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By email: [REDACTED]

Dear Ben,

### **Application for Catastrophic Event Reopener and Allowance**

Firstlight Network (Firstlight) is seeking to reopen its Default Price-quality Path (DPP) for DPP3, and additionally, seeking an allowance in DPP4, to remediate the effects of a Catastrophic Event. Cyclone Gabrielle severely impacted the Gisborne and Wairoa Districts, with a national state of emergency declared for the third time in New Zealand's history. This catastrophic event has resulted in unforeseen remediation expenditures for Firstlight that has triggered this application.

This application is made under the relevant clauses listed in **Appendix A**. This application follows a draft application submitted to the Commission in December 2023 and responds to the feedback received from the Commission in a letter dated 11 April 2024.

### **Background**

Cyclone Gabrielle struck the Gisborne and Wairoa districts from 12-16 February 2023, with a national state of emergency being declared on 14 February 2023. The Treasury estimated the economic cost of this cyclone to be up to \$14.5 billion with physical infrastructure asset damage incurred of up to \$7.5 billion.<sup>1</sup>

The cyclone caused significant electricity network damage across Te Tairāwhiti and Wairoa. The impacts on our network are shown in the photographs in Appendix C. Our customers experienced a total of 65 outages impacting 4,500 installation control points (ICPs). Wind speeds exceeded 150 km/h, toppling many trees, some of which fell onto our powerlines. Our ability to access the faults was limited due to severe flooding, slips and washouts.<sup>2</sup> More than 30 sections of state highway were completely closed to traffic, according to data provided by the New Zealand Transport Agency Waka Kotahi. This included a significant proportion of the state highways serving Northland, Auckland, Coromandel, Manawatu, the Central Plateau, Tairāwhiti and Hawkes' Bay. State Highway 2 between Wairoa and Napier was the longest State Highway closure resulting from Cyclone Gabrielle, with access restored three months after the cyclone following the completion of a single-lane bailey bridge<sup>3</sup>.

### **Network Damage and Remediation Works**

The east coast was the hardest-hit area by Cyclone Gabrielle, with Gisborne/Tairāwhiti, parts of Hawke's Bay, and Northland becoming completely cut off, lacking power, mobile networks, and road access. In the Tairāwhiti region, about 90% of mobile towers were offline over the 14-15 February period.

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<sup>1</sup> <https://www.treasury.govt.nz/sites/default/files/2023-04/impacts-from-the-north-island-weather-events.pdf>

<sup>2</sup> <https://www.beehive.govt.nz/release/state-national-emergency-declared>

<sup>3</sup> <https://www.phcc.org.nz/briefing/cyclone-gabrielle-numbers-review-six-months>

In July 2023, energia released its Report to Electricity Networks Aotearoa entitled Electricity Distribution Sector Cyclone Gabrielle Review. The energia report independently assessed the appropriateness of the electricity distribution sector's risk reduction, readiness and response to Cyclone Gabrielle. The assessment was based on an extensive information-gathering exercise from EDBs impacted by the cyclone, including Firstlight.<sup>4</sup> The reports notes that the largest cause of outages for EDBs was out-of-zone tree damage to overhead lines.<sup>5</sup>

Firstlight's rural network was constructed in the 1950s and 60s and was originally designed to deliver electricity to sheep and beef farms. Over time, there has been a significant change in land use in the region. Farms were converted to forestry, with a mix of farming usually located at the end of a spur line. The change from farming to forestry has seen many of our lines traverse through large tracks of open farmland to running through the middle of large forestry plantations. The trees are now over 30 meters tall and in high winds, such as those experienced during extreme weather events, come into contact with our lines either by falling through the lines or the high winds breaking branches off these trees and throwing them onto our lines. During regulatory year 2023 (RY2023), we had several incidents where the trees further back in the plantation fell, knocking the tree next to it over and having a cascading effect until the trees on the fringe fell into our lines. The adverse weather conditions throughout the period were a key reason for increase in vegetation-related outages. In RY2023, 90% of vegetation SAIDI occurred during extreme weather.

