



Eastland
Network

Default Price-Quality Path Annual Compliance Statement

Assessment Period

1 April 2021 – 31 March 2022

18 August 2022

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1. Introduction

Eastland Network is subject to price-quality regulation under Part 4 of the Commerce Act 1986. The Commerce Commission has set a Default Price-Quality Path (DPP) which applies to Eastland Network from 1 April 2020.

This annual compliance statement is published in accordance with clause 11.4 of the 2020 DPP Determination, and applies to the second assessment period, commencing 1 April 2021 and ending 31 March 2022.

2. Date prepared

This statement was prepared on 18 August 2022.



3. Wash-up amount

3.1 Statement of compliance

As demonstrated in Table 1 in Section 3.2, and consistent with clause 8.6 of the 2020 DPP Determination Eastland Network has complied with the wash-up amount calculation for the second assessment period.

3.2 Wash-up amount calculation

Table 1

Wash-up amount RY22		
Term	Description	Value (\$000)
Actual allowable revenue (AAR)	<i>Sum of actual net allowable revenue, actual pass-through and recoverable costs, pass-through balance and revenue wash-up draw down amount</i>	31,365
Actual revenue (AR)	<i>Sum of actual revenue from prices plus other regulated income</i>	31,340
Revenue foregone (RV)	<i>Actual net allowable revenue x (revenue reduction percentage - 20%) when revenue reduction percentage is greater than 20%, otherwise nil</i>	-
Wash-up amount	<i>AAR - AR - RV</i>	25

Further information supporting actual allowable revenue is included in Section 3.2.1.

Further information supporting actual revenue is included in Section 3.2.2.

Further information supporting revenue foregone is included in Section 3.2.3.



3.2.1 Actual allowable revenue

Table 2 below shows the actual allowable revenue for the assessment period consistent with Schedule 1.6 of the 2020 DPP Determination. Below is also a CPI adjustment calculation used to calculate the Actual net allowable revenue.

Table 2

Actual allowable revenue RY22		
Term	Description	Value (\$000)
Actual net allowable revenue previous (ANAR _{previous})	<i>ANAR_{previous} is the actual net allowable revenue of the previous assessment period</i>	24,028
ΔCPI_t	<i>is the derived change in CPI to be applied for the assessment period</i>	5.30%
X	<i>X Factor is the annual rate of change specified in Schedule 1.2 of the Determination</i>	0.00%
Actual net allowable revenue (ANAR)	<i>ANAR for the second assessment period is the amount calculated using the formula $ANAR_{previous} * (1 + \Delta CPI_t) * ((1 - X))$</i>	25,301
Actual pass-through costs	<i>Sum of all pass-through costs that were incurred or approved by the Commission in the assessment period</i>	394
Actual recoverable costs	<i>Sum of all recoverable costs that were incurred or approved by the Commission in the assessment period</i>	5,755
Opening wash-up account balance	<i>The opening wash-up account balance for the second assessment period of the DPP regulatory period is nil as set out in Schedule 1.7 (1)(a)</i>	
Pass-through balance	<i>Pass-through balance for the assessment period ending 31 March 2020 as specified under clause 8.6 of the DPP2 Determination</i>	(85)
Total actual allowable revenue (AAR)	<i>Actual net allowable revenue + actual pass-through costs and actual recoverable costs - (pass-through balance x (1 + 67th percentile estimate of post-tax WACC))</i>	31,365



ΔCPI_{2022}			
Denominator		Numerator	
$\text{CPI}_{\text{Jun}2020}$	1047	$\text{CPI}_{\text{Jun}2021}$	1082
$\text{CPI}_{\text{Sep}2020}$	1054	$\text{CPI}_{\text{Sep}2021}$	1106
$\text{CPI}_{\text{Dec}2020}$	1059	$\text{CPI}_{\text{Dec}2021}$	1122
$\text{CPI}_{\text{Mar}2021}$	1068	$\text{CPI}_{\text{Mar}2022}$	1142
ΔCPI_{2022}	5.30%		

Further information supporting actual pass-through costs, actual recoverable costs and the pass-through balance is included in Appendix A.

3.2.2 Actual revenue

Table 3 below shows actual revenue for the assessment period consistent with clause 4.2 of the 2020 DPP Determination.

Table 3

Actual revenue RY22		
Term	Description	Value (\$000)
Actual revenue from prices	<i>Actual prices between 1 April 2021 and 31 March 2022 multiplied by actual quantities for the assessment period</i>	30,984
Other regulated income	<i>Other income associated with supply of electricity distribution services</i>	355
Total actual revenue (AR)	<i>Sum of actual revenue from prices plus other regulated income</i>	31,340

Further information supporting actual revenue from prices is included in Appendix B.

