

Proposed Code amendments relating to the system operator and alignment with the statutory objective

Decisions Paper

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1 The Authority has decided to amend the Code in relation to the system operator and alignment with the Authority's statutory objective

The Authority has consulted on the proposed Code amendments

- 1.1 On 8 December 2015, the Electricity Authority (Authority) published the consultation paper *Proposed Code amendments relating to the system operator and alignment with the statutory objective* (consultation paper).¹
- 1.2 The consultation paper proposed:
 - (a) to better give effect to section 8(3) of the Electricity Industry Act 2010 (Act), amendments to certain provisions in Parts 1, 3, 7, 8 and 13 of the Electricity Industry Participation Code 2010 (Code) that relate to the system operator
 - (b) a Code amendment to require market operation service providers (MOSPs) to assist the Authority to give effect to its statutory objective (statutory objective alignment requirement).
- 1.3 On 12 January 2016, the Authority published two changes to the wording of the proposed new clause 7.1A, relating to the reasonable and prudent system operator obligation. The Authority made these changes to better deliver the policy intention outlined in the consultation paper by:
 - (a) replacing the words "international best practice" with the words "international good practice"
 - (b) adding a new clause 7.1A(2) to clarify that the system operator cannot breach its principal performance obligations (PPOs), if the system operator has complied with the reasonable and prudent system operator standard (RPO requirement).

The proposed Code amendments relating to the system operator promote the Authority's statutory objective and better give effect to section 8(3) of the Act

- 1.4 The Authority's statutory objective under section 15 of the Act is to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.
- 1.5 Under section 8(3) of the Act, the Code must:
 - (a) specify the functions of the system operator

¹ A copy of this paper can be found on the Authority's website at:
<http://www.ea.govt.nz/development/work-programme/wholesale/system-operator-and-market-services-review/consultations/#c15673>

- (b) specify how the system operator is to perform its functions
 - (c) set requirements relating to transparency and performance.
- 1.6 The system operator performs a range of activities that can have a material impact on competition in, reliable supply by, and the efficient operation of the electricity market, such as real time system operation and security of supply monitoring and information provision. The Authority considers that the Code amendments promote the long-term benefit of consumers more effectively by:
- (a) more clearly specifying some of the system operator's functions
 - (b) clarifying how the system operator should perform its functions
 - (c) setting up-to-date requirements relating to the transparency of the system operator's activities and system operator performance.
- 1.7 Improved clarity of the system operator's functions and performance expectations, and the requirement for these to align with the statutory objective, should help to ensure that the system operator's decision-making is focussed on outcomes consistent with the Authority's statutory objective. The Authority also considers that these changes better give effect to the requirements of section 8(3) of the Act.
- 1.8 After considering the submissions on the proposed amendments, the Authority has decided to amend the relevant provisions relating to the system operator in Parts 1, 3, 7, 8 and 13 of the Code. The Authority has determined that the amendments will promote the reliability and efficiency limbs of its statutory objective, in particular, and better give effect to the requirements of section 8(3) of the Act.
- 1.9 As a consequence of certain points raised in submissions, the Authority has made several minor changes to the proposals the Authority consulted on. As outlined at section 3 of this paper, the Authority considers that these changes clarify how and when the amendments will operate. This added clarity will better promote the reliability and efficiency limbs of the statutory objective, and better give effect to the requirements of section 8(3) of the Act.
- 1.10 The Authority's decisions regarding each of these Code amendments relating to the system operator (including the changes to the proposals the Authority consulted on) are set out at section 3 of this paper. The drafting for these amendments is set out Appendix A.

The Authority has decided to require market operation service providers to assist the Authority to give effect to its statutory objective

- 1.11 The Authority has also decided it will add a new clause 3.2A to the Code, to make a statutory objective alignment requirement for MOSPs.
- 1.12 Section 16(1)(h) of the Act requires the Authority to contract for market operation services and system operator services. In order for the Authority to meet its statutory objective, MOSPs' services, Code obligations and contracts must be aligned to the objective.

- 1.13 The Authority considers that adding clause 3.2A to the Code will ensure that MOSPs perform their Code obligations in a way that is consistent with, and assists the Authority to give effect to, its statutory objective. Establishing this requirement through the Code is expected to result in more effective outcomes than establishing this requirement through contract alone, as the services to be delivered under the contracts are necessarily defined by the relevant Code obligations.
- 1.14 The Authority considers that without clause 3.2A, the Code would lack a clear framework within which MOSPs must perform their Code obligations. In the case of the system operator, the Authority would not properly comply with section 8(3) of the Act.
- 1.15 After considering submissions on the proposed statutory objective alignment requirement in the consultation paper, the Authority has decided to make one change to the wording of the proposal. As outlined at section 4 of this paper, this wording change will better reflect the fact that:
- (a) under section 8(3)(a) of the Act, it is the Code that specifies the system operator's functions
 - (b) the Code is the primary source of the other MOSPs' industry participant functions and obligations.
- 1.16 The Authority's decision regarding this Code amendment is set out at section 4 of this paper (including the wording change to the proposal the Authority consulted on). The drafting for this Code amendment is set out Appendix A.

The Code amendments are consistent with section 32(1) of the Act and the Code amendment principles, and the Authority has not changed the cost-benefit analysis set out in the consultation paper

- 1.17 The Authority has decided that the Code amendments relating to the system operator and the statutory objective alignment requirement meet the requirements of section 32(1) of the Act because these amendments are:
- (a) consistent with the statutory objective
 - (b) desirable to promote:
 - (i) competition in the electricity industry
 - (ii) the reliable supply of electricity to consumers
 - (iii) the efficient operation of the electricity industry
 - (iv) the performance by the Authority of its function of contracting for market operation services and system operator services under section 16(1)(h) of the Act.
- 1.18 The Code amendments are consistent with the Authority's Code amendment principles because they:
- (a) are lawful and promote the statutory objective
 - (b) will provide clearly identified efficiency gains

- (c) will enable positive net benefits based on the Authority's cost-benefit analysis in the regulatory statement at Appendix C of the consultation paper.
- 1.19 In addition to the minor changes (set out in section 3 of this paper) the Authority has made to the Code amendments following consultation, the Authority has also:
 - (a) provided for cross-references to the Code amendments in other parts of the Code
 - (b) corrected minor typographical errors in the wording of the proposed amendments outlined in the consultation paper.
- 1.20 The Authority considers that the cost-benefit analysis for the proposals set out in the consultation paper's regulatory statement is not affected by these changes.

2 The Authority has considered the submissions on the proposed Code amendments

- 2.1 The consultation period ran from 8 December 2015 until 10 February 2016.
- 2.2 The Authority received and considered submissions from:
- (a) Contact Energy Limited
 - (b) Genesis Energy Limited
 - (c) Major Electricity Users' Group
 - (d) Meridian Energy Limited
 - (e) Mighty River Power Limited
 - (f) Transpower New Zealand Limited.
- 2.3 This paper sets out the Authority's decisions having considered all of the submissions.
- 2.4 The common themes in the submissions were:
- (a) the proposed amendments relating to the system operator would better give effect to section 8(3) of the Act
 - (b) the reasonable and prudent system operator standard (RPO requirement) should apply to all of the system operator's Code obligations
 - (c) the proposed statutory objective alignment requirement will promote the statutory objective. However, the wording of the proposed requirement was unclear, and it was not clear how the Authority would enforce the proposed requirement.
- 2.5 Some submitters questioned how the proposed amendments relating to the system operator would operate and affect them. In particular:
- (a) some submitters expressed concern that extending clause 3.11 to apply to the system operator could result in the system operator disclosing a participant's information to the Authority that was subject to a confidentiality agreement between that participant and the system operator. Clause 3.11 would entitle the system operator, along with all other MOSPs, to disclose to the Authority all information they receive in providing services under the Code (except Parts 6 and 9 of the Code) and certain parts of the Act. The Authority considers that applying clause 3.11 to the system operator is unlikely to override confidentiality obligations in agreements between the system operator and participants. The reason is that, rather than establishing a mandatory requirement on the system operator to disclose information, clause 3.11 only entitles or permits information to be disclosed. The system operator must still consider its contractual obligations before releasing such information. This will include whether the information is legitimately protected under the terms of the confidentiality agreement. Clause 3.11 will not override common law and contractual confidentiality obligations that allow disclosure of confidential information only when required by law
 - (b) submitters differed on whether the proposed RPO requirement should require the system operator to carry out its role in accordance with international 'best' practice, rather than international 'good' practice as proposed in the consultation paper. After considering the submissions, the Authority remains of the view that

international 'good' practice better gives effect to the policy intent of clause 7.1A outlined in the consultation paper. The Authority likewise considers that:

- (i) international 'good' practice is consistent with the existing wording and the current standard in the Code
 - (ii) requiring international 'best' practice risked the system operator considering solutions that may be too costly for New Zealand
 - (c) some submitters were concerned that the proposal to revoke clauses 13.102(3) and (4) removed the rights of generators and purchasers to seek information from the system operator relating to matters it reported to the market administrator under clause 13.102 that could affect the settlement process. However, the published information relevant to clauses 13.102(3) and 13.102(4) relates only to any system operator Code breach that materially affected the relevant generator or purchaser, and not any other reported matters. The Authority remains of the view that revoking clause 13.102(3) and (4) will not affect the rights of generators and purchasers because:
 - (i) the Authority already publishes information relating to alleged Code breaches under investigation under regulation 17 of the Electricity Industry (Enforcement) Regulations 2010. The Authority also voluntarily publishes, after each Compliance Committee meeting (in its Compliance Update), summaries of Code breaches the Committee considered at the meeting
 - (ii) generators and purchasers have not used clause 13.102(3) and (4) to date
 - (iii) revoking clause 13.102(3) and (4) would not prevent generators and purchasers seeking such information from the system operator.
- 2.6 Submitters also suggested a number of drafting changes to the statutory objective alignment requirement proposed in the consultation paper under new clause 3.2A. Submitters considered the changes would clarify clause 3.2A and make it more enforceable.
- 2.7 Apart from the wording change outlined at section 4 of this paper, the Authority does not consider that the drafting changes proposed would materially clarify clause 3.2A or make it more enforceable. In addition to the statutory objective alignment requirement, the Authority will also rely on each of its service provider agreements to assist its oversight of MOSPs' alignment with the statutory objective.
- 2.8 Section 3 of this paper outlines:
- (a) the Authority's decisions on the Code amendments proposed in the consultation paper that relate to the system operator
 - (b) the changes the Authority has made to the Code amendments relating to the system operator from the proposals the Authority consulted on, along with the reasoning for these changes.
- 2.9 Section 4 outlines:
- (a) the Authority's decision on the statutory objective alignment requirement proposed in the consultation paper and the single change it has made to the wording of the statutory objective alignment requirement from the proposal the Authority consulted on, along with the reasoning for this change.

- 2.10 The Authority's consultation paper sets out the Authority's substantial discussion and reasoning for the Code amendments.²

3 The Authority has decided to adopt the proposed Code amendments relating to the system operator, including minor changes to the proposals consulted on

- 3.1 This section sets out:

- (a) the Authority's decisions on the Code amendments proposed in the consultation paper that relate to the system operator
- (b) the changes the Authority has made to the proposed amendments relating to the system operator from the Code amendment proposals the Authority consulted on, and the reasons for these changes.

Amendments proposed to Part 1 of the Code

- 3.2 The Authority has decided to proceed with the proposals in the consultation paper to:

- (a) revoke the definitions of "frequency time error" and "reasonable and prudent system operator" as the Code will incorporate the content of these definitions as new provisions in Part 7
- (b) simplify the content of the existing definition of "momentary fluctuations"
- (c) revise the definition of "principle performance obligations" to ensure its consistency with other changes to Part 7.

Changes made to the amendments to Part 1 from the proposals consulted on

- 3.3 The Authority has decided to adopt a simplified and clearer definition to replace the current definition of "momentary fluctuations" proposed in the consultation paper. The Authority has changed the term from "momentary fluctuation" to "frequency fluctuation".

- 3.4 Compared with "momentary fluctuation", the Authority considers that a "frequency fluctuation" more clearly shows that this defined term relates to a fluctuation in the power system's frequency. Changing the term to "frequency fluctuation" also better reflects that:

- (a) the previous definition of "momentary fluctuation" did not include any reference to the length of the fluctuation
- (b) fluctuations of momentary nature do not require system operator action.

- 3.5 The Authority is therefore replacing the definition of and all references to "momentary fluctuations" with the definition of and references to "frequency fluctuations".

² Supra footnote 1

Amendments proposed to Part 3 of the Code

- 3.6 The Authority has decided to proceed with the proposal in the consultation paper to amend clause 3.1(3) to apply clause 3.11 (disclosure to the Authority) and clause 3.12 (performance standards to be agreed) to the system operator.

Amendments proposed to Part 7 of the Code

- 3.7 The Authority has decided to proceed with the proposals in the consultation paper to:
- (a) revise clause 7.1 to reflect the amended content of Part 7
 - (b) insert an RPO requirement as new clause 7.1A that applies to all of the system operator's obligations under the Code
 - (c) replace and update the system operator's PPOs for common quality and dispatch under new clauses 7.2A to 7.2D
 - (d) simplify and clarify the system operator's security of supply and emergency management functions in clause 7.5
 - (e) better align the timing and content of the system operator's annual self-review of performance (under clause 7.11) with the Authority's own review of the system operator's performance (under clause 7.8).

Changes made to the amendments to Part 7 from the proposals consulted on

New clause 7.1A(1)

- 3.8 The RPO requirement under proposed new clause 7.1A(1) in the consultation paper would have required the system operator when performing its role to act as a reasonable and prudent system operator. The Authority has decided to adopt this new clause but revise its wording by replacing the word "role" with the words "obligations under this Code".
- 3.9 The Authority considers the revised wording "obligations under this Code" better reflects the fact that under section 8(3)(a) of the Act, it is the Code that specifies the system operator's functions.

New clause 7.1A(2)

- 3.10 New clause 7.1A(2) proposed in the consultation paper provided that the system operator would not breach a PPO (under new clauses 7.2A to 7.2D) if the system operator complies with the RPO requirement under new clause 7.1A(1). The Authority has decided to adopt new clause 7.1A(2) but also to extend it to include the system operator's obligation to restore normal operation of the power system under clause 8.5 of the Code³. New clause 7.1A(2) will therefore provide that the system operator does not

³ Clause 8.5 sets out the requirements on the system operator to restore normal operation of the power system as soon as possible following a disruption, including by having regard to specified priorities when doing so.

breach a PPO or clause 8.5 if the system operator complies with new clause 7.1A(1).

- 3.11 The reason for extending new clause 7.1A(2) to include clause 8.5 is that, like the PPOs, clause 8.5 previously included the wording “act as a **reasonable and prudent system operator**”. This wording qualified the requirement under clause 8.5 to restore normal operation of the power system by requiring the system operator to act as a reasonable and prudent system operator when doing so.
- 3.12 The consultation paper proposed removing this wording from all operative Code provisions that included it (including revoking the defined term “reasonable and prudent system operator”), and replacing it with the RPO requirement under new clause 7.1A(1) as a clause generally applicable to all the system operator’s obligations. The Authority does however intend to make it clear that the qualifications to obligations in the previous Code do remain in relation to the PPOs and also to restoration to normal power system operations under clause 8.5.
- 3.13 The consultation paper proposed new clause 7.1A(2) to provide that the system operator would not breach the PPOs if it complied with clause 7.1A(1). However, the new clause 7.1A(2) did not extend to include a reference to clause 8.5. The Authority has decided that extending clause 7.1A(2) to expressly include clause 8.5, as submitters have proposed, will transparently set out that when the system operator undertakes its obligations under clause 8.5, it will not breach clause 8.5’s obligations if it performs them in compliance with the RPO requirement.

