

SETTLEMENT AGREEMENT

(Regulation 24 Electricity Industry (Enforcement) Regulations 2010)

DATED:

BETWEEN:

- (1) Transpower New Zealand Limited as the system operator of 96 The Terrace, Wellington; and
 - (2) Contact Energy Limited of 29 Brandon St, Wellington (Contact); and
 - (3) Meridian Energy Limited of 33 Customhouse Quay, Wellington (Meridian)
- (Collectively the **parties**).

BACKGROUND:

- (A) This Agreement covers three events when Transpower New Zealand Limited as the system operator incorrectly modelled reserve requirements in the market system.
- (B) From 12:00 on 18 December 2014 until 12:00 on 19 December 2014, Transpower New Zealand Limited as the system operator failed to include its asset assessment for West Wind and Mill Creek generation when modelling the reserve requirements. There was no actual impact because the system operator corrected the modelling error before real time. However, the system operator only corrected the modelling error after being made aware of it by a participant.
- (C) The system operator determined that Wairakei power station (Wairakei) was a contingent event risk to the power system but failed to continually model that risk in the market system from 13 March 2015 to 16 March 2015. The breach had no actual impact. However, the breach had the potential for a serious system security impact in the case of a system event if Wairakei had set the actual risk because insufficient reserves would have been procured to cover that risk.
- (D) From 5 April at 23:30 to 6 April 2015 at 08:00, the system operator failed to prepare a dispatch schedule in accordance with the methodology set out in Schedule 13. The system operator incorrectly modelled the amount of fast instantaneous reserve (FIR) and sustained instantaneous reserve (SIR) in relation to the risk set by West Wind and Mill Creek wind farms. The system operator over-procured reserves as the result of this breach. The cost to the market was \$33,700.
- (E) Contact Energy Limited and Meridian Energy Limited joined the investigation as affected parties.
- (F) The parties have agreed to settle the Alleged Breaches on the terms contained in this Agreement.

IT IS AGREED:

1. Interpretation

1.1 In this Agreement, unless the context requires otherwise:

- (a) **Agreement** means this Settlement Agreement
- (b) **Alleged Breaches** means the alleged breaches of the Code arising from the Circumstances and described in clause 2
- (c) **Approval Date** means the date the parties to this Agreement are notified that the Electricity Authority Board has approved this Agreement under regulation 24(4)(a) of the Regulations
- (d) **Board** means the Board of the Electricity Authority
- (e) **Circumstances** means the circumstances set out in clause 3
- (f) **Code** means the Electricity Industry Participation Code 2010
- (g) **Regulations** means the Electricity Industry (Enforcement) Regulations 2010
- (h) all capitalised terms not defined in this Agreement have the same meanings as in the Regulations or Code, as the case may be
- (i) all references to clauses are to clauses of this Agreement.

2. Alleged Breaches

- 2.1 From 12:00 on 18 December 2014 until 12:00 on 19 December 2014, the system operator breached clause 32.2 of the policy statement when it failed to use its asset assessment for West Wind and Mill Creek generation when modelling the reserve requirements.
- 2.2 From 23:30 on 13 March 2015 until 16:30 on 16 March 2015, the system operator breached clause 13.69A of the Code by not including the contingent event risk identified for Wairakei for modelling reserve requirements in the dispatch schedule.
- 2.3 From 5 April at 23:30 to 6 April 2015 at 08:00, the system operator breached clause 13.69A of the Code when it failed to prepare a dispatch schedule in accordance with the methodology set out in Schedule 13.3 when modelling the amount of fast instantaneous reserve and sustained instantaneous reserve.

3. Circumstances of the Breaches

First event

- 3.1 From 21 November 2014 the system operator declared West Wind and Mill Creek generators as secondary extended contingent event (ECE) risks in the North Island. The system operator made this declaration in response to a HVDC tripping that caused these generators to subsequently trip.