3.2.3 Revenue foregone

Table 4 below shows the revenue foregone consistent with clause 4.2 of the 2020 DPP Determination.

Table 4

Revenue foregone RY22		
Term	Description	Value (\$000)
Actual net allowable revenue (ANAR)	<i>Amount specified as forecast net allowable revenue for the second assessment period</i>	25,301
Revenue reduction percentage (RRP)	<i>1 - (actual revenue from prices / forecast revenue from prices)</i>	-2.47%
Revenue foregone (RV)	<i>Actual net allowable revenue x (RRP - 20%) when RRP is greater than 20%, otherwise nil</i>	-



4. Quality standards

4.1 Statement of compliance with planned interruptions quality standards

Eastland Network is subject to a planned accumulated SAIDI limit and a planned accumulated SAIFI limit which are assessed for the DPP regulatory period as stated in clause 9.2 of the 2020 DPP Determination.

Table 5 and Table 6 below show the planned accumulated SAIDI and SAIFI limits for Eastland Network for the DPP regulatory period and the planned SAIDI and SAIFI assessed values for the second assessment period.

Table 5

Planned interruptions quality standard - SAIDI	
Sum of planned SAIDI assessed values \leq Planned accumulated SAIDI limit	
Planned accumulated SAIDI limit	1,290.68
Planned SAIDI assessed value for the second assessment period	195.09
Compliance result	Compliant

Table 6

Planned interruptions quality standard - SAIFI	
Sum of planned SAIFI assessed values \leq Planned accumulated SAIFI limit	
Planned accumulated SAIFI limit	7.4745
Planned SAIFI assessed value for the second assessment period	1.2708
Compliance result	Compliant

Further information supporting planned SAIDI and SAIFI assessed values is included in Section 4.1.1.

4.1.1 Planned SAIDI and SAIFI assessed values

Table 7 and Table 8 below show Eastland Network's planned SAIDI and SAIFI assessed values for the assessment period.



Table 7

Planned SAIDI assessed value RY22		
Term	Description	Value
Class B non-notified interruptions		26.64
Class B notified interruptions falling outside window		3.62
SAIDI _B	<i>Sum of Class B non-notified interruptions</i>	30.26
Class B notified interruptions falling inside window		127.18
Class B intended interruptions cancelled without notice		36.63
Class B intended interruptions cancelled with notice		-
SAIDI _N	<i>Sum of Class B notified interruptions</i>	163.81
Planned SAIDI assessed value	$SAIDI_B + (SAIDI_N / 2)$	112.17

Table 8

Planned SAIFI assessed value RY22		
Term	Description	Value
Planned SAIFI assessed value	<i>Sum of Class B interruptions commencing within the assessment period</i>	0.7347



4.2 Statement of compliance with unplanned interruptions quality standards

As demonstrated in Table 9 and Table 10 below, and consistent with clause 9.7 of the 2020 DPP Determination, Eastland Network has complied with the unplanned interruptions quality standard.

Table 9

Unplanned interruptions quality standard RY22 - SAIDI		
Unplanned SAIDI assessed value \leq Unplanned SAIDI limit		
Unplanned SAIDI limit		219.46
Unplanned SAIDI assessed value	<i>Sum of normalised SAIDI values for Class C interruptions commencing within the assessment period</i>	214.72
Compliance result		Compliant

Table 10

Unplanned interruptions quality standard RY22 - SAIFI		
Unplanned SAIFI assessed value \leq Unplanned SAIFI limit		
Unplanned SAIFI limit		3.1525
Unplanned SAIFI assessed value	<i>Sum of normalised SAIFI values for Class C interruptions commencing within the assessment period</i>	2.7849
Compliance result		Compliant

Information about policies, procedures and calculations for measuring planned and unplanned interruptions during the assessment period is in Appendix C.

4.2.1 Major events

Table 11 and Table 12 below show the SAIDI and SAIFI values attributed to major events which occurred during the assessment period.

Further information about major events is included in Appendix D.



