

14 December 2018 under-frequency event

Final determination

Decision



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1 Final determination of the 14 December 2018 under-frequency event (UFE)

- 1.1 The Electricity Authority (Authority) has determined Transpower New Zealand Limited (Transpower) as the causer of the 14 December 2018 UFE.

The draft determination

- 1.2 On 16 July 2019, we published a consultation paper titled, *Draft determinations of causer for the 13 and 14 December 2018 UFEs*. We consulted on two draft determinations that:
- (a) Genesis Energy Limited, is the causer of the under-frequency event on 13 December 2018 at 2.25 pm
 - (b) Transpower New Zealand Limited, as the grid owner, is the causer of the under-frequency event on 14 December 2018 at 12.20 pm.
- 1.3 Both draft determinations were finalised after consultation closed. Due to an internal process error, a submission on the 14 December 2018 UFE was not considered when finalising the causer decision for that event. On 10 September 2019 we withdrew our final determination published under clause 8.61(9) of the Code for the 14 December 2018 UFE. The determination on the 13 December 2018 UFE remains unchanged because all submissions were considered for that event.
- 1.4 The 14 December 2018 determination has received three submissions. This decision paper:
- (a) responds to the matters raised in submissions
 - (b) sets out our decision to determine Transpower as the causer and gives reasons for that decision.

2 The Authority considered the following matters in making this determination

- 2.1 The UFE regime operates on a strict liability basis. During policy design there was a deliberate decision to allocate event charges to a “causer” where the root cause of the relevant interruption or reduction was a force majeure type event.¹
- 2.2 Our decision process requires us to apply the intent of the regime and the Code as it is currently written. Although we are applying the Code as it currently stands, we also understand submitters points about the potential for perverse incentives like when a force majeure type of event occurs. Refer to paragraphs 2.25 to 2.30 for more analysis on the issue of policy intent.
- 2.3 We received submissions on our July 2019 consultation paper from the three parties:
- (a) Mercury Energy Limited
 - (b) Tilt Renewables Limited
 - (c) Transpower New Zealand Limited.

¹ Refer to <https://www.ea.govt.nz/about-us/what-we-do/our-history/archive/dev-archive/consultations/power-systems-and-common-quality-consultations/2010/under-frequency-event-causer-determination/>.

- 2.4 Submissions are available on our website at: <https://www.ea.govt.nz/development/work-programme/risk-management/determinations-of-who-caused-under-frequency-events/consultations/#c18137>.
- 2.5 Matters raised by submitters fell into four categories:
- (a) the lightning strike
 - (b) outage planning and risk management
 - (c) the exclusion in paragraph (c) of the definition of 'causer'
 - (d) the policy intent and the repercussions of the determination.
- 2.6 Each of these issues is discussed below. This discussion adds to our earlier analysis contained in the original draft determination, published 18 July 2019. The draft determination is available on our [website here](#).

The lightning strike

- 2.7 All submitters proposed the lightning strike as the cause of the UFE and that our interpretation of causer is incorrect.
- 2.8 One submitter proposes that distinguishing between the cause of the interruption (Transpower's property) and the reason why it happened (the lightning strike) is artificial. They say that the Concise Oxford Dictionary has a primary meaning of "reason" to be "a motive, cause, or justification", and a primary meaning of "cause" to be "a reason or motive". So, the reason is the cause.
- 2.9 We consider this definition to be too narrow. There doesn't need to be a reason or motive involved. While the lightning strike was part of the chain of causation of the UFE, that doesn't invalidate finding Transpower's property as the cause of the interruption/reduction of electricity that led to the UFE. The definition of 'causer' in Part 1 of the Code is clear that if the UFE is caused by an interruption or reduction of electricity from a grid owner's (or generator) asset, the grid owner (or generator) is the causer. It is indifferent to the reason (root cause) the asset interrupted or reduced the flow.
- 2.10 After reconsideration of the definition of causer, we don't consider any change to the draft determination is necessary.

Outage planning and risk management

- 2.11 One submitter considers the planned outage at Huntly which had split the generation bus going ahead is a key issue. We were asked to consider further whether the UFE would have occurred without the planned maintenance.
- 2.12 As part of making decisions around maintenance and outages, generators and the grid owner should be factoring in the potential for an under-frequency event. The charging regime puts the cost of a decision (investment, operation, and maintenance) that can affect the cost of instantaneous reserve procurement on the asset owner. The charge incentivises the asset owner to take reliability and risk into account when designing, maintaining and operating their assets.
- 2.13 However, the UFE regime was created with a strict liability approach. As such, whether or not the grid owner was justified in proceeding with the Huntly bus B outage has no impact on whether or not it is the causer.

- 2.14 One submitter noted incentives work best when the risk is reasonably controllable by the person being incentivised to avoid it. When the risk isn't reasonably controllable (such as a lightning strike or other force majeure type event) undesirable incentives potentially arise. These incentives will tend to increase the cost of maintenance work without reducing the required quantity or cost of instantaneous reserve. This may make the incentives inefficient.
- 2.15 We agree that incentives generally work best when the risk is borne by the person in the best position to avoid it, and that person is given the incentive to manage the risk.
- 2.16 In this particular case the grid owner would need to decide if proceeding with the outage when the risk of thunderstorms was forecast to be moderate to high was appropriate given the risk of a lightning strike and a consequent UFE event charge.
- 2.17 When making investment decisions on assets or property, the asset owner could consider the potential for damage, such as if struck by lightning. Putting generation on n security significantly increases the risk of that generation becoming isolated. The grid owner should be incentivised to consider alternative options in circumstances like this and have established plans to manage the risk.