The second largest cause of outages in RY2023 was adverse weather damage to assets. High winds were the most significant cause of asset damage to overhead lines, followed by flooding damage to lines and zone substations. The windspeeds experienced during Cyclone Gabrielle were very close to current design limits (for the affected regions), and we believe that it is highly likely that the windspeeds in certain locations were above the design limits for older (pre-2000) poles and that this was the primary cause of failures.<sup>6</sup>

Much of Firstlight's overhead network was installed before 2000, and design standards (pre-2000) were to a lower standard and less rigorously applied (reflecting the practices of the time). Hence, we had assets designed to older standards that were more vulnerable to high wind speed.

Energia found that flooding was the third largest cause of outages from Cyclone Gabrielle, with flood damage being 'most significant in Hawkes Bay and Tairāwhiti.'<sup>7</sup>

Flood waters breached stopbanks across Hawke's Bay, caused partly by the buildup of forestry slash at bridges. There were over thirty stop bank breaches covering some five kilometres. Power was lost to our entire network (i.e., all 26,000 ICPs) when the transmission network was extensively damaged; of those ICPs, 4,500 were impacted due to damage to our distribution network. Roading was widely impacted, with 19 bridges washed away and many unsafe crossings.

## **Recovery and Remediation**

Cyclone Gabrielle caused multiple faults and limited access to our network. To assess the initial impacts of Cyclone Gabrielle on our network, we undertook an aerial review of the impacted areas, with a focus on the state of our distribution lines (results are shown in Figure 5 of Firstlight Network's **Unplanned Interruptions Report for RY2023**<sup>8</sup> . We inspected a sample of feeders and assessed the damage, e.g., slips near poles, leaning poles, and trees that had an increased probability of contacting our lines (i.e., trees made unstable by high winds that were at an increased risk of falling into our lines post the event).

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<sup>4</sup> <https://www.ena.org.nz/assets/ENA-EDB-Cyclone-Gabrielle-Review-Report-ISSUED-13-Jul-23-1197.pdf>

<sup>5</sup> Ibid, p2.

<sup>6</sup> Ibid, p2.

<sup>7</sup> Ibid, p3.

<sup>8</sup> <https://www.firstlightnetwork.co.nz/assets/Documents/Firstgas-Network-Unplanned-Interruptions-Report-for-the-period-ended-31-March-2023.pdf>

Using this approach in the days following Cyclone Gabrielle, we inspected:

- 2,165 poles, marked 174 for replacement and 176 for remedial maintenance, and,
- 536 transformers, earth tested 564, and found 317 defects.

In the weeks following Cyclone Gabrielle, we combined the information collected via the flyover and ground observations. We updated our routine maintenance programmes to reflect the state of our network post-Cyclone Gabrielle. We identified 11 issues arising from Cyclone Gabrielle that needed immediate attention, with remaining issues rolled into our routine maintenance program. We inspected 13% of our distribution lines (i.e., 309 km of our 2,388 km 11kv conductor) and 12% of our poles (i.e., 3,181 of our 25,485 11kv poles). We have provided a summary of the results in Table 3 of our Unplanned Interruptions Report RY2023.<sup>9</sup>

During the response period to Cyclone Gabrielle, we directed all of our resources and attention towards managing the cyclone's impact and restoring power. It was only following the immediate response that we were able to focus on assessing the damage to the network and planning the necessary remediation work. Our efforts were concentrated on ensuring a swift and effective recovery, prioritising the restoration of essential infrastructure and that resulted in halting work on routine projects.

Immediate works in response to Gabrielle totalled \$2.8 million in RY2023.<sup>10</sup> Additional works will continue throughout RY2024 and RY2025 and planned works deferred from RY2023 will need to be undertaken in future years. Forecast expenditures are expected to be \$4.9 million higher across RY2024 and RY2025 as the result of the Catastrophic Event.

### **Catastrophic Event Reopener**

The damage from cyclone Gabrielle was significant and beyond our reasonable control. Since it was an unforeseen event, DPP3 did not provide allowances to repair the network damage and remediate Gabrielle impact. Therefore, Firstlight Network seeks to apply to reopen its Default Price-Quality Path 3.

## **Approach**

The proposed approach is to set an effective date of 1 April 2025. The effective date results in a calculation of a Catastrophic Event Allowance through DPP4. With the Catastrophic Event Allowance calculated using additional net costs for the 2023, 2024 and 2025 regulatory years. In addition, the quality incentive cost for the duration of Cyclone Gabrielle is included.