Table 11

Unplanned SAIDI major events RY22			
Start	End	Pre-normalised unplanned SAIDI	Normalised unplanned SAIDI
17/07/2021 2:03 AM	17/07/2021 2:55 AM	41.342	0.273
17/07/2021 9:09 AM	19/07/2021 6:35 PM	12.965	1.910
9/08/2021 5:02 AM	10/08/2021 2:00 PM	11.432	1.549
23/03/2022 6:48 PM	25/03/2022 9:32 AM	15.363	0.273
28/03/2022 3:56 PM	1/04/2022 12:00 AM	8.459	0.273
23/03/2022 12:29 AM	24/03/2022 9:42 AM	8.256	0.835
28/03/2022 8:45 PM	31/03/2022 4:39 PM	7.741	0.677
23/03/2022 2:15 AM	31/03/2022 2:16 PM	6.691	0.676
22/03/2022 11:02 PM	22/03/2022 11:46 PM	6.613	0.546
22/03/2022 9:02 PM	31/03/2022 2:14 PM	6.331	0.459
24/03/2022 10:03 PM	30/03/2022 4:11 PM	5.321	0.273
25/03/2022 2:38 PM	27/03/2022 4:45 PM	4.879	0.723
25/03/2022 2:38 PM	25/03/2022 5:24 PM	4.893	0.676
25/03/2022 6:25 PM	26/03/2022 6:19 PM	4.922	0.603
28/03/2022 4:41 PM	29/03/2022 5:10 PM	4.399	0.385
25/03/2022 4:41 PM	28/03/2022 6:57 PM	3.019	0.370
22/03/2022 8:57 PM	24/03/2022 4:14 PM	2.896	0.450
17/07/2021 8:05 PM	18/07/2021 6:13 PM	2.822	0.422

Table 12

Unplanned SAIFI major events RY22			
Start	End	Pre-normalised	Normalised
31/07/2021 12:34 AM	31/07/2021 1:11 AM	0.284	0.004
3/09/2021 9:00 AM	3/09/2021 9:42 AM	0.177	0.004
17/11/2021 7:46 PM	17/11/2021 7:57 PM	0.284	0.004
25/03/2022 7:51 AM	25/03/2022 1:06 PM	0.037	0.004
22/03/2022 9:16 AM	22/03/2022 11:25 AM	0.037	0.004
25/03/2022 9:04 AM	25/03/2022 1:33 PM	0.015	0.004
23/03/2022 1:49 AM	23/03/2022 1:59 AM	0.077	0.016
22/03/2022 11:02 PM	22/03/2022 11:46 PM	0.187	0.004

4.3 Statement of compliance with extreme event standard

As demonstrated in Table 13 below, and consistent with clause 9.9 of the 2020 DPP Determination Eastland Network has complied with the extreme event standard.

Table 13

Extreme event standard RY22	
<i>Unplanned SAIDI value ≤ 120 minutes, and customer interruption minutes ≤ six million during any 24-hour period, excluding unplanned interruptions from major external factors</i>	
Number of extreme events	Compliance result
-	Compliant



4.4 Quality Incentive Adjustment

Table 14 below shows Eastland Network’s quality incentive adjustment for the assessment period.

Table 14

Quality Incentive Adjustment RY22		
Term	Description	Value (\$000)
SAIDI planned adjustment	$(SAIDI_{planned, target} - SAIDI_{planned, assessed}) \times 0.5 \times IR$	(37)
SAIDI unplanned adjustment	$(SAIDI_{unplanned, target} - SAIDI_{unplanned, assessed}) \times IR$	(114)
Total adjustment	$SAIDI_{planned adjustment} + SAIDI_{unplanned adjustment}$	(151)
Revenue at risk	$0.02 * ANAR$	506
Total penalty/reward		(151)
67th percentile estimate of post-tax WACC		4.23%
Quality incentive adjustment		(164)



Table 15 below shows Eastland Network's quality incentive adjustment inputs consistent with Schedule 4 of the 2020 DPP Determination.

Table 15

Quality Incentive Adjustment Inputs RY22					
Term	Units	Value	Term	Units	Value
SAIDI planned interruption cap	minutes	258.14	SAIDI unplanned interruption cap	minutes	219.46
SAIDI planned interruption collar	minutes	-	SAIDI unplanned interruption collar	minutes	-
SAIDI planned interruption target	minutes	86.05	SAIDI unplanned interruption target	minutes	173.85
Planned SAIDI assessed value	minutes	112.17	Unplanned SAIDI assessed value	minutes	214.72
Incentive rate		2,797			
Actual net allowable revenue (ANAR)	\$000	25,301			
SAIDI planned interruption target	minutes	86	SAIDI unplanned interruption target	minutes	174
Minimum of the planned SAIDI cap and assessed value	minutes	112	Minimum of the unplanned SAIDI cap and assessed value	minutes	215
Planned SAIDI subject to incentive	minutes	(26)	Unplanned SAIDI subject to incentive	minutes	(41)
Adjustment (IR x 0.5)	\$	1,399	Adjustment (IR)	\$	2,797
SAIDI planned adjustment	\$000	(37)	SAIDI unplanned adjustment	\$000	(114)

5. Transactions

Eastland Network has not entered into any agreements with another EDB or Transpower for an amalgamation, merger, major transaction or transfer in the assessment period.

