

1912CTCT1

Investigator's report on alleged breaches of clause 13.5A(1) by Contact Energy Limited between 11 November and 28 December 2019

Prepared by: Peter Wakefield
Senior Investigator

Recommendation

1. The investigator recommends that the Board:
 - (a) **discontinues** the investigation under regulation 23(3)(a) of the Electricity Industry (Enforcement) Regulations 2010 (Regulations)

Rationale

2. Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP (the Complainants) have alleged that Contact Energy Limited (Contact) has breached the high standards of trading conduct (HSOTC) provisions of the Code. The Complainants in the same letter as alleging the breach, also claimed a UTS.
3. The circumstances of the alleged breaches concern the prices in Contact's offers when it was spilling water during flood conditions in the Clutha catchment area.
4. The investigator considers that Contact did not breach clause 13.5A(1) because the safe harbour provisions in clause 13.5B(1) applied. Where a generator complies with the safe harbour provisions the generator is considered to comply with the HSOTC requirement in clause 13.5A(1).
5. The investigator considers the safe harbour provisions create a situation where "static" offer behaviour is deemed to meet a HSOTC. The "static" offer behaviour is what the investigator considers to be the underlying issue behind the alleged breaches where Contact maintained its offers despite the value of water having zero value when spilling water under flood conditions.
6. The investigator notes the HSOTC provisions are fraught with interpretation issues and there have been no precedent cases by the Rulings Panel. Despite these issues the investigator has not found any reason to believe that the safe harbour provisions do not apply to the circumstances in this case.
7. The investigator has considered the potential that a small minority of trading periods (4 out of 2,117) during the relevant period may lie outside the safe harbour provisions. For these trading periods, Contact has not been able to provide an explanation as to why not all generation was offered to the market. The investigator

considered the overall deviation from the safe harbour provision represented by these four trading periods to be minor and isolated and not merit consideration as a breach of clause 13.5A(1). This is consistent with clause 13.5B(2) that a generator does not breach clause because 13.5A(1) because it does not comply with the safe harbour provisions.

Legal basis

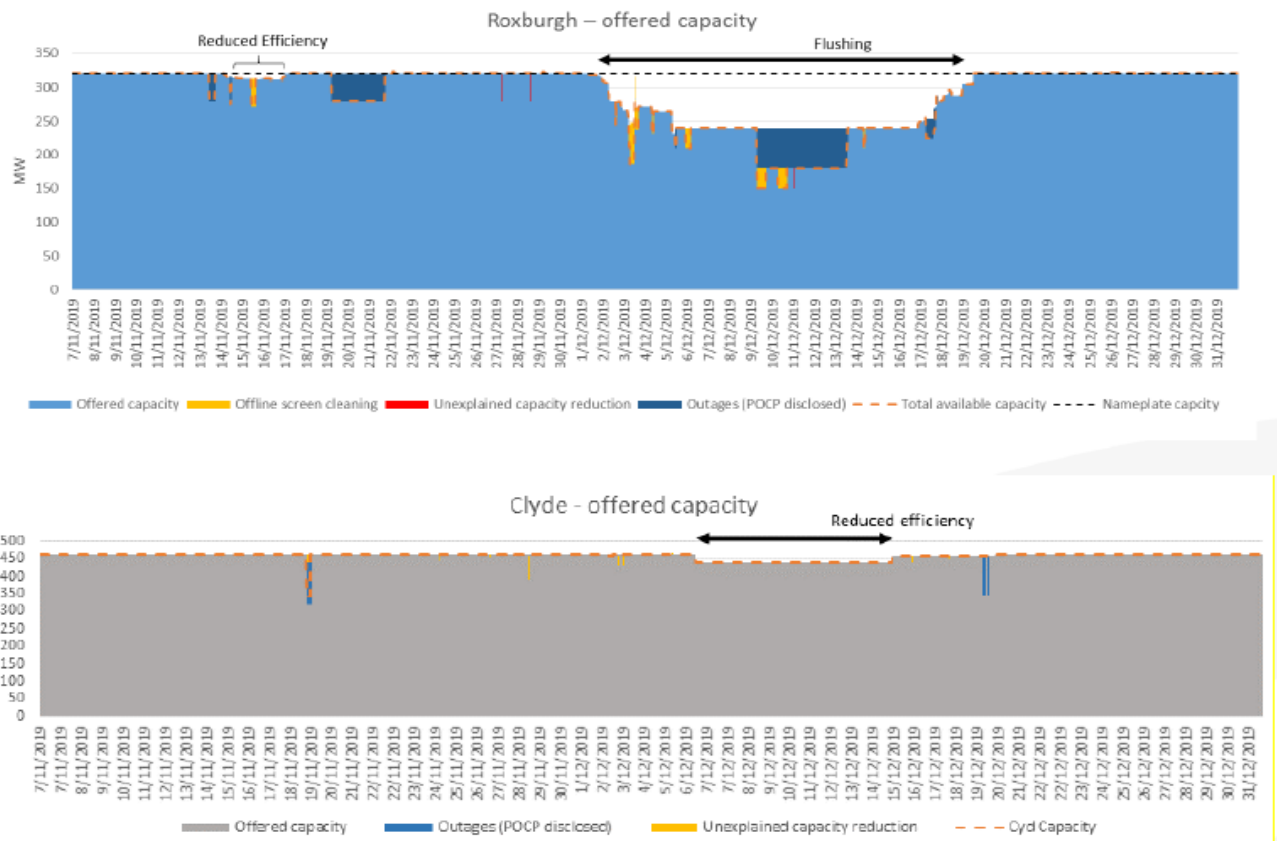
8. This is an investigator's report under regulation 19 of the Regulations concerning the alleged breaches of clause 13.5A(1) of the Code by Contact from 11 November to 28 December 2019.
9. On 12 August 2020, Contact was notified of the investigation which at the same time was publicised on the Authority's website.
10. The investigation has been carried out independent to the Authority's investigation into the UTS claim.
11. Genesis Energy Limited, Mercury NZ Limited, Nova Energy Limited and Todd Generation Taranaki Limited joined the investigation as affected parties. The notifying participants were also parties to the investigation.
12. The investigator was not able to effect a settlement of the matter under investigation.
13. As required by regulation 19(2) of the Regulations, this report sets out sufficient detail to enable the Committee to decide whether a formal complaint on the matter should be made to the Rulings Panel. To the extent that is reasonably practicable and appropriate in the circumstances, this report sets out the information specified in regulation 19(3) of the Regulations.

Circumstances of the event

14. On 12 December 2019, the Complainants made an undesirable trading situation claim and in the same letter alleged Contact was in breach of clause 13.5A during times of spill at Roxburgh and Clyde.
15. The Complainants allege during this period that "Contact has repeatedly offered zero-value water into the market at prices greater than \$50 [per MWh] to prop up spot prices, intentionally spilling more water than necessary". This applied to approximately 2,117 trading periods based upon spill data provided by Contact which occurred between 11 November and 28 December 2019 inclusive.
16. The Complainants have alleged the breach has extracted excess revenue of \$23m for Contact.
17. The spill occurred during sustained flood conditions in the Clutha catchment area when flows on the Clutha River exceeded the ability to store or utilise all water for generation.
18. The Code does not define a HSOTC but does specify a safe harbour where if a generator meets safe harbour conditions it deemed not to have breached the

HSOTC. However, if a generator does not meet the safe harbour conditions it does not mean that it has breached a HSOTC.

19. For the 2,117 trading periods, when Contact was spilling water the investigator reviewed Contact's adherence to the requirements of safe harbour clause 13.5B(1). The three aspects of clause 13.5B(1) were reviewed.
20. Safe harbour clause 13.5B(1)(a) requires a generator to make offers in respect of all its generating capacity that it is able to operate. Contact provided the following explanations for reductions in generation offered:
 - a) Planned outages where generation units are removed for planned maintenance. These outages were published on the Planned Outage Co-ordination Protocol (POCP) website
 - b) Screen cleaning required due to the significant amount of flood debris blocking the intake screens. This cleaning can be sometimes be undertaken while the generator units are online and at other times is required to be undertaken when the units are offline.
 - c) Reduced efficiency when the head level of the dams are operated at a lower level due to it flushing silt downstream. This flushing of silt is required by Contact's resource consent and in co-ordination with the Otago Regional Council.
 - d) Situations where Clyde could not operate at its stated continuous rating of 464MW and was reduced to the rated capacity of 432MW. There were a few of these situations due to grid voltage and hydrology conditions.
21. Contact provided an analysis of these periods annotated with a variety of reasons for reductions in offered capacity. An excerpt of this summary is shown below.



22. The investigator found that Contact, except for four trading periods, offered all of its generating capacity that it was able to operate. For those four trading periods Contact could not find the reason for the reduced offers.
23. As such, four trading periods (three for Roxburgh and one for Clyde) do not fall under the safe harbour provision in clause 13.5B(1)(a). For three of the trading periods there was also a reduction in final price. For one unexplained capacity reduction of 40MW in trading period 29 on 28 November 2019 there was an increase in final price from \$158.78 to \$208.76. The investigator considers this unexplained capacity reduction is not a breach of the HSOTC as provided for in clause 15.5B(2) that a generator does not breach the HSOTC requirement only because the generator does comply with a safe harbour.
24. The investigator notes that Contact was not pivotal in any of these trading periods.
25. Safe harbour clause 13.5B(1)(b) requires a generator to submit or revise an offer as soon as it can after it decides to do so. The investigator does not know when Contact decided to make any offer revisions but notes this is not part of the breach allegation. The investigator found no evidence that offers were not revised in a timely manner.
26. The investigator reviewed the reasons for the four trading periods where Contact revised its offers within one hour of the trading period and agree the reasons were valid.

27. Where the tests in clauses 13.5B(1)(a) and 13.5B(1)(b) are met and when a generator is pivotal there are three further conditions in clause 13.5B(1)(c)(i), (ii) or (iii) where meeting any one of those conditions deems that the generator falls within the safe harbour.
28. Calculations by Market Performance showed that for the 2,117 trading periods when Contact was spilling water, it was pivotal in the South Island for 5% (108) of those trading periods.
29. Clause 13.5B(1)(c)(i) deems a generator to be in the safe harbour when the prices and quantities in its offers do not result in a material increase in the price in the region where it is pivotal. Clause 13.5B(1)(c)(i) requires this to be assessed by comparing prices in the immediately preceding trading period or another comparable trading period in which it was not pivotal.
30. This assessment requires interpretation of what is a material increase in the final price and did the generator's offers result in that increase.
31. The investigator reviewed each of the 108 trading periods when Contact was pivotal in the South Island and was spilling water from one of its generating plants.
32. To simplify the assessment the investigator assessed what could be considered a material increase in final price without considering if Contact's offers resulted in that increase. The investigator found there were 54 trading periods that could be considered to have a material increase in final price compared to when Contact was not pivotal.
33. The investigator considered the remaining 54 trading periods where Contact was pivotal and found there was either no material increase in final price or there was a reduction in final price. Therefore, for these 54 trading periods the investigator assessed Contact as being in safe harbour 13.5B(1)(c)(i).
34. The investigator further considered the 54 trading periods noted in paragraph 32 where there was a material increase in final price without consideration of whether Contact's offers resulted in that increase. The investigator assessed Contact's offers for these 54 trading periods as being generally consistent with its offers when it was not pivotal. Therefore, for these 54 trading periods the investigator assessed Contact offers as being in safe harbour clause 13.5B(1)(c)(ii).
35. The investigator's assessment of these trading periods is in Appendix B.
36. The investigator did not need to consider safe harbour clause 13.5B(1)(c)(iii) where a generator does not benefit financially from an increase in the final price where the generator is pivotal.

Relevant provisions

37. Clause 13.5A provides:

13.5A Conduct in relation to generators' offers and ancillary service agents' reserve offers

- (1) Each **generator** and **ancillary service agent** must ensure that its conduct in relation to **offers** and **reserve offers** is consistent with a high standard of trading conduct.
- (2) Subclause (1) applies when—
 - (a) a **generator** submits, revises, or cancels an **offer**; or
 - (b) an **ancillary service agent** submits or revises a **reserve offer**.

38. Clause 13.5B provides:

13.5B Safe harbours for clause 13.5A

- (1) A **generator** complies with clause 13.5A if—
 - (a) the **generator** makes **offers** in respect of all of its generating capacity that is able to operate in a **trading period**; and
 - (b) when the **generator** decides to submit or revise an **offer**, it does so as soon as it can; and
 - (c) in the case of a **generator** that is **pivotal**,—
 - (i) prices and quantities in the **generator's offers** do not result in a material increase in the **final price** at which **electricity** is supplied in a **trading period** at any **node** at which the **generator** is **pivotal**, compared with the **final price** at the **node** in an immediately preceding **trading period** or other comparable trading period in which the **generator** is not **pivotal** at that **node**; or
 - (ii) the **generator's offers** are generally consistent with **offers** it has made when it has not been **pivotal**; or
 - (iii) the **generator** does not benefit financially from an increase in the **final price** at which **electricity** is supplied in a **trading period** at a **node** at which the **generator** is **pivotal**.
- (2) A **generator** does not breach clause 13.5A only because the **generator** does not comply with subclause (1).

....

39. Clause 1.1 provides:

pivotal means—

- (a) in relation to a **generator**, that the total **demand** in a **trading period** at any 1 or more **nodes** would not have been met if the **generator** had not submitted **offers** for all or any of its **generating plant**; and
- (b) in relation to an **ancillary service agent**, that the total **demand** in a **trading period** for an **ancillary service** supplied by the **ancillary service agent** in an **island** would not have been met if the **ancillary service agent** had not submitted **reserve offers** for all or any of its capacity to provide **instantaneous reserve** in the **island**.

Investigator's assessment of impact

On market

40. Because the investigator has assessed Contact to be within the safe harbour provisions, and therefore not breached the HSOTC the alleged breach did not have any market impact.

On security

41. The investigator considers there was no breach, however, regardless of whether or not there was a breach the investigator's assessment was there was no security impact in relation to the circumstances.

Contact's explanations

42. Contact denies the alleged breach. Contact is confident its trading conduct in relation to offers and reserve offers was consistent with a HSOTC at all times.
43. Contact's comprehensive responses are included in appendix A – relevant correspondence.
44. A summary of key points made in Contact's responses are as follows:
 - a) It takes any allegation of a HSOTC breach extremely seriously and has used considerable resource in and significant cost to investigate and respond to the UTS and HSOTC investigations to confirm It has operated consistently with the high standards at all times.
 - b) The Complainants continue to conflate the HSOTC investigation with the UTS investigations.
 - c) In addition to it operating with a HSOTC under the Code it met the conditions necessary to be within the safe harbour.
 - d) At all times it operated under the assumption that it was not pivotal, and would not have been aware of those trading periods that modelling has subsequently identified were pivotal in ex post analysis.
 - e) It did not intentionally spill more water than necessary. The claim covers a period when significant flooding occurred in the lower South Island. Contact's paramount concern was for the safety of its dams, people, plant and local communities. During the flood event it managed safe and sensible generation in real-time with the safety of its plant, people, resource consents and managing the health of the river.
 - f) Contact did not offer generation at high prices to "prop up spot prices". Tranches were offered at high prices during the period to ensure that it did not operate its hydro generation at the margin. Avoiding marginal operation was essential to maintain stable lake levels and ensure steady flows to avoid flooding downstream from Roxburgh. The engineering design of its plant

means that spill and sluice gates cannot operate as quickly as other generators when they are marginal.

- g) Despite the operational complexity brought about by flood conditions it believes it managed its hydro generation assets in accordance with the behaviour of a prudent generator and adopted responsible trading behaviour in line with its policies and practices over and above the requirements set out in the Code.
- h) Contact also provided supplementary data that it was provided for the UTS investigation.

Similar situations previously dealt with

- 45. There have been no previous breaches of provisions of the Code concerning clause 13.5A by Contact.

Settlement

- 46. The parties to the investigation have not reached a settlement because Contact denies that it has breached the Code.

Investigator's assessment of the alleged breaches

- 47. The investigator considers that Contact did not breach clause 13.5A(1) because the safe harbour provisions in clause 13.5B(1) applied. Where a generator complies with the safe harbour provisions the generator is considered to comply with the HSOTC requirement in clause 13.5A(1).

Other relevant information

- 48. The investigator acknowledges that Contact fully co-operated in supplying information.

Correspondence

- 49. A copy of all relevant correspondence held by the investigator relating to the alleged breaches is attached in Appendix A.

Options for the Board

- 1. This is an investigation where a settlement was not able to be achieved by the parties to the investigation.
- 2. The Board has the following options with respect to the alleged breaches covered in this report:
 - (a) discontinue the investigation under regulation 23(3)(a) of the Regulations; or
 - (b) lay a formal complaint with the Rulings Panel under regulation 23(3)(b) of the Regulations.

3. Regulation 31 provides that if the Authority decides to discontinue the investigation under the above option (a), an industry participant may lay a formal complaint with the Rulings Panel within 10 working days after receiving the Authority's decision to discontinue the investigation against another industry participant allegedly in breach if –
 - (a) the industry participant was the notifying participant; and
 - (b) the industry participant has suffered a loss as a result of the alleged breach.

Appendix A Relevant correspondence

Date	From	To	Information
12 Dec 19	Complainants	CE Electricity Authority	Letter claiming UTS and alleged breaches
12 Dec 19	Complainants	Alleged breach notification form	Alleging breaches of clause 13.5A by Contact Energy and Meridian Energy
18 Dec 19	Compliance	Contact	Fact finding letter
19 Dec 19	Compliance	Complainants	Advising process and timing
10 Jan 20	Contact	Compliance	Requesting 14 Feb 20 response date
10 Jan 20	Compliance	Contact	Agreeing 14 Feb 20 response date
14 Feb 20	Contact	Compliance	Response to alleged breach
12 Aug 20	Investigator	Contact	Notice of investigation
17 Aug 20	Genesis Energy	Investigator	Joining Investigation
20 Aug 20	Investigator	Contact	Asking if Contact require an extension to respond
24 Aug 20	Investigator	Contact	Agreeing response date of 23 Sept20
24 Aug 20	Mercury Energy	Investigator	Joining investigation
25 Aug 20	Nova Energy	Investigator	Joining investigation
25 Aug 20	Todd Generation Taranaki	Investigator	Joining investigation
23 Sep 20	Contact	Investigator	Response to notice of investigation
1 Dec 20	Investigator	Parties to investigation	Outlining settlement process and requesting settlement requirements

10 Dec 20	Allen Consulting	Investigator	Providing a joint response to settlement requirements from the Complainants
11 Dec 20	Todd Generation and Nova Energy	Investigator	Settlement requirements
11 Dec 20	Contact	Investigator	Advising Contact had no settlement requirement and that it was not prepared to settle – letter dated 12 Dec 20 received 11 Dec 20
11 Dec 20	Investigator	Parties to investigation	Circulating settlement requirements – note by this stage the settlement responses to the Meridian and Contact HSOTC investigations had become conflated
14 Dec 20	Investigator	Parties to investigation	Circulating Meridian's response to settlement requirements
17 Dec 20	Allen Consulting	Investigator	Providing a joint response to settlement submissions from the Complainants
18 Dec 20	Contact	Investigator	Response on settlement submissions
18 Dec 20	Investigator	Parties to investigation	Advising that the investigator would conclude the settlement process, complete the investigations
22 Jan 20	Contact	Investigator	Response to offers on 17 Dec 20
26 Jan 20	Contact	Investigator	Providing data behind charts along with explanations re capacity variances
27 Jan 20	Contact	Investigator	Explaining Clyde variation from maximum output



12 December 2019

James Stevenson-Wallace
Chief Executive
Electricity Authority

By email: compliance@ea.govt.nz, uts@ea.govt.nz, james.stevenson-wallace@ea.govt.nz

CC: MBIE, Gareth.wilson@mbie.govt.nz

Reporting of Contact and Meridian's breaches of the High Standard of Trading Conduct requirements and Undesirable Trading Situation

Dear James,

Haast Energy Trading considers that both Contact Energy and Meridian Energy's conduct during the relevant trading periods:

- Breached the High Standard of Trading Conduct (HSOTC) provisions (clause 13.5A) of the Electricity Industry Participation Code (the Code);
- Fell outside the clause 13.5B safe harbour provisions in the Code; and
- The nature and scale of the HSOTC breach – specifically the manipulative trading activity and quantum of the wealth transfers – also qualifies as an undesirable trading situation (UTS) under Part 5 of the Code.

Our simulations show Meridian's generation business has extracted excess revenue of \$38m in the period since 10 November 2019 and Contact's by \$23m. We consider that the scale of monopoly pricing goes well beyond a breach of the HSOTC provisions and amounts to a UTS.

Please find attached the Notice of Breach forms for a HSOTC and UTS. We are joined in the HSOTC and UTS breach complaints by ecotricity, Vocus, Electric Kiwi, Flick Electric, Oji Fibre, and Pulse Energy Alliance.

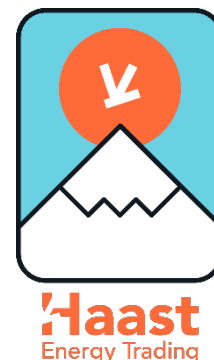
HSOTC versus UTS

Haast considers that Contact and Meridian have breached both the HSOTC and UTS provisions of the Code. We note the definition of a UTS specifies that:

“undesirable trading situation means any situation— (a) that threatens, or may threaten, confidence in, or the integrity of, the wholesale market; and (b) that, in the reasonable opinion of the Authority, cannot satisfactorily be resolved by any other mechanism available under this Code (but for the purposes of this paragraph a proceeding for a breach of clause 13.5A is not to be regarded as another mechanism for satisfactory resolution of a situation).”

This means that a breach of the HSOTC Code provisions can also be a breach of the UTS provisions.

The date and time the alleged breach occurred



The relevant trading periods for the alleged breach include hundreds of trading periods from 11 November 2019 onwards and the situation remains on-going. From approximately November 10 Meridian has been spilling water from Lake Manapouri into the Waiau river. Meanwhile, Contact have had sufficient flow at Clyde (generally >850 cumecs¹) to run their Clyde and Roxburgh stations at maximum capacity 24/7 but have foregone this opportunity to generate and spilled water to prop up energy prices. Both Meridian and Contact have been pricing large tranches of volume at greater than \$50 despite spilling hundreds of GWh of water², and as a result these stations have not been dispatched as much as they would if their offers reflected the SRMC of the water in these catchments.³

Lakes Manapouri and Te Anau both encroached into their high operating ranges around November 10, leading Meridian Energy to commence spill from the scheme in order to satisfy resource consents.

Flows in the Lower Waiau River are controlled by releases of water from the Lake Manapouri Control structure. Meridian must generally maintain minimum flows in the range of 12 to 16 cumecs to satisfy Environment Southland resource consent 96022.⁴ Release flows must also increase to equal the flow in the Mararoa River when turbidity increases beyond the consented threshold in that river. With rare exceptions for environmental releases, flows in the lower Waiau river in excess of the Mararoa river flow indicate that Meridian is spilling water from Lake Manapouri. Data from Environment Southland indicates that this has been the case continuously since 10 November.⁵

Lake Manapouri water level

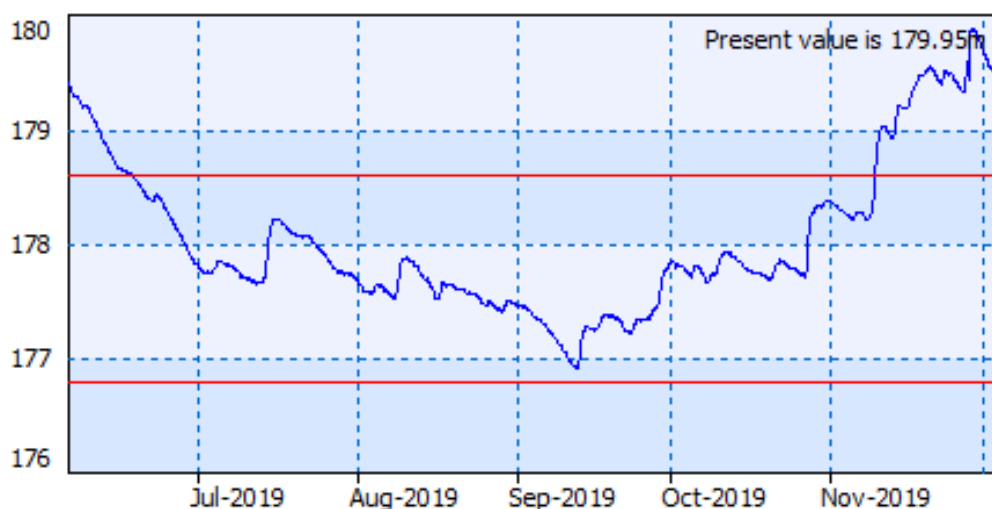


Figure 1: Lake Manapouri water levels. The red lines demarcate the normal operating range of the lake, and it can be seen that the lake entered its high operating range around 10 November

¹ Cubic metres of water per second

² For example the spill in cumecs at Manapouri since 3 December has exceeded the maximum consumption of the power station itself (circa 520 cumecs).

³ The attached spreadsheet details trading periods where Clyde (CYD) and Manapouri (MAN) separately had bands priced to >\$5 while they were spilling. (Periods where Manapouri or Clyde was spilling AND maintaining offers above 5 dollars.xls) We chose \$5 to reflect: (i) the water value was virtually \$0 for the entire period (11th Nov to 9 Dec), but there may be some O&M costs etc which could mean SRMC is above zero.

⁴ <https://www.es.govt.nz/repository/libraries/id:26gi9ayo517q9stt81sd/hierarchy/about-us/plans-and-strategies/regional-plans/proposed-southland-water-and-land-plan/documents/background-documents/evidence/ENV-2018-CHC-000038%20-%20Meridian%20Energy%20Ltd%20>

⁵ <http://envdata.es.govt.nz/>



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Lake Te Anau water level

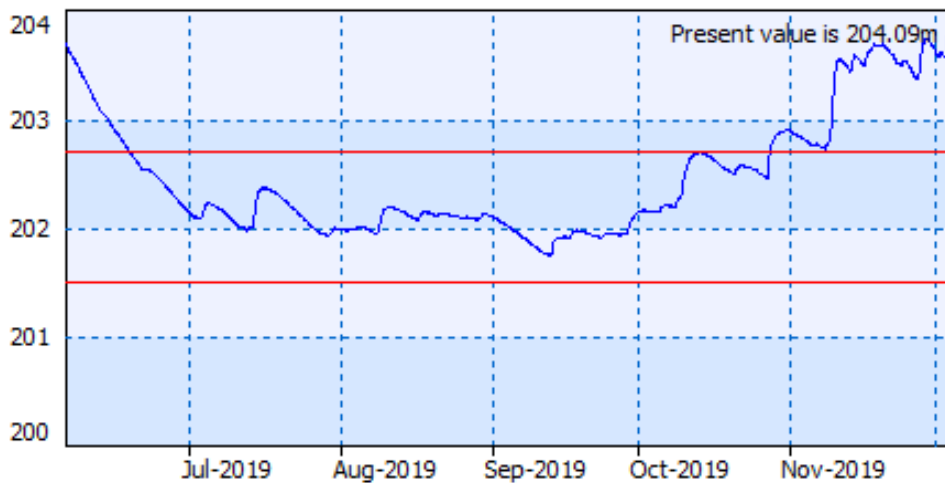


Figure 2: Lake Te Anau water levels. The red lines demarcate the normal operating range of the lake, and it can be seen that the lake entered its high operating range in late October, then rose further around 10 November.

Mararoa water flow

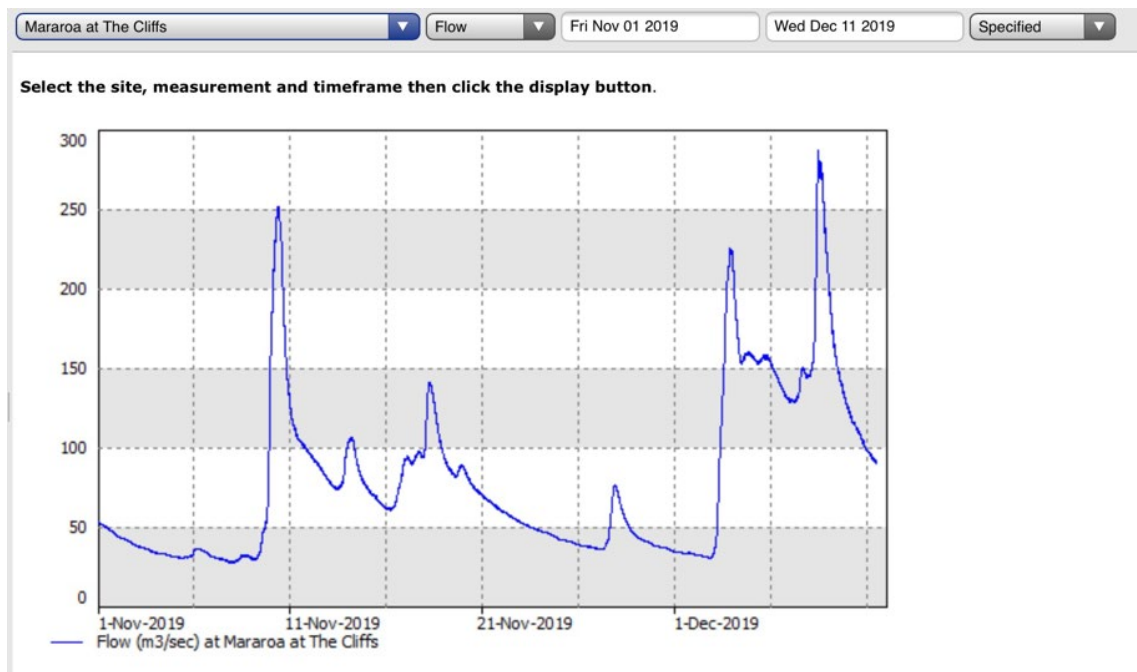


Figure 3: Mararoa river flows (in cumecs), upstream of the Manapouri Control Structure.



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Waiau River water flow

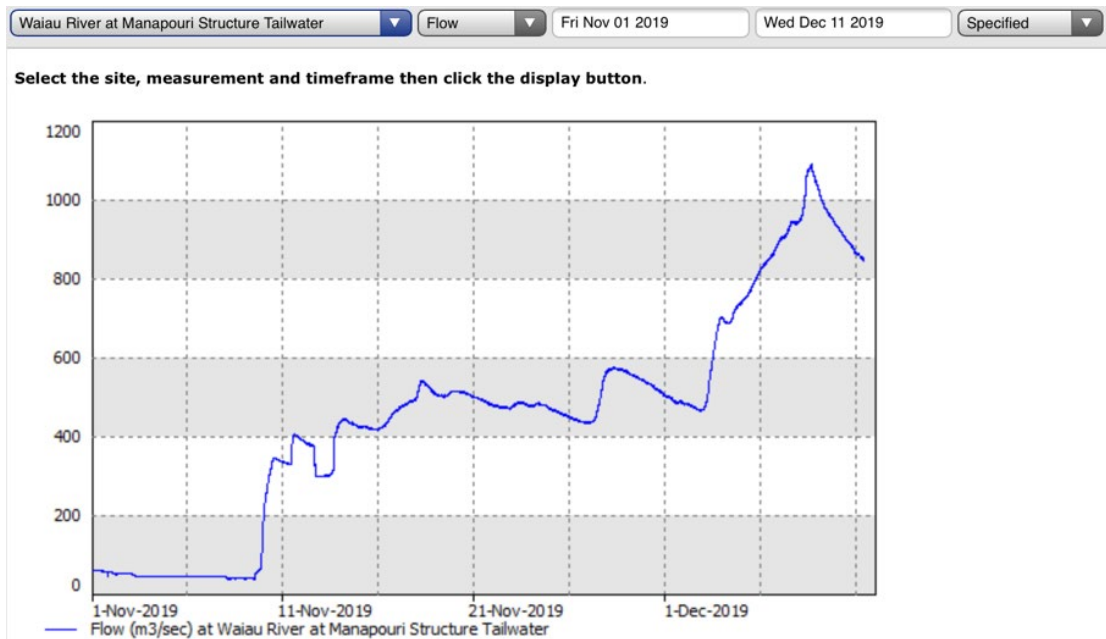


Figure 4: Waiau river flows (in cumecs) immediately downstream of the Manapouri Control Structure. The flows well in excess of Mararoa river flows since 10 November indicates the balance has come from Lake Manapouri

Clutha River water flow

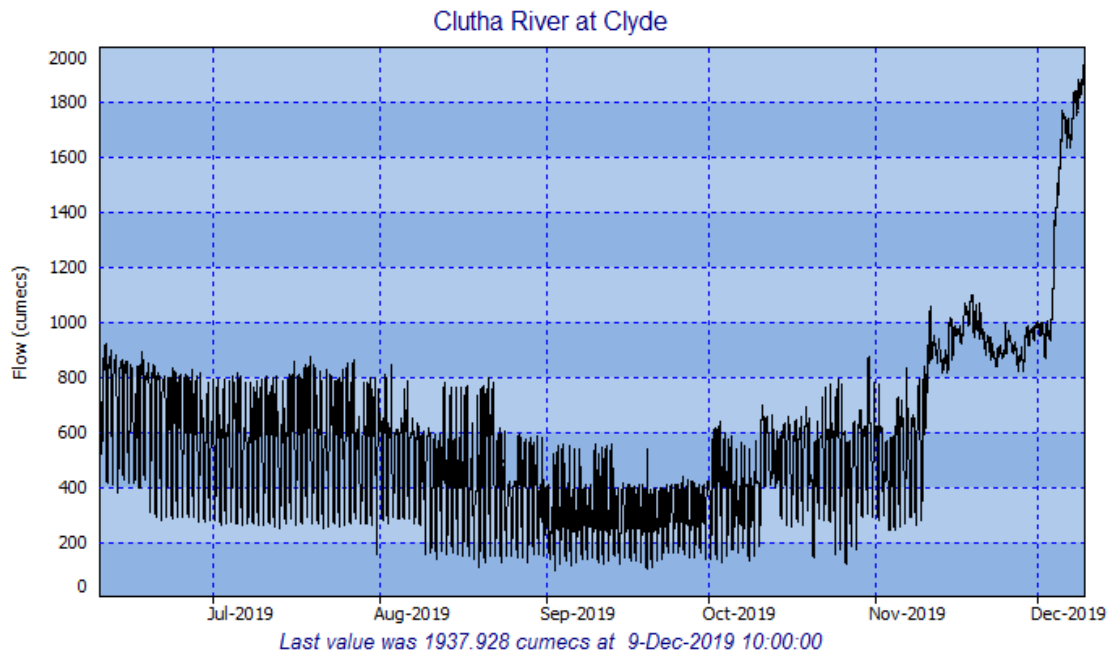
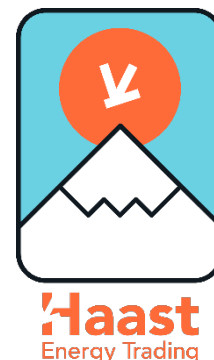


Figure 5: Clutha River flows at Clyde. The flow since 10 November, generally above 850 cumecs, would have been sufficient to run the Clutha scheme near full capacity.



Circumstances of Meridian's breach

Meridian has been spilling water at the Manapouri Power Scheme (Manapouri) during the relevant trading periods. The spill is of the same order or magnitude as the maximum water consumption of the power station (circa 520 cumecs).

The spilling of water means the 'opportunity cost' or value of water is zero during the relevant trading periods and the short-run marginal cost (SRMC) of generating electricity at Manapouri is near zero.⁶

Meridian has offered in tranches of Manapouri hydro generation at well above its SRMC even though it is spilling water at the same time. It was able to do this by misusing its market power. For example:

- From 13 November to 9 December generation of 100MW to 200MW+ at Manapouri was frequently made available only at prices above \$450 during off-peak periods, and from 6 December water has also been priced up during peak periods.⁷
- In the same period, Meridian has exercised its market power through actively managing its Waitaki offers⁸ prior to gate closure to ensure overnight Benmore prices are maintained in a \$50 to \$70 range.⁹

Circumstances of Contact's breach

The Clyde Power Station has an energy conversion rate of approximately 0.52 MW/cumec and a maximum generation capacity of 464MW (previously 432MW), meaning flows of roughly 890 cumecs are required for maximum generation. The Roxburgh Power Station has an energy conversion rate of approximately 0.40 MW/cumec and a maximum generation capacity of 320MW, meaning flows of roughly 800 cumecs are required for peak generation.¹⁰ Essentially the same flows pass through each station, barring the addition of the Manuherekia river and some minor tributaries downstream of Clyde¹¹

The flow in the Clutha River downstream of the Clyde Dam has averaged over 900 cumecs since 11 November, yet generation from Clutha from 11 November to 9 December averaged approximately 600MW against the scheme's total capacity of 784MW, and often dropped nearer to 300MW overnight. Contact has repeatedly offered zero-value water into the market at prices greater than \$50 to prop up spot prices, intentionally spilling more water than necessary.¹²

⁶ The Electricity Authority provides the following definition of the "opportunity cost" of water:

"The opportunity cost of using water to generate electricity today is the value of using it at some time in the future to generate electricity, or its value in some other use, such as, irrigation, recreation or conservation of the environment". Reference: Dr Brent Layton, Chair, Electricity Authority, The Economics of Electricity, 4 June 2013, paragraph 17.

⁷ Refer to Appendix 1.

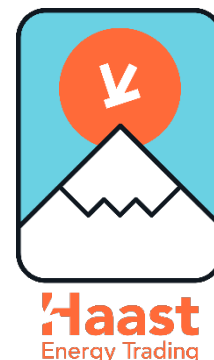
⁸ Refer to Appendix 2

⁹ Refer to Appendix 9.

¹⁰ Refer to Tables 6 and 7 of this document: <http://www.epoc.org.nz/papers/EMBEROnlineCompanion.pdf>

¹¹ Refer to: <https://www.orc.govt.nz/managing-our-environment/water/water-monitoring-and-alerts>

¹² Refer to Appendix 3.



Impact of the manipulative trading activity

To assess the impact of Contact and Meridian's manipulative trading activity Haast used the vSPD-online tool¹³ to produce a counter-factual scenario with all of the available Waiau and Clutha plant offered into the market at \$5.¹⁴ A level of \$5 was chosen to reflect a near zero water value but some small variable operations and maintenance costs.

The impact of Contact and Meridian's manipulative trading activity has included:

- higher than otherwise wholesale electricity prices (resulting in adverse allocative efficiency impacts and wealth transfers from consumers to generators, including Contact and Meridian). Our simulations show Meridian's generation business has extracted excess revenue of \$38m in the period since 10 November and Contact's by \$23m.¹⁵ The following graph (Figure 6) shows the difference of approximately \$30 between actual prices and the prices that would have arisen if Contact and Meridian hadn't artificially raised their offer prices.¹⁶

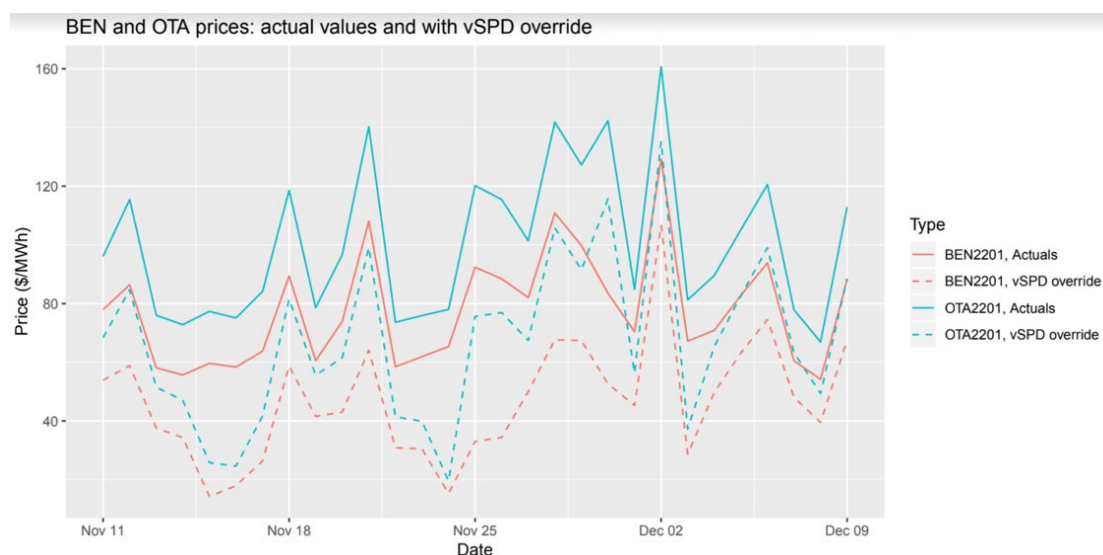


Figure 6: There is a clear and consistent reduction in market prices in the simulated scenario for BEN and OTA (dashed lines)

- additional and unnecessary water spill (productive inefficiency). Our simulation indicates that if the full generation capability of the Waiau and Clutha plant had been offered into the market at \$5, then an additional 109 GWh of generation would have been dispatched from these schemes that has been instead been spilled;
- inefficient and higher use of North Island hydro, wasting storable water in the North Island during off-peak hours (productive inefficiency). Our simulations show that 15GWh of North Island water was used needlessly and could have been supplanted by spilled South Island water;¹⁷

¹³ <https://www.emi.ea.govt.nz/vSPD-online>

¹⁴ Refer to Appendix 6 for a full list of assumptions

¹⁵ This is based on assumption that the SRMC for Clyde, Manapouri and Roxburgh was \$5. We chose \$5 to reflect: (i) the water value was virtually \$0 for the entire period (11th Nov to 9 Dec), but there may be some O&M costs etc which could mean SRMC is above zero.

¹⁶ Refer Appendices 6, 7, and 8.

¹⁷ Refer to Appendix 4.



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- inefficient and higher fuel cost (above zero) thermal (gas and coal) power generation in the North Island (including Huntly) during off-peak hours (productive inefficiency). Our simulations show that 11GWh of Huntly thermal generation could have been supplanted by spilled South Island water;¹⁸
- higher carbon dioxide (CO₂) emissions for New Zealand. Our analysis indicates 6000 tonnes of CO₂ emissions could have been avoided. The additional coal-fired generation at Huntly also generates other forms of air pollution including sulfur dioxide, nitrogen oxides, particulate matter (PM), and heavy metals (see Figure 7 below). For the excess CO₂ emissions analysis, the following emission rates were assumed (tonnes of CO₂ per MWh of electricity generated):¹⁹
 - HLY5: 0.394.
 - HLY1-4: 0.974 if burning coal, 0.581 if burning gas.
 - SFD peakers: 0.506

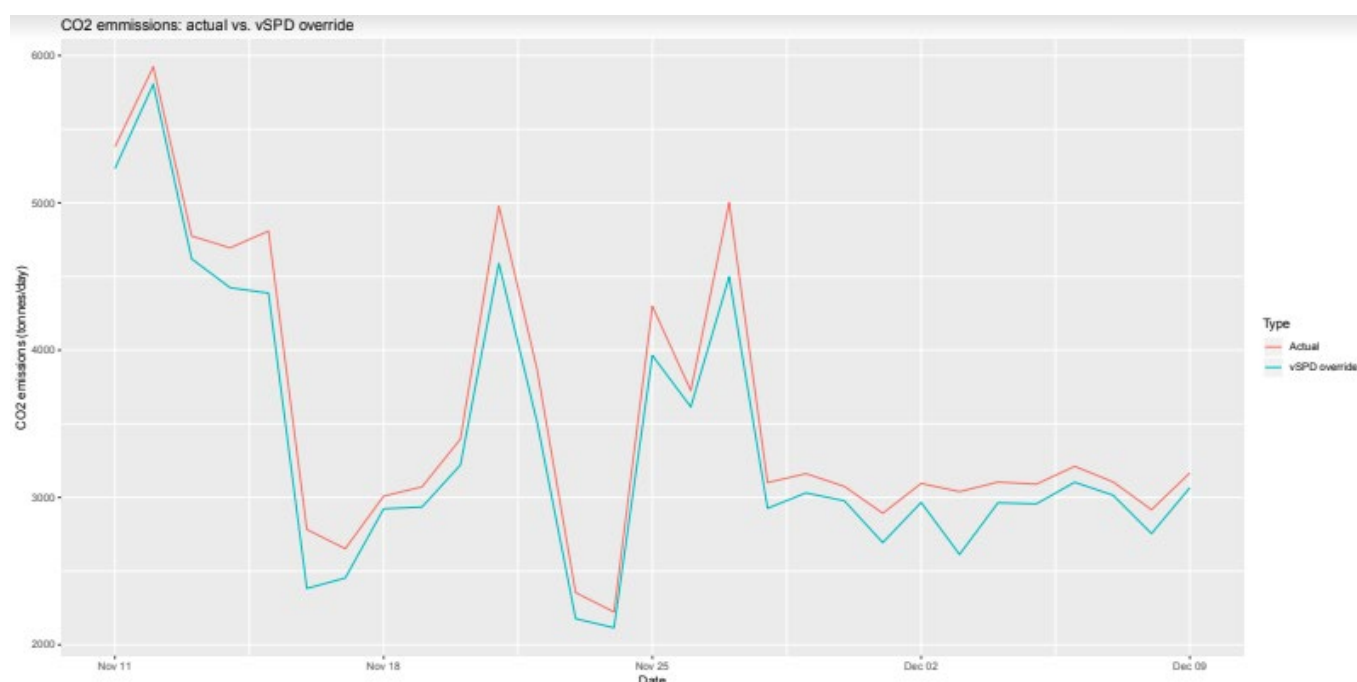


Figure 7: There is a clear and consistent reduction in carbon emissions from electricity generation in the simulated scenario (green line)

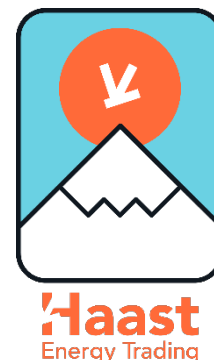
The value of water if the storage lake is full is zero

The Electricity Authority has been clear that: “Water has no value in an economic sense when it is so abundant that there are no constraints on the use of water now or in the future in any activity”.²⁰

¹⁸ Refer to Appendix 5.

¹⁹ NB the source of the CO₂ emission rates is as follows: for HLY5 and HLY1-4 when burning coal: Table 12 of this document: <https://www.waikatoregion.govt.nz/assets/PageFiles/21888/TR201218.pdf>. The figure for HLY1-4 when burning gas was obtained from Tables 10 and 12 of the same document, specifically by multiplying the coal emission rate from Table 12 by the ratio of gas to coal combustion emissions from Table 10 (53.3/89.4). The figure for the SFD peaker was obtained by multiplying its heat rate (9.5GJ/MWh, from <http://www.epoc.org.nz/papers/SecurityofSupply-Fulton2018.pdf>, Appendix 1) by an estimated CO₂ emission rate for gas plant (53.3, from Table 12 of this document: <https://www.waikatoregion.govt.nz/assets/PageFiles/21888/TR201218.pdf>).

²⁰ Dr Brent Layton, Chair, Electricity Authority, The Economics of Electricity, 4 June 2013, paragraph 18.



This is reinforced by the Authority's observation that "the opportunity cost of hydro storage ... is the value of water preserved for later use"²¹ which, by definition, is zero if the water cannot be stored i.e. when water is being spilled.

Consistent with the Authority's view, Poletti has also observed: "If the storage lake is full, and more water is flowing in, there is no value in storing any water for the future, i.e. the opportunity cost of using water is zero".²²

Contact and Meridian's breaches of the HSOTC Code requirements is unambiguous

Haast considers this to be one of the most unambiguous and clearest breaches of the HSOTC Code requirements.

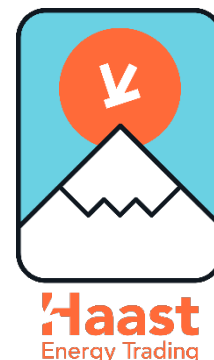
The fact the 'opportunity cost' or water value is zero when water is being spilt makes it straightforward to compare the generator's offer prices against SRMC to determine whether the generator has mis-used market power to offer generation above workably competitive market levels and raise spot prices.

As we have demonstrated above, it is a relatively straight-forward matter to use vSPD modelling to 'correct' the offer prices to workably competitive levels to determine the level of excess wholesale electricity prices (and excess returns for the generator), as well as other indirect adverse impacts such as increased use of higher cost generation plant (such as Huntly) and higher New Zealand CO2 emissions. The modelling Haast has undertaken reflects the following:

- There was water spilled at Clyde, Manapouri and Roxburgh that could have been used to generate electricity e.g. Contact had sufficient flow at Clyde to run Clyde and Roxburgh near maximum capacity 24/7 since November 11.
- We then assumed that the SRMC for CYD, ROX and MAN water was \$5 for the entire period (11th November to 9 December). We chose \$5 to reflect: (i) the water value was virtually \$0 for the entire period (11th Nov to 9 Dec), but there may be some O&M costs etc which could mean SRMC is above zero.
- We ran an experiment with vSPD where we offered in these stations' full capacity at \$5.
- The vSPD results show that prices would have been approximately \$30 lower if the CYD/ROX/MAN water was priced at \$5.

²¹ Dr Brent Layton, Chair, Electricity Authority, The Economics of Electricity, 4 June 2013, paragraph 26.

²² Stephen Poletti, University of Auckland, Market Power in the NZ wholesale market 2010-2016.



Application of the Authority's statutory objective to determine whether there has been a breach of the HSOTC requirements

Bell Gully has provided the Market Design Advisory Group (MDAG) advice that “In interpreting the trading conduct provisions, we would expect a court to first consider: ... the purpose of the Code as set out in s 32 of the Electricity Industry Act 2010 (the Act)”.²³

The Authority interprets its statutory objective in section 15 of the Electricity Industry Act 2010 (Act) “To promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers” as referring to “workable or effective competition”.²⁴ The Authority also elaborated that it used a short-term, allocative efficiency, benchmark of short-run marginal cost (SRMC) to determine workably competitive market outcomes:²⁵

“... workable competition delivers benefits to consumers by placing pressure on firms to set their prices close to their marginal cost of supply. Prices above this marginal cost of supply cause consumers to forgo goods and services that they value more highly than it costs to supply them. That is an allocatively inefficient outcome, as consumer surplus is forgone.” [emphasis added]

Consistent with this, the Authority “... Board also noted that ideally prices in a pivotal supplier situation would ... settle at a level just below the short run marginal cost of the next best alternative”.²⁶

In the Authority's market performance review of the High Prices on 2 June 2016, the Authority took a longer-term, more dynamic, perspective to the meaning of workable competition than it did in its interpretation of its statutory objective:²⁷

“The Authority's underlying benchmark for competition is workable competition. Workable competition is a dynamic view of markets that encompasses prices deviating from long term equilibrium levels as long as barriers to entry are low so that, in the long term, prices move towards competitive levels.”

While the two positions are different they are consistent. The positions presented in the Interpretation of the Statutory Objective and the market performance review, individually, only tell part of the story of the outcomes in a workably competitive market: what can be expected is that in the short-term (half-hour by half-hour) pricing is based on SRMC, while in equilibrium (a theoretical construct that is never actually achieved) or on average, over-time, SRMC/prices will tend towards long-run marginal cost (LRMC). The Authority's 2 June 2016 market performance review also explicitly referred to SRMC as being the relevant benchmark²⁸ and made no reference to LRMC as being relevant to the review.²⁹

What this means is that when it is being tested whether prices are consistent with workably competitive markets in any given half-hour, the relevant test is whether generation offers and wholesale electricity prices reflect or exceed SRMC, but when prices are being looked at over an extended period, e.g. over year or longer, the relevant test is whether prices reflect or exceed LRMC. This interpretation is an orthodox economic description of how competitive markets work.

²³ Bell Gully, INTERPRETATION OF THE TRADING CONDUCT PROVISIONS, Summary of interpretative aids, 27 August 2018.

²⁴ Electricity Authority, Interpretation of the Authority's statutory objective, section 2.2.1(a).

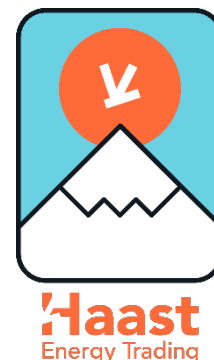
²⁵ Electricity Authority, Interpretation of the Authority's statutory objective, section A.22.

²⁶ Letter from Carl Hansen (CEO, Electricity Authority) to John Hancock (WAG Chair), “Feedback from the Board on WAG discussion paper”, 12 April 2013.

²⁷ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, paragraph 9.4.

²⁸ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, paragraph 8.24.

²⁹ The only reference to LRMC was the statement that: “Contact advised that its standard practice is to offer Whirinaki close to its short run marginal cost (SRMC) when covering its own book, and near Whirinaki's long run marginal cost (LRMC) when selling above its contracted position” at paragraph 4.16.



The High Court has also discussed the meaning of workable competition including:

“A workably competitive market is one that provides outcomes that are reasonably close to those found in strongly competitive markets. Such outcomes are summarised in economic terminology by the term “economic efficiency” with its familiar components: technical efficiency, allocative efficiency and dynamic efficiency. Closely associated with the idea of efficiency is the condition that prices reflect efficient costs (including the cost of capital, and thus a reasonable level of profit).”³⁰

“In a workably competitive market no firm has significant market power and consequently prices are not too much or for too long significantly above costs.”³¹

“Workable competition implies that no player has excessive market power.”³²

“... workably competitive markets have a tendency towards generating certain outcomes. These outcomes include the earning by firms of normal rates of return, and the existence of prices that reflect such normal rates of return, after covering the firms’ efficient costs.”³³

“ ... the prices that tend to be generated in workably competitive markets will provide incentives for efficient investment and for innovation.”³⁴

“In short, the tendencies in workably competitive markets will be towards the outcomes produced in strongly competitive markets. ... The more those tendencies are seen in a market, the more the market can be regarded as workably competitive. And of course, the more competitive the market, the more those tendencies will be seen.”³⁵

The interpretation Haast takes from the above guidance on workably competitive market outcomes is that:

- Workable competition tends towards strong competition;
- There is no excessive market power or mis-use of market power in a workably competitive market;
- The outcomes of workable competition include productive (or technical), allocative (SRMC pricing) efficiency and dynamic efficiency;
- Prices should reflect the firms’ efficient costs and should not result in sustained excessive (above normal) returns. Above normal returns are a temporary reward for superior efficiency;
- In the short-run (half-hour by half-hour) prices should reflect SRMC; and
- In the long-run prices should tend towards or average LRMC.

Contact and Meridian’s conduct is inconsistent with the Authority’s statutory objective

Haast considers that when Contact and Meridian’s trading conduct is compared against workably competitive market outcomes and the statutory objective, the conclusions the Authority reached in relation to Meridian’s 2 June 2016 are, at least, equally, if not more applicable, to the conduct that has given rise to this HSOTC breach allegation.

³⁰ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [14].

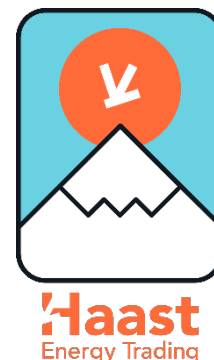
³¹ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [15].

³² WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [17].

³³ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [18].

³⁴ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [20].

³⁵ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraphs [22] – [23].



The high South Island prices, just like for 2 June 2016, was the result of trading behaviour that was inconsistent with the Authority's statutory objective to promote competition in, reliable supply by, and the efficient operation of, the electricity industry for the long-term benefit of consumers.

As with 2 June 2016:

"The high South Island prices ... were inconsistent with workable competition ... A market is statically efficient if price equals cost in a particular time period. A market is dynamically efficient in a workable competition sense if it tends towards an efficient equilibrium over time. Prices above cost due to innovation or superior performance can occur in a workably competitive market. The high ... prices ... were inconsistent with workable competition because they did not provide a useful price signal to potential entrants, and it was not the result of innovation or superior performance.

"Meridian's profit from the higher ... energy prices ... was not a return to innovation or superior performance ... The only reason it was able to employ this approach was because of its size—Meridian owns approximately 65 per cent of South Island generation capacity."³⁶

"This offer approach contributed to high spot prices ... that:

- did not signal scarcity
- were not the result of innovation
- created no useful signal for potential entrants".³⁷

Meridian (along with Contact) has again adopted an "offer approach" which has resulted in "prices [moving] away from workably competitive levels"³⁸ and which "were inconsistent with workable competition".³⁹ This is clearly reflected in Meridian's Manapouri generation offers exceeding SRMC (based on a zero water value) and resulting in higher than otherwise (above workably competitive market) wholesale electricity prices.

By way of example also, the Authority's conclusions about "Inefficient locational signals" are directly applicable:⁴⁰

"Raising prices in the South Island when there is abundant supply has the potential to:

- (a) lead to higher South Island retail and hedge prices in the long term
- (b) incentivise over-investment in South Island peaking generation.

"These would be inefficient outcomes if there is fundamentally no supply scarcity.

...

"The high South Island prices also did not provide an efficient signal for more demand response in the South Island. ... Under these circumstances, this would mean that demand response providers would simply be avoiding artificially high energy prices, so any entry would be a response to this practice rather than a response to fundamental scarcity in the market."

The nature of the breach was a form of market manipulation

Bell Gully has provided advise to MDAG that "In addition to considering what conduct is acceptable in individual comparable markets, we consider that a court would also be persuaded by evidence that certain standards of conduct are consistent across several markets. In particular, we consider that the universality of the following provisions makes it highly likely that they form part of a "high standard of trading conduct": ... prohibitions on market manipulation, including: ... prohibitions on trading with an improper purpose".⁴¹

³⁶ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, paragraphs 9.1 and 9.2.

³⁷ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, page ii.

³⁸ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, paragraph 8.14.

³⁹ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, section 9.

⁴⁰ Electricity Authority, High Prices on 2 June 2016, Market performance review, 18 December 2017, paragraphs 8.3 - 8.6.

⁴¹ Bell Gully, INTERPRETATION OF THE TRADING CONDUCT PROVISIONS, Summary of interpretative aids, 27 August 2018, paragraph 4.6.



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The UTS provisions also specify that “examples of what the Authority may consider to constitute an undesirable trading situation” include “manipulative or attempted manipulative trading activity” (clause 5.1(2)(a)).

Contact and Meridian’s conduct was a form of “market manipulation” (artificially raising prices above cost-based or workably competitive levels” and had “an improper purpose” (to extract excessive revenues and profits to the detriment of competing retailers and consumers).

Wider environmental and NZ Inc reputational considerations

Haast considers that the wider implications for New Zealand of Contact and Meridian’s conduct resulting in New Zealand relying more than necessary on thermal generation, resulting in higher CO₂ emissions, is something that should be taken into account in considering the harm caused by Meridian’s breach of the HSOTC Code requirements.

The nature of the breach is particularly cynical and hypocritical given Meridian likes to virtue signal about being 100% renewable. Meridian leverages off 100% renewable generation claims to improve its reputation and as part of its branding and marketing while, at the same time, its own actions and market abuses result in higher CO₂ emissions.

It should also be recognised the increase in thermal/non-renewable generation resulting from Contact and Meridian’s trading conduct also resulted in other forms of pollutants and emissions, from the additional coal-fired generation at Huntly, including sulphur dioxide, nitrogen oxides, particulate matter (PM), and heavy metals

Safe harbour provisions have been breached

Contact and Meridian’s trading conduct is in breach of the safe harbour provisions, including as a consequence of the Clyde, Manapouri and Roxburgh offers resulting “in a material increase in the final price at which electricity is supplied” (clause 13.5B(1)(c)(i) of the Code) and Contact and Meridian benefitted “financially from an increase in the final price” (clause 13.5B(1)(c)(iii) of the Code).

We do not consider that Meridian can comply with the safe harbour provision that the “generator’s offers are generally consistent with offers it has made when it has not been pivotal” (clause 13.5B(1)(c)(ii) of the Code) as Meridian is pivotal 100% of the time. Haast considers that it is not possible for Meridian to be protected by the safe harbour provisions because it is always pivotal.

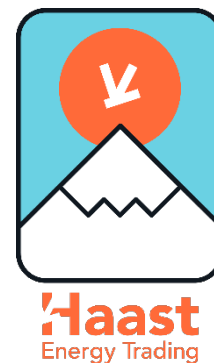
With regards to Contact, they have not made offers for all of their available capacity and therefore also cannot be in the safe harbour.⁴²

A breach finding would provide important HSOTC precedent

In our 23 August 2019 letter re “16 August 2019 Settlement Meetings” we noted “There is important precedent value from the Authority reaching a decision that Genesis’ conduct had breached the HSOTC provisions and in relation to any sanctions that are determined”. This is particularly true in relation to Meridian given it wasn’t the first time Meridian has breached the HSOTC provisions.

It is clear from the Authority’s previous breach finding that Contact and Meridian had been breaching the HSOTC provisions on a regular basis. Despite the Authority’s warning at the time, it is clear Contact and

⁴² Refer to Appendix 10.



Meridian have continued to conduct themselves in a way that breaches the HSOTC provisions and that this is not simply an isolated or one-off incident.

Haast consider it abundantly clear Contact and Meridian are in breach the HSOTC Code requirements and any reasonably well-informed market participant would have understood their actions were not of a high standard.

A finding that Contact and Meridian had breached the HSOTC provisions would provide useful precedent in relation to how the HSOTC Rules should be interpreted and what is a breach.

Using market power to manage locational price spreads

One of the likely motivations for Meridian and Contact to withhold generation from the spilling reservoirs is to manage the locational prices spreads between the lower South Island and the rest of the market. The Authority board has previous commented “the Board would have expected Meridian to have covered its North Island exposure using other available risk management products or, if it chose not to do that, then to bear the cost of the risk if it eventuates.”⁴³ By continuing to use market power rather than the available hedge instruments to manage locational price risk Meridian and Contact are undermining liquidity in hedge markets and ignoring the warning letter which was issued to Meridian.

Remedy for the breach that Haast is seeking

Haast is seeking that wholesale electricity prices are reset on the basis of a \$5 offer price for both Meridian (Manapouri) and Contact (Roxburgh and Clyde). The \$5 level is chosen to reflect a near zero water value plus a small O&M component. We would support a sanction that not only required Contact and Meridian to pay back the excess spot prices, but also included a penalty element to send a strong message to generators that they should not use market power or engage in this type of conduct.

We note and support Meridian’s view that where “a generator has take[n] advantage of a net pivotal position in circumstances where there is no energy or capacity shortage, prices should be “normalised” by being returned to workably competitive levels” and if “offers are reduced to a level ... higher than “normal” ... as Meridian has previously submitted, generators could well begin to actively seek net pivotal status”.

Meridian’s 100%-owned subsidiary similarly commented in favour of resetting offers at SRMC: “SRMC provides more accurate price signals for both buyers and investors. SRMC will also have the highly desirable effect of discouraging generators from exploiting transmission outages which is in the long term interest of consumers”.⁴⁴

Concluding remarks

The nature of Contact and Meridian’s trading conduct is extraordinary. Wholesale prices are delivering at unprecedented levels in the context of record hydro storage and now relatively low gas prices.

In dry year situations there is uncertainty about the extent to which high prices genuinely reflect market circumstances (with uncertainty about what the genuine value (opportunity cost) of water is) or abuse of market power.

⁴³ 4 May 2017 Decision regarding Code breach on 6 June 2016 where Meridian withdrew offers to manage location prices.

⁴⁴ Powershop, Proposed actions of the Electricity Authority under Part 5 of the Electricity Industry Participation Code to correct the Undesirable Trading Situation on 26 March 2011, 26 March 2011.



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In circumstances where there is water spill there is no such uncertainty. The water value is clearly zero. Offer prices that don't reflect the zero water value are a clear mis-use of market power.

Our simulations show Meridian's generation business has extracted excess revenue of \$38m in the month since 10 November 2019 and Contact's by \$23m. We consider that the scale of monopoly pricing goes well beyond a breach of the HSOTC provisions and amounts to a UTS. The situation is on-going and is currently leading to \$3-4m per day of excess generation revenue.⁴⁵

There is important precedent value from the Authority reaching a decision that Contact and Meridian's conduct breached the HSOTC Rules and UTS provisions and in relation to any sanctions that are determined.

Yours sincerely,

Phillip Anderson
Managing Director
Haast Energy Trading
phill@haastenergy.com
+64 21 460 040

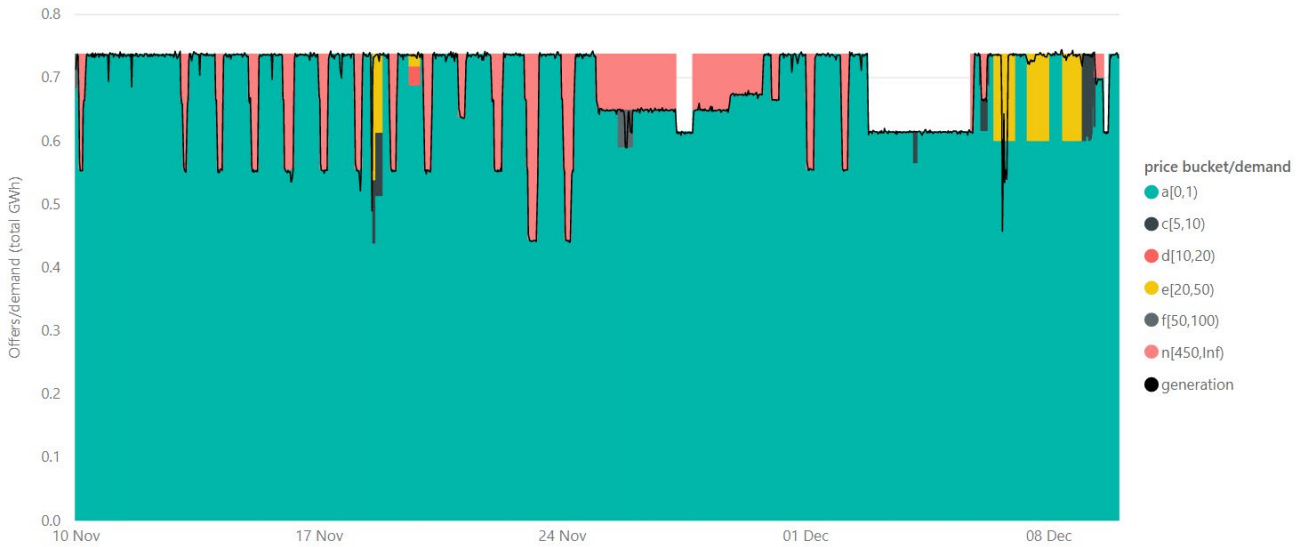
⁴⁵ Refer to Appendix 8.



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Appendix 1: Manapouri generation offers

Offer stacks and demand



Spot prices

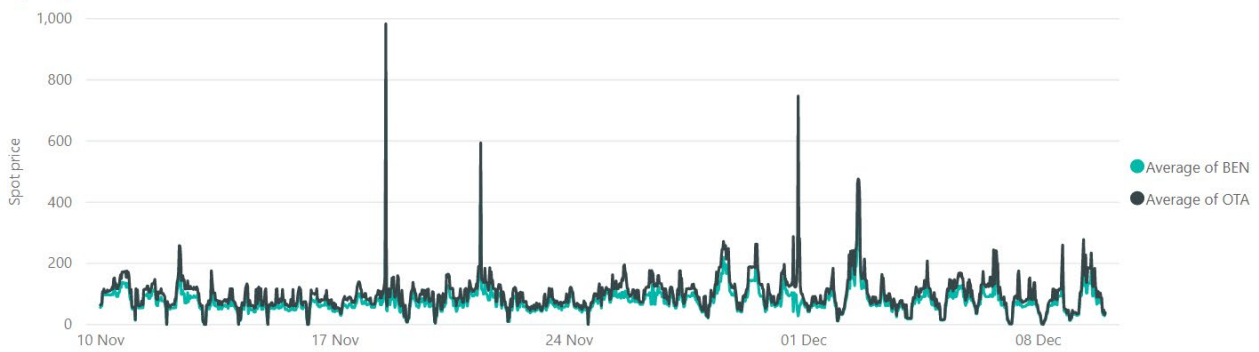


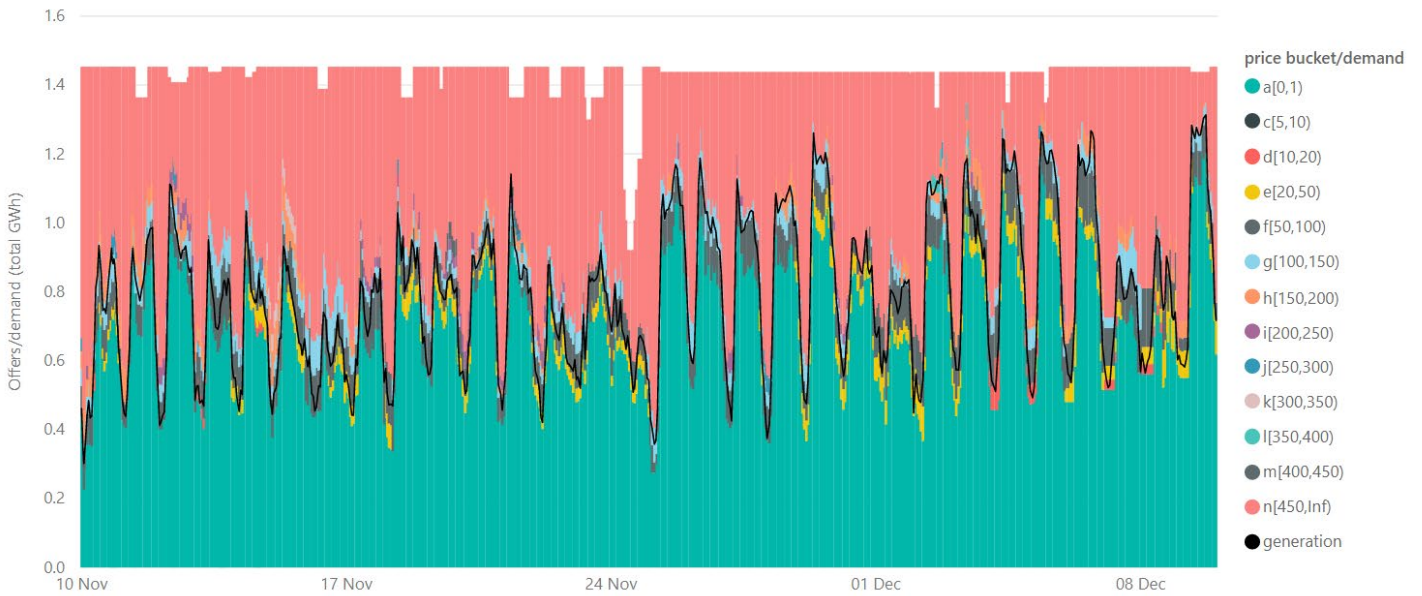
Figure 8: Manapouri offer stack and generation from 10 November, when Meridian commenced spilling, to 9 December. The offers shaded rose indicate capacity offered to the market above \$450.



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Appendix 2: Waitaki generation offers

Offer stacks and demand



Spot prices

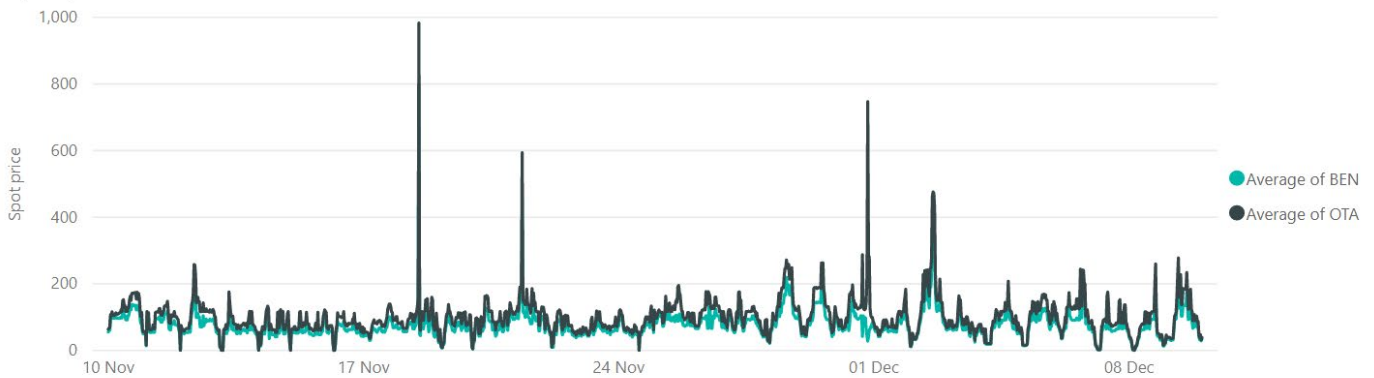


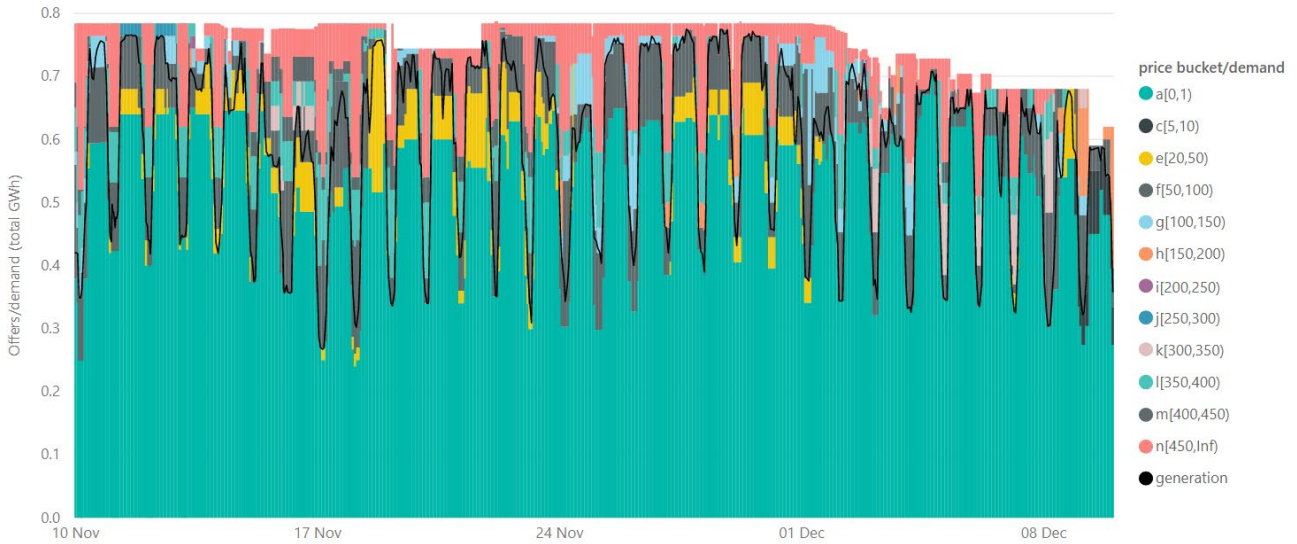
Figure 9: Waitaki offer stack and generation from 10 November, when Meridian commenced spilling at Manapouri, to 9 December. Offers resulted in prices rarely falling below \$50, despite frequent occasions when Manapouri was under-utilised and excess water was spilled.



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Appendix 3: Clutha generation offers

Offer stacks and demand



Spot prices

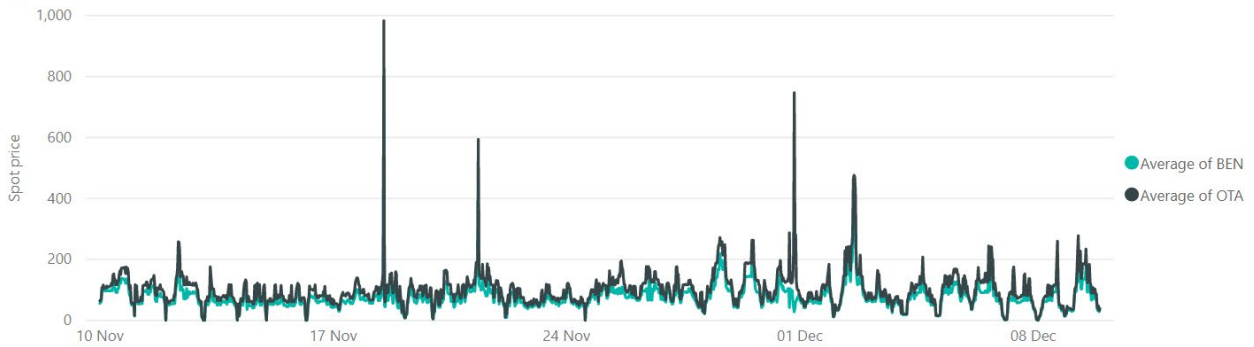


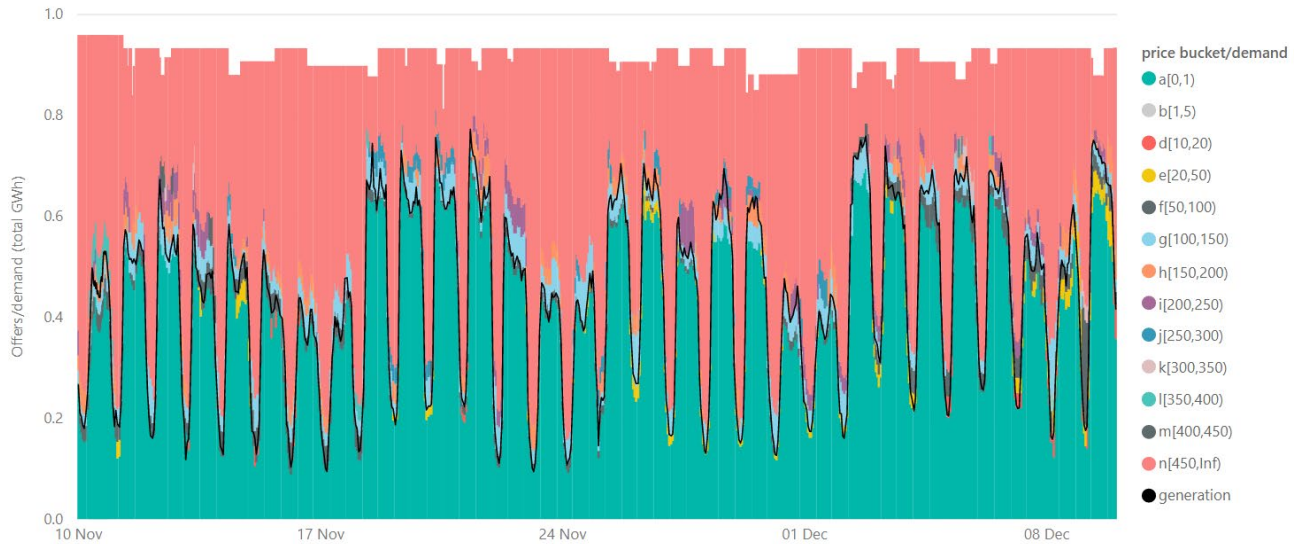
Figure 10: Clutha offer stack and generation from 10 November to 9 December. Offers resulted in prices rarely falling below \$50 and frequently reaching over \$150, while the scheme almost always had spare capacity but was spilling water to support prices.