- 3.2 On the morning of 19 December 2014, a trader contacted the system operator with concerns over the much higher than anticipated reserve prices forecast from 23:30 on 19 December 2014.
- 3.3 The system operator's immediate investigation determined that an erroneously high contingent event risk was scheduled for the affected trading periods. The system operator's further investigation determined that it had modelled the West Wind and Mill Creek generators as contingent event risks instead of ECE risks as determined on 21 November 2014.
- 3.4 To model ECE risks in the market system, the system operator must first manually adjust this information to determine the risk level. Any value above that risk level will be modelled as a contingent event as well as an ECE risk. The system operator must conduct a manual input for every trading period into the future and can only be entered up to three weeks in advance.
- 3.5 From 23:30 on 19 December 2014 onwards, the West Wind and Mill Creek risk levels were modelled at the default value of 0 MW. This meant that any scheduled generation was modelled as a contingent event risk onwards instead of as an ECE risk.
- 3.6 Prior to 23:30 on 19 December 2014, the risk level was modelled at 100 MW, which was the maximum output of each of the generators. This was the correct ECE risk.
- 3.7 The system operator forgot to update the risk level for the period beyond the initial modelling on 21 November 2014. The responsibility to maintain the modelling of the risk levels in the market system after the initial change was not clearly given to any member of the system operator's staff.
- 3.8 The system operator corrected the risk level error and manually produced the corrected price responsive and non-responsive schedules (PRS and NRS). The system operator published the PRS and NRS 14:05 on 19 December 2014.

Second event

- 3.9 On 23 February 2015, the system operator reclassified Wairakei as a North Island AC contingent event. The system operator's security coordinator modelled this reclassification as a temporary change in the market system.
- 3.10 The system operator's security coordinator and support staff manually input the temporary change into the market system for each trading period. The temporary change can be input into the market system up to six weeks in advance. The system operator has advised that manually inputting the change by trading period typically takes one week to complete.
- 3.11 On 5 March 2015, following a previous breach, the system operator issued a temporary process change instruction to its national control centre staff. This instruction informed staff of AC contingent event and AC extended contingent event risk reclassifications, and outlined the process and responsibilities for managing them.
- 3.12 At 16:40 on 16 March 2015, the security coordinator identified that modelling Wairakei as an AC contingent event had ended in the market system at 23:30 on 13 March

2015. The security coordinator then re-enabled the risk modelling for Wairakei and extended it until 31 March 2015.

- 3.13 The system operator advised that a number of shifts had missed the extension of the Wairakei AC contingent event risk despite wide knowledge of the reclassification. This was despite the duty operations manager having communicated the risk change using the temporary instruction process as well as on-the-desk debriefs.
- 3.14 The system operator could not determine the exact point when the communication with staff broke down. The system operator immediately changed its security check sheets to include a check for optional AC risks. Previously, the most recent update to the security check sheets only included checking the commissioning risks for secondary AC extended contingent event risks.

Third event

- 3.15 On 5 March 2015, the system operator published a temporary instruction that detailed the current secondary risk reclassifications and outlined the process for managing them. This was in response to the event on 19 December 2014 (the first event described above).
- 3.16 At approximately 07:30 on 6 April 2015, a trader called the system operator to query high negative net free reserve values and increased FIR requirements.
- 3.17 The system operator's investigation determined that it had modelled the West Wind and Mill Creek generators from trading period 50 (23:30) on 5 April 2015 as contingent event risks instead of ECE risks as determined on 21 November 2014.
- 3.18 To model ECE risks in the market system, the system operator must manually adjust this information to determine the risk level. Any value above that risk level will be modelled as a contingent event risk as well as an ECE risk.
- 3.19 When the system operator's security support coordinator checked the risk modelling he correctly identified that both the Mill Creek and West Wind generators were selected as commissioning risks. However, the 100 MW value that sets the threshold to transition between an contingent risk and ECE risk was missing.
- 3.20 At 08:00 on 6 April 2015, the system operator corrected the modelling.

4. Impact of the Breaches

First event

- 4.1 There was no market impact because the system operator corrected the modelling error prior to real time. The PRS and NRS from 12:00 on 18 December 2014 until 12:00 on 19 December 2014 were published using incorrect modelling, and scheduled higher North Island reserve prices.

Second event

- 4.2 There was no actual impact of the breach. Other generation set the North Island AC contingent event risk at a level higher than the Wairakei contingent event risk during the period when the system operator did not model the Wairakei contingent event risk.

- 4.3 The potential security risk was that if Wairakei had set the contingent event risk, insufficient reserves would have been procured to cover that risk to the power system.

Third event

- 4.4 The generation output from West Wind and Mill Creek was wrongly subtracted from the North Island FIR and SIR resulting in more reserve than necessary being procured. The generation scheduled in final pricing varied from 0 MW for most of the affected periods to 72 MW in the trading period that commenced at 08:00. The cost to the market of modelling the reserve requirements incorrectly was \$33,700.

