2 May 2022

MEMORANDUM

Re: Claim on an undesirable trading situation on 9 August 2021

Introduction

1. On 19 April 2022, the Electricity Authority issued a supplementary consultation paper relating to the claim on an undesirable trading situation (**UTS**) on 9 August 2021, in which it noted:[1]

> An issue has arisen in the course of the compliance investigation into alleged breaches by the system operator relating to 9 August 2021 concerning the island shortage situation (ISS) notice issued by the system operator. Both the system operator and the Authority consider that the ISS notice was not issued in accordance with the Code, although that is ultimately a matter for the Rulings Panel in the context of the compliance investigation.

2. The Authority observed that the island shortage situation notice (the **ISS Notice**) might be relevant to the UTS investigation and, specifically, questioned whether scarcity pricing should apply to trading periods 39–42 on 9 August 2021.[2] Therefore, the Authority asked this:[3]

> Q1. Do you agree that it is appropriate for scarcity pricing to apply to trading periods 39 – 42 on 9 August 2021, notwithstanding that the ISS notice may not have been issued in accordance with the Code?
>
> In your response to this question please provide the reasons for your answer, and any other comments you wish to make as to the ISS notice and its consequences.

3. This memorandum is filed on behalf of Haast Energy Trading (Haast), Electric Kiwi, Flick Electric (Flick), and Vocus, (the **Parties**). In this memorandum, the Parties respond to the question posed by the Authority in the supplementary consultation paper. The Parties have an interest in this issue, because they made or joined the UTS claim on 12 August 2021.

4. The Parties have no issue with this submission being published by the Authority.

Summary

5. In summary, the Parties' position is that:

   (a) The Authority should find a UTS existed regarding the incorrectly issued ISS Notice and the subsequent declaration of scarcity pricing on 9 August 2021. The Authority should use its UTS powers to roll back scarcity pricing and instruct the Pricing Manager to set prices as if the ISS notice was never issued.

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1 Electricity Authority "Preliminary decision on claim of an undesirable trading situation on 9 August 2021 – Supplementary consultation paper" (19 April 2022) at 1 (**Supplementary Paper**).
2 At [1.3].
3 Appendix A to the Supplementary Paper.

(b) Relatedly, the Authority should also find that a Pricing Error has occurred because the incorrectly issued ISS Notice gave rise to an incorrect input being used in the calculation of interim prices and/or also gave rise to an incorrect process being followed in calculating interim prices.

6. The reasons for that position are expanded upon below.

Background

7. The events of 9 August 2021 are summarised below:

Time	Event on 9 August 2021
6.42am	The System Operator notified market participants that it was possible there would be a shortage of supply that evening if the weather worsened.
1.03pm	The System Operator notified market participants that further generation offers were required to avert the risk of demand management.
5.10pm	The System Operator issued a Grid Emergency Notice (**GEN**) stating there were insufficient offers to cover energy and reserve requirements, and that reserve dispatch would be reduced to provide energy supply.
6.47pm	The System Operator issued a GEN requiring distributors to reduce demand by 1% and which indicated that a Demand Allocation Notice (**DAN**) would follow.
7.09pm	The System Operator issued a DAN, which contained a number of errors.
8.20pm	The System Operator revised the original GEN to allow distributors to increase load by 5% based on current load.
9.01pm	The System Operator issued a GEN revision notice declaring that the grid emergency had ended and all participants could restore all load.
11.54pm	The System Operator issued the ISS Notice.

8. The highlighted entries are material to why the Pricing Manager applied scarcity pricing to trading periods 39–42.

9. When the System Operator issued the ISS Notice at 11.54pm, it was under the (mistaken) impression that the 6.47pm GEN was an instruction to electrically disconnect demand. As a consequence, the ISS Notice provided as follows:

> This notice is issued in accordance with Technical Code B – Emergencies, Schedule 8.3 Part 8, clause 5(1A). This Island Shortage Situation (ISS) notice has been issued by the System Operator to inform the Pricing Manager and Market Participants that an island wide instruction to disconnect demand has been issued, amended or revoked. Refer to the related GEN notice for details of the instruction. The ISS notice serves as an indication to the market that the Pricing Manager may invoke Scarcity Pricing subject to meeting additional market criteria.
>
> (Emphasis added).