6. Director's certification

A Director's certificate in the form set out in Schedule 7 of the 2020 DPP Determination is included as Appendix E.

7. Assurance report

An assurance report meeting the requirements of Schedule 8 of the 2020 DPP Determination is included in Appendix F.



Appendix A – Pass-through and recoverable costs

Pass-through costs

Table 16

Actual and forecast pass-through costs RY22				
Actual pass-through costs	Actual (\$000)	Forecast (\$000)	Forecast variance (\$000)	Explanation for variances
Rates on system fixed assets	254	346	(92)	Based on FY21 latest forecast + 2% CPI
Commerce Act levies	53	48	5	Based on FY21 actuals + 2% CPI
Electricity Authority levies	70	62	8	Based on FY21 latest forecast + 2% CPI
Utilities Disputes levies	17	17	0	
Total actual pass-through costs	394	473	(79)	



Recoverable costs

Table 17

Actual and forecast recoverable costs RY22				
Actual recoverable costs	Actual (\$000)	Forecast (\$000)	Forecast variance (\$000)	Explanation for variances
IRIS incentive adjustment	(280)	(280)	-	
Transmission charges	5,495	5,495	0	
New investment contract charges	75	75	-	
System operator services charges			-	
Avoided transmission charges			-	
Distributed generation allowance	405	405	(0)	
Claw-back			-	
Catastrophic event allowance			-	
Extended reserves allowance			-	
Quality incentive adjustment	112	112	-	
Capex wash-up adjustment	(77)	(77)	-	
Reconsideration event allowance			-	
Quality standard variation engineers fee			-	
Urgent project allowance			-	
Fire and Emergency NZ levies	25	31	(6)	Forecast based on actual for Q1 FY22 and 2% CPI for Q2 - Q4 FY22
Innovation project allowance			-	
Total actual recoverable costs	5,755	5,760	(6)	



Pass-through balance

Table 18

Pass-through balance RY22		
Term	Description	Value (\$000)
Pass-through balance	<i>Pass-through balance for the assessment period ending 31 March 2020</i>	358
ePTB	<i>An estimate of the pass-through balance as at 31 March 2020</i>	280
67th percentile estimate of post-tax WACC		4.23%
Pass-through balance allowance	<i>(ePTB - pass-through balance) x (67th percentile estimate of post-tax WACC)^2</i>	(85)



Appendix B – Prices and quantities

Table 19 shows the actual prices and quantities for actual revenue from prices for the second assessment period.

Table 19

Actual revenue from prices RY22				
Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$'000)
DOMLFC Fixed	\$/day	0.1500	13,544	742
DOMLFC Uncontrolled	\$/kWh	0.1442	35,047,584	5,054
DOMLFC Controlled	\$/kWh	0.0759	15,575,491	1,182
DOMLFC Peak	\$/kWh	0.2074	7,233,855	1,500
DOMLFC Off Peak + Night	\$/kWh	0.1157	13,548,778	1,568
DOMSTD Fixed	\$/day	1.9576	6,695	4,784
DOMSTD Uncontrolled	\$/kWh	0.0528	31,650,434	1,671
DOMSTD Controlled	\$/kWh	0.0294	12,887,435	379
DOMSTD Peak	\$/kWh	0.0897	5,102,659	458
DOMSTD Off Peak + Night	\$/kWh	0.0359	9,848,545	354
COM0050 Fixed	\$/day	2.2019	4,605	3,701
COM0050 Uncontrolled	\$/kWh	0.0474	31,416,454	1,489
COM0050 Controlled	\$/kWh	0.0284	2,203,422	63
COM0050 Peak	\$/kWh	0.0807	1,739,975	140
COM0050 Off Peak + Night	\$/kWh	0.0323	3,870,569	125
COM0100 Fixed	\$/day	7.7684	418	1,185
COM0100 Uncontrolled	\$/kWh	0.0643	19,601,077	1,260
COM0100 Controlled	\$/kWh	0.0423	441,534	19
COM0100 Peak	\$/kWh	0.1141	1,347,498	154
COM0100 Off Peak + Night	\$/kWh	0.0457	3,512,498	161
COM0300 Fixed	\$/day	15.6289	112	639
COM0300 Uncontrolled	\$/kWh	0.0507	10,472,838	531
COM0300 Evening Peak	\$/kWh	0.0460	2,006,383	92
COM0300 Morning Peak	\$/kWh	0.0429	3,289,098	141
COM0300 Off Peak	\$/kWh	0.0340	3,981,787	135
COM0300 Night	\$/kWh	0.0188	2,834,580	53
COM0500 Fixed	\$/day	29.3636	21	230
COM0500 Evening Peak	\$/kWh	0.0460	1,426,123	66
COM0500 Morning Peak	\$/kWh	0.0429	2,215,624	95
COM0500 Off Peak	\$/kWh	0.0340	2,906,964	99
COM0500 Night	\$/kWh	0.0188	2,713,077	51
COM1000 Fixed	\$/day	45.4660	24	401
COM1000 Evening Peak	\$/kWh	0.0460	4,708,845	217
COM1000 Morning Peak	\$/kWh	0.0429	7,133,170	306
COM1000 Off Peak	\$/kWh	0.0340	9,458,910	322
COM1000 Night	\$/kWh	0.0188	8,767,498	165
COM4500 Fixed	\$/day	113.6647	3	124
COM4500 Evening Peak	\$/kWh	0.0449	3,581,315	161
COM4500 Morning Peak	\$/kWh	0.0420	5,153,597	216
COM4500 Off Peak	\$/kWh	0.0335	6,958,827	233
COM4500 Night	\$/kWh	0.0184	6,854,871	126
COM6500 Fixed	\$/day	172.9834	1	63
COM6500 Evening Peak	\$/kWh	0.0449	746,342	34
COM6500 Morning Peak	\$/kWh	0.0419	1,848,837	77
COM6500 Off Peak	\$/kWh	0.0335	1,969,650	66
COM6500 Night	\$/kWh	0.0184	1,523,666	28
GEN4500 Fixed	\$/day	77.4477	1	28
GEN6500 Fixed	\$/day	106.0789	1	39
GEN6500 Uncontrolled	\$/kWh	0.0382	136,271	5
OTH0003 Fixed	\$/day	0.4741	82	14
OTH0003 Uncontrolled	\$/kWh	0.1276	218,017	28
DUML Fixed	\$/day	0.0609	4,819	107
DUML Uncontrolled	\$/kWh	0.0872	1,737,573	152
STLGM Fixed	\$/day	0.0620	142	3
STLGM Uncontrolled	\$/kWh	0.0872	39,214	3
Tariff switches variance and prior period wash-ups				(54)
Total actual revenue from prices				30,984



Table 20 shows the forecast revenue from prices for the second assessment period from the price setting compliance statement.

Table 20

Forecast revenue from prices RY22	
Total forecast revenue from prices	30,237



Appendix C – Policies and procedures for measuring planned and unplanned interruptions

Following is a summary of policies and procedures used by Eastland Network during the assessment period for capturing, recording and calculating class B and class C interruptions and planned and unplanned SAIDI and SAIFI assessed values.

Processing planned and intended interruptions

1. Project manager issues a job to a network approved contractor.
2. The network approved contractor or project manager completes a work application form for a shutdown and emails it to the control room.
3. Work application is assessed and checked by the Network Control Manager or the Senior control room operator.
4. The information from the approved work application is entered into outage manager (an access database) as a new record.
5. When the data has been entered into outage manager an email is generated about the planned shutdown and sent to all retailers and MEPS.
6. Attached with the work application is a schematic plan of the work site which includes the transformers that will be affected by the shutdown. These transformers are entered into outage manager. This will generate a spreadsheet that will have a list of the number of ICPs (customers) affected. This is generated from ESRI/SAP system and these are the customers that are used as a basis for the customer minute calculations.
7. The outage is then entered onto Eastland Network website.
8. When the planned outage occurs, the switching is completed by the controller.
9. The controller completes an outage information form.
10. The outage information form is then checked by another controller to verify the information is correct.
11. The outage form is entered into the SAIDI/SAIFI model. This is an excel model that calculates SAIDI and SAIFI in accordance with the regulations set out in Electricity Distribution Services Default Price-Quality Path Determination 2020.
12. Pricing and Regulatory Manager would review Pricing and Regulatory Analyst's input to avoid errors.
13. Regulatory and Pricing Analyst to check the monthly data. These checks include
 - a. Cross check with outage manager to ensure all outages entered into outage manager are in the SAIDI SAIFI model.
 - b. Cross check with outages displayed on website to ensure all outages entered onto website are in the SAIDI SAIFI model.
 - c. Cross check on notified interruptions with the control room email and website notification to ensure that they comply with the 10-day notification period.



14. The Regulatory and Pricing Analyst is to prepare monthly SAIDI SAIFI reports and present them to the Network team during the third week of the following month.
15. General Manager Networks to include the monthly SAIDI SAIFI reports in the monthly board papers.