5. Steps taken to prevent recurrence

- 5.1 The system operator has taken the following steps to prevent recurrence:
- (a) The inability to set the risk level associated with individual stations for extended periods has been logged as a future market system enhancement project
 - (b) The system operator has reviewed the process for changing the risk modelling in the market system, and clarified who is responsible for maintaining the modelling of these risks in the market system.
 - (c) The system operator's market operating team will make the necessary changes to the market system model to enable the system operator to model a generator as a secondary contingent event or ECE. The system operator's real time team at the national control centre will then take responsibility for manually maintaining the model parameters in the market system.

6. Guiding Principle

- 6.1 The parties agree the following guiding principle in relation to this Agreement:
- (a) to ensure compliance with the Code, the system operator recognises the need for more transparency and simplicity to capture and share temporary and assessed risks.

7. Settlement

7.1 The system operator agrees to:

- (a) consolidate information about assessed risks and temporary risks distributed through the customer advice notice process and develop its website functionality to capture and share the temporary risks and assessed risk with participants
- (b) provide a simple listing on its website of risk and impact, and the system operator's actions to manage those risks
- (c) seek participants' input and feedback when developing its website functionality
- (d) make its website functionality available to participants by the end of 2015.

8. Confidentiality

8.1 If the Authority decides under regulation 25(2) of the Regulations not to publicise any part of this Agreement, each party will treat that part of the Agreement as confidential information and will not disclose it other than:

- (a) to the party's employees or contractors who need to know the confidential information to implement or monitor the implementation of this Agreement;
- (b) to the party's professional advisers, auditors and bankers;
- (c) as required by law or for the purposes of judicial proceedings;
- (d) as required by any securities exchange or regulatory or governmental body to which the party is subject or submits; or
- (e) as authorised in writing by the other parties.

8.2 A party must not disclose confidential information under clause 8.1(a) or (b) unless the party obtains a confidentiality undertaking from the person to whom the confidential information is to be disclosed on terms no less onerous than those set out in this clause 8 before disclosing the confidential information. Any confidential information to be disclosed in the circumstances set out in clause 8.1(c) or (d) may only be disclosed after written notice to the other parties (unless the disclosing party is prevented from notifying the other parties by law).

9. Agreement Subject to Approval

9.1 Subject to clause 9.2, this Agreement will come into effect on the Approval Date.

9.2 Clause 8 is binding on the parties as from the date of this Agreement. Pending the Board's approval of this Agreement under regulation 24(4)(a) of the Regulations, clause 8 will apply as if the Board has decided under regulation 25(2) of the Regulations not to publicise any part of this Agreement or the existence of this Agreement.

10. Settled Breaches

10.1 This Agreement is in full and final settlement of all claims, actions and demands against any party (under the Regulations, the Code or otherwise) in relation to:

- (a) the Alleged Breaches
- (b) any other breaches of the Regulations or Code involved in or arising from the Circumstances that the claiming party ought reasonably to have known about at the date of this Agreement

(the Alleged Breaches and such other breaches together the **Settled Breaches**).

10.2 Pursuant to regulation 24, but subject to regulation 26 of the Regulations, this Agreement is binding on the parties. A Participant who is not a party to this Agreement may make a further report under regulation 7 or 8 of the Regulations in relation to the Settled Breaches if it can demonstrate that:

- (a) it was materially adversely affected by the Circumstances that gave rise to the Settled Breaches
- (b) it could not reasonably have been expected to be aware of being affected when, under regulation 17 of the Regulations, the Investigator publicised the information under investigation.

11. General

11.1 Each party will execute all documents and do, or refrain from doing, all other reasonable things necessary or desirable to give full effect to the provisions of this Agreement, including to secure the Board's approval of this Agreement under regulation 24(4)(a) of the Regulations.

11.2 This Agreement is the whole and only agreement between the parties relating to the settlement of claims, actions and demands arising from the Circumstances. Each party acknowledges that it has not been induced to enter into this Agreement by any representation made by or on behalf of the other party that is not repeated in this Agreement.

11.3 This Agreement may be signed in any number of counterparts.

SIGNED:

For Transpower New Zealand Limited

Name:

Position:

SIGNED:

For Contact Energy Limited

Name:

Position:

SIGNED:

For Meridian Energy Limited

Name:

Position: