

# **Draft determination of causer: 17 September 2024 under-frequency event**

Consultation paper

14 January 2025

## Executive summary

The normal frequency band in the New Zealand power system is between 49.8Hz and 50.2Hz. An under-frequency event (UFE) occurs when the frequency falls below 49.25Hz because of a loss of more than 60 megawatts (MW) injected into the grid. The Electricity Industry Participation Code 2010 (Code) requires the Electricity Authority Te Mana Hiko (Authority) to determine the causer of a UFE and sets the process for making the determination.

### **The Authority's draft determination is that Genesis Energy Limited (Genesis) was the causer of the 17 September 2024 UFE.**

At 2:04pm on 17 September 2024 a UFE occurred when 239.232MW of generation injection was lost at the Huntly grid connection point. This resulted in a drop of frequency to 49.16Hz in the North Island.

The Authority's draft determination is that Genesis was the causer of the 17 September 2024 UFE. The reasons for the draft determination are:

- (a) the interruption of energy injected into the grid occurred at Unit 5 of the Huntly power station, which belongs to Genesis
- (b) no other asset was identified as having caused or potentially caused the UFE
- (c) in the system operator's view, Genesis was the causer of the UFE
- (d) Genesis has accepted that it was the causer.

### **Submissions are invited from interested parties**

Clause 8.61 of the Code requires the Authority to consult with interested parties on the reasons of its findings before making a final determination. Interested parties are invited to make a submission on the Authority's draft determination by 5pm on 29 January 2025. The Authority will then consider all submissions received and make a final determination on the causer of the UFE.

The Authority also invites comment on the system operator's calculation of the megawatts of power lost during the event, which the system operator uses for calculating the UFE event charge.

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# 1. What you need to know to make a submission

## What this consultation is about

- 1.1. This paper consults with interested parties on the Authority's draft determination that Genesis, as the generator which owns Huntly Unit 5, was the causer of the UFE at 2:04pm on 17 September 2024.

## How to make a submission

- 1.2. The Authority's preference is to receive submissions in electronic format (Microsoft Word) in the format shown in Appendix B. Submissions in electronic form should be emailed to [compliance@ea.govt.nz](mailto:compliance@ea.govt.nz) with 'Consultation paper – 17 September 2024 under-frequency event' in the subject line.
- 1.3. If you cannot send your submission electronically, please contact the Authority ([compliance@ea.govt.nz](mailto:compliance@ea.govt.nz) or 04 460 8860) to discuss alternative arrangements.
- 1.4. Please note the Authority intends to publish all submissions it receives. If you consider that the Authority should not publish any part of your submission, please:
  - (a) indicate which part should not be published,
  - (b) explain why you consider we should not publish that part, and
  - (c) provide a version of your submission the Authority can publish (if we agree not to publish your full submission).
- 1.5. If you indicate part of your submission should not be published, the Authority will discuss this with you before deciding whether to not publish that part of your submission.
- 1.6. However, please note that all submissions received by the Authority, including any parts that the Authority does not publish, can be requested under the Official Information Act 1982. This means the Authority would be required to release material not published unless good reason existed under the Official Information Act to withhold it. The Authority would normally consult with you before releasing any material that you said should not be published.

## When to make a submission

- 1.7. Please provide your submission by 5pm on 29 January 2025.
- 1.8. Compliance staff will acknowledge receipt of all submissions electronically. Please contact us via [compliance@ea.govt.nz](mailto:compliance@ea.govt.nz) or 04 460 8860 if you do not receive electronic acknowledgement of your submission within two business days.

## The Authority will consider submissions and make a final determination

- 1.9. The Code requires the Authority to consult with every generator, grid owner and other participant substantially affected by a UFE event in relation to a draft determination. The consultation period is 10 business days.
- 1.10. The Authority will consider submissions received and publish its final determination. The Code sets out provisions relating to any disputes regarding the Authority's determination. These requirements and provisions are in clause 8.62 of the Code.

## 2. Introduction

- 2.1. Clauses 8.60 and 8.61 of the Code contain provisions for investigating and determining the causer of a UFE. The system operator is required to investigate the causer of a UFE and provide a report to the Authority. The Authority must then publish a draft determination that states whether a UFE was caused by a generator or grid owner, and, if so, the identity of the causer. The draft determination must include reasons for the findings.