The exemption in the definition of causer paragraph (c)

- 2.18 A submission raised a previous decision by the Rulings Panel indicating that careless, reckless or negligent behaviour should be taken into account when determining a causer.
- 2.19 Previous Rulings Panel decisions should be used when applying the same Code provisions in question. However, it only extends to the reasons why they reached the decision, not other material included in the decision that wasn't determinative of the outcome. If the same set of circumstances arises again, the decision should be the same. When applying previous decisions, distinctions need to be identified between the earlier case and the current set of circumstances.
- 2.20 There is a material point of difference between the Meridian case identified in submissions and the current case. The purpose of the Meridian testing was to interrupt supply, there were meant to be other measures in place designed to ensure that when the testing was done it didn't lead to a UFE. There was no intention to interrupt/reduce supply on 14 December 2018. The exemption in paragraph (c) applied to Meridian in that case as the relevant reduction in electricity was part of an approved testing process required by the Code, such that the reduction in electricity was an intentional and conscious decision that Meridian took "in order to comply with the Code".
- 2.21 By contrast, the automatic operation of an asset owner's protection systems in response to a detected fault does not occur "in order to comply" with the Code. By providing protection systems, the grid owner is obliged to minimise the size and consequences of interruptions of electricity, but not cause them. Instead, the words "in order to" imply a level of intentionality, in that the relevant interruption or reduction in electricity occurs because of a decision of the asset owner to interrupt or reduce electricity for the purposes of complying with the Code (rather than as a necessary consequence of the asset owner having Code-compliant protection systems).
- 2.22 After consideration of the Rulings Panel decision, we don't consider any change to the draft determination is warranted.

- 2.23 A submission also proposed that if there had not been protection on the circuit, or the protection had not operated correctly, Transpower would not have been the causer of the 14 December UFE under the reasoning in the draft determination.
- 2.24 If there had not been protection in place, Genesis (as owner of the generator that lost its connection) wouldn't have been the causer. It's likely that Transpower would still have been found to be the causer under (a)(i) of the causer definition. It would still have been the grid owner's property/act or omission that had caused the interruption or reduction to electricity (dependent on the exact scenario).
- 2.25 The event charge would not have been avoided, and additionally there would have been a breach of the obligation to have protection.

Policy intent and repercussions

- 2.26 All submissions raised questions on the policy intent and possible repercussions of Transpower being determined the causer.
- 2.27 The Code was intentionally drafted so that the determination of causer was clearer and more enforceable. The UFE regime operates on a strict liability basis and there was a deliberate policy choice to allocate an event charge to a "causer" for a UFE even where the root cause of the relevant interruption or reduction in electricity was a force majeure event (such as extreme weather). This was a deliberate policy choice by the Electricity Commission when it added the current causer definition to the Electricity Governance Rules in 2010.
- 2.28 The Code must be applied as it is currently. Challenges to the Code should be submitted through a Code amendment proposal and consulted on appropriately with all parties.
- 2.29 The concern raised by a submitter that the scheme isn't consistent with the Authority's objectives is a policy question. The objectives of the 2012 amendment to the causer regime are to:
 - (a) enable the regime to operate in a manner that makes explicit the costs of asset owner decisions that can affect the cost of instantaneous reserve procurement. Thereby incentivising asset owners to factor reliability into the design, operation and maintenance of plant
 - (b) reduce the cost, time and resources involved in making a determination, and resolving any disputes in relation to it.
- 2.30 We agree that there may be occasions where a grid owner or generator is unable to avoid a UFE. This was considered and accepted when the regime was last reviewed.
- 2.31 These questions on policy will be considered in any future reviews of the regime.

3 What we proposed

- 3.1 Our draft determination under clause 8.61 of the Code is that Transpower, as the grid owner, was the causer of the UFE on 14 December 2018.
- 3.2 The reasons for the 14 December 2018 draft determination are:
 - (a) the interruption or reduction of electricity occurred when lightning struck, faulting the Huntly-Stratford One circuit (Stratford circuit) in north Taranaki triggering protection equipment to disconnect Unit 4 at the Huntly power station and causing a UFE

(b) Transpower is the grid owner that owns the Stratford circuit.

Our decision

- 3.3 We have now considered all three submissions received and made a final determination that Transpower New Zealand Limited, as the grid owner, is the causer of the under-frequency event on 14 December 2018 at 12.20 pm for the above reasons.

Rulings Panel

- 3.4 We recognise that submitters have disagreed with our draft determination. While we have decided to finalise the proposed determination, we can see how submitters have reached the alternative interpretations proposed in submissions. It is important to us that participants have confidence in our decision making and know that there are options available if they disagree with us.
- 3.5 If a substantially affected participant would like to dispute the final determination, they must provide a written notice to the Rulings Panel within 10 business days after the publication of this document. Please send notices to the Rulings Panel via registrar@electricityrulingspanel.nz by **5 pm on 29 January 2019**.
- 3.6 Clauses 8.62 and 8.63 of the Code set out provisions relating to determination disputes and Rulings Panel decisions.