10. The Pricing Manager determined that scarcity pricing applied to trading periods 39–42 on 9 August 2021. The effect of applying scarcity pricing across the relevant trading periods is about $130 million.[4]

11. The System Operator has subsequently acknowledged that the GENs issued on 9 August 2021 were notices to reduce demand, not to electrically disconnect demand.[5] As a result, the System Operator's view is that the ISS Notice was issued incorrectly. That view is shared by the Authority.

12. Nevertheless, the Authority has not made a final decision on whether scarcity pricing should apply to the relevant trading periods. It has indicated it intends to make a final decision on this in June 2022.

The Code and Scarcity Pricing

13. The Parties address the Authority's question after first considering the relevant parts of the Code. Three parts of the Code are immediately relevant, namely, those relating to an island shortage situation, pricing, and scarcity pricing.

Island shortage situation

14. One must understand an island shortage situation in order to understand the role of scarcity pricing under the Code.

15. The Code defines a *"shortage situation*" as an *"island shortage situation"* or a *"national shortage situation"*.[6] An island shortage situation is *"a situation specified in a notice to be an island wide shortage by the system operator under clause 5(1A) of Technical Code B of Schedule 8.3"*.[7]

16. Technical Code B of Schedule 8.3 concerns emergency events.[8] Under clause 5(1A) of Technical Code B, the System Operator must issue a notice in writing *"to all participants whenever, or as soon as practicable after, under clause 6, the system operator has issued, amended, or revoked an island wide instruction to electrically disconnect demand"*. The System Operator must provide the notice to the Pricing Manager by 7.30am the following trading day.[9]

17. Clause 5(1A) does not refer to an island shortage situation, nor does any other part of Technical Code B. Instead, clause 5(1A) refers to clause 6 of Technical Code B, which outlines the actions available to the System Operator in a grid emergency. However, clause 5(1A) only relates to an *"island wide instruction to electrically disconnect demand"*, being the most significant actions available to the System Operator in response to a grid emergency.[10]

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4 Supplementary Paper, above n 1, at [3.5].
5 We discuss this distinction below by reference to the Code.
6 Clause 1.1, definition of *"shortage situation"*.
7 Clause 1.1, definition of *"island shortage situation"*.
8 Clause 1 of Technical Code B, Schedule 8.3.
9 Clause 5(1C), Technical Code B, Schedule 8.3.
10 See the actions noted in clauses 6 and 7 of Technical Code B, Schedule 8.3.

18. In practical terms, these clauses of the Code mean that the System Operator will give notice of an instruction to electrically disconnect demand before giving notice of an island wide shortage situation. It is the former that justifies the latter.

19. The notification of an island shortage situation impacts upon the Pricing Manager's calculation of price for trading periods affected by the island shortage situation, as discussed below.

Calculation of provisional, interim and final prices

20. Subpart 4 of Part 13 of the Code concerns pricing. The purpose of the pricing process is to *"achieve an appropriate balance between certainty and accuracy of final prices and final reserve prices for each trading period"*.[11]

21. Clause 13.135 stipulates the methodology the Pricing Manager must use to calculate provisional, interim and final prices. Specifically, it requires the Pricing Manager to use the *"input information"* in clause 13.141 and the methodology in schedule 13.3.

22. Clause 13.141(1) requires the Pricing Manager use the *"input information"* specified in that subclause. The balance of clause 13.141 relates to the provision of information and the publication of that information on the wholesale information trading system or WITS.

23. Schedule 13.3 is titled *"The Modelling System"*. Its purpose is as follows:[12]

> The purpose of the modelling system is to provide schedules of quantities and prices that maximise the gross purchaser benefit from purchases of electricity from the clearing manager less the total cost of production of electricity and instantaneous reserves as specified in this Schedule.

24. Clause 1(3) of schedule 13.3 further explains that the *"modelling system must provide prices for electricity and instantaneous reserve that are consistent with the above purpose and the scheduled quantities of electricity and instantaneous reserve."*

25. Clause 3(d) of schedule 13.3 provides that the inputs in clause 13.141 must be used to prepare schedules of provisional, interim and final prices. Clauses 15–17 provide further requirements for, or details about, the preparation of those schedules.

26. Stepping back, then, clause 13.135 requires that the Pricing Manager ordinarily calculate provisional, interim and final prices using the input information in clause 13.141 and by applying the methodology developed in schedule 13.3. But clause 13.135 is subject to clause 13.135B,[13] which is discussed below.

Scarcity pricing

27. The Pricing Manager is required to calculate prices differently in the event that scarcity pricing applies.

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[11] Clause 13.132.
[12] Clause 1(1) of sch 13.3.
[13] See clause 13.135(1).

28. The Code defines *"scarcity pricing situation"* to mean an *"island scarcity pricing situation"* or a *"national scarcity pricing situation"*.[14] Relevantly, an island scarcity pricing situation means *"a situation determined to be an island scarcity pricing situation by the pricing manager under clause 13.135A(3)"*.[15]

29. Clause 13.135A(3) provides:

> An island scarcity pricing situation exists for an island if the pricing manager gives notice that an island shortage situation existed and the input information or revised data shows that—
>
> (a) for the relevant trading period, there is no binding constraint in the island (excluding the HVDC link) in which an island shortage situation declaration is made; and
>
> (b) for the relevant trading period—
>
> (i) the HVDC link is in service and—
>
> (A) if the island in which the island shortage situation declaration is made is the South Island, the price at the Benmore node is higher than the price at the Haywards node; or
>
> (B) if the island in which the island shortage situation declaration is made is the North Island, the price at the Haywards node is higher than the price at the Benmore node; or
>
> (ii) the HVDC link is out of service.

30. The balance of clause 13.135A is also relevant:

> **Notice of scarcity pricing situation**
>
> (1) This clause applies if the pricing manager, in relation to a trading period, gives written notice in accordance with clause 13.144(1) that a shortage situation exists.
>
> (2) If this clause applies, the pricing manager must determine whether a scarcity situation exists in the relevant trading period.
>
> […]
>
> (5) If the pricing manager determines that a scarcity pricing situation exists, the pricing manager must—
>
> (a) give written notice of the scarcity pricing situation on WITS and to the system operator, relevant grid owner, and any person that has requested notice; and
>
> (b) specify in the notice each trading period affected by the scarcity pricing situation; and
>
> (c) in relation to each trading period affected by the scarcity pricing situation, specify in the notice whether the scarcity pricing situation is an island scarcity pricing situation or a natural scarcity pricing situation.
>
> (6) If the pricing manager determines that a scarcity pricing situation does not exist, the pricing manager must give written notice of its determination on

[14] Clause 1.1, definition of *"scarcity pricing situation"*. See the separate

[15] Clause 1.1, definition of *"island scarcity pricing situation"*. The Code also makes provision for a national scarcity pricing situation, which is to be determined by the Pricing Manager under clause 13.135A(4): see clause 1.1, definition of *"national scarcity pricing situation"*.

> WITS and to the system operator, relevant grid owner, and any persons that request notice.

31. Clause 13.135A(1) refers to a notice given under clause 13.144. That clause obliges the Pricing Manager to give written notice in the event it receives certain information including, relevantly, *"notice of a shortage situation in accordance with clause 5(1A) of Technical Code B of Schedule 8.3"*. The Pricing Manager must give written notice of the shortage situation, which must identify the trading period(s) affected by the shortage situation and specify whether it is an island or national shortage situation.[16]

32. If the Pricing Manager gives notice of a shortage situation, clause 13.146 requires the Pricing Manager to *"determine whether a scarcity pricing situation exists in accordance with clause 13.135A and, if a scarcity pricing situation does exist, calculate interim prices and interim reserve prices in accordance with clause 13.135B."*[17]

33. If the Pricing Manager determines that a scarcity pricing situation exists, then clause 13.135B(1)(a) requires the Pricing Manager to calculate interim prices using the methodology in schedule 13.3A.

34. Clause 1(1) of schedule 13.3A is important:

> If the pricing manager determines under clause 13.135A that an island scarcity pricing situation exists in a trading period, the pricing manager must calculate interim prices and interim reserve prices in the relevant island for that trading period in accordance with the following:
>
> (a) calculate initial interim prices and interim reserve prices for the relevant island for that trading period in accordance with clause 13.135:
>
> (b) calculate the island GWAP in accordance with subclause (2):
>
> (c) calculate the scarcity pricing factor in accordance with subclause (3):
>
> (d) calculate interim prices by multiplying the initial interim prices calculated under paragraph (a) by the scarcity pricing factor:
>
> (e) calculate interim reserve prices by multiplying the initial interim reserve prices calculated under paragraph (a) by the scarcity pricing factor.

35. Clause 1(2) of schedule 13.3A provides the Pricing Manager with the calculation for the island GWAP. The island GWAP is the generation weighted average price for an island for a trading period.[18]

36. Clause 1(3) of schedule 13.3A tells the Pricing Manager how to determine the scarcity pricing factor.

37. As clause 1(1) of schedule 13.3A makes clear, the calculation of scarcity pricing for the relevant trading period begins by applying the ordinary approach to the calculation of interim prices in clause 13.135. However, the ordinary interim price is multiplied by the scarcity pricing factor, which is derived after calculating the island GWAP.

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[16] See clause 13.144(1)(a), (b) and (d).
[17] Clause 13.146(2A).
[18] Clause 1.1, definition of *"island GWAP"*.

Interim and final prices

38. The Pricing Manager is required to make interim prices available on WITS in accordance with clause 13.167. It is at that point that one can claim that the prices contain a pricing error.[19]

39. In the absence of a pricing error claim, the Pricing Manager will publish the final prices on WITS in accordance with clause 13.171. But, where a pricing error has been claimed, the Pricing Manager cannot make final prices available on WITS until it has implemented the Authority's decision in accordance with clause 13.177.[20]

40. Clauses 13.173–13.182 outline the procedure to be followed in determining a pricing error claim. The Pricing Manager is required to review the pricing error claim and make a recommendation that the Authority either uphold or not uphold the claim. The Authority is not required to accept the Pricing Manager's recommendation. But, if the Authority decides that a pricing error occurred, then the Pricing Manager must implement the Authority's decision, including by recalculating interim prices and making them available on WITS.

Summary of process

41. Appendix A to this memorandum is an effort to summarise the process described above.

The ISS Notice and Its Consequences

42. It is accepted by the System Operator, as well as the Authority, that the System Operator wrongly issued the ISS Notice. It is important to explain why because, in the Parties' view, a number of procedural and substantive errors flowed from the invalid ISS Notice.

43. The System Operator's 6.47pm GEN was not a notice to electrically disconnect demand. Instead, it was a notice to reduce demand by 1%. An examination of the notice shows it did not purport to instruct emergency load shedding as described in clause 7(20) of schedule 8.3, Technical Code B. The System Operator did not instruct demand to be electrically disconnected, nor did it specify a point of connection at which load was to be shed. Therefore, the System Operator was wrong to issue the ISS Notice at 11.54pm. The System Operator could not issue that notice under clause 5(1A) of Technical Code B unless that was an *"island wide instruction to electrically disconnect demand"*. There was no such instruction. The ISS Notice is accordingly ultra vires.

44. Clause 6(1) of Technical Code B outlines the actions available to the System Operator during the Grid Emergency of 9 August 2021. The 6.47pm notice could have been consistent with either (b) or (e) of this clause, but, most importantly, neither of these actions trigger an Island Shortfall Situation or Scarcity Pricing:

[19] Clause 13.168.
[20] Clause 13.172.