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Appendix 4: Mercury (Waikato river chain) hydro generation

Offer stacks and demand



Spot prices

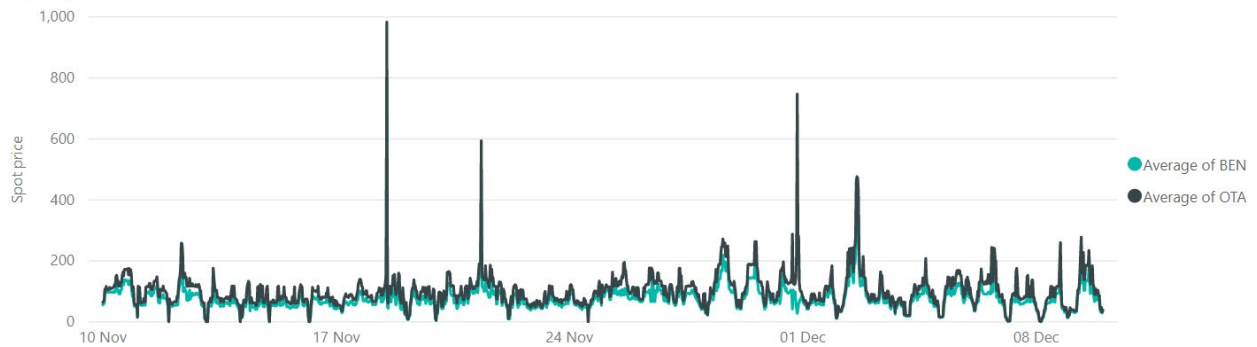


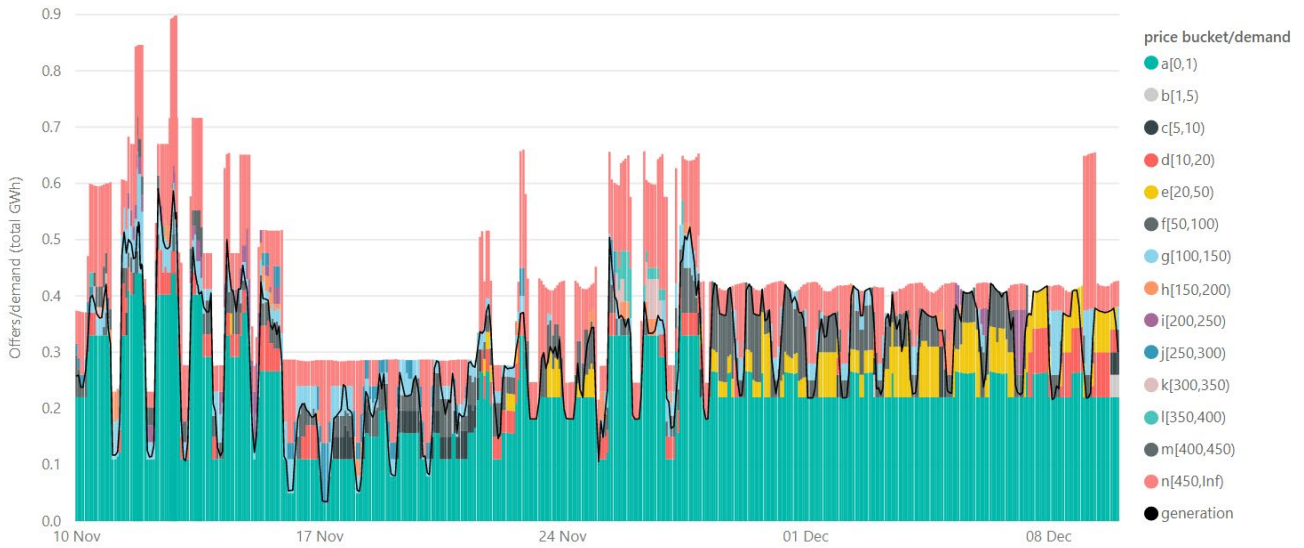
Figure 11: An increase in South Island offer volume at \$5 would have reduced dispatch of storable North Island water



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Appendix 5: Genesis (Huntly) thermal generation

Offer stacks and demand



Spot prices

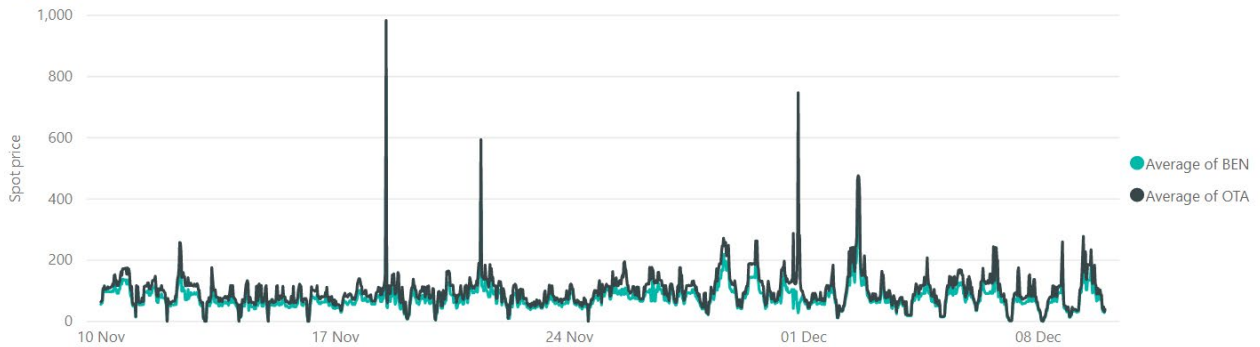
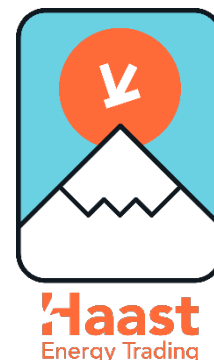


Figure 12: An increase in South Island offer volume at \$5 would have reduced dispatch of Huntly generation



Appendix 6: Assumptions made during analysis

- For the vSPD override runs, it was assumed that Manapouri and Clutha offered all available capacity at \$5.
- For the excess CO2 emissions analysis, the following emission rates were assumed (tonnes of CO2 per MWh of electricity generated)⁴⁶:
 - HLY5: 0.394.
 - HLY1-4: 0.974 if burning coal, 0.581 if burning gas.
 - SFD peakers: 0.506.
- For the excess CO2 emissions analysis, it was assumed that rankines burnt 50% gas, 50% coal.
- It was assumed that lost North Island storage could be estimated as the difference in generation under the base scenario and vSPD override summed across hydro stations in the Waikato and Waikaremoana catchments (ARA2201 ARA0, ARI1101 ARI0, ARI1102 ARI0, ATI2201 ATI0, KPO1101 KPO0, MTI2201 MTI0, OHK2201 OHK0, RPO2201 RPO0, TKU2201 TKU0, TUI1101 KTWO, TUI1101 PRI0, TUI1101 TUI0, WKM2201 WKMO, and WPA2201 WPA0).

⁴⁶ NB the source of the CO2 emission rates is as follows: for HLY5 and HLY1-4 when burning coal: Table 12 of this document: <https://www.waikatoregion.govt.nz/assets/PageFiles/21888/TR201218.pdf>. The figure for HLY1-4 when burning gas was obtained from Tables 10 and 12 of the same document, specifically by multiplying the coal emission rate from Table 12 by the ratio of gas to coal combustion emissions from Table 10 (53.3/89.4). The figure for the SFD peaker was obtained by multiplying its heat rate (9.5GJ/MWh, from <http://www.epoc.org.nz/papers/SecurityofSupply-Fulton2018.pdf>, Appendix 1) by an estimated CO2 emission rate for gas plant (53.3, from Table 12 of this document: <https://www.waikatoregion.govt.nz/assets/PageFiles/21888/TR201218.pdf>).



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Appendix 7: VSPD files

vSPD files used in the analysis. Available from <https://www.emi.ea.govt.nz/vSPD-online>

JOB NAME	OVERRIDE	DESCRIPTION	CREATED BY	CREATED DATE	FINISHED	DURATION	DOWNLOAD
+ nov_11-14_mrc_override	Man Rox Clyde v2	Nov 11-14 with Manapouri/Roxborough/Clyde offering all volume at \$5	jonathan	10/12/2019	10/12/19 19:20	23 minutes and 7 seconds	↓
+ nov_11-14_base		Nov 11-14 base case (no override)	jonathan	10/12/2019	10/12/19 18:57	18 minutes and 30 seconds	↓
+ dec_3-9_base		Dec 3-9 base case (no override)	jonathan	10/12/2019	10/12/19 18:24	30 minutes and 42 seconds	↓
+ dec_3-9_mrc_override	Man Rox Clyde v2	Dec 3-9 with Manapouri/Roxborough/Clyde offering all volume at \$5	jonathan	10/12/2019	10/12/19 17:53	32 minutes and 2 seconds	↓
+ nov_27-dec_2_base		Nov 27-Dec 2 base case (no override)	jonathan	10/12/2019	10/12/19 17:21	26 minutes and 10 seconds	↓
+ nov_27-dec_2_mrc_override	Man Rox Clyde v2	Nov 27-Dec 2 with Manapouri/Roxborough/Clyde offering all volume at \$5	jonathan	10/12/2019	10/12/19 16:55	28 minutes and 16 seconds	↓
+ nov_15-21_base		Nov 15-21 base case (no override)	jonathan	10/12/2019	10/12/19 16:23	30 minutes and 8 seconds	↓
+ nov_22-26_base		Nov 22-26 base case (no override)	jonathan	10/12/2019	10/12/19 15:52	21 minutes and 35 seconds	↓
+ nov_15-21_mrc_override	Man Rox Clyde v2	Nov 15-21 with Manapouri/Roxborough/Clyde offering all volume at \$5	jonathan	10/12/2019	10/12/19 15:27	33 minutes and 7 seconds	↓
+ nov_22-26_mrc_override	Man Rox Clyde v2	Nov 22-26 with Manapouri/Roxborough/Clyde offering all volume at \$5	jonathan	10/12/2019	10/12/19 14:47	25 minutes and 13 seconds	↓



Haast
Energy Trading

Appendix 8: Summary data from VSPD runs

The following table highlights some differences between actual dispatch and the VSPD runs outputs if the spilling hydro catchments were offered at \$5.

Metric	Unit	Value (sum of all trading periods, 11/11-9/12)	Value (daily avg)	Description*
ota_excess	\$/MWh	NA	32.9	Excess OTA price
ben_excess	\$/Mwh	NA	30.9	Excess BEN price
revenue_excess	\$	99,099,453	3,417,223	Excess revenue collected by all generators
revenue_excess_meri	\$	37,970,356	1,309,323	Excess revenue collected by Meridian
revenue_excess_contact	\$	22,649,108	781,004	Excess revenue collected by Contact
cost_excess	\$	95,634,700	3,297,748	Excess price paid across all load nodes
co2_excess	tonnes	5,984	206	Excess CO2 released across all thermal generators
lost_ni_storage	MWh	15,036	519	Reduction in storable NI water as a result of unnecessary dispatch
reduced_hvdc	MWh	32,613	1,125	Reduction in HVDC flows

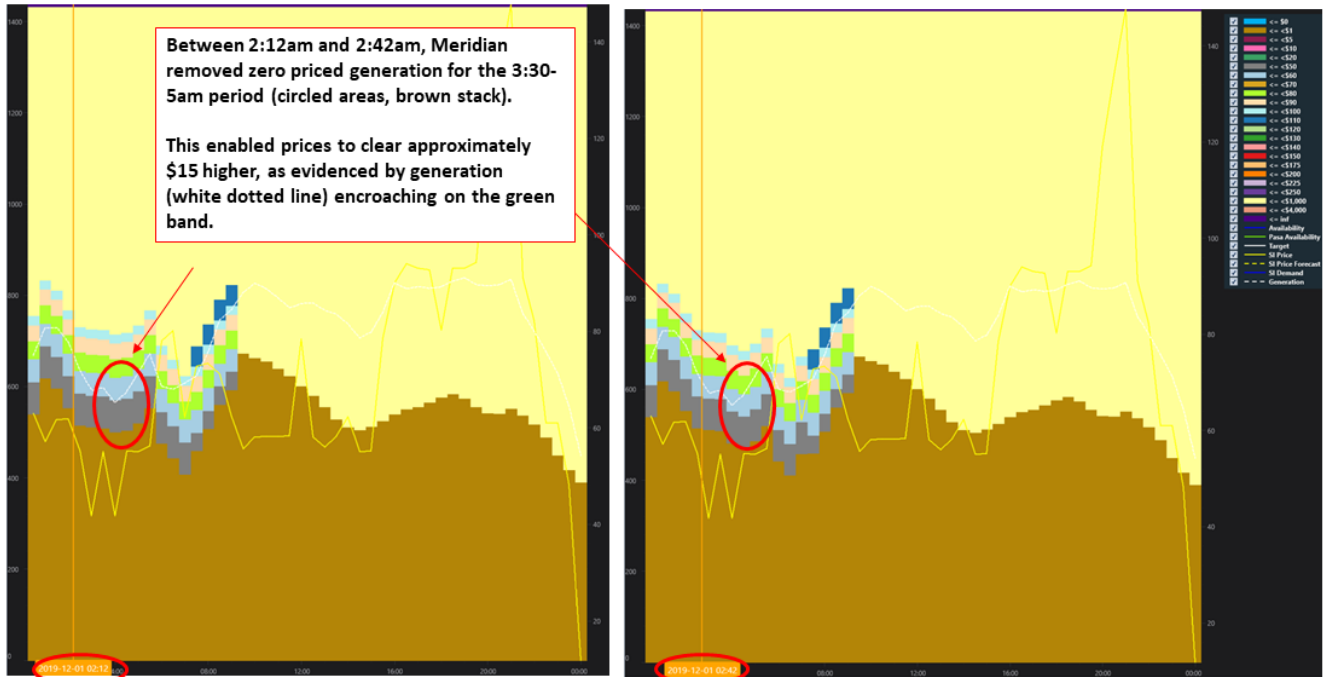
*'Excess' or 'reduction' refers to the difference in values between the actual outcome and that output from vSPD assuming Manapouri/Clutha offered all volume at \$5



Haast
Energy Trading

Appendix 9: Example of Meridian pricing up Waitaki while Manapouri is spilling

Example of Meridian pricing up Waitaki offer stacks while marginal Manapouri water was offered at \$1000 and Lake Manapouri was spilling

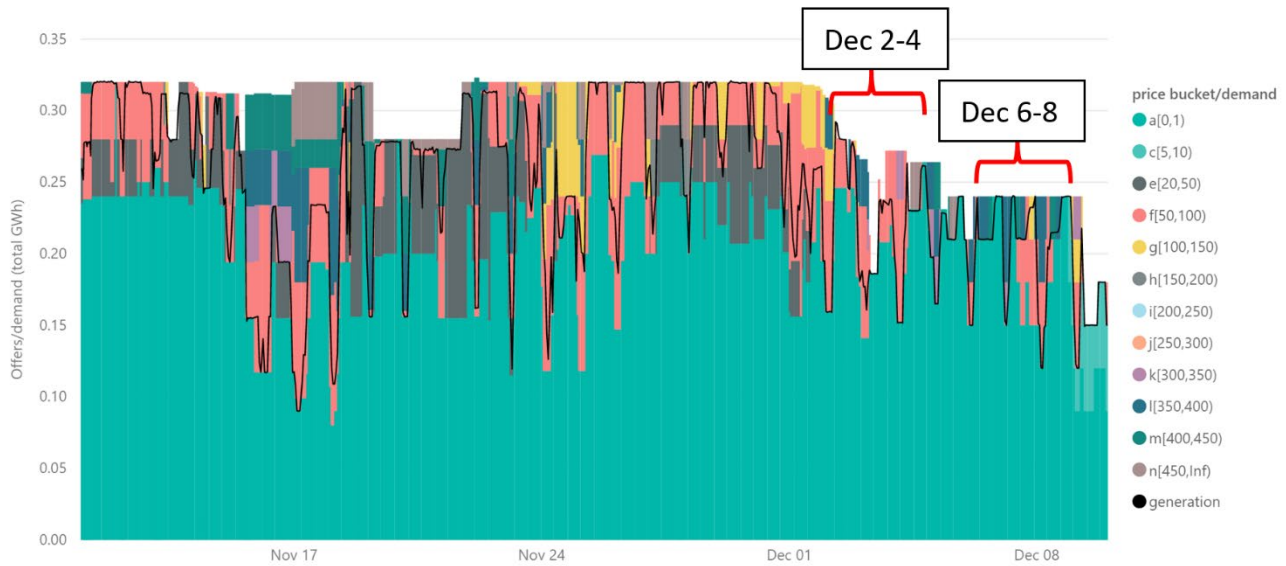




Haast
Energy Trading

Appendix 10: Evidence for offers not being made for full ROX available capacity.

There appears to be a number of periods where the full ROX capacity was not offered and there was no declared outage that explained the missing offers, but in particular we highlight the periods between Dec 2-4 and Dec 6-8.



ROX outages declared on POCP:

Outage Block:

Outage ID:

Active: 11/11/2019 to 09/12/2019

4 Weeks(s) from today

GXP/GIPs:

Group:

Region:

Sort by start time

- Owners
- Comcast
 - Contact Energy
 - ENA
 - Genesis
 - MEUC
 - Minderoo
 - Mighty River
 - Novus Energy
 - PowerGo
 - Powernet
 - Top Energy
 - Transpower
 - Trustpower
- Planning
- Tentative
 - Confirmed
 - Cancelled
 - Completed

Outage Block	Group	Start	End	Type	Owner	Planning	MW Remain	MW Loss
ROX_1		11 Nov 2019 09:00	11 Nov 2019 15:00	daily	Contact Energy	cancelled	unknown	40.00
ROX_8		13 Nov 2019 11:00	13 Nov 2019 17:30	continuous	Contact Energy	completed	unknown	40.00
ROX_1		14 Nov 2019 10:00	14 Nov 2019 12:00	continuous	Contact Energy	completed	unknown	40.00
ROX_1		19 Nov 2019 07:00	21 Nov 2019 17:30	continuous	Contact Energy	completed	unknown	40.00
ROX_3		5 Dec 2019 07:00	5 Dec 2019 12:00	continuous	Contact Energy	completed	unknown	40.00
ROX_1		9 Dec 2019 07:00	13 Dec 2019 17:30	continuous	Contact Energy	confirmed	unknown	40.00
ROX_5		9 Dec 2019 07:00	13 Dec 2019 18:00	continuous	Contact Energy	confirmed	unknown	40.00

NOTIFICATION OF BREACH

Notification Date: 12 December 2019

CONTACT DETAILS

Reporting Participant: Haast Energy Trading

Contact Name: Phillip Anderson

E-mail: phill@haastenergy.com

Mobile: +64 21 460 040

Reporting Participant: ecotricity

Contact Name: Al Yates

E-mail: alyates@ecotricity.co.nz

Reporting Participant: Electric Kiwi

Contact Name: Luke Blincoe

E-mail: luke.blincoe@electrickiwi.co.nz

Reporting Participant: Flick Electric

Contact Name: Steve O'Connor

E-mail: steve.oconnor@flickelectric.co.nz

Reporting Participant: Oji Fibre

Contact Name: Darren Gilchrist

E-mail: Darren.Gilchrist@ojifs.com

Reporting Participant: Pulse Energy Alliance

Contact Name: Gary Holden

E-mail: gary.holden@pulseenergy.co.nz

Reporting Participant: Vocus

Contact Name: Emily Acland

E-mail: Emily.Acland@vocusgroup.co.nz

PARTICIPANT ALLEGED TO BE IN BREACH

Contact Energy and Meridian Energy

RULE/REGULATION

Specify regulation/s or rule/s allegedly breached.

Clause 13.5A of the Electricity Industry Participation Code.

ALLEGED BREACH OCCURRED

Date: 10 November 2019 - ongoing as at the date of this Claim.

Time:

DESCRIPTION OF CIRCUMSTANCES

Refer to the letter "Reporting of Contact and Meridian's breaches of the High Standard of Trading Conduct requirements and Undesirable Trading Situation", dated 12 December 2019.

SUPPORTING ATTACHMENTS

Refer to the letter "Reporting of Contact and Meridian's breaches of the High Standard of Trading Conduct requirements and Undesirable Trading Situation", dated 12 December 2019.

MARKET OR OPERATIONAL IMPACT

Refer to the letter "Reporting of Contact and Meridian's breaches of the High Standard of Trading Conduct requirements and Undesirable Trading Situation", dated 12 December 2019.

RESOLUTION TO THIS EVENT

Issuing breach allegation.

STEPS TAKEN TO PREVENT RECURRING

Issuing breach allegation.

CONFIDENTIALITY:

Not applicable.

Please send completed form to:

compliance@ea.govt.nz

18 December 2019

Gerard Demler
Transmission Manager
Generation and Development
Contact Energy Limited

By Email

Dear Gerard,

Report of alleged breach: clause 13.5A.

File ref: 1912CTCT1

On 12 December 2019, seven participants jointly alleged that Contact Energy Limited's conduct breached clause 13.5A of the Electricity Industry Participation Code 2010 (Code).

The seven participants that alleged the breach were:

- Haast Energy Trading Limited
- ecotricity Limited
- Electric Kiwi Limited
- Flick Electric Limited
- OJI Fibre Solutions (NZ) Limited
- Pulse Energy Alliance LP
- Switch Utilities Limited (Vocus)

It was alleged that on 10 November 2019 and ongoing Contact was breaching the high standard of trading conduct provision in the Code. Please find attached a copy of the alleged breach, a letter to the Authority supporting the alleged breach, and the spreadsheet referred to in footnote 3 of that letter.

The letter to the Authority also claims the breach also qualifies as an undesirable trading situation (UTS). Please note this alleged breach is being processed independent of the UTS claim.

The purpose of this letter is to collate information so that the Authority's Compliance Committee can decide whether the matter requires a formal investigation to be undertaken.

Accordingly, the Authority requests that you provide information with respect to the following matters:

1. whether you accept or deny the alleged breach

2. the full circumstances surrounding the alleged breach
3. your understanding of the extent of actual and potential market and operational impact and the rationale for this
4. any steps taken to resolve the alleged breach
5. any steps taken to prevent the matter reoccurring in the future.

All information supplied to the Authority in respect of this matter will be used for investigative purposes only. However, note that all information provided to the Authority will be subject to the Official Information Act 1982. Please identify any information that you consider to be confidential or commercially sensitive.

Please provide your written response by 31 January 2020.

If you have any questions please contact me at 04 460 8864 or peter.wakefield@ea.govt.nz.

I look forward to your response.

Yours sincerely



Peter Wakefield
Senior Investigator

Peter Wakefield

From: Peter Wakefield
Sent: Thursday, 19 December 2019 3:20 PM
To: Phillip Anderson
Cc: Luke Blincoe; gary.holden; to: Al Yates; Darren Gilchrist - Oji FS; Steve O'Connor; Emily Acland
Subject: RE: UTS and Code Breach claims

Dear Phill

As discussed I am processing the breaches alleged of Contact and Meridian. In doing so I will be following our Code breach process. This process is described at a high level on our website <https://www.ea.govt.nz/code-and-compliance/compliance/code-breach-process/> and partly copied below.

At this stage I am at the fact finding stage and have sent letters to both participants requesting responses by 31 January 2020. I will then report the alleged breaches to the Authority's Compliance Committee. The Committee's next meeting is scheduled for 16 March 2020, however I will see if these cases can be considered at an earlier date.

I have recorded the breaches as being jointly alleged by

- Haast Energy Trading Limited
- ecotricity Limited
- Electric Kiwi Limited
- Flick Electric Limited
- OJI Fibre Solutions (NZ) Limited
- Pulse Energy Alliance LP
- Switch Utilities Limited (Vocus)

Please note these alleged breaches are being processed independent of the associated UTS claim.

How we deal with alleged breaches

Our process for dealing with alleged breaches of (Enforcement) Regulations.

Fact finding

When an alleged breach report is received, we contact the reporting party. If necessary, the reporting party, or other relevant parties, provide further information.

Compliance Committee

Based on the information gathered, a report on the alleged breach is prepared for the Compliance Committee. The Compliance Committee decides whether to take any action. This may involve:

- deciding to take no further action
- issuing a warning letter
- appointing an investigator to more fully investigate

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879

Peter Wakefield

From: Merinda-Lee Hassall <Merinda-Lee.Hassall@contactenergy.co.nz>
Sent: Friday, 10 January 2020 11:47 AM
To: Peter Wakefield
Cc: Chris Abbott
Subject: FW: Breach of clause 13.5A alleged of Contact Energy Limited - extension request

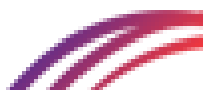
Hi Peter

Thanks for the chat this morning on Contact Energy's letter re the Breach of clause 13.5A. Thanks for the clarification on the compliance process, it was much appreciated.

As discussed we intend to provide you with a comprehensive written response and as many senior key colleagues are still on leave we would like to request an extension until Friday 14 February 2020.

Many thanks
Merinda-Lee

Merinda-Lee Hassall
Senior Regulatory Adviser
Ph: +64 4 462 1213 Ext: 4213



PO Box 10742, Wellington 6143
Level 2, Harbour City Tower
29 Brandon Street
Wellington, New Zealand
contact.co.nz

From: Peter Wakefield [<mailto:Peter.Wakefield@ea.govt.nz>]
Sent: Wednesday, 18 December 2019 4:28 p.m.
To: Gerard Demler <Gerard.Demler@contactenergy.co.nz>
Subject: Breach of clause 13.5A alleged of Contact Energy Limited

Hi Gerard

Please find attached a fact finding letter along with relevant attachments for this alleged breach.

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz

Peter Wakefield

From: Peter Wakefield
Sent: Friday, 10 January 2020 12:09 PM
To: Merinda-Lee Hassall
Cc: Chris Abbott
Subject: RE: Breach of clause 13.5A alleged of Contact Energy Limited - extension request

Hi Merinda-Lee

Thank you for your email. I acknowledge your request and reasons provided for an extension to the response date for this alleged breach.

I look forward to receiving Contact's response on the revised date of 14 February 2020.

Regards



Peter Wakefield
Senior Investigator

DDI: +64 4 460 8864

Mob: +64 21 392 715

Fax: +64 4 460 8879

Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko

Level 7, Harbour Tower, 2 Hunter Street

PO Box 10041

Wellington 6143

New Zealand

www.ea.govt.nz

From: Merinda-Lee Hassall <Merinda-Lee.Hassall@contactenergy.co.nz>
Sent: Friday, 10 January 2020 11:47 AM
To: Peter Wakefield <Peter.Wakefield@ea.govt.nz>
Cc: Chris Abbott <Chris.Abbott@contactenergy.co.nz>
Subject: FW: Breach of clause 13.5A alleged of Contact Energy Limited - extension request

Hi Peter

Thanks for the chat this morning on Contact Energy's letter re the Breach of clause 13.5A. Thanks for the clarification on the compliance process, it was much appreciated.

As discussed we intend to provide you with a comprehensive written response and as many senior key colleagues are still on leave we would like to request an extension until Friday 14 February 2020.

Many thanks
Merinda-Lee

Merinda-Lee Hassall
Senior Regulatory Adviser
Ph: +64 4 462 1213 Ext: 4213

14 February 2020

Peter Wakefield
Senior Investigator
Electricity Authority – Te Mana Hiko
Level 7, ASB Tower
Wellington

Dear Peter

RE: Report of alleged breach: clause 13.5A. File ref 1912CTCT1

We acknowledge receipt of your letter dated 18 December 2019 to report on the alleged breach of clause 13.5A of the Electricity Industry Participation Code 2010 (“the Code”).

We deny the alleged breach of the high standard of trading conduct provisions of the Code.

Contact manages the Clyde and Roxburgh Power Stations on the Clutha River, collectively referred to in this correspondence as the “Clutha Assets”. The Clutha Assets operate on a catchment which is largely a ‘run of river scheme’, meaning the ability to store water is negligible. This means that when flows exceed around 920-980 cumecs at Clyde or 825-900 cumecs at Roxburgh over sustained periods we are unable to utilise all water for generation.

Since November 2019 natural flows have been significantly elevated and well above the historical average for the time of year. The Clutha catchment was in flood conditions with total flows averaging approximately 1150 cumecs (which includes the release of the minimum consented level of 10 cumecs from Lake Hawea).

We have analysed the period from 7 November 2019 to 31 December 2019 (“the relevant period”) and at all times, we believe we have complied with clause 13.5A of the Code - our conduct in relation to offers and reserve offers has been consistent with a high standard of trading conduct.

13.5B(1)(a)

In Haast’s letter to the Electricity Authority dated 12 December 2019 it is alleged that there are a number of trading periods where the full Roxburgh capacity was not offered and therefore Contact cannot comply with the safe harbour provisions. In particular, Haast highlighted the periods between 2-4 December and 6-8 December in Appendix 10 of its letter.

In accordance with the safe harbours for clause 13.5A, for nearly all of the 2640 trading periods during the relevant period, Contact offered all available generating capacity into the market (13.5B(1)(a)) (i.e. where a unit is capable of providing generation, and capable of meeting a dispatch instruction within the following trading period).

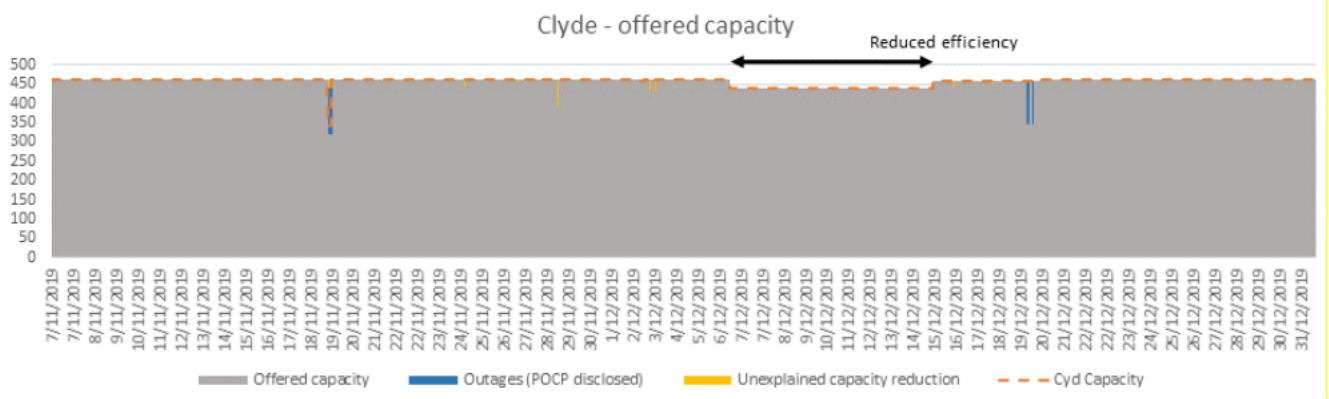
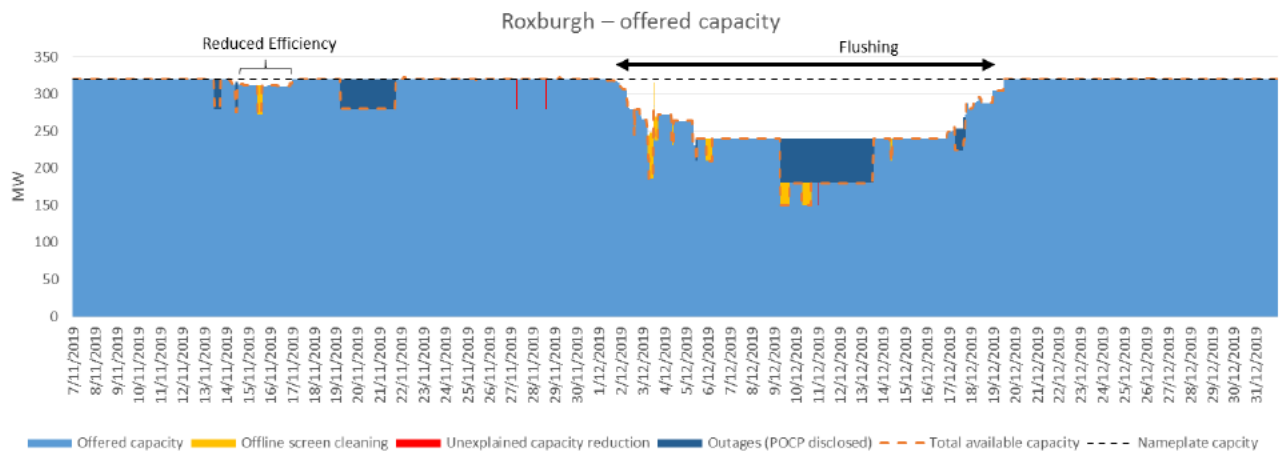
There were reductions in the generation capacity offered from the Clutha Assets when set against the intended full-load sustained output of the Clutha Assets during a number of

trading periods, but those reductions were because the units were not capable of meeting a dispatch instruction during the following trading period greater than the MW offered. Such reductions were as a result of:

- Planned Outages – units being removed from service for planned maintenance. These outages were published on the POCP website.
- Screen Cleaning - A flood event of this magnitude on the Clutha River brings significant amounts of debris (weed and driftwood) through the catchment. This debris causes significant operational issues with our intake screens, particularly at our Roxburgh Power station. To manage this build up, we are required to undertake daily cleaning of all of our Roxburgh generator's intakes. Removal of the debris from the intake screens (screen cleaning) can sometimes be undertaken whilst the units are online, but at other times the units need to be taken offline to complete this work. The build-up of debris is unpredictable and difficult to monitor. Decisions to undertake offline screen cleaning are made on the day with the work occurring on that day. This reduction in capacity was accurately reflected in our spot market offers to help ensure the system operator can accurately manage security of supply. Given the same day nature of this work, we do not disclose this through the POCP website.
- Reduced Efficiency - As part of our resource consent we are required to lower Lake Roxburgh during high flow events to remove sediment that builds up over time. Flushing the silt downstream reduces the risk of flooding to Alexandra and so this activity is important for the safe and prudent management of the scheme. We also reduce the level of the head-pond lake of the Clyde Dam, Lake Dunstan. As the lake levels are reduced, the efficiency of the Clyde and Roxburgh units, and the power that can actually be generated by them, reduces. Below is a timeline of our flushing activities:
 - Sunday 1 December 5pm: we decided to reduce Lake Roxburgh
 - Monday 2 December 3am: Lake Roxburgh had reached <126.00masl (flushing level)
 - Monday 16 December noon: we decided to stop flushing at Lake Roxburgh
 - Monday 16 December 5pm: we started to raise Lake Roxburgh
 - Wednesday 18 December 3pm: Lake Roxburgh reached >130.15masl (normal operating level)
 - Thursday 19 December noon: after an engineering assessment and review we started to offer full machine capacity from Roxburgh.

This information was communicated to the market in a timely manner through our spot market offers. This information is not published on the POCP website as it is not considered to be an outage nor a de-rating, and the duration of flushing events is determined by the weather so a return to normal operations is not accurately predictable.

The following charts show the total capacity of generation offered at Roxburgh and Clyde over the relevant period:



When analysing our offers for all 2640 trading periods during the relevant period, we have identified three trading periods at Roxburgh and seven trading periods at Clyde where we did not offer all generating capacity into the market. Contact made 120,749 offer changes during the relevant period. We have been unable to identify the specific reason for the reduction in generating capacity offered into the market when retrospectively reviewing our offer position. This may have been because we were not capable of meeting a dispatch instruction greater than the MW offered for one of the reasons outlined above, or may have occurred as a result of the reality of managing operational complexities and challenging flood conditions in real time.

Whilst we cannot demonstrate compliance with the safe harbour provisions, for the trading periods referred to above, we believe our people did exceptionally well to manage the challenging conditions and adopted responsible trading behaviour at all times.

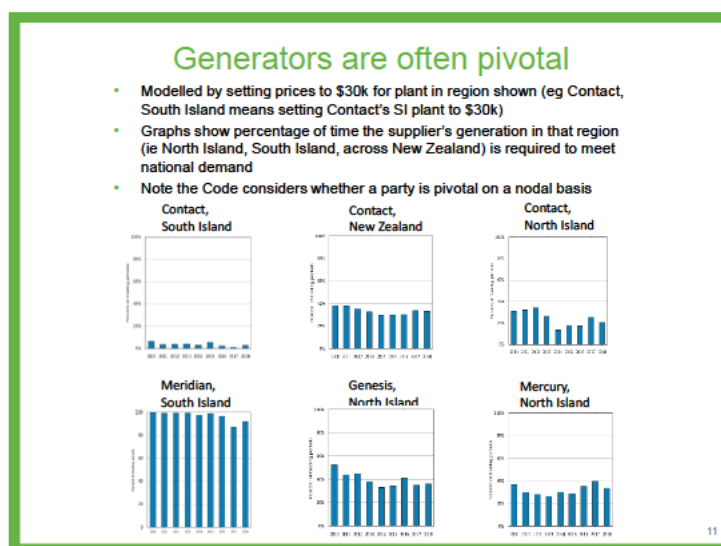
13.5B(1)(b)

In accordance with the safe harbours for clause 13.5A, Contact submitted and revised offers in a timely manner (13.5B(1)(b)), as soon as practicable based on the latest market information available to the trader. This is evident upon review of Contact’s trading activity which shows that offers were constantly being made and revised in reaction to real time market conditions.

The trading decisions of Contact’s trading team are guided by our internal policies and principles.

13.5B(1)(c)

Contact is rarely pivotal in respect of its South Island generation. The following extract from the Market Development Advisory Group’s trading conduct review briefing and discussion paper shows the percentage of time a supplier’s generation in that region is required to meet South Island, North Island and national demand:



As a result of the analysis illustrated by the above graphs we consider we were not pivotal in respect of the South Island for each trading period during the relevant period.

In the unlikely case that Contact was pivotal in respect of its South Island generation for any of the trading periods during the relevant period, we are comfortable that our offers will have been consistent with trading periods when we were not pivotal.

During extreme flood conditions, the safety of our dams, equipment, people and communities is Contact’s primary concern. Despite the challenging conditions and extra operational complexity brought about by the flood conditions we believe we managed our hydro generation assets in accordance with the behaviour of a prudent generator and adopted responsible trading behaviour, in line with our policies and practices over and above the requirements set out in the Code.



We are confident that at all times our conduct in relation to offers and reserve offers has been consistent with a high standard of trading conduct in compliance with clause 13.5A of the Code.

Yours sincerely

A handwritten signature in grey ink, appearing to read "James Kilty".

James Kilty
Chief Generation and Development Officer

Investigation of alleged breaches of the Electricity Industry Participation Code 2010 by Contact Energy Limited

On 12 December 2019, Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP (the Complainants) reported to the Electricity Authority (Authority) that they believed on reasonable grounds that Contact Energy Limited (Contact) breached clause 13.5A of the Electricity Industry Participation Code 2010 (Code).

On 5 August 2020, under regulation 12 of the Electricity Industry (Enforcement) Regulations 2010 (Regulations), the Authority appointed Peter Wakefield as the investigator to investigate the alleged breaches.

Under regulation 16 of the Regulations, the investigator must promptly notify the industry participant alleged to have breached the Code of the allegations that it is being investigated. On 12 August 2020, the investigator notified Contact of the investigation.

Under regulation 17 of the Regulations, at the same time as the investigator sends a notice under regulation 16, the investigator must publicise the information about the matter under investigation, including the content of the notice given under that regulation. This notice publicises the information about the matter under investigation, and a copy of the notice given under regulation 16 is attached.

Any participant who considers that it is affected by the matter being investigated, and who wishes to become a party to this investigation, should notify the investigator within 10 working days after the date on which this notice is published.

The investigator's contact details are:

Peter Wakefield
Senior Investigator
Electricity Authority
Phone: 04 460 8864
Mobile: 021 392 715
peter.wakefield@ea.govt.nz

Level 7
Harbour Tower
2 Hunter Street
PO Box 10041
Wellington

NOTICE UNDER REGULATION 16 OF THE ELECTRICITY INDUSTRY (ENFORCEMENT) REGULATIONS 2010

Date:	12 August 2020
Addressee:	Contact Energy Limited
Subject:	Contact is alleged to have breached the high standard of trading conduct with its offers for its Clyde and Roxburgh power stations.
Investigator:	Peter Wakefield, Senior Investigator, peter.wakefield@ea.govt.nz (appointed investigator under regulation 12 of the Electricity Industry (Enforcement) Regulations 2010 (Regulations)).
Notifying industry participants:	Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP (the Complainants)
Clause allegedly breached:	Clause 13.5A. Clause 13.5A requires a generator to ensure that its trading conduct in relation to offers and reserve offers is consistent with a high standard of trading conduct.
Circumstances of alleged breaches:	<p>For the period from 11 November 2019 to 28 December 2019 the flows on the Clutha River were above the level able to be used or stored for generation at Clyde and Roxburgh.</p> <p>The Complainants alleged the breaches occurred when Contact was spilling water at Clyde and Roxburgh power stations from 11 November 2019 and ongoing. The Complainants allege that “Contact has repeatedly offered zero-value water into the market at prices greater than \$50 [per MWh] to prop up spot prices, intentionally spilling more water than necessary.”</p> <p>The period of spilling water covered approximately 2,116 trading periods up until 28 December 2019.</p>

Date and time of alleged breaches:
<ul style="list-style-type: none">• Between 11 November 2019 and 28 December 2019
<p><i>Please note, under regulation 16 of the Regulations, you are obliged to respond to this allegation, in writing, to the investigator within 10 working days of receipt of this notice (unless the investigator allows, in writing, a longer period).</i></p> <p><i>Please provide your response by return email to the investigator.</i></p>

Include the following in your response:

Whether you believe you have breached the Code

Whether there is another provision you consider more accurately describes the nature of the event

A full explanation of the circumstances surrounding the alleged breaches

Identification of any information provided in your response that you consider confidential and that should not be included in the investigator's report under regulation 19 of the Regulations (regulation 15(2) of the Regulations).

Peter Wakefield

From: Peter Wakefield
Sent: Thursday, 20 August 2020 4:22 PM
To: Chris Abbott
Subject: RE: Notice of Investigation reference 1912CTCT1

Hi Chris

I have allowed Meridian an extension to respond to its HSOTC notice of investigation. Please let me know if Contact requires an extension to respond.

Regards
Peter

Peter Wakefield

From: Peter Wakefield
Sent: Monday, 24 August 2020 10:36 AM
To: Chris Abbott
Subject: RE: Notice of Investigation reference 1912CTCT1

Hi Chris

As discussed an extension to 23 September 2020 is allowable to respond to this investigation.

Regards



Peter Wakefield
Senior Investigator

DDI: +64 4 460 8864

Mob: +64 21 392 715

Fax: +64 4 460 8879

Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz

Peter Wakefield

From: Andrew Anderson <Andrew.Anderson@mercury.co.nz>
Sent: Monday, 24 August 2020 2:51 PM
To: Peter Wakefield
Cc: james.flexman@mercury.co.nz; Nick Wilson; John Bright
Subject: Joining Investigations

Peter

Mercury wishes to become party to both investigations the Authority are undertaking with regards to the alleged breaches of clause 13.5A of the Electricity Industry Participant Code by Contact and Meridian.

Regards

ANDREW ANDERSON

TRADING MANAGER

MERCURY.CO.NZ

P +64 7 857 0112 M +64 27 2078304

E Andrew.Anderson@mercury.co.nz

17 Grantham St, Hamilton

PO Box 445. Hamilton 3240. New Zealand



This message contains confidential information. If it's not intended for you, please don't copy, disclose or use it, but please do let us know by return email and then delete this message.

25 August 2020

Peter Wakefield
Senior Investigator
Electricity Authority
By email: peter.wakefield@ea.govt.nz

Dear Peter

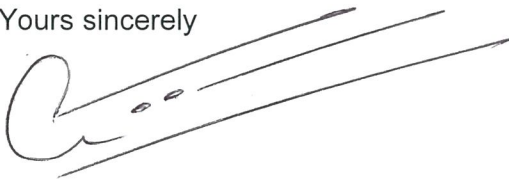
Re: Investigation of alleged breaches of the Electricity Industry Participation Code 2010 by Meridian Energy Limited and Contact Energy Limited

We refer to the notices of investigation for the alleged breaches of the Electricity Industry Participation Code 2010 by Meridian Energy Limited and Contact Energy Limited dated 12 August 2020.

In accordance with regulation 17 of the Electricity Industry (Enforcement) Regulations 2010, Nova Energy Limited hereby notifies you that it considers that it was or is affected by the matter being investigated and wish to become a party to the investigation.

Please send any further notices concerning this matter to me at lkoomen@toddcorporation.com.

Yours sincerely



Liesbeth Koomen
General Counsel

E lkoomen@toddcorporation.com
P +64 4 901 7058
M +64277343149

Level 15, 95 Customhouse Quay | PO Box 3141 Wellington 6140 | New Zealand



25 August 2020

Peter Wakefield
Senior Investigator
Electricity Authority
By email: peter.wakefield@ea.govt.nz

Dear Peter

Re: Investigation of alleged breaches of the Electricity Industry Participation Code 2010 by Meridian Energy Limited and Contact Energy Limited

We refer to the notices of investigation for the alleged breaches of the Electricity Industry Participation Code 2010 by Meridian Energy Limited and Contact Energy Limited dated 12 August 2020.

In accordance with regulation 17 of the Electricity Industry (Enforcement) Regulations 2010, Todd Generation Limited hereby notifies you that it considers that it was or is affected by the matter being investigated and wish to become a party to the investigation.

Please send any further notices concerning this matter to me at lkoomen@toddcorporation.com.

Yours sincerely

A handwritten signature in black ink, consisting of a stylized 'L' followed by a series of horizontal strokes that trail off to the right.

Liesbeth Koomen
General Counsel

E lkoomen@toddcorporation.com
P +64 4 901 7058
M +64277343149

Level 15, 95 Customhouse Quay | PO Box 3141 Wellington 6140 | New Zealand

Peter Wakefield

From: Matt Ritchie <Matt.Ritchie@genesisenergy.co.nz>
Sent: Monday, 17 August 2020 1:52 PM
To: Peter Wakefield
Subject: Regulatory investigations - affected party
Attachments: 1912MERI2_GENE_affected_party.pdf; 1912CTCT1_GENE_affected_party.pdf

Dear Peter,

Please find **attached** letters requesting Genesis Energy join as an affected party to two investigations announced on 12 August (refs: **1912MERI2**, and **1912CTCT1**).

Please don't hesitate to contact me if you have any questions.

Regards,
Matt



Matt Ritchie | Senior Advisor, Regulatory Affairs and Government Relations |
Genesis Energy Ltd
M. 027 204 3864 [in](#) [f](#)



23 September 2020

Peter Wakefield
Senior Investigator
Electricity Authority – Te Mana Hiko
Level 7, ASB Tower
Wellington

Dear Peter

Investigation of alleged breaches of clause 13.5A of Electricity Industry Participation Code 2010

We refer to the Electricity Authority's (**Authority**) notice of 5 August that the Authority would investigate alleged breaches by Contact of clause 13.5A of the Electricity Industry Participation Code 2010 (the **Code**). The Authority has requested our response to whether we believe we have breached the Code, and providing a full explanation of the circumstances surrounding the alleged breaches.

Contact did not breach the Code

At all times Contact operated with a high standard of trading conduct under the Code. In addition, Contact met the necessary conditions under clause 13.5B safe harbour:

- Contact made offers in respect of all of its generating capacity that it was able to operate in the relevant trading periods;¹ and
- when Contact decided to submit or revise an offer, we did so as soon as we could;² and
- Contact was not pivotal in 2,200 of 2,304 relevant periods across all nodes when considering its offers for its Clyde and Roxburgh power stations;³
- In 104 of 2,304 relevant periods where Contact was pivotal, Contact's offers were consistent with offers we made when not pivotal. At all times, Contact staff operated under the assumption that Contact was not pivotal, and would not have been aware of those trading periods that modelling has subsequently identified were pivotal in this ex post analysis.⁴

¹ Clause 13.5B(a)

² Clause 13.5B(b)

³ Clause 13.5B(c)

⁴ Clause 13.5B(c)(ii)

Contact denies the allegation made by the complainants⁵ set out in the investigation notice that “Contact has repeatedly offered zero-value water into the market at prices greater than \$50 [per MWh] to prop up spot prices, intentionally spilling more water than necessary”.

Contact has reviewed its trading during that period. The allegation is factually incorrect:

- **Contact did not intentionally spill more water than necessary** – this claim covers a period when significant flooding occurred in the lower South Island. Safety of our dams, people, plant and local communities is always Contact’s paramount concern. During the flood event, Contact balanced safe and sensible generation in real-time with the safety of our plant, people, resource consents, and managing the health of the river.
- **Contact did not offer generation at high prices to “prop up spot prices”** - Tranches were offered at higher prices during the allegation period to ensure that Contact did not operate its hydro generation at the margin. Avoiding marginal operation during this period was essential to maintain stable lake levels and ensure steady flows to avoid flooding downstream of Roxburgh. The engineering design of our plant means that spill and sluice gates cannot respond as quickly as other generators do when they are marginal.

At all times during the alleged period, Contact’s conduct in relation to offers and reserve offers was consistent with a high standard of trading conduct as required under clause 13.5A of the Code.

Circumstances surrounding the alleged breaches

Contact has previously provided information to the Authority that sets out Contact’s operations during the allegation period.⁶ This is attached as Annex One. We have undertaken further analysis of the seven trading periods at Clyde where we had been unable to confirm that we had offered all generation capacity into the market. On further investigation, we can confirm that in six of the periods, Contact did offer all generation capacity. The rated capacity of each unit at Clyde is 108MW with a station total of 432MW. While 464MW is the stated continuous rating, this assumes ideal grid conditions (voltage) and hydrology conditions (net head) that were not present during this period.

Annex Two sets out supplementary information provided to the Authority on 14 February 2020 for the UTS investigation. This document explains how Contact was managing the Clyde and Roxburgh power stations on the Clutha River, the flood conditions at the time, available water storage, spill as a result of high flow, necessary capacity reductions as a result of planned and forced outages and screen cleaning, and finally regulatory requirements including flushing and table discharge.

This information clearly shows that Contact was not spilling excess water above that necessary for the safe and prudent operation of the Clyde and Roxburgh dams during flooding.

⁵ Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited and Pulse Energy Alliance LP

⁶ Contact Energy, *RE: Report of alleged breach: clause 13.5A. File ref 1912CTCT1*, 14 February 2020

We look forward to discussing this material further with you.

Yours sincerely

A handwritten signature in cursive script, appearing to read "Matthew Cleland".

Matthew Cleland

GM Wholesale Markets

**Annex One – Contact initial response
to the HSOTC allegation**

14 February 2020



Peter Wakefield
Senior Investigator
Electricity Authority – Te Mana Hiko
Level 7, ASB Tower
Wellington

Dear Peter

RE: Report of alleged breach: clause 13.5A. File ref 1912CTCT1

We acknowledge receipt of your letter dated 18 December 2019 to report on the alleged breach of clause 13.5A of the Electricity Industry Participation Code 2010 (“the Code”).

We deny the alleged breach of the high standard of trading conduct provisions of the Code.

Contact manages the Clyde and Roxburgh Power Stations on the Clutha River, collectively referred to in this correspondence as the “Clutha Assets”. The Clutha Assets operate on a catchment which is largely a ‘run of river scheme’, meaning the ability to store water is negligible. This means that when flows exceed around 920-980 cumecs at Clyde or 825-900 cumecs at Roxburgh over sustained periods we are unable to utilise all water for generation.

Since November 2019 natural flows have been significantly elevated and well above the historical average for the time of year. The Clutha catchment was in flood conditions with total flows averaging approximately 1150 cumecs (which includes the release of the minimum consented level of 10 cumecs from Lake Hawea).

We have analysed the period from 7 November 2019 to 31 December 2019 (“the relevant period”) and at all times, we believe we have complied with clause 13.5A of the Code - our conduct in relation to offers and reserve offers has been consistent with a high standard of trading conduct.

13.5B(1)(a)

In Haast’s letter to the Electricity Authority dated 12 December 2019 it is alleged that there are a number of trading periods where the full Roxburgh capacity was not offered and therefore Contact cannot comply with the safe harbour provisions. In particular, Haast highlighted the periods between 2-4 December and 6-8 December in Appendix 10 of its letter.

In accordance with the safe harbours for clause 13.5A, for nearly all of the 2640 trading periods during the relevant period, Contact offered all available generating capacity into the market (13.5B(1)(a)) (i.e. where a unit is capable of providing generation, and capable of meeting a dispatch instruction within the following trading period).

There were reductions in the generation capacity offered from the Clutha Assets when set against the intended full-load sustained output of the Clutha Assets during a number of trading periods, but those reductions were because the units were not capable of meeting a dispatch instruction during the following trading period greater than the MW offered. Such reductions were as a result of:

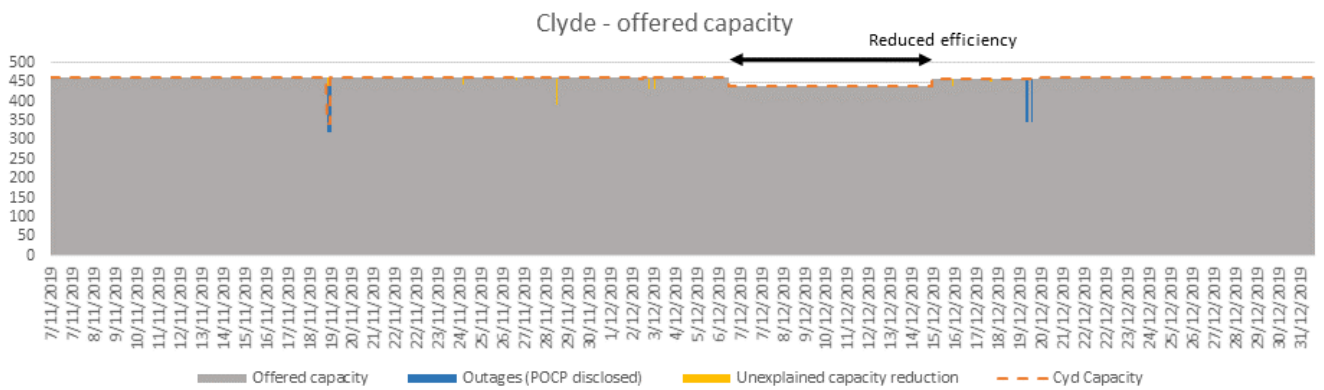
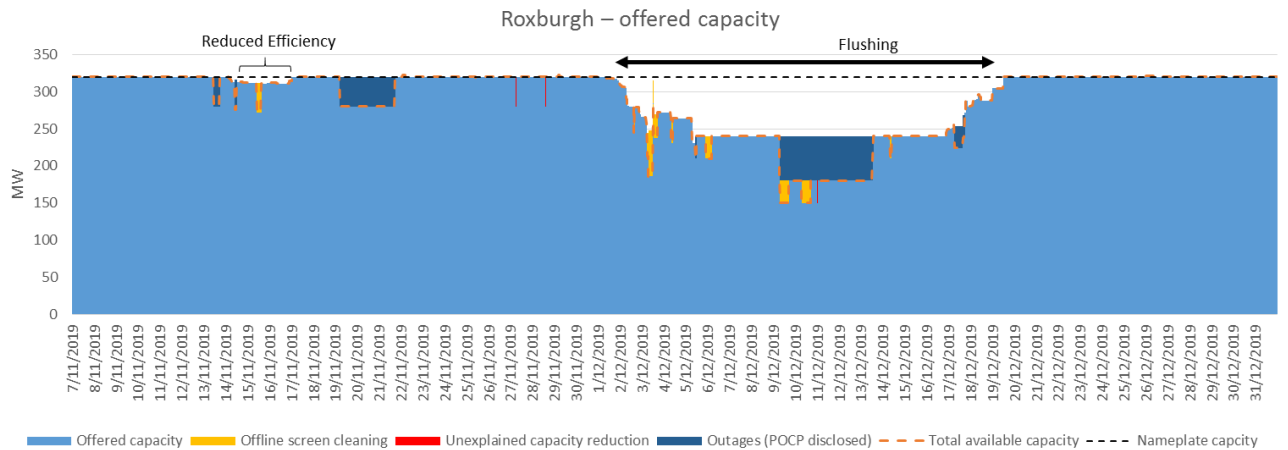
- Planned Outages – units being removed from service for planned maintenance. These outages were published on the POCP website.

- Screen Cleaning - A flood event of this magnitude on the Clutha River brings significant amounts of debris (weed and driftwood) through the catchment. This debris causes significant operational issues with our intake screens, particularly at our Roxburgh Power station. To manage this build up, we are required to undertake daily cleaning of all of our Roxburgh generator’s intakes. Removal of the debris from the intake screens (screen cleaning) can sometimes be undertaken whilst the units are online, but at other times the units need to be taken offline to complete this work. The build-up of debris is unpredictable and difficult to monitor. Decisions to undertake offline screen cleaning are made on the day with the work occurring on that day. This reduction in capacity was accurately reflected in our spot market offers to help ensure the system operator can accurately manage security of supply. Given the same day nature of this work, we do not disclose this through the POCP website.

- Reduced Efficiency - As part of our resource consent we are required to lower Lake Roxburgh during high flow events to remove sediment that builds up over time. Flushing the silt downstream reduces the risk of flooding to Alexandra and so this activity is important for the safe and prudent management of the scheme. We also reduce the level of the head-pond lake of the Clyde Dam, Lake Dunstan. As the lake levels are reduced, the efficiency of the Clyde and Roxburgh units, and the power that can actually be generated by them, reduces. Below is a timeline of our flushing activities:
 - Sunday 1 December 5pm: we decided to reduce Lake Roxburgh
 - Monday 2 December 3am: Lake Roxburgh had reached <126.00masl (flushing level)
 - Monday 16 December noon: we decided to stop flushing at Lake Roxburgh
 - Monday 16 December 5pm: we started to raise Lake Roxburgh
 - Wednesday 18 December 3pm: Lake Roxburgh reached >130.15masl (normal operating level)
 - Thursday 19 December noon: after an engineering assessment and review we started to offer full machine capacity from Roxburgh.

This information was communicated to the market in a timely manner through our spot market offers. This information is not published on the POCP website as it is not considered to be an outage nor a de-rating, and the duration of flushing events is determined by the weather so a return to normal operations is not accurately predictable.

The following charts show the total capacity of generation offered at Roxburgh and Clyde over the relevant period:



When analysing our offers for all 2640 trading periods during the relevant period, we have identified three trading periods at Roxburgh and seven trading periods at Clyde where we did not offer all generating capacity into the market. Contact made 120,749 offer changes during the relevant period. We have been unable to identify the specific reason for the reduction in generating capacity offered into the market when retrospectively reviewing our offer position. This may have been because we were not capable of meeting a dispatch instruction greater than the MW offered for one of the reasons outlined above, or may have occurred as a result of the reality of managing operational complexities and challenging flood conditions in real time.

Whilst we cannot demonstrate compliance with the safe harbour provisions, for the trading periods referred to above, we believe our people did exceptionally well to manage the challenging conditions and adopted responsible trading behaviour at all times.

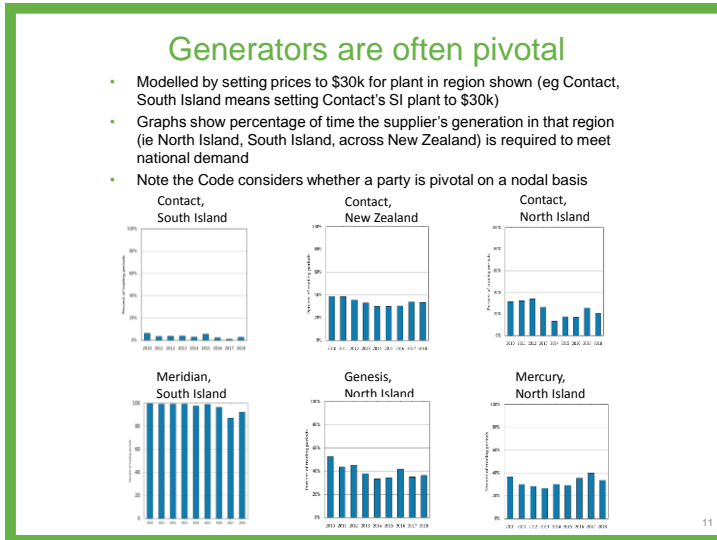
13.5B(1)(b)

In accordance with the safe harbours for clause 13.5A, Contact submitted and revised offers in a timely manner (13.5B(1)(b)), as soon as practicable based on the latest market information available to the trader. This is evident upon review of Contact’s trading activity which shows that offers were constantly being made and revised in reaction to real time market conditions.

The trading decisions of Contact's trading team are guided by our internal policies and principles.

13.5B(1)(c)

Contact is rarely pivotal in respect of its South Island generation. The following extract from the Market Development Advisory Group's trading conduct review briefing and discussion paper shows the percentage of time a supplier's generation in that region is required to meet South Island, North Island and national demand:



As a result of the analysis illustrated by the above graphs we consider we were not pivotal in respect of the South Island for each trading period during the relevant period.

In the unlikely case that Contact was pivotal in respect of its South Island generation for any of the trading periods during the relevant period, we are comfortable that our offers will have been consistent with trading periods when we were not pivotal.

During extreme flood conditions, the safety of our dams, equipment, people and communities is Contact's primary concern. Despite the challenging conditions and extra operational complexity brought about by the flood conditions we believe we managed our hydro generation assets in accordance with the behaviour of a prudent generator and adopted responsible trading behaviour, in line with our policies and practices over and above the requirements set out in the Code.

We are confident that at all times our conduct in relation to offers and reserve offers has been consistent with a high standard of trading conduct in compliance with clause 13.5A of the Code.

Yours sincerely

James Kilty
Chief Generation and Development Officer

Annex Two – Contact Energy Supplementary Data

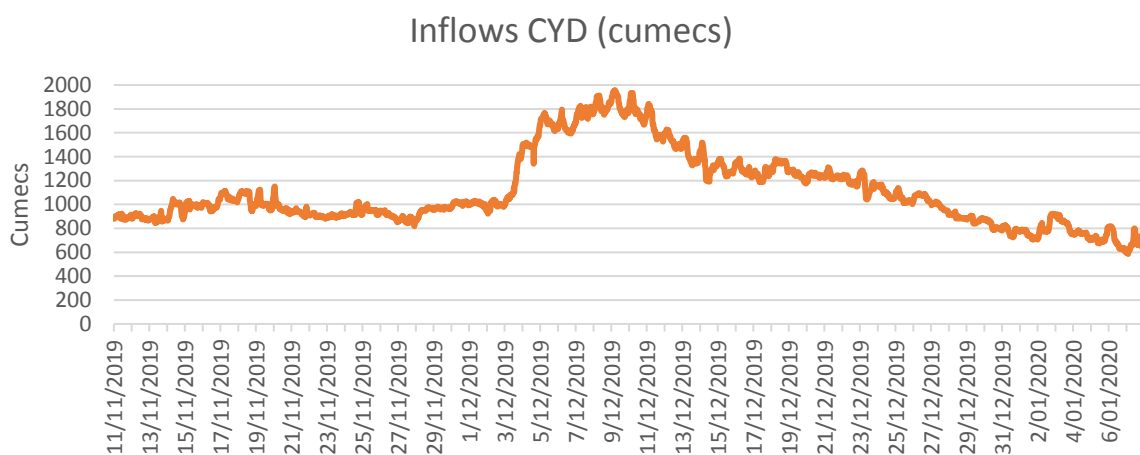
**[provided on 14 February 2020
for UTS investigation]**

CONTACT ENERGY: Context and Supplementary Information

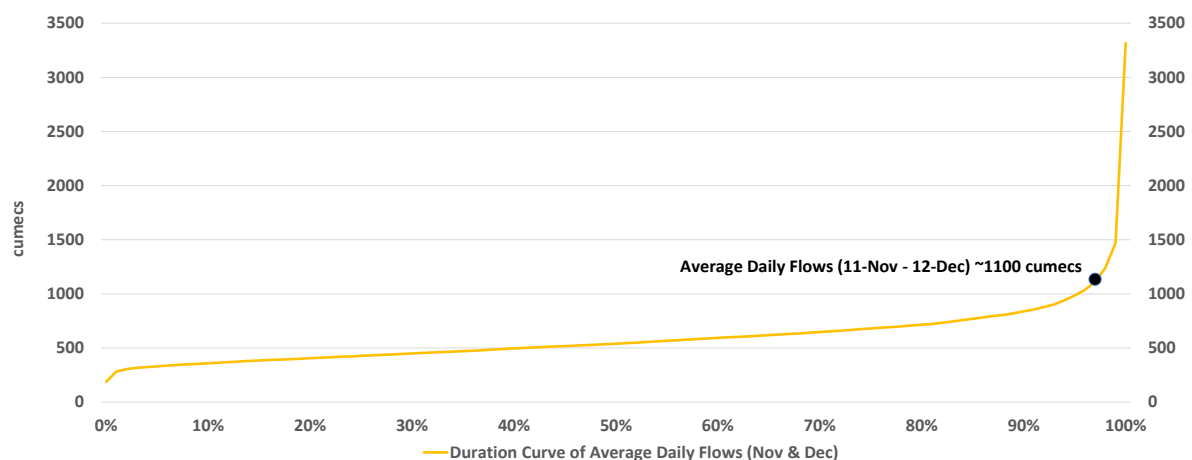
1. Managing Contact's assets

Contact manages the Clyde and Roxburgh Power Stations on the Clutha River, collectively referred to in this document as the “Clutha assets”. The Clutha assets operate in a highly volatile catchment which is largely ‘run of river’ with very little ability to store water.

Throughout the period 11 November – 31 December 2019, natural flows were significantly elevated and well above the historical average for that time of year. Total flows in the Clutha River averaged approximately 1150 cumecs, including the minimum consented releases out of Lake Hawea of 10 cumecs.

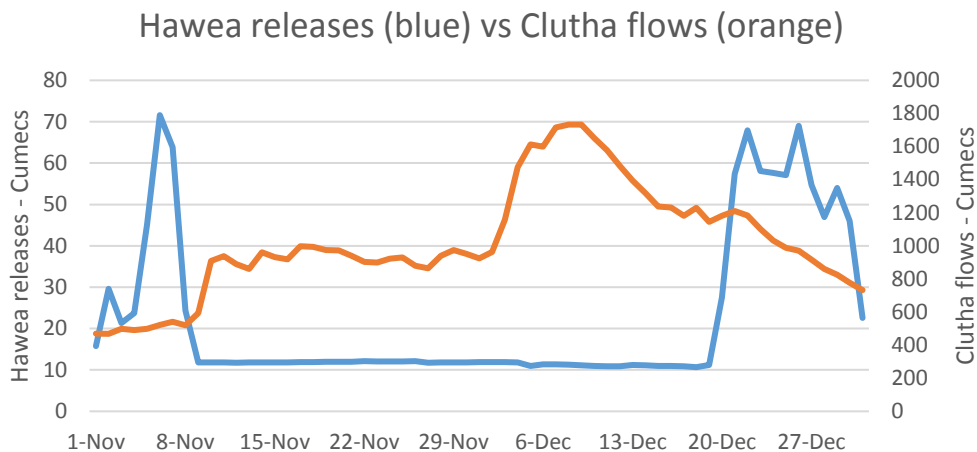


The duration curve for average daily natural flows is presented below for the months of November and December 2019 and compared against 1100 cumecs, which corresponds to approximately the 97th percentile.



2. Water Storage

Contact's only storage on the Clutha scheme is at Lake Hawea which accounts for around 10% of the volume generated by the Clutha assets. Over the period of elevated Clutha flows, Contact reduced releases to the minimum consented level (10 cumecs) until the lake was full and endeavoured to store as much water as possible over this period.



3. Spill

In a flood situation on the Clutha River not all of the flow is put through the turbines to generate power. A volume of water is spilt as explained below:

A. High Flow

When flows exceed around 920-980 cumecs at Clyde or 825-900 cumecs at Roxburgh over sustained periods we are unable to utilise all water for generation and a volume of water is spilt.

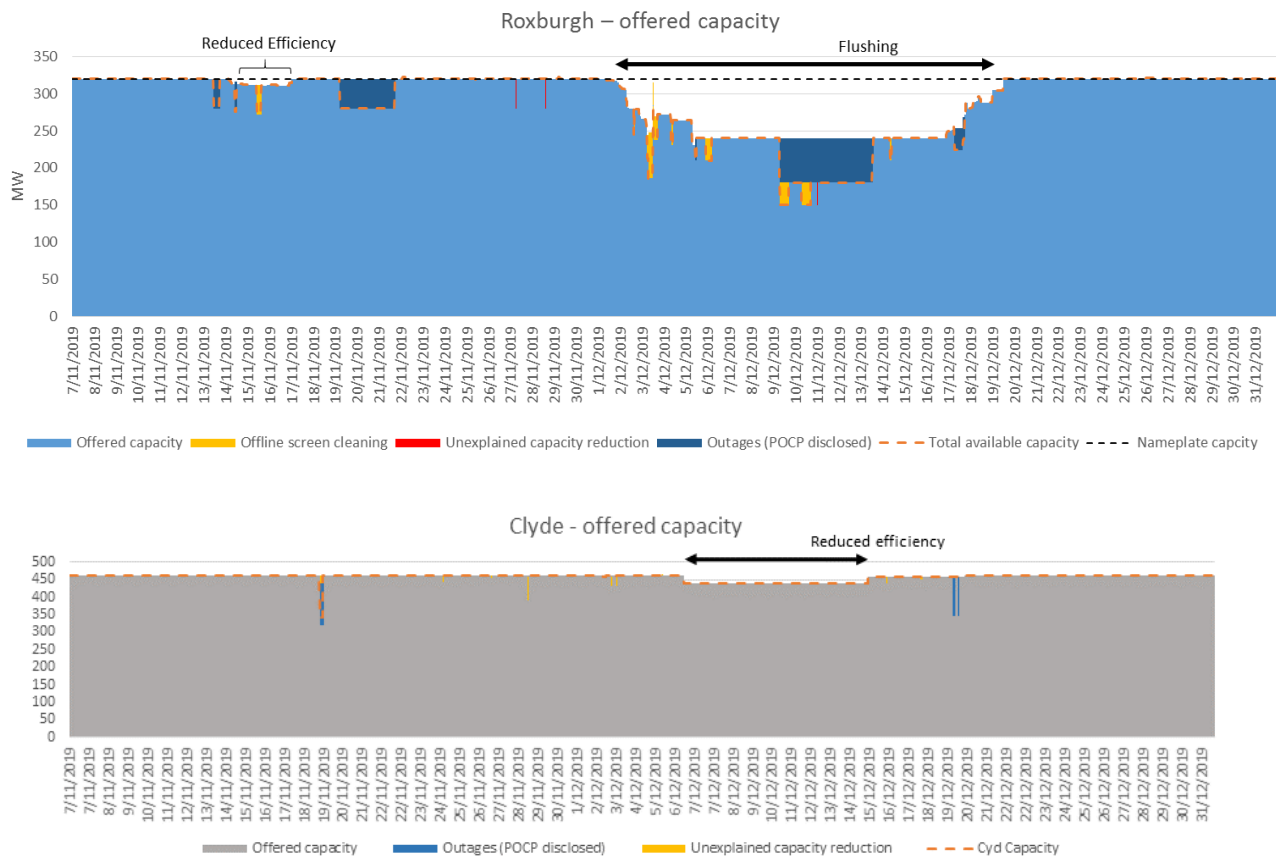
B. Capacity reductions

Generation capacity is only offered from the Clutha Assets where the MW offered are capable of meeting a dispatch instruction during the following trading period

The reductions to the generation capacity offered were as a result of:

- Planned and forced outages – units being removed from service for maintenance.
- Screen Cleaning - A flood event of this magnitude on the Clutha River brings significant amounts of debris (weed and driftwood) through the catchment. This debris causes significant operational issues with our intake screens, particularly at our Roxburgh Power station. To manage this build up, we are required to undertake cleaning of all of our Roxburgh generator's intakes. Screen cleaning is sometimes done whilst the units remain online and the trader will price this volume up so it is less likely to be dispatched but still available if the market requires it. At other times the units need to be taken offline to complete this work. The build-up of debris is unpredictable and difficult to monitor. Decisions to undertake offline screen cleaning are made on the day with the work occurring on that day.

The following charts show the total capacity of generation available at Roxburgh and Clyde over the relevant period:



C. Regulatory consent requirements

During a flood event Contact manages the operation of the Clutha assets in accordance with the Clutha Flood Rules that have been agreed to by the Otago Regional Council under Contact’s consents. Contact may undertake flushing and must maintain table discharge.

- **Flushing** - As part of our resource consent we are required to lower Lake Roxburgh during high flow events to remove sediment that builds up over time. Flushing the silt downstream reduces the risk of flooding to Alexandra and so this activity is important for the safe and prudent management of the scheme. We also reduce the level of the head-pond lake of the Clyde Dam, Lake Dunstan. As the lake levels are reduced, the efficiency of the Clyde and Roxburgh units, and the power that can actually be generated by them, reduces. Below is a timeline of our flushing activities:
 - Sunday 1 December 5pm: we decided to reduce Lake Roxburgh
 - Monday 2 December 3am: Lake Roxburgh had reached <126.00masl (flushing level)
 - Monday 16 December noon: we decided to stop flushing at Lake Roxburgh
 - Monday 16 December 5pm: we started to raise Lake Roxburgh
 - Wednesday 18 December 3pm: Lake Roxburgh reached >130.15masl (normal operating level)
 - Thursday 19 December noon: after an engineering assessment and review we started to offer full machine capacity from Roxburgh.

The duration of flushing events is determined by the weather so a return to normal operations is not accurately predictable.

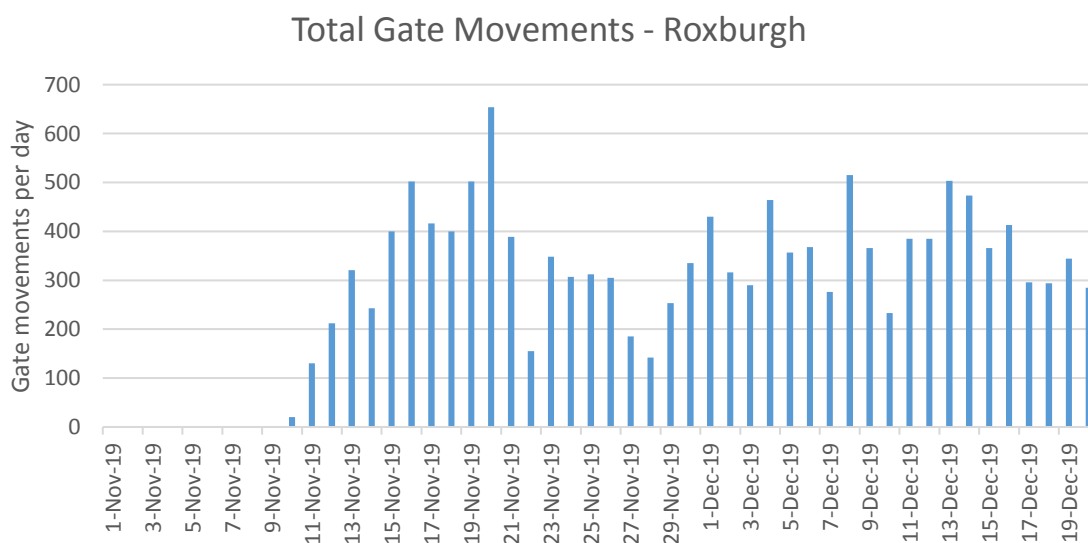
- **Table Discharge:** In a run of river catchment such as the Clutha the requirement to meet “table discharge” necessitates the matching of outflows from our power stations to the corresponding inflows in close to real time (steady flows).

During a flood, steady flows are achieved by continually monitoring the inflow and outflow of the facility to ensure they are close to equal. If the MW dispatch alters, then a new set point is calculated and entered for the units. Following this action a new flow set point for the spill & sluice gate is also required. Due to various mechanical systems, the time it takes to receive a new dispatch instruction and complete a new flow on the spill & sluice gates can take up to 5mins.

Generation is dispatched on a half hour by half hour basis. The last generator to be dispatched to meet demand is known as the marginal generator. Given that demand over a half hour period will fluctuate, the marginal generator will receive multiple dispatch instructions over the half hour period increasing or reducing the number of set point changes required. Being the marginal generator during a flood forces changes in output from the unit every five minutes making it extremely difficult to maintain table discharge (steady flows). This results in:

- Plant set point changes putting pressure on operating equipment;
- The management / clearance of debris during screen cleaning operations becomes problematic;
- Downstream users see significant deviation in the rate of flows and lake/river levels leading to issues with managing their own pumps and assets;
- Flushing optimization is impacted due to rising and lowering the lake level at Roxburgh.
- Communication with the ORC Flood manager becomes complicated

During this flood event the Roxburgh spill-gates operated over 13,000 times, exceeding the original design of the spill gates. In order to reduce the number of set point changes on both the generators and sluice gates, Contact’s operators tried to minimise marginal running. In normal market conditions this is a reasonably straight forward process, but the transmission constraints in the lower South Island make this process far more involved.



The ability to export generation from the lower South Island (LSI) to the rest of the South Island is restricted due to limited export capacity of transmission lines. Contact has worked with Transpower over the last 7 years to increase this capacity by approximately 120 MW through instigation of two special protection schemes. However export limitations remain, particularly in summer months when limitations are lower. In addition, Contact has recently paid \$5m to Transpower to commence work to upgrade transmission lines with the specific purpose to ensure export capability is future proofed.

In a non-constrained market, a dispatch trader can avoid having plant on the margin by offering all available fuelled capacity at a very low price ensuring that a higher priced generator will be the marginal generator.

This is not the case for the Clutha assets during a flood event due to the total available generation in the lower South Island (LSI) being greater than total demand (including the ability to export power out of the lower South Island). If Contact had offered all Clutha generation at a low price, it is likely the Clutha assets would have been the marginal generator within the LSI for the vast majority of trading periods over this period.

Forecasting in any given trading period when or if the LSI transmission limit will bind is difficult due to error in forecasting other generators offers, variable wind output, variable demand, inclement weather conditions (lightning strikes) and variable transmission constraint equations. In these circumstances the dispatch trader seeks to maximise generation whilst avoiding operating on the margin.

It should also be noted that over the relevant period transmission line outages further restricted export capacity.

Peter Wakefield

From: Peter Wakefield
Sent: Tuesday, 1 December 2020 4:26 PM
To: 'phill@haastenergy.com'; 'Al Yates'; Luke Blincoe (luke.blincoe@electricikiwi.co.nz); Steve O'Connor; 'darren.gilchrist@ojifs.com'; 'gary.holden@pulseenergy.co.nz'; Emily Acland; Chris Abbott; Matt Ritchie; Andrew Anderson (Andrew.Anderson@mercury.co.nz); Joycelyn Raffills
Subject: Settlement process for investigation into alleged breaches of clause 13.5A by Contact Energy Limited
Attachments: Notice-of-investigation-report-1912CTCT1-1264011-1.PDF; Contact response to HSOTC Decision to Investigate Sept 2020.pdf

Dear Participants

For this investigation please refer to the following documents:

- the Regulation 16 notice notifying the investigation
- Contact's response to the Regulation 16 notice.

Settlement Process

Regulation 22 of the Electricity Industry (Enforcement) Regulations 2010 provides that the investigator must endeavour to effect an informal settlement on every matter under investigation between:

- the notifying participants – Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP
- the participant allegedly in breach – Contact Energy Limited
- participants who join the investigation as affected parties – Genesis Energy Limited, Mercury NZ Limited, Nova Energy Limited and Todd Generation Taranaki Limited

Regulation 24 provides that if the alleged breach can be resolved by settlement it must be submitted to the Authority who may approve or reject the settlement. Regulation 23 provides for the situation where the alleged breach is not resolved by settlement requiring a report and recommendation to the Authority to decide on whether or not a formal complaint should be made under Regulation 30 to the Rulings Panel.

To commence the first stage of the process required under Regulation 24, please provide your settlement requirements by 11 December 2020 . Your responses will be circulated to provide the opportunity for further feedback by 18 December 2020.

I look forward to your responses.

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143

Peter Wakefield

From: Robert Allen <robert@allenconsulting.nz>
Sent: Thursday, 10 December 2020 5:07 PM
To: Compliance Electricity Authority; Peter Wakefield
Cc: Luke Blincoe; Phillip Anderson; Huia Burt; eleanor.briggs@electrickiwi.co.nz Briggs; Ben Winslade; Quentin Reade; O'Connor, Steve; maryann.mitchell@flickelectric.co.nz; Al Yates; Darren Gilchrist - Oji FS; Terry Skiffington
Subject: Settlement requirements: investigation into alleged breaches of clause 13.5A by Meridian Energy Limited
Attachments: Haast OJI + Independent Retailers - HSTOC Settlement Requirements - 2020 12 10.pdf

Hi Peter,

Please find attached a response to your 1 December request for settlement requirements from Ecotricity, Electric Kiwi, Flick Electric, Haast Energy Trading, Oji Fibre Solutions and Vocus.

Please let me know if you have any queries etc.