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<sup>9</sup> <https://www.firstlightnetwork.co.nz/assets/Documents/Firstgas-Network-Unplanned-Interruptions-Report-for-the-period-ended-31-March-2023.pdf>

<sup>10</sup> Year ending 31 March 2023

## Proposed amendments to expenditure allowances

Proposed adjustments to the DPP3 Financial Model 27 November 2019<sup>11</sup> and Tables 2.2.1 and 2.2.2 of the DPP3 Determination are shown in the tables below.<sup>12</sup> These adjustments remove the impacts of the Incremental Rolling Incentive Scheme (IRIS) through DPP4.

The inputs to the proposed columns are the sum of the actual expenditures up to the year ending 31 March 2024, and forecasts expenditures for the year ending March 2025 as detailed in **Appendix B**.

Table 1: Inputs Tab of the DPP3 Financial Model, cells F39:F41

	Current (\$000)	Proposed (\$000)	Difference (\$000)
Operating Expenditure 2022/23	11,197	11,778	581
Operating Expenditure 2023/24	11,499	11,586	87
Operating Expenditure 2024/25	11,784	11,934	150

Table 2: Inputs Tab of the DPP3 Financial Model, cells F47:F49

	Current (\$000)	Proposed (\$000)	Difference (\$000)
Value of commissioned assets 2022/23	8,982	11,219	2,237
Value of commissioned assets 2023/24	9,383	11,173	1790
Value of commissioned assets 2024/25	10,052	12,915	2,863

## Estimated allowance calculation for DPP4

Firstlight has estimated the catastrophic event reopener allowance for DPP4 using the expenditures for the 2023 to 2025 regulatory years, as listed in **Appendix B**. The Additional Net Costs are calculated using the Building Blocks Allowable Revenue (BBAR) from the 27 November 2019 Financial Model, with the addition of the Operating Expenditure and Value of Commissioned Assets presented above, calculated the difference in BBAR, then added the BBAR difference to the existing FNAR as stated in table 1.4.1 of the DPP3 determination.

Table 3: Additional Net Costs

	Current (\$000)	Impacted (\$000)	Additional Net Costs (\$000)	Materiality
FNAR 2022/23	24,993	25,649	656	2.63%
FNAR 2023/24	25,493	25,751	258	1.01%
FNAR 2024/25	26,003	26,448	445	1.71%
Total	76,488	77,848	1,359	1.78%

## Impact of Cyclone Gabrielle on Quality Incentive Adjustment

In addition, the Unplanned Normalised SAIDI attributable to Cyclone Gabrielle itemised in **Appendix C** has been added to the Catastrophic Event Allowance calculation due to the impact of the catastrophic event on the Quality Incentive Adjustment.

Unplanned SAIDI incentive rate: 2,797

Unplanned SAIDI attributable to Cyclone Gabrielle (from **Appendix C**): 10.0294

<sup>11</sup> [https://comcom.govt.nz/\\_data/assets/excel\\_doc/0025/191464/Financial-model-EDB-DPP3-final-determination-27-November-2019.xlsx](https://comcom.govt.nz/_data/assets/excel_doc/0025/191464/Financial-model-EDB-DPP3-final-determination-27-November-2019.xlsx)

<sup>12</sup> [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0029/191972/2019-NZCC-21-Electricity-distribution-services-default-price-quality-path-determination-2020-27-November-2019.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0029/191972/2019-NZCC-21-Electricity-distribution-services-default-price-quality-path-determination-2020-27-November-2019.pdf)

Table 4: Quality Incentive Adjustment

	(\$000)
Quality Incentive Calculation 2022/23 = 2,797 * 10.0294	28

We propose the overall calculation of the Catastrophic Event Allowance through DPP4 be set at \$1.403 million.

Table 5: Total Proposed Catastrophic Event Allowance

	(\$000)
Additional Net Costs	1,359
Quality Incentive	28
Total allowance	1,387

## Forecast Costs

Firstlight Network applied to the Commission and was granted an extension to issuing the Asset Management Plan (AMP) for RY2023 which was submitted in October 2023. The extension was used to assess the impact of Cyclone Gabrielle and to plan accordingly. Further work was done as part of the 2024 AMP update submitted in March 2024. The forecast expenditures are included as part of schedules 11a and 11b of the AMP which were approved by the Firstlight Board on 15 March 2024.