Processing unplanned interruptions

1. The unplanned interruption occurs. The fault trips part of the network and this is alerted to the duty controller.
2. The controller completes the fault switching and the outage information form.
3. The outage form is then checked by another controller.
4. The outage form is entered into the SAIDI/SAIFI model. This is an excel model that calculates SAIDI and SAIFI in accordance with the regulations set out in Electricity Distribution Services Default Price-Quality Path Determination 2020
5. The Regulatory and Pricing Analyst is to prepare monthly SAIDI SAIFI reports and present them to the Network team during the third week of the following month.
6. General Manager Networks to include the monthly SAIDI SAIFI reports in the monthly board papers.

Numbers of customers used for switching sheets throughout the year

At the start of each regulatory period (1 April) the information office is responsible for completing the customer numbers as at 1 April. These customer numbers will be the ones that are used for the regulatory period and are to be used while completing the outage data forms.

ENL understands that throughout the year there will be customers disconnected from the network or new customers connections. However, the effort required to track these changes and update customer maps for customer minute purposes does not seem justified so Eastland will only use this one set of customer numbers for the entire period.

ICP count

The average customer numbers that are generated from Gentrack (billing system) as part of billing are to be used.

The definition for a customer is: Means any person who is supplied with electricity but does not include any electricity generator or any electricity distributor or retailer.

This means that ICP status AC (= Active) is to be included in the average customer numbers for the year.



Appendix D – SAIDI and SAIFI major events

The below table 21 and 22 show the normalisation of the SAIDI and SAIFI major events that took place during the assessment period, consistent with Schedule 3.2 of the 2020 DPP Determination.

Below each table there is further information pertaining to the major event including location of the event, equipment involved, Eastland Network’s response and future step to avoid similar event occurring in the future.

Table 21

Normalisation of unplanned SAIDI major events RY22			
SAIDI unplanned boundary value			13.10
1/48th of the SAIDI unplanned boundary value	16/07/2021 to 17/07/2021		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	16/07/2021 15:30	0.278	0.273
0.27	17/07/2021 2:00	41.342	0.273
0.27	17/07/2021 2:30	0.164	0.164
0.27	17/07/2021 8:00	2.137	0.273
0.27	17/07/2021 8:30	0.244	0.244
0.27	17/07/2021 9:00	1.423	0.273
0.27	17/07/2021 11:30	5.701	0.273
0.27	17/07/2021 12:00	1.088	0.273
0.27	17/07/2021 13:30	0.236	0.236
0.27	17/07/2021 14:00	0.193	0.193
0.27	17/07/2021 14:30	2.928	0.273
Total		55.735	2.748

SAIDI and SAIFI Major Event Information	
Cause	High winds causing clashing of 110kV conductor lines
Start Date	17/07/2021
Start Time	02:03 AM
End Date	17/07/2021
End Time	02:55 AM
SAIDI value of major event before replacement	41.3420
SAIDI value of major event	0.2729
SAIFI value of major event before replacement	0.8148
SAIFI value of major event	0.0314
Location of SAIDI major event	Tuai - Gisborne 110kV Circuits Other normalised outages: Frasertown - Faulty HV line - 0.28 SAIDI
Main equipment involved in SAIDI major event	110kV Conductor
How Eastland Network responded to the event	<p>During an adverse weather event, the Gisborne – Tuai 110kV circuits were subject to high winds during the early morning hours.</p> <p>The Gis – Tui 110kV is a double circuit for most of its length and shares a single steel lattice tower to support both circuits for some sections of the line. The wind was strong enough to cause a clashing between the two circuits, resulting in an overcurrent tripping at the Tuai and Gisborne substations.</p> <p>An assessment was made in consultation with fellow Eastland Network employees about the risk involved with reclosing the circuit. As strong winds were the probable cause, it was determined that it was best to allow some time for the wind to subside before attempting a reclose.</p> <p>Staff were confident that there were no other causes or sources of the tripping other than strong winds. Following this stand-down period, a single circuit was reclosed at 02:52, and the supply to the region restored at 02:55</p>
Mitigating factors that may have prevented or minimised the major event	Inter-circuit spacers would have eliminated the possibility of clashing between both circuits. However, it was found that the weight of the spacers would overload the line and was therefore not recommended.
Steps taken to mitigate the risk of future major events	<p>An external consultant was used to assess the relay protection data to identify the location of the clashing conductor. It was found that the Blue Phase of Cct1 clashed with the Yellow phase of Cct 2. Following the review, if the protection data and software modelling it was found that the clash occurred at a distance of approximately 55% along the length of the line beginning from the Gisborne sub. Further modelling will prove that historic clashing along the circuit has occurred in a similar location.</p> <p>Work has been programmed to change the rotation of the circuits to align the phases of each circuit. By doing this, if future clashes were to occur, the existing protection relays could better identify where the clashing occurs by detecting phase-to-phase faults. Currently, the clashing of different phases from different circuits provides negligible results in terms of fault data, as the relays cannot distinguish the exact fault type.</p> <p>A protection matrix has also been developed to inform control room operators on the fault conditions in which auto reclosing will be possible if certain conditions are met, i.e. the risk of re-tripping is low. It will also outline the areas of the line where clashing is most likely to occur.</p> <p>A condition assessment of the identified clashing area was also conducted, and obvious arcing signs were found, confirming that the location specified in the post-analysis report is more than likely responsible for the tripping.</p>



1/48th of the SAIDI unplanned boundary value	17/07/2021 to 18/07/2021		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	17/07/2021 15:00	1.996	0.273
0.27	17/07/2021 15:30	0.029	0.029
0.27	17/07/2021 16:00	0.308	0.273
0.27	17/07/2021 16:30	4.898	0.273
0.27	17/07/2021 17:00	0.010	0.010
0.27	17/07/2021 18:30	0.001	0.001
0.27	17/07/2021 20:00	2.822	0.273
0.27	18/07/2021 2:30	2.285	0.273
0.27	18/07/2021 7:00	1.096	0.273
0.27	18/07/2021 7:30	0.007	0.007
0.27	18/07/2021 9:30	0.168	0.168
0.27	18/07/2021 10:00	0.027	0.027
0.27	18/07/2021 11:00	0.232	0.232
0.27	18/07/2021 14:00	0.073	0.073
0.27	18/07/2021 14:30	0.003	0.003
Total		13.955	2.188

SAIDI Major Event Information	
Cause	Adverse Weather (Large Storm event)
Start Date	17/07/2021
Start Time	09:09 AM
End Date	19/07/2021
End Time	06:35 PM
SAIDI value of major event before replacement	12.9646
SAIDI value of major event	1.9100
Location of SAIDI major event	Matawai Township and surrounding areas
Main equipment involved in SAIDI major event	Poles, 11kV conductor, vegetation
How Eastland Network responded to the event	<p>On 17/07/2021, a large storm front moved through the Gisborne region, causing widespread damage to the distribution network, with the Matawai area receiving substantial damage. The first tripping occurred at 09.09 am when a large tree fell across the road, tearing down the conductor within the township near the local police station. Faultman and arborists were sent to the area to repair the damage. Numerous interruptions from this point on would continue along the Matawai feeder.</p> <p>Following this, multiple reports of poles falling over were received from various areas around the Matawai region. As conditions restricted the capabilities of faultman to respond to the damage, isolation of the faulted areas occurred to minimise the outage area. This was a temporary measure until weather conditions eased and faultman could carry out their repair work. This time was extended, and some repairs could only occur on the following days when weather conditions improved and more resources were available to meet the demand.</p> <p>A defective protection relay gave that area a false indication of power. It also meant that back-feeding capabilities were prevented. The recloser provided power to a ring in the feeder, which was being used to restore power to other areas affected by the storm. Once identified, the recloser was promptly bypassed so that power was restored to customers.</p> <p>Due to the severity of the storm and the widespread damage it caused, restoration times were prolonged.</p>
Mitigating factors that may have prevented or minimised the major event	Introducing a tie-feeder between the Totangi feeder and the Matawai feeder will produce an alternative backup supply to the Matawai feeder if faults near the beginning of the line occur. Currently, any faults along here result in the entire feeder being interrupted. This may have reduced the number of customers affected during faults near the line's first tee-off.
Steps taken to mitigate the risk of future major events	<p>The defective recloser was replaced with a new Ghorit recloser to mitigate any future issues associated with the protection relay. This provides backup capabilities for the ring section within the Matawai feeder and will help reduce outage times for future events.</p> <p>Regarding the tie-feeder, This project has been programmed to be issued within the AMP planning period.</p>



SAIDI Major Event Information	
Cause	Tree through line install generator
Start Date	17/07/2021
Start Time	08:05 PM
End Date	18/07/2021
End Time	06:13 PM
SAIDI value of major event before replacement	2.8224
SAIDI value of major event	0.4225
Location of SAIDI major event	Hicks Bay/Lottin point
Main equipment involved in SAIDI major event	11Kv conductor
How Eastland Network responded to the event	Tripping occurred in 2005, and remote switching occurred. J4035 was closed, and a fault occurred. The switch is left open. Faultman dispatched at first light and undertook field switching. Located fault North of Waikura Road. This enabled a majority of customers back on. The generator was sent from Gisborne, and power was restored via a generator to the rest of the consumers. The line crew could not attend due to other fault events at the time to repair. All power was restored via network on 20 July.
Mitigating factors that may have prevented or minimised the major event	Trees had been harvested on the top side of the line. Trees had been left between the state highway and the line as they were not deemed plantation trees, so the forest company did not take them. These trees should have been cleared at the same time as the harvest was done to minimise the chance of damage.
Steps taken to mitigate the risk of future major events	Additional line inspections must be undertaken as part of the network management function. The location is remote, and resource is a long way from the area. These areas should be identified as higher risk due to longer restoration times. Weather events have impacted this area over the year.