Regards,

Robert Allen
Allen Consulting
+64 21725536

10 December 2020

Peter Wakefield
Senior Investigator
Electricity Authority
Wellington

By e-mail: compliance@ea.govt.nz, peter.wakefield@ea.govt.nz

Dear Peter,

Settlement requirements for alleged HSOTC breach by Contact and Meridian

Ecotricity, Electric Kiwi, Flick Electric, Haast Energy Trading (Haast), Oji Fibre Solutions and Vocus (the independents) welcome the opportunity to outline our settlement requirements, in relation to the alleged breach of the High Standard of Trading Conduct (HSOTC) rules (clause 13.5A of the Electricity Industry Participation Code 2010) by Contact Energy and Meridian.

For the sake of clarity, we agree with the investigator that the relevant time-periods for the alleged HSOTC breaches are between:

- 11 November 2019 to 28 December 2019 for Contact Energy;² and
- 10 November 2019 and 16 January 2020 for Meridian.³

These dates align with our own separate and independent modelling, which was undertaken without knowledge of the time periods the investigator had established.⁴

We are open to reaching a settlement on these matters

Given the seriousness of the alleged breach of the HSOTC rules we believe the onus should be on Contact and Meridian to propose any settlement(s).

For the Settlement Offer(s) to have any useful precedent value, they would need to confirm there was a breach of the HSOTC rules, and provide details of how Contact's/Meridian's conduct was in breach of the HSOTC rules.

Contact/Meridian should acknowledge their trading conduct wasn't of a high standard and resulted in higher aggregate water spill, higher CO2 emissions and other adverse environmental factors (due to the consequent unnecessary running of Huntly etc), and higher spot prices than would otherwise have occurred.

[https://www.ea.govt.nz/assets/dms-assets/27/27201Not ce-of- nvest gat on-report-1912CTCT1-1264011-1.PDF](https://www.ea.govt.nz/assets/dms-assets/27/27201Not%20ce-of-nvest%20gat%20on-report-1912CTCT1-1264011-1.PDF) and [https://www.ea.govt.nz/assets/dms-assets/27/27200Not ce-of- nvest gat on-report-1912MERI2-1264013-1.PDF](https://www.ea.govt.nz/assets/dms-assets/27/27200Not%20ce-of-nvest%20gat%20on-report-1912MERI2-1264013-1.PDF)

² NOTICE UNDER REGULATION 16 OF THE ELECTRICITY INDUSTRY (ENFORCEMENT) REGULATIONS 2010, 12 August 2020 at: [https://www.ea.govt.nz/assets/dms-assets/27/27201Not ce-of- nvest gat on-report-1912CTCT1-1264011-1.PDF](https://www.ea.govt.nz/assets/dms-assets/27/27201Not%20ce-of-nvest%20gat%20on-report-1912CTCT1-1264011-1.PDF)

³ NOTICE UNDER REGULATION 16 OF THE ELECTRICITY INDUSTRY (ENFORCEMENT) REGULATIONS 2010, 12 August 2020 at: [https://www.ea.govt.nz/assets/dms-assets/27/27200Not ce-of- nvest gat on-report-1912MERI2-1264013-1.PDF](https://www.ea.govt.nz/assets/dms-assets/27/27200Not%20ce-of-nvest%20gat%20on-report-1912MERI2-1264013-1.PDF)

⁴ See our submissions and cross-submissions in response to the Authority's preliminary UTS decisions.

The Settlement Offer(s) should include undertakings including changes to training and internal processes and policies to ensure there aren't any further breaches of the HSOTC rules. We would give extra weight to internal changes that have already been put in place (if any), noting the time between the alleged breaches and the settlement process.⁵

The Settlement Offer(s) should also include compensation for affected parties, which includes recognition of the time and resources that are involved in making an HSOTC claim, and a 'penalty' element. Any settlement should ensure Contact/Meridian does not financially benefit from the alleged breaches. It would be reasonable to take into account any remedy decision the Authority makes in relation to the related UTS allegations.

Meridian's position on the Authority's decision on the 2 June 2016 HSOTC highlights the importance that any settlement confirms there was a breach

In considering any potential Settlement Offer, consideration should be given to Meridian's commentary in relation to its 2 June 2016 breach of the HSOTC rules.

Meridian unequivocally disputed "The Authority held that it [Meridian] was in breach", and dismissed the Authority's letter of warning as no more than "its opinion". According to Meridian the letter "does not amount to a finding of a Code breach", and "carries no legal weight as the Authority has no statutory function or responsibility when it comes to deciding whether the Code has been breached". Meridian "did not and does not agree with the Authority's comments in respect of 2 June 2016 and made a public media release at the time saying as much".⁶ This was despite the Notification of the Authority's decision issued under regulation 29 of the Electricity Industry (Enforcement) Regulations 2010, that "The Authority decided Meridian's trading conduct on 2 June 2016 was not of a high standard and, therefore, breached clause 13.5A(1)".

Meridian has reconfirmed these positions, including in "Meridian's response to notice of investigation of breach of clause 13.5A of the Code", 23 September 2020.

We consider there is similar risk in relation to any potential Settlement Offers. The precedent value will be substantially undermined if the question of whether there was a HSOTC breach remains in dispute or unaddressed.

Contact and Meridian's responses to their respective notices of investigation of breach of clause 13.5A of the Code are inadequate

We consider that the limited nature of Contact and Meridian's responses to the notices of investigation, despite the seriousness of the allegations, and the potential damage the alleged breaches could do to the wholesale electricity market, and their own reputations, highlights they lack any strong basis for their respective denials that they breached the HSOTC rules. By way of illustration:

- Meridian disputes the level of unnecessary hydro spill that was caused by the alleged breach:

⁵ Meridian has made oblique reference to changes in its internal processes or policies: "Meridian has already taken steps to ensure that, in the event of a recurrence of a significant flood event like that we saw in December 2019, we will minimise or eliminate avoidable spill": Meridian, Meridian submission, Preliminary decision on conduct of any undesirable trading situation Supplementary consultation, 27 November.

⁶ Meridian, MDAG review of the high standard of trading conduct provisions, 4 May 2020.

“The complainants allege that a Meridian and Contact hydro generation from Manapōur, Clyde, and Roxburgh while spinning should have been offered at \$5/MWh. The complainants use vSPD to override offer prices at those locations to \$5/MWh and allege that an additional 109 GWh of generation would have been dispatched from these schemes as a result. Later vSPD runs on the Authority’s EMI website ... show that, had Waitaki, Manapōur and Cutha generation been offered at \$5/MWh, Manapōur and Cutha generation would have been dispatched by Waitaki generation and that between 11 November and 15 December 2019 the market would only absorb approximately 60 GWh of extra hydro generation from Meridian and Contact combined ...”

The basis of our complaint was Contact and Meridian’s respective offer strategies resulted in unnecessary hydro spill and higher spot prices than should have occurred in workably competitive circumstances. Debate over the actual level of unnecessary spill doesn’t change whether there was a breach, only the severity of it.⁷

- Meridian relies heavily on the claim that “the sole argument put forward by the complainants is that Meridian’s conduct did not meet that standard because it did not offer at SRMC”. Meridian is attempting to dance on the head of a pin. The claim there was a breach of the HSOTC rules does not hinge on the offers deviating from SRMC but the extent to which prices deviated from SRMC (“by too much or for too long”⁸). For example, the complaint included the following statement which Meridian quoted:

“Meridian has offered in tranches of Manapour hydro generation at well above its SRMC even though it is spinning water at the same time. It was able to do this by misusing its market power. For example:

- From 13 November to 9 December generation of 100MW to 200MW+ at Manapour was frequently made available only at prices above \$450 during off-peak periods, and from 6 December water has also been priced up during peak periods.
- In the same period, Meridian has exercised its market power through actively managing its Waitaki offers prior to gate closure to ensure overnight Benmore prices are maintained in a \$50 to \$70 range.” [footnotes removed, emphasis added]

- In addition to Meridian’s ‘Aunt Sally’ type claim that “the sole argument put forward by the complainants is that Meridian’s conduct did not meet that standard because it did not offer at SRMC”, Meridian demonstrates a lack of understanding about the relationship between SRMC and LRMC e.g.:

“The suggestion by the complainants that offers in every trading period should be at SRMC but that over a longer period prices might somehow reflect LRMC is illogical. Each year is made up of individual trading periods and if offers in each trading period must be at SRMC then it is more difficult for generators to recover the fixed costs.”

“... it is necessary for spot prices to on average sit above SRMC and at a level which induces sustainable entry.”

These statements are surprising; Meridian should understand that if prices are set at SRMC they will average LRMC in the long-run in a competitive market. The Meridian statements also contradict Meridian’s previous, and economically sound, commentary on SRMC and LRMC e.g.:

“In the absence of any shortage of energy or capacity, there is no basis for using estimates of the LRMC of new entry generation and the cost of demand-side response, rather the “right” price would be SRMC or something closer to it”⁹

“... it is artificial to focus on LRMC of new entry generation ... In the absence of energy or capacity shortage, competitive prices should approximate SRMC not LRMC.”¹⁰

⁷ We also provided submissions on that the Authority’s UTS decision made understated the level of unnecessary spill.

⁸ WELLINGTON INTERNATIONAL AIRPORT LTD & ORS v COMMERCE COMMISSION [2013] NZHC [11 December 2013], paragraph [15].

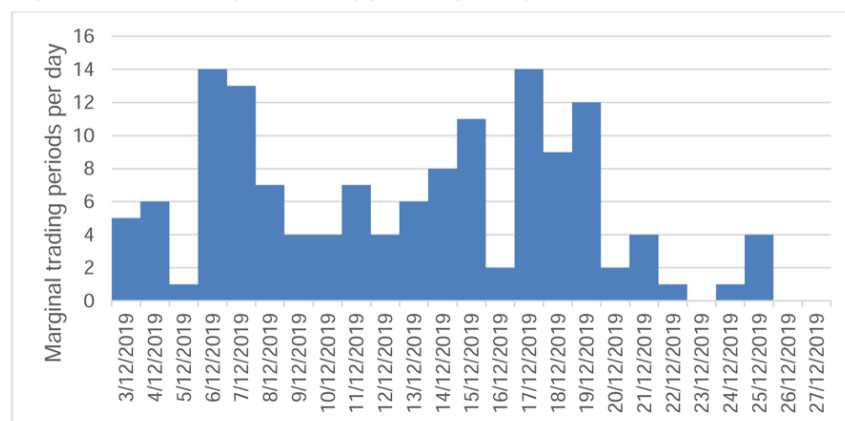
⁹ Meridian, Draft Decision regarding alleged UTS on 26 March 2011, 13 May 2011.

¹⁰ Meridian, Draft Decision regarding alleged UTS on 26 March 2011, 13 May 2011.

- Meridian and Sapere claim determining when Meridian was pivotal demonstrates when they had market power. They then make a leap of logic and suggest that when Meridian is not pivotal they do not have significant market power. This is analogous to comparing a monopoly with a concentrated oligopoly, and arguing the members of the concentrated oligopoly have no market power. At all times Meridian and Contact together were providing the vast majority of generation in both the Lower South Island and South Island regions. Because both Meridian and Contact had significant market power throughout the period, any test regarding what market outcomes should have been expected in the absence of significant market power needs to lean on a workable competition assumption. This implies that prices should not be expected to depart from SRMC levels by too much or for too long.
- Both Contact and Meridian claim that the safe-harbour provisions applied. This is despite, by way of example, clear evidence their offer strategies, both individually and jointly, resulted in substantial increases in spot prices (contrary to clause 13.5B1(c)(i)).²

Meridian has also provided evidence in submission that Contact was marginal (and that “Tranches of generation offers do not need to be marginal to have an influence on prices”) and that “Market data in Figure 1 below shows that Clutha offers were in fact marginal in 12% of trading periods between 3 and 27 December 2019 (about what might be expected given the scale of Clutha generation)”:³

Figure 1: Clutha marginal trading periods per day 3 – 27 December



- Contact submitted that it “denies the allegation made by the complainants set out in the investigation notice that “Contact has repeatedly offered zero-value water into the market at prices greater than \$50 [per MWh] to prop up spot prices, intentionally spilling more water than necessary”. There is evidence there was unnecessarily spill and Contact’s offer strategy resulted in higher spot prices.⁴ We have also submitted in response to Contact’s claim that it needed to spill water/offer in at high prices.⁵
- We are not sure why Meridian has referenced MDAG’s review of the HSOTC rules. What matters, in terms of the current investigations, is the HSOTC rules at the time of the alleged breach, and not potential future changes to the rules.

¹¹ Contact adopt a similar approach, calculating that they were on average 104 out of 2,304 trading periods.

¹² See, for example, the Authority’s preliminary UTS decision, and our submission and cross-submission in response.

¹³ Meridian, Meridian submission, Preliminary decision on a claim of any undesirable trading situations Supplementary consultation, 27 November.

¹⁴ See, for example, the Authority’s preliminary UTS decision, and our submission and cross-submission in response.

¹⁵ See our submission and cross-submission in response to the Authority’s preliminary UTS decision.

Constraints relating to Contact's spill gates

In Contact's submission in response to the Authority's Supplementary UTS consultation,¹⁶ Contact dismissed that the must run dispatch auction (MRDA) was an appropriate tool to manage plant constraints such as at spill gates. Contact asserted that:

"Regardless of MRDA rights when the Lower South Island security constraint binds, the System Operator must back off generation in the region to bring that part of the grid back to a secure state, effectively putting generation in the region on the margin."

Contact conveniently ignores that their generation is not the only generation located in the Lower South Island region and Meridian has not raised any similar issues with their own Manapouri Power Station. If Contact bid its constrained plant into the MRDA then Manapouri or Contact's unconstrained plant would be on the margin and receive dispatch instructions from the System Operator.

Similarly, Contact dismissed the use of lower ramp rates as:

"Lower ramp rates, as suggested by Haast, to achieve that minimum margin running also hinders the System Operator's ability to manage security violations on the grid and results in running hydro generators with rough running ranges for extended periods of time..."

Ramp rates exist for participants to signal to the System Operator what the safe operating capability of their plant is. If Contact was to adjust ramp rates to reflect the safe operation of their spill gates (being part of the generation plant) they would be using ramp rates exactly as intended by the Code. The System Operator's ability to securely dispatch the power system is enhanced not diminished when participants provide accurate information to them regarding the capability of their plant. Contact's assertion that lower ramp rates inherently means rough running of plant is a red herring. There is no fundamental reason why specifying a ramp rate higher than the plant is safely capable of performing will lead to less rough running.

Additionally, in Meridian's response to the HSTOC breach investigation, Meridian claim the System Operator will always prefer Contact's generation in the Lower South Island and put Manapouri on the margin if the plant is offered at the same price:

"...In fact, this alternative vSPD run has Meridian generation less than what we did in reality because Manapouri generation is displaced by Contact generation that is further north and therefore electrically closer to major load centres..."

This implies Contact could have offered its generation at \$0.01 knowing that even if Meridian did the same at Manapouri, Clutha generation would not be on the margin.

We do not believe Contact has presented any credible explanation as to why they needed to offer significant tranches of Clutha generation at high prices in order to manage spill gate constraints. There appears at least 3 alternative approaches which wouldn't have resulted in unnecessary spill. Contact's chosen strategy had the convenient consequence of increasing spot prices by tens of millions of dollars and the Authority should scrutinise Contact's after the fact explanation for its trading conduct in this context.

¹⁶ Contact, Supplementary consultation on the Preliminary UTS decisions, November 2020, pages 14-16.







Concluding remarks

We are open to reaching a settlement in relation to Contact and Meridian's alleged HSOTC breaches. Any settlement needs to acknowledge there was a breach and the nature of the breach including unnecessarily spill of water, higher CO2 emissions and other adverse environmental factors (due to the consequent unnecessary running of Huntly etc), and higher spot prices than would otherwise have occurred.

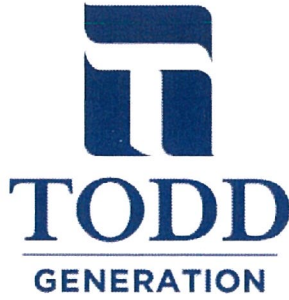
We remain hopeful Contact and Meridian will reflect on how their alleged breaches of the HSOTC rules (and related alleged UTS breach) has harmed, and is harming, their reputations, the harm it has caused the New Zealand electricity market, the harm and detriment to its competitors and other market participants, and most importantly the harm to consumers.⁷ Meridian should reflect on how its actions which resulted in needless coal burning sits with its corporate positioning and branding on the environment and climate change.

In 'blowing the whistle' on Contact and Meridian, we have presented them with the opportunity to 'do the right thing'. The settlement process is an opportunity to put a 'line in the sand' and provide assurances the alleged conduct won't happen again, including publishing how their internal policies/processes have changed. Based on Contact and Meridian's defences of their actions, including using trading to manage locational risk, our expectation is the conduct will continue to be repeated.

Yours sincerely,

<p>Al Yates Chief Executive alyates@ecotricity.co.nz</p> 	<p>Luke Blincoe Chief Executive luke.blincoe@electrickiwi.co.nz</p> 	<p>Steve O'Connor Chief Executive Officer steve.oconnor@flickelectric.co.nz</p> 
<p>Phillip Anderson Managing Director phill@haastenergy.com</p> 	<p>Terry Skiffington Chief Operating Officer terry.skiffington@oijfs.com</p> 	<p>Quentin Reade Head of Communications quentin.reamde@vocusgroup.co.nz</p> 

¹⁷ Consistent with the independent retailers' submissions on the Consumer Care Guidelines, where the Consumer Care project and UTS/HSOTC investigations are not only distinct, they are a critical path to ensuring consumers are protected and electricity supply is affordable. If prices in the wholesale electricity market are higher than they should be then retail tariffs will be higher than they should be and there will be more payment default issues.



11 December 2020

Nova Energy Limited
PO Box 10141, Wellington 6143
www.novaenergy.co.nz

Speak to one of our team
0800 668 236
7.30am to 7pm – Monday to Friday
Or email us
info@novaenergy.co.nz

Peter Wakefield
Senior Investigator
Electricity Authority
By email: Peter.Wakefield@ea.govt.nz

Dear Peter

Settlement process for investigation into alleged breaches of clause 13.5a by Contact Energy Limited and Meridian Energy Limited

We refer to your email of 1 December requesting participants to the proceedings referred to above to provide their settlement requirements. Nova Energy Limited (Nova) and Todd Generation Taranaki Limited's (TGT) concerns lie in the outcome of the settlement process.

Nova and TGT relied on spot price forecasts to make their operating decisions during the period of concern, including the purchasing of gas for its generation plants. Nova and TGT are concerned that the outcome of the settlement or other enforcement process may lead to a reset of the final prices to a level below the costs of operating their peaker and co-generation plants at the relevant times.

In the event that the settlement process results in a price reset which causes Nova and/or TGT to suffer loss, Nova and/or TGT are seeking to be compensated in terms of recovering those costs incurred in reliance on the spot prices.

Please contact Joycelyn Raffills at jraffills@toddcorporation.com if you have any questions.

Yours sincerely

A handwritten signature in blue ink, appearing to be 'Liesbeth Koomen', with several long, sweeping horizontal lines extending to the right.

Liesbeth Koomen
General Counsel

E info@todddgeneration.co.nz
P +64 4 472 2970
F +64 4 472 2474
PO Box 3141 Wellington 6140 | New Zealand

Great value energy
for families and businesses

Peter Wakefield

From: Peter Wakefield
Sent: Friday, 11 December 2020 5:38 PM
To: 'phill@haastenergy.com'; 'Al Yates'; Luke Blincoe (luke.blincoe@electrickiwi.co.nz); 'Steve O'Connor'; 'darren.gilchrist@ojifs.com'; 'gary.holden@pulseenergy.co.nz'; 'Chris Abbott'; 'Matt Ritchie'; Andrew Anderson (Andrew.Anderson@mercury.co.nz); 'Joycelyn Raffills'; 'ben.winslade@vocusgroup.co.nz'; Robert Allen; 'Sam Fleming'
Subject: RE: Settlement process for investigation into alleged breaches of clause 13.5A by Contact Energy Limited and Meridian Energy Limited
Attachments: Haast OJI + Independent Retailers - HSTOC Settlement Requirements - 2020 12 10(1285210.1).pdf; Todd Generation Nova Energy HSOTC letter 111220(1285208.2).pdf; Contact letter to EA on HSOTC settlement 12 December 2020(1285206.1).pdf

Dear Participants

Please find attached the settlement requirement responses received from:

- Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP
- Contact Energy Limited
- Nova Energy Limited and Todd Generation Taranaki Limited

Mercury NZ Limited and Genesis Energy Limited have advised they have no settlement requirements. Meridian Energy Limited as yet has not responded.

Please provide your feedback on these responses by 18 December 2020.

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz

12 December 2020

Peter Wakefield
Senior Investigator
Electricity Authority
Wellington

By email: peter.wakefield@ea.govt.nz

Dear Peter

High Standard of Trading Conduct Complaint

I refer to your email of 1 December 2020 requesting parties' views whether the alleged breach of High Standard of Trading Conduct (**HSOTC**), under section 13.5A of the Electricity Industry Participation Code 2010, can be resolved by settlement under section 22 of the Electricity Industry (Enforcement) Regulations 2010:

22 Investigator to effect settlements

- (1) An investigator must endeavour to effect an informal resolution (a **settlement**) of every matter under investigation, by agreement between the parties to the investigation.
- (2) The investigator must endeavour to effect the settlement within 30 working days after the notification referred to in regulation 16, or any longer period agreed to in writing between the investigator and any party.
- (3) The investigator may, after consultation with the parties to the investigation, use any process that the investigator thinks fit for the purpose of effecting a settlement between the parties.

Contact has provided significant detail to the Authority to demonstrate that Contact's trading conduct in relation to offers and reserve offers was consistent with HSOTC requirements at all times. For that reason, Contact is not prepared to settle.

Contact looks forward to the completion and closure of this investigation.

Should you have any questions, please let us know.

Yours sincerely,



Jacqui Nelson
Chief Generation Officer

Peter Wakefield

From: Robert Allen <robert@allenconsulting.nz>
Sent: Thursday, 17 December 2020 5:20 PM
To: Peter Wakefield; Compliance Electricity Authority
Cc: Luke Blincoe; eleanor.briggs@electrickiwi.co.nz Briggs; Huia Burt; Phillip Anderson; O'Connor, Steve; maryann.mitchell@flickelectric.co.nz; Al Yates; Quentin Reade; Ben Winslade; Terry Skiffington; Darren Gilchrist - Oji FS
Subject: Settlement requirements: investigation into alleged breaches of clause 13.5A by Meridian Energy Limited
Attachments: Haast OJI + Independent Retailers - HSTOC Settlement Requirements - Response to other submissions - 2020 12 17.pdf

Hi Peter,

Thanks again for the opportunity to engage in the settlement process.

As requested, please find attached the joint submission of Ecotricity, Electric Kiwi, Flick Electric, Haast Energy Trading, Oji Fibre Solutions and Vocus (the independents) in response to the other submissions in relation to settlement requirements.

Kind regards,

Robert Allen
Allen Consulting
+64 21725536

17 December 2020

Peter Wakefield
Senior Investigator
Electricity Authority
Wellington

By e-mail: compliance@ea.govt.nz, peter.wakefield@ea.govt.nz

Dear Peter,

Response to settlement requirement submissions in relation to the alleged HSOTC breach by Contact and Meridian

Electricity, Electric Kiwi, Flick Electric, Haast Energy Trading (Haast), Oji Fibre Solutions and Vocus (the independents) have engaged in the settlement process in good faith and are disappointed by Contact's response and Meridian's failure to do the courtesy of responding or even acknowledging the Authority Investigator's request.

It is clear Contact or Meridian are not prepared to settle. It is imperative, therefore, that the matter is fully investigated, and an Investigator's report on alleged breaches of clause 13.5A is produced as soon as reasonably practicable. The Authority needs to demonstrate serious breaches of the Code will not be tolerated, and the Code will be enforced without fear or favour.

We reiterate the importance of the precedent of a finding that there was a breach; particularly given the seriousness of the matter.

We are clear in our view that Contact and Meridian's trading conduct wasn't of a high standard and resulted in higher aggregate water spill, higher CO2 emissions and other adverse environmental factors (due to the consequent unnecessary running of Huntly etc), and higher spot prices than would otherwise have occurred.

We also reiterate Meridian's response to the Authority's decision on the 2 June 2016 HSOTC highlights the importance of a finding that confirms there was a breach.

For the avoidance of doubt, the allegation of a breach of the Code was made on 12 December 2019 just over a year ago and the Code/ rules that applied then are the rules that are relevant. While we do not consider potential reform or amendment to the existing HSOTC rules to be a relevant factor,² the existing and proposed HSOTC rules are substantially overlapping. The decision will have important precedent value under either version of the rules. It is clear from the MDAG work, including the Panel case studies, that Contact and Meridian would be in breach of both the existing rules and MDAG's proposed HSOTC rules.

¹ Meridian eventually provided a response on 14 December following circulation of the responses

² The Authority has indicated it has accepted MDAG's recommendations, and will consult on the proposed new trading conduct rules early in 2021. We note MDAG's proposals are contentious and there was no industry consensus the changes should be adopted

The extent to which the Code is complied with is a function of how well the rules are monitored and enforced

The Authority's compliance monitoring and enforcement has been an ongoing area of concern. How the Authority deals with this breach allegation is critical for trust and confidence in the extent to which Code rules will be complied with and enforced.

We agree with MDAG that the Authority should "Improve deterrence" which includes "more rigorous compliance monitoring by the Authority, particularly when competition is weak or absent". We also agree "Achieving the Authority's policy objective ... will depend crucially on improved monitoring and enforcement".³ We also note and agree with MDAG that:

"The evaluation panels independently recommended that the Authority prioritise monitoring and enforcement. The evaluation panels pointed out that any rule that seeks to prevent undesirable trading conduct needs to be supported by strong deterrence signals. ... We concur with the evaluation panels and recommend that the Authority undertake more frequent and more rigorous monitoring of participants' behaviour, particularly when competition is weak or absent."

"A key tenet to the effectiveness of any rule or laws is the achievement of deterrence. Effective deterrence is achieved through the credible threat of enforcement of that rule or law. That credibility is principally derived from the actual prosecution of breaches and the subsequent application of sanctions against those found to be in breach".

We reiterate from Ecotricity, Electric Kiwi, Flick Electric, Pulse and Vocus' recent 2021/22 levy-funded appropriations submission that:⁴

"Based on submissions to the Authority – for example, in relation to HSOTC reform – we consider that there would be widespread support for this. At present, we consider breach investigations are taking longer than they should,⁵ and there is prima facie evidence of potential Code breaches that have not been investigated."

Concluding remarks

The settlement process provided Contact and Meridian with an opportunity to put a 'line in the sand' and provide assurances the alleged conduct won't happen again, including publishing how their internal policies/processes have changed. This has clearly been rejected.

It is imperative now that the matter is fully investigated, and an investigator's report on alleged breaches of clause 13.5A is produced as soon as reasonably practicable.

The way the Authority deals with this matter goes to the very heart of its strategic ambition to build trust and confidence:⁶

"... it is increasingly important to actively build trust and confidence in the industry and regulation through greater transparency, understanding and improved behaviours. Consumers expect participants to be held to account to rules designed to provide long-term benefit. Participants require a stable investment framework and regulatory environment to enable decision making that will deliver further benefit to consumers."

"As regulator, we need to continue using markets and our compliance function to create the right incentives for progress, work with participants to ensure better practice by all of industry and enhance consumers' and stakeholders' understanding of the electricity industry and how it delivers benefit."







³ MDAG, REVIEW OF THE TRADING CONDUCT PROVISIONS RECOMMENDATIONS PAPER, published 15 December 2020

⁴ Reflected, for example, in examples provided by MDAG as part of its HSOTC review

⁵ For example, the investigation into Genesis' trading conduct between 6 and 9 August 2018: <https://www.ea.govt.nz/assets/dms/assets/25/25116NoticeofinvestigationintoGenessEnergyLimited1.pdf>

⁶ <https://www.ea.govt.nz/assets/dms/assets/27/27020StatementofIntent2020-2024.pdf>

Yours sincerely,

<p>Al Yates Chief Executive alyates@ecotricity.co.nz</p> 	<p>Luke Blincoe Chief Executive luke.blincoe@electrickiwi.co.nz</p> 	<p>Steve O'Connor Chief Executive Officer steve.oconnor@flickelectric.co.nz</p> 
<p>Phillip Anderson Managing Director phill@haastenergy.com</p> 	<p>Terry Skiffington Chief Operating Officer terry.skiffington@oifs.com</p> 	<p>Quentin Reade Head of Communications quentin.reamde@vocusgroup.co.nz</p> 

Peter Wakefield

From: Andrew Anderson <Andrew.Anderson@mercury.co.nz>
Sent: Friday, 18 December 2020 9:43 AM
To: Peter Wakefield
Subject: RE: Settlement process for investigation into alleged breaches of clause 13.5A by Contact Energy Limited and Meridian Energy Limited

Peter

Mercury have no comments with respect to the settlement requirements.

Rgds Andy

From: Peter Wakefield <Peter.Wakefield@ea.govt.nz>
Sent: Friday, 11 December 2020 5:38 PM
To: 'phill@haastenergy.com' <phill@haastenergy.com>; 'Al Yates' <alyates@ecotricity.co.nz>; Luke Blincoe (luke.blincoe@electricikiwi.co.nz) <luke.blincoe@electricikiwi.co.nz>; Steve O'Connor <steve.oconnor@flickelectric.co.nz>; 'darren.gilchrist@ojifs.com' <darren.gilchrist@ojifs.com>; 'gary.holden@pulseenergy.co.nz' <gary.holden@pulseenergy.co.nz>; Chris Abbott <Chris.Abbott@contactenergy.co.nz>; Matt Ritchie <Matt.Ritchie@genesiseenergy.co.nz>; Andrew Anderson <Andrew.Anderson@mercury.co.nz>; Joycelyn Raffills <jraffills@toddcorporation.com>; ben.winslade@vocusgroup.co.nz; Robert Allen <robert@allenconsulting.nz>; sam.fleming@meridianenergy.co.nz
Subject: RE: Settlement process for investigation into alleged breaches of clause 13.5A by Contact Energy Limited and Meridian Energy Limited

Dear Participants

Please find attached the settlement requirement responses received from:

- Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP
- Contact Energy Limited
- Nova Energy Limited and Todd Generation Taranaki Limited

Mercury NZ Limited and Genesis Energy Limited have advised they have no settlement requirements. Meridian Energy Limited as yet has not responded.

Please provide your feedback on these responses by 18 December 2020.

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz



18 December 2020

Peter Wakefield
Senior Investigator
Electricity Authority
Wellington

By email: peter.wakefield@ea.govt.nz

Dear Peter

High Standard of Trading Conduct Complaint

1. Contact has reviewed the proposed settlement requirements from Ecotricity, Electric Kiwi, Flick Electric, Haast Energy Trading (Haast), Oji Fibre Solutions and Vocus (the **Applicants**).
2. Contact disagrees with the Applicant's assertion that Contact has breached High Standards of Trading Conduct (**HSOTC**). As set out in our letter of 12 December, Contact has provided significant detail to the Authority demonstrating that Contact's trading conduct in relation to offers and reserve offers was consistent with HSOTC requirements at all times.
3. For that reason, there is no basis to progress a settlement as requested by the Applicants for their complaint under the HSOTC provisions of the Code.
4. Contact has reviewed the Applicants' submission.
5. Applicants argue that Contact has put insufficient attention or focus on these applications, and that *"the limited nature of Contact and Meridian's responses to the notices of investigation, despite the seriousness of the allegation, and the potential damage the alleged breaches could do to the wholesale electricity market, and their own reputations, highlights they lack any strong basis for the respective denials that they breached the HSOTC rules."*¹
6. Contact takes any allegation made of a breach of high standards of trading conduct extremely seriously, and we have undertaken significant analysis on the joint UTS and HSOTC application over the past year. Contact has used considerable resource, and incurred significant cost, to investigate and respond to these claims and the UTS investigation, and to confirm that Contact operated consistently with high standards requirements at all times.

7. Applicants have failed to respond to the detailed analysis and evidence that Contact has provided. Instead, Applicants continue an unfounded narrative, despite no preliminary view having been put forward by the Authority. This appears to be more focussed on public positioning, rather than analysis of either the Electricity code, or its application to the facts.
8. The Applicants also continue to conflate the separate Meridian and Contact HSOTC investigations with the UTS investigation and fail to respond to the detailed evidence showing that Contact operated consistently with the HSOTC requirements. The Applicants have raised further questions around ramp rates and MRDA. Neither of these issues have any bearing on the HSOTC claim. Contact would be happy to respond to the EA to address these questions as part of its UTS investigation if useful. The EA has rightly separated the UTS and HSOTC components of the complaint and are dealing with separately.

Should you have any questions, please let us know.

Yours sincerely,



Jacqui Nelson
Chief Generation Officer

Peter Wakefield

From: Peter Wakefield
Sent: Friday, 18 December 2020 5:23 PM
To: 'phill@haastenergy.com'; 'Al Yates'; Luke Blincoe (luke.blincoe@electricikiwi.co.nz); Steve O'Connor; 'darren.gilchrist@ojifs.com'; 'gary.holden@pulseenergy.co.nz'; Chris Abbott; Matt Ritchie; Andrew Anderson (Andrew.Anderson@mercury.co.nz); Joycelyn Raffills; ben.winslade@vocusgroup.co.nz; Robert Allen; Sam Fleming
Subject: Settlement process now concluded for the investigations into alleged breaches of clause 13.5A by Contact Energy Limited and Meridian Energy Limited
Attachments: Copy of Haast OJl + Independent Retailers - HSTOC Settlement Requirements - Response to other submissions - 2020 12 17(1286011.1).pdf; Copy of Contact cross-submission to EA re HSOTC 18 Dec 2020(1286009.1).pdf

Dear Participants

Please find attached feed back on the settlement responses from:

- Haast Energy Trading Limited, Ecotricity Limited Partnership, Switch Utilities Limited (Vocus), Electric Kiwi Limited, Flick Energy Limited, Oji Fibre Solutions (NZ) Limited, and Pulse Energy Alliance LP
- Contact Energy Limited

Mercury NZ Limited, Genesis Energy Limited, Nova Energy Limited and Todd Generation Limited have advised they have no further comments. Meridian Energy Limited has advised it was not going to provide any feedback.

I will now conclude the settlement process for both investigations. The next steps will be for me to complete the investigations and prepare investigation reports with recommendations.

Regards

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864

Mob: +64 21 392 715

Fax: +64 4 460 8879

Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz

Peter Wakefield

From: Boyd Brinsdon <boyd.brinsdon@contactenergy.co.nz>
Sent: Friday, 22 January 2021 11:39 AM
To: Peter Wakefield
Subject: RE: Further query re ROX offers on 17 December 2019

Hi Peter,

Yes it was screen cleaning. Looks like we attempted to screen clean G7 (110 bus) between TP 20 and 24, but it had to be abandoned due to being dispatched. We then carried out screen cleaning on G4 (220 bus) between TP24 and 30.

ROX G8 (110 bus) was also out on that day for scheduled servicing and we had ceased the lake flushing regime the night before, hence the gradual increase in total station output as the lake was returned to its normal operating level.

Please call if anything in the above doesn't make sense.

Cheers Boyd.

From: Peter Wakefield [mailto:Peter.Wakefield@ea.govt.nz]
Sent: Friday, 22 January 2021 10:17 a.m.
To: Boyd Brinsdon <boyd.brinsdon@contactenergy.co.nz>
Subject: Further query re ROX offers on 17 December 2019

Hi Boyd

I would like to discuss the offers for ROX1101 for TP 20-24 and ROX2201 for TP25-30. Is this the same as the continuous screen cleaning we discussed yesterday?

Thanks
Peter

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko
Level 7, Harbour Tower, 2 Hunter Street
PO Box 10041
Wellington 6143
New Zealand
www.ea.govt.nz

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Peter Wakefield

From: Matthew Cleland <Matthew.Cleland@contactenergy.co.nz>
Sent: Tuesday, 26 January 2021 9:46 AM
To: Peter Wakefield
Cc: Chris Abbott; Boyd Brinsdon
Subject: Raw data from charts
Attachments: Copy of Rox.xlsx; Copy of Cyd.xlsx

Hi Peter, the data that was used for the charts in our response to the alleged breach are attached. The three periods at ROX and one at CYD where we have been unable to find an explanation are highlighted.

Happy to discuss.

Matthew
0212282347

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Categories

Reduced Efficiency:

- HW** Head Water Level: every day the dispatch team looks at the lake levels and net head. This information is then used to update the Capacity of the units. Sometimes +/- up to 3MW compared to the installed capacity ***name plate rating 8 x 40MW**. When this happens we offer more or less than the Station Name Plate Max; to ensure that we are not dispatched (including reserve) to more than what we can deliver. This explains the small differences away from 320MW.
- SF** Flushing Start. The net head calculation is more dynamic than HW. This leads to a more offer changes with the reduced net head (lowering of Rox Lake rising of tail water). The offered data from ROX has been checked and column "A" is the max capacity for the period, as we get less and less net head we reduce the available potential energy.
- EF** Ending Flushing. The net head calculation is more dynamic than HW. This leads to a more offer changes with the increasing net head (raising of Rox Lake reducing tail water). The offered data from ROX has been checked and column "A" is the max capacity for the period, as we get more and more net head we increase the available potential energy.
- Z** During some periods of flow, the team experimented with more energy offered into the market above 240MW, to try and push the units capacity and gate opening. This only led to asset team manually checked to the machines; and then notified of the issues, which returned the units to 240MW max.
- SC** Screen Cleaning, sometimes this work is done online if the volume of material on the screen is low
- F** When Lake Rox is at its lowest point, the energy from the units is limited. No derating, just a loss of efficiency. Wicker gates are maximized at 100% open. Sometime, screen cleaning required to remove material.

Unknown reason

- X** Unknown why capacity was pulled from the offer. Most likely human error

Reduction in Capacity

- D** Derating, a state when a unit is in service, however, unable to generate to the full capacity. If this is the result of plant fault that can be fixed, a derating applies.
- U1** Forced outage, plant became unavailable due to an unknown fault.
- MO** Maintenance Outage: Transpower Work
Maintenance Outage: Screen Cleaning; sometimes the units is off line if the volume of material on the screen is high.
Maintenance Outage: Other work of the plant to repair some issues
- PO** Planned Outage: In POPC in advance

Categories

Reduced Efficiency:

- HW** Head Water Level: every day the dispatch team looks at the lake levels and net head. This information is then used to update the Capacity of the units. Sometimes +/- up to 3MW compared to the installed capacity ***name plate rating 4 x 116MW**. When this happens we offer more or less than the Station Name Plat Max; to ensure that we are not dispatched (including reserve) to more than what we can deliver. This explains the small differences away from 464MW.
- F** When Lake Rox is at its lowest point (in Flood) Clyde will have a higher tail water level. No derating, just a loss of efficiency. Wicker gates are maximized at 100% open.

Unknown reason

- X** Unknown why capacity was pulled form the offer. Most likely human error

Reduction in Capacity

- D** Derating, a state when a unit is in service, however, unable to generate to the full capacity. If this is the result of plant fault that can be fixed, a derating applies.
- U1** Forced outage, plant became unavailble due to an unknow fault.
- MO** Maintenance Outage: Transpower Work
Maintenance Outage: Other work of the plant to repair some issues
- PO** Planned Outage: In POPC in advance

Peter Wakefield

From: Boyd Brinsdon <boyd.brinsdon@contactenergy.co.nz>
Sent: Wednesday, 27 January 2021 4:31 PM
To: Peter Wakefield
Cc: Chris Abbott; matthew.cleland@contactenergy.co.nz; Trevor Lawrence
Subject: RE: Raw data from charts [EIAut-ELCOMM.FID43970]

Hi Peter,

464MW is the Clyde station's maximum output, but this can only be achieved if both the hydrology and power system conditions are favourable. That being we have a high net head - the difference between the lake level behind the dam and the river level below the power station. And that the power system voltage and our requirement to provide voltage support to the system operator is at or near normal.

During flood conditions the net head requirement is compromised (lake lowered and river high) and the power system requirement is always outside of our control.

464 MW is an output that can be achieved under ideal conditions but rarely indefinitely and as such is typically used for the purpose of providing spinning reserves and frequency keeping to the market, but ultimately each generator at Clyde is only rated to 108MW (as per our Asset Capability Statement) and that is the only output that can be relied on.

During flooding events when many other priorities are at play and hydrology and power system conditions are unpredictable, generation capacity above 108MW per unit cannot always be accurately forecasted and as we are required to *"not exceed the total MW that the generator expects to be capable of generating at the relevant point of connection to the grid for the relevant trading period"* (Electricity Industry Participation Code 13.9A 1), it is understandable that it is not always offered.

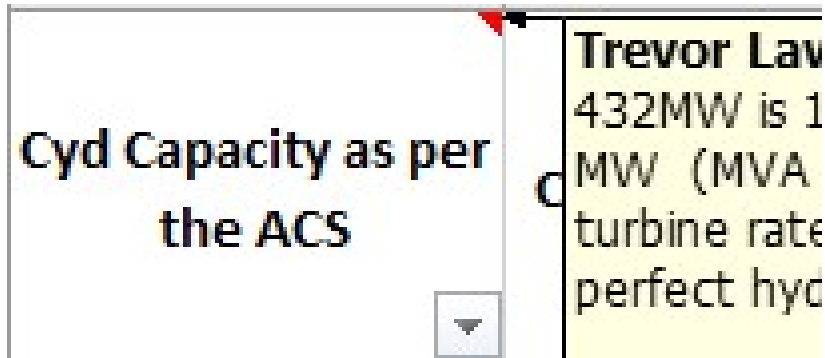
As always, if something is still unclear, feel free to give me a call.

Regards Boyd.

From: Peter Wakefield [mailto:Peter.Wakefield@ea.govt.nz]
Sent: Tuesday, 26 January 2021 4:58 p.m.
To: Matthew Cleland <Matthew.Cleland@contactenergy.co.nz>
Cc: Chris Abbott <Chris.Abbott@contactenergy.co.nz>; Boyd Brinsdon <boyd.brinsdon@contactenergy.co.nz>
Subject: RE: Raw data from charts [EIAut-ELCOMM.FID43970]

Hi Matthew

Thank you for this data. I have a query about CYD capacity of 464MW versus 432MW. I recall Boyd advising the 464MW was under ideal hydrological and grid voltage conditions. The spreadsheet has a note showing CYD per the ACS as 432 and the category description shows 464MW – see below. For my understanding I would appreciate a clear explanation of the difference between these two numbers.



Categories

Reduced Efficiency:

HW

Head Water Level: every day the dispatch team look at the head water level. This information is then used to update the Capacity

Thanks
Peter

 **Peter Wakefield**
Senior Investigator

DDI: +64 4 460 8864
Mob: +64 21 392 715
Fax: +64 4 460 8879
Email: peter.wakefield@ea.govt.nz

Electricity Authority - Te Mana Hiko

Appendix B Assessment

Appendix B: analysis of pivotal trading periods

Trading date and period	Trading Period	Pivotal	Spill Cumecs	Final Price CYD201	Final Price ROX1101	Final Price ROX2201	Final Price BEN2201	Final Price HAY2201	Material price safe harbour	consistent offer safe harbour	Notes
21/11/2019 7:00	15	1	0								no spilling
21/11/2019 7:30	16	1	0								no spilling
21/11/2019 8:00	17	1	0								no spilling
21/11/2019 8:30	18	1	0								no spilling
21/11/2019 9:00	19	1	0								no spilling
21/11/2019 9:30	20	1	0								no spilling
2/12/2019 8:30	18	0	76	\$111.95	\$109.84	\$111.83	\$118.00	\$128.28	na	na	not pivotal
2/12/2019 9:00	19	1	67	\$181.66	\$178.24	\$181.46	\$191.47	\$208.15	No	Yes	no offer change in cleared tranches or other tranches
2/12/2019 9:30	20	1	78	\$177.01	\$173.68	\$176.81	\$186.57	\$202.82	No	Yes	1MW offer reduction in tranche 2 for ROX 2201 - no other offer changes
2/12/2019 10:00	21	1	73	\$175.23	\$171.94	\$175.04	\$184.70	\$203.38	No	Yes	no offer change in cleared tranches or other tranches
2/12/2019 10:30	22	1	73	\$142.89	\$140.20	\$142.73	\$150.61	\$163.73	No	Yes	no offer change in cleared tranches or other tranches
2/12/2019 11:00	23	1	73	\$180.05	\$176.67	\$179.86	\$190.00	\$206.55	No	Yes	no offer change in cleared tranches or other tranches
2/12/2019 12:30	26	0	38	\$131.13	\$120.16	\$122.33	\$190.00	\$206.55	na	na	not pivotal
2/12/2019 13:00	27	1	33	\$140.30	\$130.60	\$132.96	\$190.00	\$208.10	Yes	na	no material price change compared with TP 26
2/12/2019 13:30	28	1	39	\$108.00	\$89.04	\$90.65	\$219.34	\$238.44	Yes	na	no material price change compared with TP 26
2/12/2019 14:00	29	1	21	\$99.67	\$61.16	\$62.00	\$365.00	\$396.79	Yes	na	no material price change compared with TP 26
2/12/2019 14:30	30	1	43	\$120.00	\$83.43	\$84.94	\$370.55	\$410.15	Yes	na	no material price change compared with TP 26
2/12/2019 15:00	31	1	46	\$157.30	\$123.64	\$125.17	\$365.00	\$405.92	Yes	na	no material price change compared with TP 26
2/12/2019 15:30	32	1	44	\$321.69	\$315.62	\$321.31	\$338.58	\$368.07	No	Yes	High prices at \$321 - bonafide revision -35MW for weed in headgate
2/12/2019 16:00	33	1	31	\$170.57	\$167.35	\$170.39	\$180.00	\$195.68	No	Yes	High prices at \$167 - 35MW now in tranche 5 @ \$380 not cleared
2/12/2019 16:30	34	1	31	\$129.25	\$126.81	\$129.11	\$136.39	\$145.97	Yes	na	no material price change compared with TP 26, 35MW in tranche 5 @ \$380 not cleared
2/12/2019 17:00	35	1	43	\$110.93	\$108.46	\$110.43	\$117.02	\$127.21	Yes	na	no material price change compared with TP 26
2/12/2019 17:30	36	1	46	\$113.41	\$110.89	\$112.91	\$119.56	\$129.97	Yes	na	no material price change compared with TP 26
2/12/2019 18:00	37	1	38	\$115.76	\$113.57	\$115.63	\$122.15	\$132.79	Yes	na	no material price change compared with TP 26
3/12/2019 7:00	15	0	95	\$103.83	\$102.15	\$103.83	\$106.99	\$113.33	na	na	not pivotal
3/12/2019 7:30	16	1	126	\$128.87	\$126.82	\$128.90	\$132.52	\$140.37	Yes	na	no material price change compare with TP 15
3/12/2019 8:00	17	1	121	\$117.12	\$115.23	\$117.14	\$120.33	\$128.58	Yes	na	no material price change compare with TP 15
3/12/2019 8:30	18	1	129	\$116.79	\$114.89	\$116.79	\$120.24	\$128.48	Yes	na	no material price change compare with TP 15
3/12/2019 9:00	19	1	125	\$79.50	\$78.22	\$79.51	\$81.75	\$87.35	Yes	na	no material price change compare with TP 15
4/12/2019 7:00	15	0	562	\$66.06	\$65.00	\$66.07	\$68.74	\$72.81	na	na	not pivotal
4/12/2019 7:30	16	1	562	\$79.94	\$78.76	\$79.94	\$82.35	\$87.99	Yes	na	no material price change compare with TP 15
4/12/2019 8:00	17	1	556	\$93.36	\$91.57	\$93.38	\$96.00	\$103.09	Yes	na	no material price change compare with TP 15
4/12/2019 8:30	18	1	563	\$89.12	\$87.39	\$89.12	\$91.78	\$98.30	Yes	na	no material price change compare with TP 15
4/12/2019 9:00	19	1	554	\$80.00	\$78.45	\$80.00	\$82.39	\$88.36	Yes	na	no material price change compare with TP 15
4/12/2019 9:30	20	0	559	\$79.84	\$78.72	\$79.84	\$82.20	\$88.04	na	na	not pivotal
4/12/2019 10:00	21	1	557	\$69.02	\$67.95	\$69.02	\$71.12	\$75.99	Yes	na	no material price change compare with TP 20
4/12/2019 10:30	22	1	542	\$79.02	\$77.81	\$79.04	\$82.22	\$87.86	Yes	na	no material price change compare with TP 20
4/12/2019 11:00	23	1	544	\$86.83	\$85.38	\$86.79	\$90.66	\$97.35	Yes	na	no material price change compare with TP 20
4/12/2019 11:30	24	1	541	\$78.91	\$77.60	\$78.88	\$82.40	\$88.25	Yes	na	no material price change compare with TP 20
4/12/2019 12:00	25	1	541	\$86.99	\$85.54	\$86.96	\$91.00	\$97.44	Yes	na	no material price change compare with TP 20
4/12/2019 13:00	27	0	540	\$87.11	\$85.66	\$87.08	\$91.00	\$97.70	na	na	not pivotal
4/12/2019 13:30	28	1	542	\$87.11	\$85.66	\$87.08	\$91.00	\$97.57	Yes	na	no material price change compare with TP 27
4/12/2019 16:30	34	0	560	\$105.87	\$104.11	\$105.83	\$110.60	\$118.39	na	na	not pivotal
4/12/2019 17:00	35	1	577	\$90.04	\$88.54	\$90.00	\$94.06	\$100.71	Yes	na	no material price change compare with TP 34
4/12/2019 17:30	36	1	614	\$86.94	\$85.50	\$86.91	\$91.00	\$97.49	Yes	na	no material price change compare with TP 34
5/12/2019 7:00	15	0	802	\$84.78	\$83.43	\$84.80	\$88.08	\$93.31	na	na	not pivotal
5/12/2019 7:30	16	1	803	\$89.86	\$87.97	\$89.86	\$92.50	\$98.85	Yes	na	no material price change compared with TP 15
5/12/2019 8:00	17	1	804	\$108.70	\$106.38	\$108.67	\$112.14	\$121.91	Yes	na	no material price change compared with TP 15
5/12/2019 8:30	18	1	773	\$89.87	\$88.41	\$89.87	\$92.60	\$99.15	Yes	na	no material price change compared with TP 15
5/12/2019 9:00	19	1	774	\$106.00	\$104.30	\$106.02	\$110.29	\$119.90	Yes	na	no material price change compared with TP 15
5/12/2019 10:00	21	0	752	\$87.07	\$85.68	\$87.09	\$90.60	\$98.49	na	na	not pivotal
5/12/2019 10:30	22	1	764	\$81.96	\$80.64	\$81.97	\$85.28	\$91.33	Yes	na	no material price change compared with TP 21
5/12/2019 11:00	23	1	767	\$105.86	\$104.17	\$105.89	\$110.31	\$119.91	Yes	na	no material price change compared with TP 21
5/12/2019 11:30	24	1	766	\$105.15	\$103.41	\$105.12	\$109.96	\$119.53	Yes	na	no material price change compared with TP 21
5/12/2019 12:00	25	1	761	\$86.57	\$85.21	\$86.55	\$90.64	\$97.64	Yes	na	no material price change compared with TP 21
5/12/2019 12:30	26	1	771	\$86.64	\$85.27	\$86.62	\$90.75	\$98.65	Yes	na	no material price change compared with TP 21
5/12/2019 13:00	27	1	743	\$89.26	\$87.85	\$89.24	\$93.49	\$101.63	Yes	na	no material price change compared with TP 21
5/12/2019 13:30	28	1	737	\$100.79	\$99.19	\$100.76	\$105.57	\$114.76	Yes	na	no material price change compared with TP 21
5/12/2019 14:00	29	1	758	\$110.67	\$108.91	\$110.63	\$115.56	\$125.63	Yes	na	no material price change compared with TP 21
5/12/2019 14:30	30	1	740	\$120.67	\$118.74	\$120.62	\$126.00	\$136.97	Yes	na	no material price change compared with TP 21
5/12/2019 15:00	31	1	734	\$112.05	\$110.26	\$112.01	\$117.00	\$127.19	Yes	na	no material price change compared with TP 21
5/12/2019 15:30	32	1	742	\$117.69	\$115.82	\$117.65	\$122.89	\$133.59	Yes	na	no material price change compared with TP 21
5/12/2019 16:00	33	1	743	\$120.67	\$118.75	\$120.62	\$126.00	\$135.18	Yes	na	no material price change compared with TP 21
5/12/2019 16:30	34	1	741	\$122.13	\$120.26	\$122.16	\$127.08	\$136.17	Yes	na	no material price change compared with TP 21
5/12/2019 17:00	35	1	725	\$112.44	\$110.72	\$112.47	\$117.00	\$125.02	Yes	na	no material price change compared with TP 21
6/12/2019 7:00	15	0	771	\$98.43	\$96.69	\$98.37	\$103.11	\$110.18	na	na	not pivotal
6/12/2019 7:30	16	1	742	\$100.12	\$98.38	\$100.09	\$104.79	\$111.98	Yes	na	no material price change compared with TP 15
6/12/2019 8:00	17	1	741	\$129.35	\$127.11	\$129.31	\$135.00	\$144.25	No	Yes	consistent offer - 30MW in tranche 5 - continuous screen cleaning with one unit at a time where 30MW can be made available if required
6/12/2019 8:30	18	1	737	\$98.99	\$97.28	\$98.96	\$103.68	\$110.99	Yes	Yes	consistent offer - 30MW in tranche 5 - continuous screen cleaning with one unit at a time where 30MW can be made available if required