New clause 7.2A

- 3.14 The consultation paper proposed a new clause 7.2A that provided for the system operator’s PPO to maintain frequency. The Authority has decided to adopt this new clause but to make minor changes to subclauses (1) and (5) to clarify when new clause 7.2A applies.

New clause 7.2D

- 3.15 The consultation paper proposed a new clause 7.2D that would allow participants to ask the system operator to investigate and take reasonable steps to resolve a security of supply or reliability problem arising from non-compliance with particular standards in the Connection Code. The Authority has decided to adopt new clause 7.2D but revise the wording of subclause (2) to:
- (a) provide that the requirements under subclause (2) only apply:
 - (i) if the system operator receives a reasonable request under subclause (1)
 - (ii) in respect of the grid assets made available to the system operator at the relevant time
 - (b) clarify that the requirements that the system operator identify the cause of and resolve a security of supply or reliability problem, only apply if there is such a problem.
- 3.16 The Authority considers that these changes clarify how clause 7.2D applies. The changes will also remove any scope to burden the system operator with requests under subclause (1) that are not reasonable or that do not relate to a security of supply or

reliability problem arising from non-compliance with the specified standards in the Connection Code.

- 3.17 The Authority also considers that the requirements on the system operator to identify the cause of, and resolve, a security of supply or reliability problem should be considered in respect of the assets made available to the system operator at the relevant time. This change makes clause 7.2D consistent with the current equivalent clause 7.2(c), which uses similar wording to ensure the system operator is not required to identify and resolve problems relating to grid assets not made available to the system operator at the time the problem is alleged to have arisen.

Amended clause 7.3

- 3.18 The Authority has decided to amend clause 7.3 as proposed in the consultation paper, but that it will remove the words “because of an **EMP departure situation**” from clause 7.3(6). The words are redundant because clause 7.3(6) already refers to “a departure under subclause (5)”, which can only be a departure caused by an EMP departure situation.

New clause 7.11(2)(f)

- 3.19 New clause 7.11(2)(f) proposed in the consultation paper required the system operator in its self-review to review its engagement with participants and consumers. As the system operator does not directly engage with consumers under the Code, the Authority has decided to adopt this new clause but limit it to cover engagement with participants only.

Amendments proposed to Part 8 of the Code

- 3.20 The Authority has decided to proceed with the proposals in the consultation paper to:
- (a) simplify certain provisions in Part 8 relating to the policy statement and align the wording of these provisions with the new clause 7.1A
 - (b) amend clause 8.11 to provide that the policy statement must include a new policy setting out how the system operator will manage any conflict of interest that may arise when the system operator performs its Code obligations
 - (c) amend Part 8 provisions for determining the causer of an under-frequency event by:
 - (i) under new clause 8.60(5), recreating an investigative role for the system operator to support the Authority to determine the causer of an under-frequency event
 - (ii) in clauses 8.61 to 8.63, replacing all references to “system operator” with references to “Authority”, making the Authority (as opposed to the system operator) responsible for determining the causer of an under-frequency event and the other associated obligations under these clauses
 - (d) revoking Schedule 8.4 because, apart from minor drafting changes, new clauses 7.2A(3) to 7.2A(7) reproduce the content of this Schedule.

Changes made to the amendments to Part 8 from the proposals consulted on

Amended clause 8.11(3)(c)

- 3.21 The Authority has decided to amend clause 8.11(3)(c) in the manner proposed in the consultation paper, but also remove the wording “must address the matters in, and must be prepared on the basis of, clause 8.8 and” from this clause. The Authority’s amendments to clause 8.8 result in the wording in clause 8.11(3)(c) (and clause 8.8 itself) no longer being relevant to clause 8.11(3)(c). The amendments at clause 8.8 remove a number of matters relating to the purpose of the policy statement and now simply require the system operator to comply with the policy statement subject to clause 8.14, which allows for specific departures.

Amended clause 8.60

- 3.22 The Authority has decided to amend clause 8.60 in the manner proposed in the consultation paper, but also to amend:
- (a) clause 8.60(1) to require the system operator to notify the Authority (in addition to the other participants listed under clause 8.60(1)) if an under-frequency event occurs
 - (b) clause 8.60(5) to require the system operator to provide the investigative report under clause 8.60(5) to the Authority within either:
 - (i) 40 business days of receiving the information; or
 - (ii) such longer period as may be agreed by the Authority.
- 3.23 Requiring the system operator to notify the Authority if an under-frequency event occurs is appropriate given the amendment to clause 8.61 to make the Authority the entity that decides:
- (a) whether the event was an under-frequency event
 - (b) if the event was an under-frequency event, whether a generator or grid owner caused the under-frequency event.
- 3.24 Enabling the system operator to agree a longer timeframe with the Authority to provide its investigative report under clause 8.60(5) allows for complexities that extend an investigation, for example, if there are multiple potential causers.

Amended clause 8.61

- 3.25 The Authority has decided to amend clause 8.61 in the manner proposed in the consultation paper, but also to add the wording “and, if so, the identity of the causer” after “grid owner” to clause 8.61(1).
- 3.26 This change ensures consistency between the description of the determination the Authority must make under clause 8.61(1) and the description of the draft determination the Authority must publish under clause 8.61(2).

Amendments proposed to Part 13 of the Code

- 3.27 The Authority has decided to proceed with the proposals in the consultation paper to:
- (a) replace clause 13.76(5) with a requirement that the system operator provide a copy of each dispatch instruction to the Authority one business day after issuing the dispatch instruction
 - (b) amend the system operator's reporting requirements under clause 13.102 to:
 - (i) revoke reporting requirements that are either duplicated in the Code or the Electricity Industry (Enforcement) Regulations 2010, or that are simply not used
 - (ii) to ease the administrative burden on the system operator, change from daily to monthly the frequency of the reporting requirements for instances in which the system operator takes discretionary action to deviate from its dispatch schedule.

4 The Authority has decided to adopt the proposed statutory objective alignment requirement, including one change to the wording of the proposal consulted on

- 4.1 This section sets out the Authority's decision on the statutory objective alignment requirement proposed as new clause 3.2A in the consultation paper.
- 4.2 The Authority has decided to adopt the statutory objective alignment requirement proposed in the consultation paper, with one change to the wording of the proposal in the consultation paper.
- 4.3 The statutory objective alignment requirement will:
- (a) require each MOSP to perform its obligations under the Code in a way that assists the Authority to give effect to its statutory objective
 - (b) require the system operator to take steps to progressively increase the extent to which, in performing its obligations under the Code, it assists the Authority to give effect to its statutory objective
 - (c) exempt the system operator from complying with the statutory objective alignment requirement when exercising discretion in real time in performing its functions
 - (d) provide that the statutory objective alignment requirement does not permit a MOSP to contravene any other provision in the Code.

Change made to the statutory objective alignment requirement from the proposal consulted on

- 4.4 The requirement under proposed new clause 3.2A(1) in the consultation paper would have required each MOSP to perform its role in a way that assisted the Authority to give effect to the Authority's statutory objective. The Authority has decided to revise the

wording of new clause 3.2A(1) by replacing the word “role” with the words “obligations under this Code”.

