setup costs, duplicate insurance costs and "causer" dispute costs)
 - (b) the possible risk of unintended effects
 - (c) the loss of aligned incentives for direct connects in regard to self-reporting of their expected VoLL costs.

Cost-benefit assessment of including a compensation regime

- 3.8.19 The Authority's CBA indicates a small \$4m NPV benefit relative to the option without compensation. The Authority considers that there were no additional substantive issues raised with the cost benefit analysis that would change the ranking of options at this stage.
- 3.8.20 The Authority acknowledges, however, the concerns expressed by some submitters that the benefits of including a compensation regime may not outweigh the costs.
- 3.8.21 The compensation mechanism is not enshrined in the Code itself, but in the SM. The Authority consults with industry before it approves the SM. The proposed framework enables a range of different compensation regimes, including no compensation.
- 3.8.22 The SM is still in development and will be the subject of comprehensive industry consultation later this year. This will provide further opportunity for stakeholders to provide their views on the appropriate compensation regime.

Authority decision

3.8.23 The Authority has decided that including a compensation regime remains its preferred approach as it will likely have the greater net benefits relative to options without compensation. It has, however, amended the proposed Code amendment to clarify that it can accommodate a variety of compensation regimes, including no compensation.

3.8.24 For the reasons outlined above, the Authority remains of the view that:

- (a) the SM is the appropriate mechanism for developing and consulting on the appropriate compensation regime
- (b) a beneficiaries-pay approach delivers the greatest net benefits.

3.9 Implications of the Commerce Commission regime

3.9.1 One of the issues addressed in the consultation paper was how the proposed compensation payments mechanism would be treated under the Commerce Commission's regime for regulation of lines companies.

3.9.2 Paragraph 5.8.5 of the consultation paper set out the following proposed approach in relation to the treatment of costs and compensation payment revenues relating to AUFLS:

...the Authority believes that the following approach could achieve the desired outcomes for all parties in a pragmatic manner:

- (a) *costs incurred in the provision of network assets used to provide AUFLS would not have any special treatment under the Part 4 regime.*
- (b) *compensation payments will distinguish between:*
 - (i) *compensation for expected customer interruption costs*
 - (ii) *compensation for provision of assets to provide standard AUFLS services. These will be based on the costs of providing such assets; and*
 - (iii) *payments for provision of assets to provide enhanced AUFLS services. These payments will be based in part on the extra system security value that such services provide.*
- (c) *payments could then be treated differently under the Part 4 regime, with some being 'regulated' and some being 'unregulated':*
 - (i) *compensation payments for expected interruption costs and standard AUFLS services could be treated as regulated*

revenue under the price control regime. This would appear appropriate for interruption cost compensation as it is the customers incurring such costs, not the lines company's shareholders. Similarly, it would be appropriate for provision of assets to provide standard AUFLS services as it will be in relation to costs which will have already been recovered through the 'standard' approach to cost recovery under the Part 4 regime...

- (ii) payments for enhanced AUFLS services would be excluded from determination of price caps – i.e. it would be effectively 'unregulated'.*

Submitters' views

- 3.9.3 Some submitters were broadly supportive of the proposed approach. Under that approach, compensation payments would likely incentivise enhanced AUFLS provision. The payment mechanism could be implemented in a way which was consistent with the Commerce Commission's Part 4 regime.
- 3.9.4 Others expressed reservations about particular aspects of how the compensation payments mechanism would interact with the Commerce Commission's Part 4 regime, with some being completely opposed to compensation payments in principle.
- 3.9.5 All the reservations related to the practicalities of implementing a compensation payments mechanism. As noted earlier, this will be finalised as part of the SM which will be the subject of further design and dialogue with stakeholders, and a formal consultation process.
- 3.9.6 Some submitters were concerned that lines companies would be required to pass through compensation payments only to customers that connected to AUFLS feeders, and exclude those that were not. They raised the concern that this would be very impractical and costly to implement from a billing perspective.
- 3.9.7 Some submitters said they will not know what AUFLS costs they will incur, or compensation payments they will receive, by the time they need to set their prices on 30 November. This means distributors will need to forecast such costs and payments, thereby raising the risk of breaching their Part 4 price paths if they get such forecasts wrong.
- 3.9.8 To address this issue, some submitters proposed mechanisms to ensure that AUFLS payments do not pose price-path compliance risks for distributors, such as:

- (a) having payments be passed through on a lagged basis
 - (b) having a wash-up mechanism.
- 3.9.9 The consultation paper noted that some assets used to provide AUFLS would also provide other network services. This would raise difficulties in terms of notionally splitting cost recovery for the asset between regulated and unregulated revenues. Accordingly, the proposal adopted a simplified approach to cost and revenue allocation.
- 3.9.10 One lines company agreed with this approach, but considered that the transaction costs would outweigh the benefits of the compensation payments mechanism.
- 3.9.11 Another lines company took the opposite view and suggested that the Authority *“consider utilising the existing cost allocation mechanisms, under the Commission’s Input Methodology regulation (as discussed at the Authority’s workshop). In our view, the existing mechanisms would help address this issue and allow the Authority to apply regulated and unregulated compensation calculations to shared assets.”*
- 3.9.12 One submitter raised a number of questions about whether the proposed AUFLS payments mechanism and treatment under the Part 4 regime were consistent with each other. They wanted to ensure there was no over-compensation for lines companies that provided AUFLS services.

Authority response

- 3.9.13 The Authority agrees that requiring lines companies to compensate only those customers connected to AUFLS feeders would be very impractical.
- 3.9.14 The Authority considers that any compensation payment should be passed through *in aggregate* to end consumers so as to reduce the charge for all consumers in a network area, irrespective of whether they are connected to an AUFLS feeder or not.
- 3.9.15 Although this will strictly ‘under-compensate’ some consumers who are on AUFLS feeders and over-compensate those who are not, the approach is considered to deliver the greatest net benefit. This is because the Authority estimates that the costs of implementing an ICP-specific compensation pass-through approach would significantly outweigh any benefits.

- 3.9.16 Further, this approach is consistent with many other aspects of the provision of network services which recognise that transaction costs prevent the implementing of truly ICP-specific charges to end consumers.¹⁷
- 3.9.17 The Authority understands the Commerce Commission also believes this approach would be appropriate.
- 3.9.18 The Authority notes the price path compliance risk raised by some submitters is for the Commerce Commission to address, and it is not in a position to comment on whatever option would likely be most appropriate.
- 3.9.19 The Authority notes, however, that the Commission has indicated it is considering such issues and intends to finalise its approach in time to implement it by 28 November. The Authority will provide whatever information the Commission may require, including, for example, estimates of the likely magnitude of costs and payments.
- 3.9.20 The Authority has decided not to alter its approach due to the difficulties associated with splitting asset cost recovery between regulated and non-regulated activities. The Authority has not seen any information that suggests that its proposed approach does not strike the right balance between providing incentives for enhanced AUFLS services without incurring excessive transaction costs.
- 3.9.21 However, the Authority will take account of these comments as it continues to:
- (a) engage with industry as it finalises the SM
 - (b) work with the Commerce Commission as it finalises its proposed treatment of AUFLS payments under its Input Methodologies.
- 3.9.22 The Authority does not believe that the proposed AUFLS payments mechanism and treatment under part 4 would likely lead to over-compensation. Nonetheless, the Authority will consider the issue as it continues to finalise the proposed AUFLS payments mechanism, and work with the Commission on its proposed approach to dealing with AUFLS payments under the input methodologies.

¹⁷ For example, it is likely that the costs of providing network assets to a semi-rural residential consumer are very different to the costs incurred in providing network assets to someone living in a city. However, in the vast majority of cases, lines companies do not distinguish between these two different types of customers for charging purposes.

Authority decision

- 3.9.23 None of the Commerce Commission regime-related concerns related to the proposed Code amendments.
- 3.9.24 Accordingly, on the specific issue of interaction with the Commerce Commission's Part 4 regime, the Authority does not believe any changes to the proposed Code are required.

3.10 Interface with interruptible load, rolling outages, and other forms of demand response

- 3.10.1 The previous consultation papers highlighted the problems with the current common AUFLS obligation procurement approach, namely:
- (a) potentially preventing load being assigned to more valuable uses (for example IL in the IR market)
 - (b) poor visibility of how much load is assigned to these other uses, introducing significant uncertainty as to how much load is actually available for AUFLS
 - (c) inconsistent approaches between assigning feeders for AUFLS and assigning them for rolling outages.
- 3.10.2 The approach proposed in the consultation paper was to:
- (a) take into account the extent to which load would be assigned for IL or other demand response purposes in the SM
 - (b) improve the information reporting requirements for parties offering IL
 - (c) improve guidance on how parties should assign feeders to rolling outages in a way which is consistent with their AUFLS requirements.

Submitters' views

- 3.10.3 Notwithstanding some submitters' general concerns about aspects of the draft SM, all submitters were supportive of the intent of the proposed approach, and were particularly supportive of the initiatives to:
- (a) improve the visibility of the amount of load offered for IL and other uses
 - (b) improve the coordination of AUFLS and rolling outages.

- 3.10.4 One submitter supported the Authority's proposal to amend the Code to require ancillary service agents to provide information about IL to distributors, but suggested changes to the drafting to include:
- (a) more detail on the information to be provided, i.e. *"information that is sufficient to allow distributors to determine the impact of the [IL] contract on the feeder load"*
 - (b) a timeframe for providing it.
- 3.10.5 A couple of submitters made relatively detailed suggestions relating to these two aspects, including:
- (a) moving to greater real-time coordination and monitoring of IL and AUFLS requirements
 - (b) specific approaches to achieving consistency between AUFLS and rolling outages, including through consideration of load behaviour during rolling outage events.

Authority response

- 3.10.6 The Authority welcomes the detailed suggestions put forward by submitters relating to improving coordination between AUFLS, IL and rolling outages.
- 3.10.7 It notes, however, that these are all issues relating to the specifics of the SM which, as noted earlier in this paper, will be the subject of further design and dialogue with stakeholders before it is finalised.
- 3.10.8 The Authority also notes that the issues raised are generic to all potential selection methodology approaches, and will require careful consideration of trade-offs between:
- (a) improved accuracy in terms of 'fine-tuning' AUFLS versus IL versus rolling outage load
 - (b) increased transaction costs associated with the complexity of arrangements required to deliver such fine-tuning.
- 3.10.9 The Authority also notes that some improvements to enhanced visibility of IL could be achieved through changes to the way IL is metered, by shifting to resolution much greater than the current six second requirement.
- 3.10.10 With one exception (discussed below), none of the issues raised relate to the proposed Code amendments. Therefore the Authority does not believe any changes to the proposed Code are required.

- 3.10.11 The exception is the suggestion by one submitter to include more detail in the Code on the IL information ancillary service agents would be required to provide to distributors and the timeframe for providing it. The Authority acknowledges the points raised, and has amended the drafting.

Authority decision

- 3.10.12 Issues relating to the specifics of the SM will be the subject of further design and dialogue with stakeholders before it is finalised. The Authority therefore has not amended the Code in that regard.
- 3.10.13 As for the information that ancillary service agents are required to provide, the Authority has amended the drafting in response so that:
- (a) each ancillary service agent that contracts for IL in a network must provide the relevant distributor or grid owner the following information:
 - (i) a list of the ICPs to which the contract relates
 - (ii) the maximum MW that can be interrupted under the contract
 - (iii) the commencement and expiry dates of the contract.
 - (b) the ancillary service agent must provide the information within 10 business days of entering the contract
 - (c) the relevant distributor or grid owner may require the ancillary service agent to provide further information about the IL to which the contract relates.

3.11 Publishing key documents

- 3.11.1 Under the proposed new arrangements, four key documents will be published:
- (a) the system operator publishes the TRS which sets out the technical requirements for extended reserves
 - (b) the ERM publishes the SM, setting out how extended reserves will be procured
 - (c) the ERM publishes the extended reserves procurement schedule which sets out the results of the procurement process
 - (d) the system operator publishes the extended reserves schedule which details the obligations of extended reserves providers.
- 3.11.2 As set out in the consultation paper, the Authority considers that publishing these four documents will:

- (a) bring a greater degree of transparency to the process for specifying and procuring AUFLS
- (b) mean that more detail about the obligations of each provider are publically available.

Submitters' views

- 3.11.3 Most submitters appeared to support the principle of transparency in general, and publication of these four documents in particular. Some did not comment on this aspect of the proposal.
- 3.11.4 One submitter noted the need for the design of the publication regime needed to recognise that *"disclosure requirements and publication must be constructed in a manner that does not put consumers' commercially sensitive information into the public arena and does not expose communities to potential security risks."*
- 3.11.5 Another submitter, as well as expressing concerns about publishing sensitive information, considered that information should be available to consumers in a manner they can understand and use. The submitter suggested that, as a minimum, a *"public version" of the extended reserves schedule ought to be published, where any sensitive information can be omitted and information can be presented in a "user-friendly" form for interested parties."*
- 3.11.6 The submitter also suggests the Authority engage with stakeholders to determine what information should and should not be included in the "public version".
- 3.11.7 Another submitter suggested the publication requirements should go further, and include a Code requirement that *"the published extended reserves schedule include details of payments to be paid to individual providers of extended reserves and on a monthly basis the system operator report details of actual payments"*.

Authority response

- 3.11.8 The Authority continues to hold the view that publishing these four documents will:
 - (a) bring a greater degree of transparency to the process for specifying and procuring AUFLS
 - (b) mean that more detail about the obligations of each provider is publically available.

- 3.11.9 The Authority acknowledges the concerns expressed by some about commercial sensitivity of information. The Authority also notes that the suggestion by one submitter to include details of payments for individual providers is at odds with other submitters' concerns about publishing sensitive information. A balance is therefore required.
- 3.11.10 The Authority considers it would be prudent to include a provision in the Code to address concerns about commercially sensitive information. It notes that a comparable provision is included in section 9(2)(b)(ii) of the Official Information Act, and has drawn on the wording of that provision.
- 3.11.11 The Authority also acknowledges the suggestion for a version of the extended reserve schedule that presents the information in a 'user-friendly' form for interested parties. The Code would not preclude publishing an alternative version of the extended reserve schedule in addition to publishing the actual document as required by the Code.

Authority decision

- 3.11.12 The Authority confirms that Code will require the TRS, SM, extended reserve procurement schedule and extended reserve schedule to be published.
- 3.11.13 The Authority has added a provision to clarify that, when publishing the extended reserve procurement schedule or the extended reserve schedule, the ERM/system operator is not required *"to publish any information the publication of which would be likely unreasonably to prejudice the commercial position of the person who supplied or who is the subject of the information"*.

3.12 Equivalence and dispensation arrangements

- 3.12.1 The consultation paper discussed equivalence and dispensation arrangements for extended reserve procurement. The Authority concluded that the equivalence regime should still apply to extended reserve, but that extended reserve would be excluded from the dispensation regime.

Submitters' views

- 3.12.2 Of those submitters that responded on this point, all supported the Authority's proposal.

- 3.12.3 One submitter did note that the dispensation regime should still apply for extended reserve obligations in the South Island until new procurement arrangements take effect.

Authority response

- 3.12.4 The Authority notes the strong support, and concurs that the dispensation regime should continue in the South Island until new procurement arrangements take effect.

Authority decision

- 3.12.5 The Authority has decided that:
- (a) the equivalence regime will continue to apply to extended reserves once the new procurement arrangements come into effect
 - (b) extended reserves are to be excluded from the dispensation regime once the new procurement arrangements take effect in the relevant island
 - (c) dispensations will still be available in respect of the South Island during the transitional period.

3.13 Other drafting matters

- 3.13.1 Submitters raised a number of other drafting matters, and the Authority's consideration of these is set out here.

Obligations of extended reserve providers in security of supply situations

- 3.13.2 The Authority agrees with the concern raised in submissions that the Code should include provisions relating to AUFLS (now extended reserve) providers in security of supply situations.
- 3.13.3 The Authority has re-instated subclauses (10) to (16) of clause 7 of Technical Code B, and they now appear as clause 7C of the (amended) Technical Code B.

Assignment of extended reserve obligations

- 3.13.4 The proposed Code amendment allowed assets to be assigned in certain circumstances. An asset owner may look to this clause if it sells the assets used to provide extended reserves. Where that is the case, the

asset owner may apply to the Authority for approval to assign the extended reserve obligations related to those assets.

- 3.13.5 In response to a submission, the Code provision now includes a requirement on the Authority to consult with the system operator before giving approval to assign the obligations.

Authority's CBA

- 3.13.6 Some submitters queried aspects of the Authority's CBA set out in the consultation paper.
- 3.13.7 A submitter asked if the on-going costs took account of the capital costs of new relays required in future selection processes. In response, the Authority notes:
- (a) The most significant cost of new relays relates to the change from the existing scheme to the new 4 block scheme. This is accounted for in the implementation costs given in Table 5 of the consultation paper
 - (b) A cost allowance for changes to relay selection in future selection process is included in Table 6 of the consultation paper. This allowance assumes that most changes will involve resetting existing relays rather installation of new relays, as the selection methodology will not choose a feeder than would require a new relay unless there was a significant benefit.
- 3.13.8 Another submitter noted that the CBA did not account for prudential requirements that the clearing manager may impose. The Authority considers this is a cashflow timing issue and not material in ranking the options.
- 3.13.9 A submitter asked how the extra costs of managing with minimum and maximum tolerances (page 132, para (k) of the consultation paper) were used. In response, the Authority notes that these additional costs only apply under option 1(d) in Table 1 of the consultation paper. For all options 2 (2a, 2b, and 2c) the selection methodology can be used to achieve these objectives by choosing feeders (possibly with pre-programmed timers) without imposing on-going costs on distributors.
- 3.13.10 One submitter noted that the Authority had estimated a VoLL benefit before the VoLL values had been set. The Authority acknowledges this in the CBA. The estimate uses a reasonable illustrative range of VoLL values as set out in C.83 to C.86 of the consultation paper. This estimate depends on the level and variation in the assumed VoLL values. Table 12 of the consultation paper gives high and low estimates.

- 3.13.11 A submitter considers that the compliance costs of setting up data bases, dealing with receipts and payments and network changes are understated. In response, the Authority considers that the CBA explicitly allows for \$2.9m (in the North Island) for distributors to set up and modify databases, systems and initial information for compliance. It also allows for an on-going cost of \$0.6m/yr. These estimates are considered uncertain, but conservative. Even a 50% increase in these costs would not change the ranking of the options.

Compensation regime

- 3.13.12 Some submitters queried aspects of the proposed compensation regime set out in the consultation paper.
- 3.13.13 A submitter asked if VoLL was used as part of the proposed compensation mechanism. In response the Authority notes that the indicative example selection methodology outlined in Appendix E of the consultation paper does include a Demand Unit Interruption Payment as compensation for feeders selected for AUFLS. This is based on the expected interruption costs (aka VoLL) for each feeder and on the expected number of hours of interruption per annum (page 187 of the consultation paper).
- 3.13.14 Some submitters are concerned that the payment mechanism would require an allocation down to individual end-users. The Authority emphasises that the proposal does not require, or even envision, that allocating payments to end users, as the cost of doing this would outweigh the benefits. That said, it may be feasible to do this for a few major users that happen to be embedded with distribution networks.
- 3.13.15 Some submitters noted that they needed more information to comment on the mechanism. The Authority notes that it provided some illustrative assessments of the scale of the payments and compensation in the consultation material published in January 2014¹⁸ It will provide further information when it consults on the selection methodology.
- 3.13.16 A submitter is concerned that the payments would be based on peak MW, but the cost allocation is based on energy. In response the Authority notes that the indicative example selection methodology proposes that payments are based on relays and on the average MW (i.e. MWh/8760) of load on feeders. This is consistent with the MWh based cost allocation.

¹⁸ <http://www.ea.govt.nz/development/work-programme/wholesale/efficient-procurement-extended-reserves/consultations/#c7618>

Lines company liability

- 3.13.17 A submitter stressed the importance of the Authority ensuring that lines companies are not exposed to any liability:
- (a) to consumers and other participants for nominating consumers' load for possible selection and/or
 - (b) consumer load being shed through the actions of AUFLS relays whether in a genuine emergency or not.
- 3.13.18 In response, the Authority notes that section 131 of the Act deals with this. This exempts distributors and grid owners from liability for damages in relation to damage caused by, or arising from, an outage that resulted from the distributor or grid owner complying with the Code.

Communication to consumers in an AUFLS event

- 3.13.19 A submitter recommends that the Authority has a communication plan prepared for communicating with the public in the event of actual load-shedding of extended reserves.
- 3.13.20 In response, the Authority considers that this matter is for the system operator to address.

Appendix 1 Submission issues table

[Published separately due to its length]