## 3. Genesis was the causer of the 17 September 2024 UFE

- 3.1. The Authority's draft determination under clause 8.61 is that Genesis, as the generator that owns Huntly Unit 5, was the causer of the UFE at 2:04pm on 17 September 2024.

### The system operator investigated the causer of the UFE

- 3.2. The system operator's report (dated November 2024) is attached as Appendix A.
- 3.3. The circumstances described in the report are summarised below:
- (a) At 2:04pm 17 September 2024, Huntly Unit 5 tripped removing 239.232MW of generation.
  - (b) North Island frequency fell to 49.16Hz.
  - (c) The frequency fall and the quantity of MW lost (greater than the 60MW minimum) meant that a UFE, as defined in Part 1 of the Code, had occurred because there was an interruption of energy injected into the grid.
  - (d) Instantaneous reserve providers in the North Island responded, returning the frequency to the normal band within seven seconds.
  - (e) Huntly Unit 5 tripped on high drum level protection due to high feed water flow. Genesis believes this is what caused the UFE.
  - (f) No other event or asset operation was identified as occurring at or around the time of the UFE.
  - (g) On 20 September 2024, the system operator requested the grid owner provide information on the circumstances of the UFE. On 27 September 2024, the grid owner provided its assessment of the UFE. The grid owner did not believe it was the causer of the 17 September 2024 UFE.
  - (h) On 20 September 2024, the system operator wrote to Genesis requesting it provide information on its assessment of whether or not it was the causer of the UFE. On 25 September 2024, Genesis replied, agreeing that it was the causer and provided the circumstances that led to the Huntly Unit 5 tripping.

### The Authority considered the circumstances of the UFE

- 3.4. The Authority has considered the system operator's report and correspondence with Genesis and the grid owner. The Authority's reasons for the draft determination that Genesis was the causer are:
- (a) A UFE occurred at 2:04pm on 17 September 2024 when frequency

dropped to 49.16Hz in the North Island.

- (b) The interruption of electricity occurred at the grid injection point for Huntly Unit 5, which belongs to Genesis.
  - (c) No other asset was identified as potentially causing the UFE.
  - (d) The system operator and Genesis agree that Genesis was the causer of the UFE.
- 3.5. The Authority agrees with the system operator's findings on the causer of the 17 September 2024 UFE having considered the relevant clauses of the Code and based on the information available at this time.

Q1. Do you agree with the draft determination that Genesis Energy Limited (Genesis) was the causer of the UFE event on 17 September 2024 at 2:04pm? If not, please advise your view on the causer and give reasons.

#### **4. The system operator has calculated the MW lost during the event based on its investigation**

- 4.1. Clause 8.64 of the Code sets out how to calculate the event charge payable by the causer of a UFE. This in turn enables calculation of the rebates paid for UFE under clause 8.65.
- 4.2. Central to the event charge calculation is determining the MW of injection lost at one or more grid injection points because of the UFE. The system operator determines the MW lost as part of its investigation into a UFE.
- 4.3. The system operator has determined the loss of injection into the grid for the 17 September 2024 event was 239.232MW at the grid injection point for Huntly Unit 5, resulting in an event charge of \$224,040.41.
- 4.4. The system operator's calculation of the MW lost for this event is included in the report (Appendix A). The system operator's calculation does not form part of the Authority's draft determination. However, the Authority acknowledges that the calculation is central to determining the UFE charge payable by the causer, and therefore also to the rebate (calculated by the clearing manager) paid for a UFE. The Authority invites comment on the system operator's calculation of the MW lost.
- 4.5. Any comments received will be passed to the system operator.

Q2. Do you agree with the system operator's assessment that 239.232MW was lost from the power system in the 17 September 2024 UFE? If not, please advise your view on the MW lost and give reasons.

**Appendix A System operator causation report 17  
September 2024 under-frequency event**

## Appendix B Format for submissions

Submitter	
Questions	Comments
Q1. Do you agree with the draft determination that Genesis Energy Limited was the causer of the UFE at 2:04pm 17 September 2024? If not, please advise your view on the causer and give reasons.	
Q.2 Do you agree with the system operator's assessment that 239.232MW was lost from the power system in the 17 September 2024 UFE? If not, please advise your view on the MW lost and give reasons.	