- 4.5 The Authority considers the revised wording “obligations under this Code” better reflects the fact that under section 8(3)(a) of the Act, it is the Code that specifies the system operator’s functions. The Authority further considers that the revised wording should apply to all other MOSPs to give effect to the policy intention, outlined in the consultation paper. The policy intention is that each MOSP will perform its Code functions and obligations in a way that assists the Authority to give effect to its statutory objective.

Appendix A: Draft strikethrough version of statutory objective alignment requirement and Code amendments relating to the system operator

- A.1 The drafting for the statutory objective alignment requirement and Code amendments relating to the system operator is set out below.
- A.2 The drafting that is in black strike-through or black underline shows the changes the Code amendments will make to the Code that the Authority proposed in the consultation paper and has decided to adopt. The drafting that is in red shows the changes the Authority will make to the Code having considering the submissions on the consultation paper.
- A.3 The drafting for new clause 7.1A that is in black with double-underline and double-strikethrough shows the revisions the Authority proposed for this new clause on 12 January 2016.

Code amendments relating to the system operator

Amendments to Part 1

~~frequency time error~~ means a deviation from ~~New Zealand standard time~~ caused by variations in system frequency

~~momentary- frequency fluctuations~~ means an ~~momentary~~ deviation in occurrence where the frequency of ~~electricity~~ deviates outside the ~~normal band~~ but is restored as soon as reasonably practicable. With respect to the frequency targets in clause 7(2)(b)(ii), the maximum and minimum frequency during a ~~momentary fluctuation~~ determine the frequency band in which the ~~momentary fluctuation~~ is recorded

~~principal performance obligations~~ and ~~PPOs~~ means ~~a the system operator~~ obligations ~~set out in any of clauses 7.2A to 7.2D~~

~~reasonable and prudent system operator~~ means exercising that degree of skill, diligence, prudence, foresight and economic management, as determined by good international practice and that would reasonably and ordinarily be expected from a skilled and experienced ~~system operator~~ engaged in the co-ordination of an integrated transmission network under the same or similar circumstances as applied in New Zealand at the time

Amendments to Part 3

3.1 Appointment of market operation service provider

...

- (3) The **system operator** is also a **market operation service provider**, but clauses 3.3, 3.10, 3.11, 3.12, and 3.15 do not apply to the **system operator**.

Amendments to Part 7

7.1 Contents of this Part

This Part provides for—

- (aa) a reasonable and prudent **system operator** standard; and
- (a) high level, output focussed performance obligations of the **system operator** in relation to the real time co-ordination and delivery of **common quality** and **dispatch**; and
- (b) the functions of the **system operator** in relation to **demand** and supply forecasting, security of supply, and supply emergencies; and
- (c) review of the **system operator's** performance under the **Act**, this Code, and the relevant **market operation service provider agreement**.

7.1A Reasonable and prudent system operator standard

- (1) The **system operator** must carry out its ~~role obligations under this Code~~ with skill, diligence, prudence, foresight, good economic management, and in accordance with recognised international ~~best~~ good practice, taking into account—
- (a) the circumstances in New Zealand; and
 - (b) the fact that real-time co-ordination of the power system involves complex judgements and inter-related events.
- (2) The **system operator** does not breach a **principal performance obligation** ~~or clause 8.5 of this Code if~~ the **system operator** complies with subclause (1).

7.2 Principal performance obligations of the system operator in relation to common quality and dispatch

The obligations in clauses 7.2A to 7.2D are **principal performance obligations**.

- (1) The **principal performance obligations** of the **system operator** are—
- (a) to act as a ~~reasonable and prudent system operator~~ with the objective of **dispatching assets** made available in a manner that avoids the cascade failure of **assets** resulting in the loss of **demand** and arising from—
 - (i) frequency or voltage excursions; or
 - (ii) **supply** and **demand** imbalances; and
 - (b) with regard to the frequency of **electricity**—
 - (i) subject to subparagraphs (ii) to (iv) and subclause (2), to act as a **reasonable and prudent system operator** with the objective of maintaining frequency in the **normal band** in accordance with Schedule 8.4, and
 - (ii) subject to subclause (2), to act as a **reasonable and prudent system operator** with the objective of ensuring that during **momentary fluctuations** frequency stays between 47 Hertz and 52 Hertz (both inclusive); and
 - (iii) subject to subclause (2), to act as a **reasonable and prudent system operator**

with the objective of ensuring that the aggregated rate of occurrence of **momentary fluctuations** experienced in the North and South Islands of New Zealand does not exceed the statistical equivalent of the following levels:

Frequency band (Hertz) (where “x” is the frequency during a momentary fluctuation)	Maximum number of occurrences by period (commencing on and from 1 March 2004)
52.00 > x ≥ 51.25	7 in any 12 month period
51.25 > x ≥ 50.50	50 in any 12 month period
49.50 ≥ x > 48.75	60 in any 12 month period
48.75 ≥ x > 48.00	6 in any 12 month period
48.00 ≥ x > 47.00	1 in any 60 month period

- (iv) ~~to act as a **reasonable and prudent system operator** with the objective of ensuring that when a fluctuation in frequency occurs, the frequency is restored to the **normal band** as soon as reasonably practicable having regard to all the circumstances surrounding the fluctuation; and~~
- (v) ~~to act as a **reasonable and prudent system operator** with the objective of ensuring **frequency time error** is not greater than 5 seconds of **New Zealand standard time**; and~~
- (vi) ~~to act as a **reasonable and prudent system operator** with the objective of ensuring that at least once every day the **frequency time error** is eliminated; and~~
- (c) ~~if reasonably requested by a **participant**, to identify the cause of the problem if the following standards are not being met at any **point of connection** to the **grid**, and take any action available to it under this Code, as reasonably requested of the **system operator** by a **participant**, and practicable given the **assets** made available to it to resolve the problem:~~
 - (i) ~~New Zealand Electrical Code of Practice (NZECP 36.1993) for harmonic levels, as amended from time to time;~~
 - (ii) ~~Australian Standard (AS2279.4 1991) for voltage flicker levels, as amended from time to time;~~
 - (iii) ~~the requirement to use reasonable endeavours to maintain **negative sequence voltage** at less than 1% and to ensure that **negative sequence voltage** will be no more than 2% in any part of the **grid**.~~
- (2) ~~The **principal performance obligations** in this clause are qualified as follows:~~
 - (a) ~~the frequency in the South Island may fall below 47 Hertz only if—~~
 - (i) ~~the statistical equivalent of 1 **momentary fluctuation** below 47 Hertz in any 60 month period is not exceeded; and~~
 - (ii) ~~the frequency does not fall below 45 Hertz:~~
 - (b) ~~the frequency in the South Island may exceed 52 Hertz only if—~~
 - (i) ~~the frequency does not exceed 55 Hertz; and~~
 - (ii) ~~the rate of **momentary fluctuations** experienced does not exceed the statistical~~

equivalent of the following levels:

Frequency band (Hertz) (where “x” is the frequency during a momentary fluctuation)	Maximum number of occurrences by period (commencing on and from 1 March 2004)
$55.00 > x \geq 53.75$	1 in any 60 month period
$53.75 > x \geq 52.00$	2 in any 12 month period

7.2A System operator to maintain frequency

- (1) The **system operator** must **dispatch assets** **made available** in a manner that avoids cascade failure of **assets** **resulting in a loss of electricity to consumers** arising from—
 - (a) a frequency or voltage excursion; or
 - (b) a **supply** and **demand** imbalance.
- (2) Except as provided in this clause and clause 7.2B, the **system operator** must maintain frequency in the **normal band**.
- (3) The **system operator** must ensure that the scheduling, pricing, and dispatch tool has the information necessary to schedule a minimum quantity of **instantaneous reserve**.
- (4) Subject to the availability of **offers** or **reserve offers**, the **system operator** must schedule sufficient **instantaneous reserve** to meet the **system operator's** obligations in subclauses (5) to (7).
- (5) During a contingent event, the **system operator** must ensure that, for the **island** in which the contingent event takes place—
 - (a) frequency remains at or above 48 Hertz; and
 - (b) frequency returns to or above 49.25 Hertz within 60 seconds **after** the contingent event.
- (6) During an extended contingent event in the North Island, the **system operator** must ensure that, for that **island**—
 - (a) frequency remains at or above 47 Hertz; and
 - (b) frequency does not drop to or below 47.1 Hertz for longer than 5 seconds; and
 - (c) frequency does not drop to or below 47.3 Hertz for longer than 20 seconds; and
 - (d) frequency returns to or above 49.25 Hertz within 60 seconds after the extended contingent event.
- (7) During an extended contingent event in the South Island, the **system operator** must ensure that, for that **island**—
 - (a) frequency remains at or above 45 Hertz; and
 - (b) frequency returns to or above 49.25 Hertz within 60 seconds after the extended contingent event.

7.2B System operator to restore frequency if **momentary-frequency fluctuation occurs**

If a **momentary-frequency** fluctuation occurs, the **system operator** must ensure that frequency is restored to the **normal band** as soon as reasonably practicable having regard to all circumstances surrounding the **momentary-frequency** fluctuation.

7.2C System operator to manage frequency time error

- (1) The **system operator** must ensure that any deviations from **New Zealand standard time** in the power system, caused by variations in system frequency, do not exceed 5 seconds.
- (2) At least once in each day, the **system operator** must eliminate from the power system any

deviations from **New Zealand standard time** caused by variations in system frequency.

7.2D System operator to identify and resolve problems

- (1) A **participant** may request that the **system operator** investigate and resolve a security of supply or reliability problem arising from non-compliance with a standard in clause 4.7, 4.8, or 4.9 of the **Connection Code**, at any **point of connection to the grid**.
- (2) If the **system operator** receives a **reasonable** request under subclause (1), the **system operator** **must, given the assets made available to it at the relevant time,—**
- (a) **identify whether there is a security of supply or reliability problem arising from non-compliance with a standard in clause 4.7, 4.8, or 4.9 of the Connection Code, at any point of connection to the grid; and**
- (b) **if there is such a problem—**
- (i) **identify the cause of the problem; and**
- (ii) **take all reasonable and practical steps to resolve the problem to the extent reasonable and practical.**

7.2E System operator to report on **momentary-frequency fluctuations**

- (1) By the 10th **working** day of each month, the **system operator** must report to the **Authority** the number of **momentary-frequency fluctuations** in each of the following frequency bands, in each **island** in the previous month:

Frequency band (Hertz) (where “x” is the maximum or minimum frequency during a momentary-frequency fluctuation)				
<u>52.00</u>	≥	<u>x</u>	≥	<u>51.25</u>
<u>51.25</u>	≥	<u>x</u>	≥	<u>50.50</u>
<u>49.50</u>	≥	<u>x</u>	≥	<u>48.75</u>
<u>48.75</u>	≥	<u>x</u>	≥	<u>48.00</u>
<u>48.00</u>	≥	<u>x</u>	≥	<u>47.00</u>

- (2) By the 10th **working** day of each month, the **system operator** must report to the **Authority** the number of **momentary-frequency fluctuations** in each of the following frequency bands, in the South Island in the previous month:

Frequency band (Hertz) (where “x” is the maximum or minimum frequency during a momentary-frequency fluctuation)				
<u>55.00</u>	≥	<u>x</u>	≥	<u>53.75</u>
<u>53.75</u>	≥	<u>x</u>	≥	<u>52.00</u>
<u>47.00</u>	≥	<u>x</u>	≥	<u>45.00</u>

7.3 Functions of the system operator in relation to security of supply and emergency management

- (1) ~~The functions of the system operator must in relation to the provision of information and short to medium term forecasting on all aspects of security of supply are—~~
- (a) ~~to~~ prepare and **publish** a **security of supply forecasting and information policy** that includes a requirement that the **system operator**—
 - (i) prepare and **publish** at least annually a security of supply assessment that contains detailed supply and demand forecasts for at least 5 years, which assists interested parties to assess whether the energy security of supply standard and the capacity security of supply standard set out in subclause (2) are likely to be met; and
 - (ii) consult with persons that the **system operator** thinks are representative of the interests of persons likely to be substantially affected by a security of supply assessment prepared under subparagraph (i) before **publishing** such an assessment; and
 - (iii) prepare and **publish** information that assists interested parties to monitor how hydro and thermal generating capacity, transmission assets, primary fuel, and **ancillary services** are being utilised to manage risks of shortage, including extended dry periods; and
 - (iv) **publish**, in connection with the information **published** under subparagraphs (i) and (iii), sufficient details of the modelling data, assumptions, and methodologies that the **system operator** has used to prepare that information as to allow interested parties to recreate that information (but without **publishing** information that is confidential to any **participant**); and
 - (b) ~~to~~ implement and comply with the **security of supply forecasting and information policy** prepared and **published** in accordance with paragraph (a).
- (2) For the purposes of subclause (1)(a)(i)—
- (a) the energy security of supply standard is a **winter energy margin** of 14-16% for New Zealand and a **winter energy margin** of 25.5-30% for the South Island; and
 - (b) the capacity security of supply standard is a **winter capacity margin** of 630-780 **MW** for the North Island.
- (2A) The **Authority** may **publicise** a security standards assumptions document.
- (2B) Subject to subclauses (2C) and (2D), if the **Authority** has **publicised** a security standards assumptions document under subclause (2A), the **system operator** must use the assumptions set out in that document in preparing a security of supply assessment under the **security of supply forecasting and information policy**.
- (2C) The **system operator** may use different assumptions from those in a security standards assumptions document to prepare a security of supply assessment if—
- (a) the **system operator** considers that there are good reasons to use different assumptions; and
 - (b) the **system operator** includes in the security of supply assessment—
 - (i) a detailed explanation of the assumptions used to prepare the security of supply assessment; and
 - (ii) a statement of reasons for using those assumptions instead of the assumptions **publicised** by the **Authority**; and

- (iii) a description of how the security of supply assessment prepared using those assumptions differs from a security of supply assessment prepared using the assumptions set out in the security standards assumptions document.
- (2D) Despite subclause (2C), the **system operator** is not required to include the information referred to in subclause (2C)(b) in a security of supply assessment if the **system operator** considers that it would have good reason to refuse to supply the information under clause 2.6.
- (3) ~~The functions of the system operator must in relation to managing supply emergencies are—~~
 - (a) ~~to prepare and~~ **publish** an **emergency management policy** that sets out the steps that the **system operator** must take, as a ~~reasonable and prudent system operator~~, and must encourage **participants** to take, at various stages during an extended emergency such as an extended dry sequence or an extended period of capacity inadequacy; and
 - (b) ~~within 2 years of this Code coming into force, to include in the~~ **emergency management policy** the steps that, at various stages in anticipation of and during a gas transmission failure or gas supply failure to **generators**, the **system operator** must—
 - (i) take as the a ~~reasonable and prudent system operator~~; and
 - (ii) encourage **participants** to take, including, if appropriate, steps for relevant **participants** to take in conjunction with gas industry entities; and
 - (iii) encourage relevant gas industry entities to take; and
 - (c) ~~to implement and comply with the~~ **emergency management policy** ~~prepared and published in accordance with paragraph (a).~~
- (4) The **emergency management policy** is not required to include information that is already set out in—
 - (a) the **system operator rolling outage plan** prepared under subpart 1 of Part 9; or
 - (b) the **policy statement**; or
 - (c) **Technical Code B** of Schedule 8.3.
- (5) The **system operator** may depart from the policies set out in an **emergency management policy** if an **EMP departure situation** arises and such departure is required to enable the **system operator** to comply with clause 7.1A(1) ~~act as a reasonable and prudent system operator~~.
- (6) If the **system operator** makes a departure under subclause (5) ~~because of an EMP departure situation~~, the **system operator** must provide a report to the **Authority** setting out the circumstances of the **EMP departure situation** and the actions taken to deal with it. The **Authority** must **publish** the report within a reasonable time of its receipt.

...

7.5 Approval of draft security of supply forecasting and information policy and emergency management policy

- (1) The **system operator** may submit to the **Authority** for approval a draft **security of supply forecasting and information policy** or a draft **emergency management policy** to replace an existing **security of supply forecasting and information policy** or **emergency management policy** as the case may be.
- (2) ~~The system operator must, within 1 year of this Code coming into effect, submit a draft emergency management policy to the Authority for approval.~~

- (3) In preparing the draft **security of supply forecasting and information policy** or the draft **emergency management policy**, the **system operator** must—
 - (a) consult with persons that the **system operator** thinks are representative of the interests of persons likely to be substantially affected by the policies; and
 - (b) consider submissions made on the policies.
- (4) The **system operator** must provide a copy of each submission received under subclause (3) to the **Authority**.
- (5) The **Authority** must, as soon as practicable after receiving the draft **security of supply forecasting and information policy** or the draft **emergency management policy**, by notice in writing to the **system operator**,—
 - (a) approve the relevant policy; or
 - (b) decline to approve the relevant policy.
- (6) If the **Authority** declines to approve the draft **security of supply forecasting and information policy** or the draft **emergency management policy**, the **Authority** must **publish** the changes that the **Authority** wishes the **system operator** to make to the relevant draft policy.
- (7) When the **Authority publishes** the changes that the **Authority** wishes the **system operator** to make to the relevant draft policy under subclause (6), the **Authority** must notify the **system operator** and interested parties of the date by which submissions on the changes must be received by the **Authority**.
- (8) Each submission on the changes to the draft policy must be made in writing to the **Authority** and be received on or before the date specified by the **Authority** under subclause (7). The **Authority** must provide a copy of each submission received to the **system operator** and must **publish** the submissions.
- (9) The **system operator** may make its own submission on the changes to the draft policy and the submissions received in relation to the changes. The **Authority** must **publish** the **system operator's** submission when it is received.
- (10) The **Authority** must consider the submissions made to it on the changes to the draft policy.
- (11) Following the consultation required by subclauses (7) to (10), the **Authority** may approve the draft policy subject to the changes that the **Authority** considers appropriate being made by the **system operator**.

...

7.8 Review of system operator

- (1) The **Authority** must review the performance of the **system operator** at least once in each **financial year**, after the **system operator** submits its self-review under clause 7.11.
- (2) The review must concentrate on the **system operator's** compliance with—
 - (a) its obligations under this Code and the **Act**; and
 - (b) the operation of this Code and the **Act**; and
 - (c) any performance standards agreed between the **system operator** and the **Authority**; and
 - (d) the provisions of the **system operator's market operation service provider agreement**.
- (3) The **Authority** must **publicise** a report on the performance of the **system operator** no later than 10 **business days** after the **Authority** completes its review.

7.9 Additional matters to be taken into account in system operator review

The **Authority** must take into account the following matters when conducting a review under clause 7.8:

- (a) the terms of the **system operator's market operation service provider agreement**;
- (b) ~~the~~ reports from the **system operator** to the **Authority**, including the **system operator's** self-review under clause 7.11:
- (c) the performance of the **system operator** over time in relation to this Part and Part 8;
- (d) the extent to which the acts or omissions of other persons have impacted on the performance of the **system operator** and the nature of the task being monitored;
- (e) reports or complaints from any person, and any responses by the **system operator** to such reports or complaints:
- (f) the fact that the real time co-ordination 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.

...

7.11 Review of performance of the system operator

- (1) No later than ~~31 August~~ ~~30 September~~ in each year, the **system operator** must submit to the **Authority** a review and assessment of its performance in the previous 12 month period ending ~~30 June~~ ~~31 August~~.
- (2) The self-review must contain such information as the **Authority** may reasonably require from time to time to enable the **Authority** to review the **system operator's** performance during the period in relation to the following: ~~in carrying out its functions with respect to—~~
 - (a) the **policy statement**;
 - (b) the **security of supply forecasting and information policy**;
 - (c) the **emergency management policy**;
 - (d) the joint development programme prepared under clause 7.7(1);
 - (e) the work programmes agreed with the **Authority** under the **system operator's** **market operation service provider agreement**:
 - (f) the **system operator's** engagement with **participants** ~~and consumers~~:
 - (g) delivery of the **system operator's** capital and business plans:
 - (h) the financial and operational performance of the **system operator**.
- (3) ~~The **Authority** must review and assess the performance of the **system operator** in the period to which the self-review relates having regard to the self-review and such other matters as the **Authority** considers relevant.~~
- (4) ~~The **Authority** must **publish** its review and assessment of the **system operator** no later than 10 **business days** after the **Authority** completes the review and assessment.~~

Amendments to Part 8

8.3 Recovery of costs from ~~causes~~**causers** of harmonic and voltage non-compliance

- (1) If the **system operator** is able to establish who is causing any departure from the standards referred to in clause 7.2~~D(4)(e)~~, the **system operator** must endeavour to recover its

reasonable identification and testing costs from that person. If the causer is a **participant**, the **participant** must pay those costs to the **system operator**.

...

8.5 Restoration

- (1) If an event disrupts the **system operator's** ability to comply with the **principal performance obligations**, the **system operator** must act as a **reasonable and prudent system operator** to re-establish normal operation of the power system as soon as possible, given—
 - (a) the capability of **generation, ancillary services**, and **extended reserve**; and
 - (b) the configuration and capacity of the **grid**; and
 - (c) the information made available by **asset owners**.
- (2) When re-establishing normal operation of the power system under subclause (1), the **system operator** must have regard to the following priorities:
 - (a) first, the safety of natural persons;
 - (b) second, the avoidance of damage to **assets**;
 - (c) third, the restoration of **offtake**;
 - (d) fourth, conformance with the **principal performance obligations**;
 - (e) fifth, full conformance with the **dispatch objective**.

8.8 System operator to comply with Purpose of policy statement

- (1) ~~Subject to clause 8.14, the **system operator** must comply with t~~The **policy statement** sets out policies and means that are considered appropriate during the term of the **policy statement** for the **system operator** to observe in complying with the **principal performance obligations**.
- (2) ~~Subclause (1) is subject to the obligation of the **system operator** to act as a **reasonable and prudent system operator** and to therefore depart from the **policy statement**.~~
- (3) ~~The **policy statement** allows the **system operator** to use its discretion in operational matters in accordance with clause 8.14.~~

8.11 Content of draft policy statement

- (1) *[Revoked]*
 - (2) *[Revoked]*
 - (3) The **draft policy statement** ~~must address the matters in, and must be prepared on the basis of, clause 8.8 and~~ must include—
 - (c) ~~a policy setting out how the **system operator** will manage the policies and means by which the **system operator** intends to address any conflict of interest that arises in the performance of its obligations under this Code; and~~
- ...

8.14 Departure from policy statement

- (1) The **system operator** may depart from the policies set out in a **policy statement** when a **system security situation** arises and such departure is required ~~in terms of the~~ for the **system operator** acting as a **reasonable and prudent system operator** to comply with clause 7.1A(1).
- (2) If the **system operator** departs from a **policy statement** under subclause (1) ~~because of a **system security situation**~~, the **system operator** must provide a report to the **Authority** setting out the circumstances of the **system security situation** and the actions taken to deal with it.