### Independent Review Report

As per the Commission's recommendation in the letter of 11 April 2024, we engaged an independent reviewer to analyse:

- if all projects (in appendix B) were (and are) reasonably necessary to mitigate the effects of the catastrophic event;
- how it was determined that the projects were reasonably necessary to mitigate the effect of the catastrophic event;
- the reasonability of any particular judgments made by Firstlight staff when including (or excluding) a project (cost item) or its associated value in (or from) appendix B; and
- any other matters arising.

The reviewer identified some projects that they believed should not be included in our application, we acted on the advice and removed the costs related to those projects from our application. The reviewer also analysed the cost reasonability and effectiveness of Gabrielle response and remediation projects and activities. The report notes that the costs were reasonable and "*the response and remediation work was delivered as efficiently as it could have been given the circumstances*".

### Appendices

Appendix A: Assessment of Catastrophic Event and applicable clauses

Appendix B: Actual and forecast expenditures attributable to Cyclone Gabrielle

Appendix C: Unplanned Normalised SAIDI attributable to Cyclone Gabrielle

Appendix D: Photographic evidence showing the extent of the network damage caused by the Cyclone Gabrielle.

## Appendix A: Assessment of Catastrophic Event and applicable clauses

Clause	Description	Clause met
Electricity Distribution Input Methodologies Clause 4.5.1 (a)	Catastrophic event means an event: (a) beyond the reasonable control of the EDB	Cyclone Gabrielle was an unforeseeable natural disaster which incurred significant damage to the Te Tairāwhiti and Wairoa regions.  The damage was significant and beyond our reasonable control
4.5.1 (b)	in relation to which expenditure is not explicitly or implicitly provided for in the DPP	DPP3 did not provide for expenditure pertinent to the natural disaster
4.5.1 (c)	that could not have been reasonably foreseen at the time the DPP was determined	The DPP3 determination did not anticipate the natural disaster
4.5.1 (d) (i)	in respect of which action required to rectify its adverse consequences cannot be delayed until a future regulatory period without quality standards being breached	The natural disaster occurred in February 2023, over 2 years before the start of the next DPP. The actions taken were of urgency to resolve the 4,500 ICPs that had experienced an outage, as detailed in Appendix C
4.5.1 (d) (ii)	in respect of which remediation requires either or both of capital expenditure or operating expenditure during the regulatory period	Necessary capital and operating expenditure is detailed in Appendix B
4.5.1 (d) (iii)	in respect of which the full remediation costs are not provided for in the DPP	Full remediation costs were unforeseen and were not provided for in the DPP
4.5.1 (d) (iv)	in respect of an EDB subject to a DPP, the cost of remediation net of any insurance or compensatory entitlements has had or will have an impact on the price path over the disclosure years of the DPP remaining on and after the first date at which a remediation cost is proposed to be or has been incurred, by an amount equivalent to at least 1% of the aggregated forecast net allowable revenue for the disclosure years of the DPP in which the cost was or will be incurred.	The materiality threshold to satisfy clause 4.5.1(d)(iv) is shown in Table 3
Input Methodologies Clause 4.5.6 (1) (a) (i)	When price-quality paths may be reconsidered (1) A DPP may be reconsidered by the Commission if: (a) the Commission considers, or the EDB applies to the Commission and satisfies the Commission, that- (i) subject to subclause (2), a catastrophic event has occurred	Cyclone Gabrielle hit New Zealand between 12-14 February 2023 and started impacting the Te Tairāwhiti and Wairoa regions on 13 February, upon which a Local State of Emergency was declared. <sup>13</sup> The Local State of Emergency ended on 14 February, when, for the third

<sup>13</sup> [https://www.gdc.govt.nz/\\_data/assets/pdf\\_file/0018/52407/CDEM-Timeline-15May23-pdf.pdf](https://www.gdc.govt.nz/_data/assets/pdf_file/0018/52407/CDEM-Timeline-15May23-pdf.pdf)

		<p>time in New Zealand's history, a National State of Emergency was declared.<sup>14</sup></p> <p>The National State of Emergency concluded 14 March 2023, and replaced with a National Transition Period which is still in place in the Te Tairāwhiti and Wairoa regions, recognising the current transition from emergency response to the recovery phase.<sup>15</sup></p>
Input Methodologies Clause 4.5.6 (2)	<p>(2) For the purpose of subclause (1)(a)(i), where the costs to rectify the adverse consequences of the catastrophic event are fully covered by:</p> <p>(a) the DPP (e.g. through an operational expenditure allowance for self insurance); or</p> <p>(b) commercial insurance held by the EDB; the Commission will only reconsider the quality standards of the DPP.</p>	<p>Firstlight does not hold insurance to cover the remedial works applicable to Cyclone Gabrielle. The unforeseen costs were not covered by the DPP</p>