> **6 Actions to be taken by the system operator in a grid emergency**
>
> (1) If insufficient generation and **frequency keeping** gives rise to a **grid emergency**, the **system operator** may, having regard to the priority below, if practicable, and regardless of whether a **formal notice** has been issued, do 1 or more of the following:
>
> (a) request that a **generator** varies its **offer** and **dispatch** the **generator** in accordance with that **offer**, to ensure there is sufficient generation and **frequency keeping**:
>
> (b) request that a **purchaser** or a **connected asset owner** reduce **demand**:
>
> (c) require a **grid owner** to reconfigure the **grid:**
>
> (d) require the **electrical disconnection** of **demand** in accordance with clause 7A:
>
> (e) take any other reasonable action to alleviate the **grid emergency**.

45. Had the System Operator realised it could not issue the ISS Notice, a number of events would not have occurred, including: the issuance of the incorrect ISS Notice; the determination by the Pricing Manager that an island scarcity pricing situation existed; and the calculation of interim prices for trading periods 39–42 using scarcity pricing.

46. Of course, the System Operator did not realise it could not issue the ISS Notice. And the ISS Notice put in train the events that led to the Pricing Manager applying scarcity pricing to trading periods 39–42.

47. What is the effect of the System Operator's wrongfully issued ISS Notice?

48. That turns on the purpose of the ISS Notice, the consequence of its invalidity, and how that bears upon the issue of scarcity pricing.[21]

49. The System Operator's requirement to give notice under clause 5(1A) of Technical Code B is a procedural requirement. The notice depends upon the existence of an island wide instruction to electrically disconnect demand; after all, that is what the System Operator is giving notice about.

50. A notice under clause 5(1A) of Technical Code B must be void and of no effect if, in fact, the System Operator has not given an island wide instruction to electrically disconnect demand. In that situation, the necessary precondition to the notice has not been satisfied. The notice itself is void as a result because the System Operator is telling participants that something has happened that has not, in fact, happened.

51. What, then, is the consequence of the void ISS Notice upon the Pricing Manager?

52. The System Operator's notice of an island shortage situation is one event that triggers the Pricing Manager's consideration of scarcity pricing.[22] The Code does not permit the Pricing Manager to give independent consideration to whether there is a shortage situation. Rather, clause 13.144(1) makes it clear that the Pricing Manager's obligations

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[21] See *Tannadyce Investments Ltd v Commissioner of Inland Revenue* [2011] NZSC 158, [2012] 2 NZLR 153 at [74]–[76] per Tipping J; and *New Zealand Institute of Agricultural Science Inc v Ellesmere County* [1976] 1 NZLR 630 (CA) at 636 per Cooke J. See also *Charles v The Judicial and Legal Service Commission* [2002] UKPC 34.

[22] See clause 13.144(1).

are not engaged until, relevantly, it *"receives notice of a shortage situation in accordance with clause 5(1A) of Technical Code B of Schedule 8.3"*.

53. The ISS Notice was not *"in accordance with"* clause 5(1A) because the System Operator had not given an instruction to electrically disconnect demand. Therefore, the Pricing Manager was not entitled to consider whether a scarcity pricing situation existed, as the precondition of a valid island shortage situation notice had not been satisfied.[23]

54. The invalid ISS Notice has substantive, as well as procedural, implications. The test for whether an island scarcity pricing situation exists, as outlined in clause 13.135A(3), cannot be satisfied unless *"the pricing manager gives notice that an island shortage situation existed"*.[24] The Pricing Manager's notice of an island shortage situation is contingent upon the System Operator's island shortage situation notice.

55. The substantive effect of an ISS notice follows from the requirement only to give such a notice where there has been an instruction to electrically disconnect demand. The effect of disconnection is to curtail demand in response to insufficient supply in order to balance the system.[25] The role of scarcity pricing is to avoid the ordinary market response to reduced demand, which is to reduce price and, in the long-term, disincentives investment in last-resort generation.[26]

56. The regulatory response of scarcity pricing — to administer a price between $10,000/MWh and $20,000/MWh for the relevant trading periods — is not required by the Code when demand has been reduced without the need for disconnection. Indeed, as was seen for trading periods 39–42 on 9 August 2021, the application of scarcity pricing increased prices by $130 million.

57. It follows that the invalid ISS Notice led the Pricing Manager to determine wrongly that an island scarcity pricing situation existed because the criteria for that situation, as contained in clause 13.135A(3), could not be satisfied in the absence of a valid island shortage situation.

58. The Pricing Manager's erroneous conclusion that an island scarcity pricing situation existed caused it to fall into another error. Instead of pricing trading periods 39–42 using clause 13.135, the Pricing Manager applied clause 13.135B and, therefore, schedule 13.3A.

59. The Pricing Manager's application of clause 13.135B, instead of clause 13.135, caused a pricing error. The Code defines pricing error as follows:

> pricing error means an interim price or interim reserve price is incorrect or is likely to be incorrect, as the result of—

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[23] Refer to clauses 144(1) and 13.135A(1)–(2).
[24] Clause 13.135A(3). The second limb of the test is that the input information or revised data shows that clause 13.135A(3)(a) and one of clause 13.135A(3)(b)(i)–(ii) has been satisfied.
[25] As explained by the Authority in "The Authority's preliminary decision on whether an undesirable trading situation occurred on 9 August 2021" (16 December 2021) at [6.2].
[26] At [6.3]–[6.4].

(a) an incorrect input being used in calculating the interim price or interim reserve price; or

(b) the pricing manager having followed an incorrect process in calculating that interim price or interim reserve price, in contravention of this Code

60. The Pricing Manager's wrongful application of scarcity pricing led to a pricing error, both because it followed an incorrect process in calculating the interim price, in breach of the Code, and because it used an incorrect input in calculating the interim price.

61. First, the Pricing Manager should have applied clause 13.135. It did not. It was wrong to apply clause 13.135B because there was no scarcity pricing situation and, as a result, it applied an incorrect process to calculate the interim price, in contravention of the Code.

62. Second, and relatedly, the Pricing Manager used an incorrect input when calculating the interim price. Clause 13.135B requires the Pricing Manager to calculate interim prices using the methodology in schedule 13.3A. Clause 1(1) of that schedule requires the Pricing Manager to calculate initial interim prices using clause 13.135 and then to multiply the initial interim prices by the scarcity pricing factor. The scarcity pricing factor becomes an incorrect input where there is no island scarcity pricing situation.

63. The resulting pricing error demonstrates the substantive consequence of an invalid ISS Notice. The ISS Notice issue is not confined to the System Operator, as it led to the Pricing Manager making a number of procedural and substantive mistakes in calculating the interim prices for trading periods 39–42 using scarcity pricing. The magnitude of those errors was $130 million.

What Can Be Done?

64. If the incorrectly issued ISS notice and Scarcity Pricing are allowed to stand, by the Electricity Authority's own estimates, purchasers will overpay by $130m. The quantum of this overpayment due to an error is such that this will undermine confidence in the market. That plainly gives rise to an Undesirable Trading Situation.[27] The Electricity Authority should find a UTS exists and use its powers to correct to set final prices in the absence of the ISS notice and Scarcity Pricing.

65. For the avoidance of doubt, the Parties maintain that the imposition of scarcity pricing should be corrected, independently of whether the Authority determines there has, or has not been, an Undesirable Trading Situation. While the Authority may determine there has been a UTS and may, in that context, also revoke the imposition of scarcity pricing, they are independent issues. For example, determining there has been a UTS is not a necessary prerequisite for a finding that there has been a pricing error.

[27] A UTS is any situation which threatens the confidence in, or integrity of, the Wholesale Market.

Conclusion

66. The Parties are grateful for the opportunity to comment on the Authority's question.

67. If the Authority has any questions arising from the analysis above, the Parties are happy to provide further elaboration.

APPENDIX

Summary of Process – Scarcity Pricing