- (3) The **Authority** must **publicise** the report within a reasonable time after receiving it.

8.18 Contributions by purchasers to overall frequency management

Each **purchaser** must limit the magnitude of any instantaneous change in the **offtake** of **electricity** and net rate of change in **offtake** to the levels the **system operator** reasonably requires. In setting those requirements, the **system operator** must have regard to the impact of the **offtake** on the **system operator's** ability to comply with the **principal performance obligations** concerning frequency (as set out in clauses ~~7.2A to 7.2C(1)(b)~~) and the **dispatch objective**.

8.20 Contributions by grid owners to frequency support

Each **grid owner** must ensure that its **assets** are capable of being operated, and operate, within the frequency targets set out in clause ~~7.2A(1)(b)(ii) and, for South Island assets, clause 7.2(2)(b)~~.

8.27 System operator to monitor compliance

- (1) To the extent possible, given the information made available by **asset owners**, the **system operator** must monitor, in the manner set out in the **policy statement**, the ongoing compliance of **asset owners** with the **asset owner performance obligations** and the **technical codes**. To avoid doubt, the **system operator** has no monitoring obligations under this subpart other than those set out in the **policy statement**.
- (2) The **system operator** has ~~the~~ a discretion, ~~acting as a reasonable and prudent system operator,~~ to not **dispatch** an **asset** or configuration of **assets**, if it is not satisfied that the **assets** or configuration of **assets** comply with the relevant **asset owner performance obligations** or provisions of the **technical codes**, or that the **asset owner** has and is complying with a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**.
- (3) The **system operator** must immediately advise an **asset owner** if the **system operator** has reasonable grounds to believe that the **asset owner** is not complying with an **asset owner performance obligation, equivalence arrangement** or **dispensation**, and that the **asset owner**—
- (a) does not have a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**; or
 - (b) is not complying with a valid **equivalence arrangement** or **dispensation** from the relevant **asset owner performance obligations** or provisions of the **technical codes**.

8.31 Grant of dispensations

- (1) The **system operator** must grant a **dispensation** to an **asset owner** who has or will have **assets** or a configuration of **assets** that do not comply with either an **AOPO** or **technical code** if the **system operator** has a reasonable expectation that it can continue to operate the existing system and meet its **principal performance obligations** and if the **system operator** can readily quantify the costs on other persons of that **dispensation**, despite the non-compliance of the **assets**, but—
- (a) if the approval of a **dispensation** could impose readily identifiable and quantifiable costs on other persons, a condition of the **dispensation** must be that the **asset owner** is liable to pay the **system operator** for those costs, including the costs of the **system operator** purchasing any other **ancillary services** required as a consequence of its **dispensation**; and
 - (b) the **asset owner** must acknowledge that the granting of a **dispensation** does not

guarantee that the **system operator** will **dispatch** that **asset** for which the **dispensation** was granted, as **dispatch** will only occur in accordance with the **dispatch objective**; and

- (c) if the **dispensation** is a **generating unit dispensation** from clause 8.19(1) or (3), the **generator** must be allocated the following costs in a relevant **trading period** with respect to paragraph (a) for each of **fast instantaneous reserves** or **sustained instantaneous reserves**:

$$\text{DispCost}_{\text{GENxt}} = 0.5 * Q_{\text{GENxt}} * P_{\text{IRt}}$$

where

DispCost_{GENxt} is the cost payable by a **generator** for **generating unit x** in any **trading period t** in which a class of **instantaneous reserves** is procured as a direct result of that **generating unit's dispensation** to ensure that the frequency does not fall below 47 Hertz or, in the South Island, below the **minimum South Island frequency**
~~established in accordance with clause 7.2(2)~~

Q_{GENxt} is the **MW** amount by which **generating unit x** is unable to sustain pre-event output in **trading period t** with reference to clause 8.19(1) or (3) (as the case may be) as determined from the capabilities specified in that **generating unit's dispensation** (different amounts may be specified with respect to each class of **instantaneous reserves**)

P_{IRt} is the **final reserve price** for **fast instantaneous reserves** or **sustained instantaneous reserves** (as the case may be) in **trading period t** in the relevant **island**.

...

8.60 **System operator must investigate** ~~Process for determining causer of under-frequency event~~

- (1) The **system operator** must promptly notify ~~the Authority~~, every **generator**, ~~every~~ **grid owner**, and any other **participant** substantially affected by an **under-frequency event**, that an **under-frequency event** has occurred.
- (2) ~~The system operator~~ **system operator** may, by notice in writing to a ~~participant~~ **participant**, require a ~~participant~~ **participant** to provide information required by the ~~system operator~~ **system operator** for the purposes of this ~~rule~~ **clause**.
- (3) A notice given under subclause (2) must specify the information required by the ~~system operator~~ **system operator** and the date by which the information must be provided (which must not be earlier than 20 ~~business days~~ **business days** after the notice is given).
- (4) A **participant** who has received a notice under subclause (2) must provide the information required by the **system operator** by the date specified by the **system operator** in the notice.
- (5) Within 40 **business days** of receiving the information, ~~or such longer period as may be agreed by the Authority~~, the **system operator** must provide a report to the **Authority** that includes the following:

- (a) whether, in the **system operator's** view, the **under-frequency event** was caused by a **generator** or **grid owner**, and if so, the identity of the **causer**:
- (b) the reasons for the **system operator's** view:
- (c) all of the information the **system operator** considered in reaching its view.

8.61 ~~Authority to System operator must determine causer of under-frequency event~~

- (1) The ~~system operator~~ **Authority** must determine whether an **under-frequency event** has been caused by a **generator** or **grid owner** **and, if so, the identity of the **causer**.**
- (2) The ~~system operator~~ **Authority** must **publish** a draft determination that states whether the **under-frequency event** was caused by a **generator** or **grid owner** and, if so, the identity of the **causer**.
- (3) The ~~system operator~~ **Authority** must give reasons for its findings in the draft determination.
- (4) The **Authority** ~~system operator~~ must consult every **generator**, **grid owner** and other **participant** substantially affected by an **under-frequency event** in relation to the draft determination.
- (5) ~~At the time~~ When the ~~system operator~~ **Authority** **publishes** the draft determination under subclause (2), the ~~system operator~~ **Authority** must give notice to **generators**, **grid owners**, and other **participants** substantially affected by ~~an~~ the **under-frequency event** of the closing date for submissions on the draft determination.
- (6) The date referred to in subclause (5) must be no earlier than 10 **business days** after the date of **publication** of the draft determination.
- (7) The ~~system operator~~ **Authority** must **publish** submissions received under subclause (4) unless there is good reason for withholding information in a submission.
- (8) For the purposes of subclause (7), good reason for withholding information exists if there is good reason for withholding the information under the Official Information Act 1982.
- (9) Following the consultation under subclause (4), the ~~system operator~~ **Authority** must **publish** a final determination.

8.62 Disputes regarding **Authority ~~system operator~~ determinations**

- (1) ~~The **Authority** or a~~ A **participant** who is substantially affected by a determination may dispute the determination by referring the matter to the **Rulings Panel**.
- (2) A dispute is commenced by giving written notice to the **Rulings Panel** specifying the grounds of the dispute.
- (3) A notice under subclause (2) must be given within 10 business days after the determination is **published**.
- (4) The ~~system operator's~~ **Authority's** determination is suspended if a dispute is referred to the **Rulings Panel** within that time.
- (5) If a dispute is not referred to the **Rulings Panel** within that time, the determination is final.
- (6) If a dispute is referred to the **Rulings Panel**, the ~~system operator~~ **Authority** must provide the **Rulings Panel** with all information considered by the ~~system operator~~ **Authority** in making the determination.