<sup>14</sup> <https://www.rnz.co.nz/news/national/505979/2023-significant-year-dominated-by-extreme-weather-metservice#:~:text=MetService%20issued%20five%20red%20weather,and%20countless%20homes%20were%20destroyed.>

<sup>15</sup> <https://www.civildefence.govt.nz/resources/previous-emergencies/transition-periods>

## Appendix C: Unplanned SAIDI attributable to Cyclone Gabrielle

Details of SAIDI Major event 13 February 2023									
Cause	Start		End		RAW SAIDI value	Normalised SAIDI value	Contribution	Location	Main equipment involved
	Date	Time	Date	Time					
Adverse Weather	13/02/2023	9:27 AM	13/02/2023	9:47 AM	0.038	0.002	0%	W O Kuri	Distribution lines
Adverse Weather	13/02/2023	7:06 AM	23/02/2023	12:32 PM	2.116	0.120	5%	Mata	Distribution lines
Unkown cause	13/02/2023	11:43 AM	13/02/2023	1:21 PM	0.178	0.010	0%	Matawai	Distribution lines
Unkown cause	13/02/2023	10:50 AM	13/02/2023	12:17 PM	0.225	0.013	1%	Mata	Distribution lines
Defective Equipment	13/02/2023	8:27 AM	13/02/2023	9:11 AM	0.071	0.004	0%	Tiki Tiki	Distribution lines
Vegetation	13/02/2023	3:54 PM	27/02/2023	1:00 PM	2.595	0.148	6%	Waimata	Distribution lines
Vegetation	13/02/2023	12:28 PM	26/02/2023	9:33 AM	0.275	0.016	1%	Inland	Distribution lines
Vegetation	13/02/2023	2:56 PM	13/02/2023	5:09 PM	3.341	0.190	8%	GIS - Tolaga	Subtransmission lines
Defective Equipment	13/02/2023	2:49 PM	13/02/2023	2:56 PM	0.034	0.002	0%	Rototahi	Distribution lines
Vegetation	13/02/2023	4:21 PM	15/02/2023	4:31 PM	31.454	1.788	74%	Ruatoria	Distribution lines
Vegetation	13/02/2023	3:18 PM	13/02/2023	5:22 PM	0.539	0.031	1%	Tiki Tiki	Distribution lines
Adverse Weather	13/02/2023	11:00 AM	17/03/2023	4:37 PM	1.794	0.102	4%	Inland	Distribution lines
					<b>42.660</b>	<b>2.425</b>			

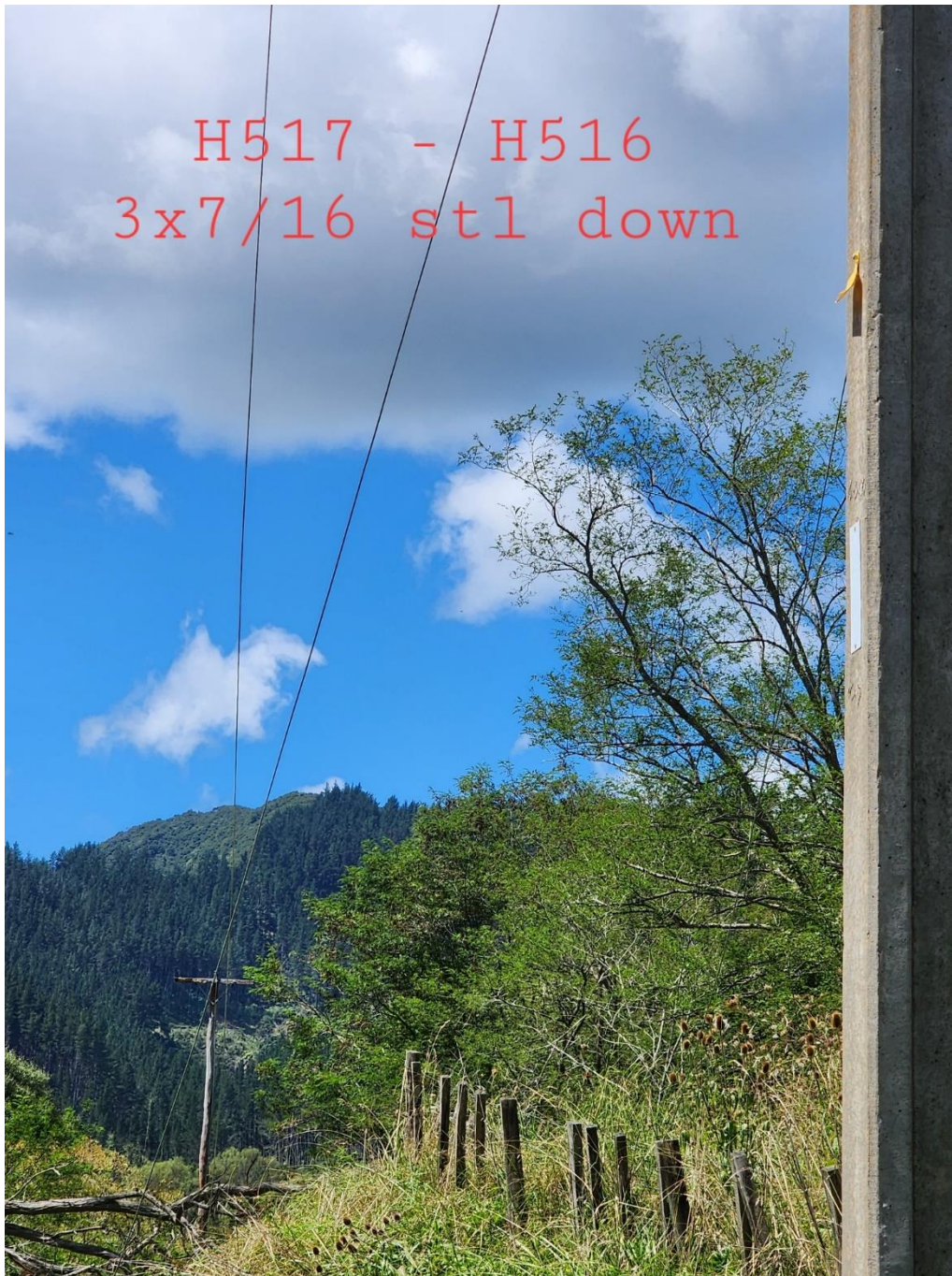
Details of SAIDI Major event 13 February 2023									
Cause	Start		End		RAW SAIDI value	Normalised SAIDI value	Contribution	Location	Main equipment involved
	Date	Time	Date	Time					
Adverse Weather	13/02/2023	7:28 PM	18/02/2023	8:40 PM	19.118	0.123	2%	Hicks Bay	Distribution lines
Adverse Weather	13/02/2023	8:59 PM	20/02/2023	11:13 AM	6.466	0.041	1%	Muriwai	Distribution lines
Defective Equipment	13/02/2023	5:32 PM	22/02/2023	2:57 PM	21.133	0.136	2%	Tahunga	Distribution lines
Vegetation	13/02/2023	10:43 PM	17/02/2023	7:10 PM	36.975	0.237	4%	Kanakanaia	Distribution lines
Vegetation	13/02/2023	10:43 PM	1/03/2023	2:26 PM	3.579	0.023	0%	Kanakanaia	Distribution lines
Adverse Weather	13/02/2023	8:59 PM	1/03/2023	3:21 PM	59.119	0.379	6%	Te Arai	Distribution lines
Vegetation	13/02/2023	9:06 PM	10/03/2023	1:01 PM	1.373	0.009	0%	Waimata	Distribution lines
Vegetation	13/02/2023	8:51 PM	22/02/2023	5:18 PM	32.645	0.209	4%	Whatautu	Distribution lines
Vegetation	13/02/2023	3:54 PM	27/02/2023	1:00 PM	18.502	0.119	2%	Waimata	Distribution lines
Vegetation	13/02/2023	5:00 PM	3/03/2023	5:00 PM	53.515	0.343	6%	Tauwhareparae	Distribution lines
Vegetation	13/02/2023	5:15 PM	2/03/2023	12:29 PM	3.741	0.024	0%	Tauwhareparae	Distribution lines
Adverse Environment	13/02/2023	5:00 PM	22/02/2023	1:18 PM	16.596	0.106	2%	Toko Tie	Distribution lines
Vegetation	13/02/2023	8:30 PM	25/02/2023	4:00 PM	21.432	0.137	2%	Makarika	Distribution lines
Vegetation	13/02/2023	12:28 PM	26/02/2023	9:33 AM	65.387	0.419	7%	Inland	Distribution lines
Adverse Environment	13/02/2023	4:29 PM	14/03/2023	4:48 PM	47.864	0.307	5%	Mata	Distribution lines
Vegetation	13/02/2023	5:09 PM	15/02/2023	10:45 AM	14.042	0.090	2%	Rototahi	Distribution lines
Adverse Weather	13/02/2023	10:31 PM	16/02/2023	3:44 PM	2.716	0.017	0%	Mahia	Distribution lines
Adverse Weather	13/02/2023	10:53 PM	16/02/2023	10:50 AM	16.032	0.103	2%	Frasertown	Distribution lines
Vegetation	13/02/2023	10:28 PM	14/02/2023	7:01 AM	5.192	0.033	1%	Brickworks	Distribution lines
Vegetation	13/02/2023	5:25 PM	15/03/2023	5:15 PM	63.489	0.407	7%	Raupunga	Distribution lines