8.63 Decision of the Rulings Panel

- (1) The **Rulings Panel** may—
 - (a) confirm the determination; or

- (b) amend the determination; or
 - (c) substitute its own determination; or
 - (d) refer the determination back to the ~~system operator~~ **Authority** with directions as to the particular matters that require reconsideration or amendment.
- (2) The ~~system operator's~~ **Authority's** determination has effect as confirmed, amended, or substituted by the **Rulings Panel** from the date of the **Rulings Panel's** decision.
 - (3) The **Rulings Panel** must give a copy of its decision to the ~~system operator~~ **Authority** as soon as reasonably practicable.
 - (4) The ~~system operator~~ **Authority** must **publish** the **Rulings Panel's** decision as soon as reasonably practicable.
 - (5) If the **Rulings Panel** refers the matter back to the ~~Authority-system operator~~, the ~~system operator~~ **Authority** must have regard to the **Rulings Panel's** directions under subclause (1)(d).

Technical Code A of Schedule 8.3

5 Specific requirements for generators

...

- (4) Each **generator** and **grid owner** must ensure that each of its **assets** is capable of operating under the voltage imbalance conditions stated in clause **4.9 of the Connection Code** ~~7.2(1)(c)(iii)~~ and, when operated within the limits stated in its **asset capability statement**, does not—
 - (a) contribute unbalanced phase currents into the **grid**; or
 - (b) aggravate any current imbalance that may occur on the **grid**.

Schedule 8.4 ~~cl 7.2~~

Reserve management objective

1—Reserve management objective

- (1) ~~The objective of the reserves management process is to provide the scheduling, pricing and dispatching tool (SPD) with the information necessary to permit the SPD to schedule a minimum quantity of **instantaneous reserve**.~~
- (2) ~~Simultaneously, but subject to the availability of sufficient **offers** or **reserve offers**, the process must satisfy the requirement that sufficient **instantaneous reserve** is scheduled to maintain the power system frequency of the North and the South Islands within the limits of the under frequency standard specified below.~~

2—Under frequency standard

- (1) ~~For a contingent event in any **island**, the frequency of the **island** where the event took place must—~~
 - (a) ~~stay at or above 48 Hz; and~~
 - (b) ~~return to or above 49.25 Hz within 60 seconds after the event.~~
- (2) ~~For an extended contingent event in the North Island the frequency must—~~
 - (a) ~~stay at or above 47 Hz; and~~
 - (b) ~~not drop to or below 47.1 Hz for longer than 5 seconds; and~~
 - (c) ~~not drop to or below 47.3 Hz for longer than 20 seconds; and~~
 - (d) ~~return to or above 49.25 Hz within 60 seconds after the event.~~
- (3) ~~For an extended contingent event in the South Island the frequency must—~~

- (a) ~~stay at or above 45 Hz; and~~
- (b) ~~return to or above 49.25 Hz within 60 seconds.~~

Amendments to Part 13

13.76 Dispatch instructions to be logged

- (1) The **system operator** must issue **dispatch instructions** using the electronic facilities specified in the **information system** to—
 - (a) each **generator**; and
 - (b) each **dispatchable load purchaser** that has submitted a **nominated dispatch bid**.
- (2) The **system operator** must use either voice communication or electronic communication (if such facility exists) to issue **dispatch instructions** to each **ancillary service agent**.
- (3) The **system operator** must log and record each **dispatch instruction**.
- (4) Each **generator** and each **ancillary service agent** must log each **dispatch instruction** received from the **system operator**.
- (5) ~~By 1600 hours on the 7th business day of each billing period, the **system operator** must provide to the **clearing manager** a copy of each **dispatch instruction** that the **system operator**—~~
 - ~~(a) issued during the previous **billing period**; and~~
 - ~~(b) has logged and recorded under subclause (3).~~
- (5) The **system operator** must provide a copy of each **dispatch instruction**—
 - (a) to the **clearing manager**, by 1600 hours on the 7th **business day** of the **billing period** after the **billing period** in which the **system operator** issues and logs the **dispatch instruction**; and
 - (b) to the **Authority**, by 1600 hours on the first **business day** after the day on which the **system operator** issues and logs the **dispatch instruction**.
- (6) For the purpose of subclause (5), if the **system operator** has issued more than 1 **dispatch instruction** for a **dispatch-capable load station** for the same **trading period**, the **system operator** must provide a copy of the latest **dispatch instruction**.

13.102 Reporting obligations of system operator

- (1) By the 10th **business day** of each calendar month, the **system operator** must inform the **Authority** in writing of any discretionary action the **system operator** has taken under clause 13.70, in the previous calendar month, that required departure from the **dispatch schedule**.
~~On each **trading day** the **system operator** must report to the **market administrator** in writing. The report must include—~~
 - ~~(a) information on any situations in relation to which the **system operator** believes, on reasonable grounds, that it or another **participant** has breached this Code, including—~~
 - ~~(i) the time at which the alleged breach took place; and~~
 - ~~(ii) the nature of the alleged breach and of any **participant** alleged to be in breach; and~~
 - ~~(iii) the reason for the alleged breach, if the **system operator** is aware of the reason, unless exceptional circumstances exist (in which case the report is to be provided as soon as reasonably practicable) the report must be provided on each **trading day** even if the **system operator** has no adjustments or alleged breaches of this Code to report; and~~

- (b) ~~details of any adjustment to the **non-response schedule** made by the **system operator** during the 48 trading periods beginning at 0700 hours of the previous **trading day**; and~~
- (c) ~~any situations in relation to which discretionary action under clause 13.70 required divergence from the **dispatch schedule** during any of the 48 **trading periods** beginning at 0700 hours of the previous **trading day**, during the previous month; and~~
- (d) ~~a summary of any **block security constraint** and **station security constraint** notices issued to **generators** in accordance with clauses 13.61(1), and 13.75(f) and (g) during the previous **trading day**.~~
- (2) ~~By the 15th business day of each calendar month, the **market administrator** must publish any sections of the reports of the **system operator** received in the previous calendar month under subclause (1)(a) that relate to breaches of this Code by the **system operator**. By the 15th business day of each calendar month the **market administrator** must refer the reports received in the previous calendar month under subclause (1) to the **Authority**.~~
- (3) ~~A **purchaser** or **generator** may, by notice in writing to the **system operator**, request further information from the **system operator** relating to any situation set out in a **system operator's** report **published** under subclause (2) that has materially affected that **purchaser** or **generator**.~~
- (4) ~~The **system operator** must provide information requested under subclause (3) to the **purchaser** or **generator**, except to the extent that the requested information includes another **participant's** confidential information.~~

Statutory objective alignment requirement

3.2A Market operation service providers to assist Authority to give effect to Authority's statutory objective

- (1) Each **market operation service provider** must perform its **role-obligations under this Code** in a way that assists the **Authority** to give effect to the **Authority's** statutory objective.
- (2) The **system operator** must progressively increase the extent to which it assists the **Authority** to give effect to the **Authority's** statutory objective.
- (3) The **system operator** is not required to comply with subclause (1) when exercising discretion in real time in performing its functions.
- (4) This clause does not permit a **market operation service provider** to contravene any other provision of this Code.

Glossary of abbreviations and terms

Act	Electricity Industry Act 2010
Authority	Electricity Authority
Code	Electricity Industry Participation Code 2010
consultation paper	Authority's consultation paper on proposed Code amendments relating to the system operator and alignment with the statutory objective
Enforcement Regulations	Electricity Industry (Enforcement) Regulations 2010
MOSPs	market operation service providers
PPOs	principal performance obligations
RPO requirement	reasonable and prudent system operator requirement under new clause 7.1A(1) of the Code
statutory objective	the Authority's statutory objective under section 15 of the Act
statutory objective alignment requirement	requirement under new clause 3.2A of the Code for MOSPs to assist the Authority to give effect to the Authority's statutory objective