Adverse Weather	13/02/2023	8:55 PM	18/02/2023	5:50 PM	10.369	0.067	1%	Mahia	Distribution lines
Adverse Weather	13/02/2023	10:53 PM	18/02/2023	1:50 PM	41.610	0.267	5%	Frasertown	Distribution lines
Vegetation	13/02/2023	4:57 PM	15/02/2023	5:35 PM	9.593	0.062	1%	Awatere	Distribution lines
Adverse Weather	13/02/2023	9:37 PM	16/02/2023	11:34 AM	18.727	0.120	2%	Dalton	Distribution lines
Vegetation	13/02/2023	11:34 PM	21/02/2023	5:40 PM	34.141	0.219	4%	Tiniroto	Distribution lines
Adverse Weather	13/02/2023	10:46 PM	13/02/2023	11:31 PM	36.504	0.234	4%	Tuia - Gis	Subtransmission lines
Adverse Environment	13/02/2023	11:36 PM	19/02/2023	12:53 PM	8.398	0.054	1%	Parikanapa	Distribution lines
Adverse Environment	13/02/2023	7:29 PM	23/02/2023	3:40 PM	11.503	0.074	1%	Te Araroa	Distribution lines
Adverse Environment	13/02/2023	11:30 PM	7/03/2023	4:08 PM	3.636	0.023	0%	Mata	Distribution lines
Adverse Environment	13/02/2023	11:34 PM	21/02/2023	1:55 PM	8.458	0.054	1%	Tiniroto	Distribution lines
Adverse Weather	13/02/2023	8:31 PM	14/02/2023	10:41 AM	2.068	0.013	0%	Makaraka-Matawhero	Distribution lines
Adverse Weather	13/02/2023	5:21 PM	16/02/2023	5:06 PM	74.9848	0.4809	8%	Te Araroa/Ruatoria	Subtransmission lines
Adverse Weather	14/02/2023	5:30 AM	14/02/2023	11:12 AM	0.621	0.004	0%	Ngatapa	Distribution lines
Vegetation	14/02/2023	2:48 AM	16/02/2023	5:42 PM	24.458	0.157	3%	Whangara	Distribution lines
Adverse Weather	14/02/2023	2:07 AM	20/02/2023	5:01 PM	26.262	0.168	3%	Tahora	Distribution lines
Vegetation	14/02/2023	2:07 AM	22/02/2023	3:38 PM	16.682	0.107	2%	Tahora	Distribution lines
Adverse Weather	14/02/2023	3:16 AM	2/03/2023	10:58 AM	38.674	0.248	4%	Matawai	Distribution lines
Adverse Weather	14/02/2023	0:25 AM	19/02/2023	2:24 PM	28.947	0.186	3%	Ruatoria	Distribution lines
Adverse Weather	14/02/2023	6:31 AM	27/02/2023	2:03 PM	3.021	0.019	0%	Raupunga	Distribution lines
Adverse Weather	14/02/2023	6:31 AM	17/02/2023	10:05 AM	8.870	0.057	1%	Frasertown	Distribution lines
Adverse Weather	14/02/2023	0:19 AM	16/02/2023	5:30 PM	1.578	0.010	0%	Ngatapa	Distribution lines
Vegetation	14/02/2023	8:46 AM	14/02/2023	9:47 AM	0.158	0.001	0%	Bushmere	Distribution lines
					<b>918.174</b>	<b>5.889</b>			



Details of SAIDI Major event 13 February 2023									
Cause	Start		End		RAW SAIDI value	Normalised SAIDI value	Contribution	Location	Main equipment involved
	Date	Time	Date	Time					
Vegetation	13/02/2023	5:25 PM	15/03/2023	5:15 PM	13.234	0.426	66%	Raupunga	Distribution lines
Adverse Weather	13/02/2023	8:55 PM	18/02/2023	5:50 PM	0.083	0.003	0%	Mahia	Distribution lines
Adverse Weather	15/02/2023	10:40 AM	15/02/2023	11:10 AM	0.006	0.000	0%	Brickworks	Distribution lines
Adverse Weather	15/02/2023	11:46 PM	17/02/2023	2:59 PM	6.580	0.212	33%	Lavenham	Distribution lines
Vegetation	13/02/2023	5:09 PM	15/02/2023	10:45 AM	0.006	0.000	0%	Rototahi	Distribution lines
					<b>7.9681</b>	<b>0.6104</b>			

Details of SAIDI Major event 13 February 2023									
Cause	Start		End		RAW SAIDI value	Normalised SAIDI value	Contribution	Location	Main equipment involved
	Date	Time	Date	Time					
3rd Party Interference	15/02/2023	11:12 PM	16/02/2023	3:09 PM	4.928	0.379	34%	Whangara	Distribution lines
Adverse Weather	13/02/2023	10:31 PM	16/02/2023	3:44 PM	6.410	0.493	45%	Mahia	Distribution lines
Vegetation	14/02/2023	2:48 AM	16/02/2023	5:42 PM	0.028	0.002	0%	Whangara	Distribution lines
Adverse Environment	16/02/2023	1:55 PM	20/02/2023	4:29 PM	2.989	0.230	21%	Morere	Distribution lines
					<b>14.355</b>	<b>1.105</b>			

**Appendix D: Photographic evidence showing the extent of the network damage caused by the Cyclone Gabrielle**



Waiau road - tree through the line



Waiau road - tree through the lines due to flooding and slips



Waiapu Road - tree through lines after flooding and slips



Waiaapu Road - flooding and slips



Waiapu Road - flooding and slips



Waiau road - tree through lines after flooding and slips



Waiau road - tree through lines after flooding and slips





Waiau road - tree through lines after flooding and slips



Waiapu road by Waiapu road - wires down due to flooding, slips and tree through line



**H2121 or H2123**

Mangahauini Gorge - Major flooding, landslides causing trees fall through the lines



Mangahauini Gorge - Major flooding, landslides causing trees fall through the lines



Mangahauini Gorge - Major flooding, landslides causing trees fall through the lines



Mangahauini Gorge - Major flooding, landslides causing trees fall through the lines



Mangahauini Gorge - Major flooding, landslides causing trees fall through the lines



Hikuwai Bridge No.1 on SH35 isolated access to the coast





New pole installed to replace pole (H714) washed away at Waiapu road



Large landslide North of Tokomaru Bay cause pole to fall over.



Image source: <https://www.gdc.govt.nz/services/tairawhiti-road-to-recovery/flood-damaged-road-network>



Bridges, water pipes and sewage systems were wiped out by the force of the hurricane when it hit Tairawhiti last year.

Image source: <https://www.rnz.co.nz/news/national/509127/cyclone-gabrielle-s-impact-on-gisborne-we-lost-everything-that-could-break> (Photo: Liam Clayton / Gisborne Herald)



Hikuwai Bridge on the state highway linking Tokomaru Bay to Gisborne.

Image source: <https://e-tangata.co.nz/reflections/cyclone-gabrielle-now-is-the-time-for-mana-motuhake/>  
(Photo: Kiri Allan)



Drone footage taken the morning of February 14 shows the river levels after Cyclone Gabrielle dumped unprecedented levels of rain on the region the previous afternoon and overnight.

Image source: <https://www.gisborneherald.co.nz/news/buyout-offer-for-17> (Photo Ben Cowper)