1/48th of the SAIDI unplanned boundary value	9/08/2021		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	9/08/2021 5:00	4.952	0.273
0.27	9/08/2021 5:30	1.634	0.273
0.27	9/08/2021 6:30	1.526	0.273
0.27	9/08/2021 7:30	0.911	0.273
0.27	9/08/2021 8:00	1.967	0.273
0.27	9/08/2021 9:00	0.746	0.273
0.27	9/08/2021 9:30	0.371	0.273
0.27	9/08/2021 10:00	1.576	0.273
0.27	9/08/2021 11:00	4.846	0.273
0.27	9/08/2021 11:30	1.782	0.273
0.27	9/08/2021 12:30	0.086	0.086
0.27	9/08/2021 13:30	0.004	0.004
0.27	9/08/2021 14:00	0.674	0.273
0.27	9/08/2021 14:30	1.486	0.273
0.27	9/08/2021 17:30	1.189	0.273
Total		23.751	3.638

SAIDI Major Event Information	
Cause	Mahia - Adverse Weather - Multiple Faults
Start Date	9/08/2021
Start Time	05:02 AM
End Date	10/08/2021
End Time	02:00 PM
SAIDI value of major event before replacement	11.4321
SAIDI value of major event	1.5492
Location of SAIDI major event	Mahia 11kV feeder, Mahia peninsula
Main equipment involved in SAIDI major event	11kV conductor
How Eastland Network responded to the event	A period of adverse weather produced strong winds in the Wairoa/Mahia region of the network. The high winds resulted in lines clashing along the Mahia Peninsula causing a protection relay to trip and interrupting power to the spur line. During this tripping high winds also caused wires on the Wairoa – Mahia 33kV line to trip as well. This feeder provides power to the Tahaenui and Blacks pad substations which supplies power to the Nuhaka, Morere and Mahia regions. Switching was developed and with the use of diesel gensets, restoration to majority of the customers was possible. The weather continued to affect the fault as a separate event caused the diesel generator to trip and resulted in another loss of supply for Mahia. This was noted to be due to clashing of conductors and the generator was closed back into the grid following a short stand down period. The original fault along the peninsula was yet to be found. It was found that clashing of wires caused the conductor to break. The interruption area was minimised as best as possible and repair work was completed the following day.
Mitigating factors that may have prevented or minimised the major event	Reconductoring of 11kV lines along the Mahia Peninsula would mitigate further breaks in conductor when subject to high winds. The peninsula is susceptible to conductor wear and tear due to it's close proximity to the sea which causes corrosion to manifest at a faster rate.
Steps taken to mitigate the risk of future major events	Future works have been developed to reconductor sections of the Mahia feeder to increase resiliency of the line.



1/48th of the SAIDI unplanned boundary value	22/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	22/03/2022 9:00	1.962	0.273
0.27	22/03/2022 10:00	0.027	0.027
0.27	22/03/2022 18:30	0.186	0.186
0.27	22/03/2022 20:30	2.896	0.273
0.27	22/03/2022 21:00	4.494	0.273
0.27	22/03/2022 23:00	5.100	0.273
Total		14.665	1.304

SAIDI & SAIFI Major Event Information	
Cause	Lightning
Start Date	22/03/2022
Start Time	11:02 PM
End Date	22/03/2022
End Time	11:46 PM
SAIDI value of major event before replacement	6.6131
SAIDI value of major event	0.5458
SAIFI value of major event before replacement	0.1874
SAIFI value of major event	0.0037
Location of SAIDI major event	Tuia & Wairoa
Main equipment involved in SAIDI major event	Lightning
How Eastland Network responded to the event	Normal fault restoration Practices
Mitigating factors that may have prevented or minimised the major event	Installation of Protection so auto reclose can be enabled
Steps taken to mitigate the risk of future major events	A Protection Review of Mahia and Waihi Lines has been carried out. Eastland Network will need an intertrip to disconnect the generator at Waihi, so Transpower will enable Auto to reclose. Or agreement during big events that the generator will be disabled and protection can have the Auto reclose enabled.

SAIDI Major Event Information	
Cause	Major rain event (March 22 -31 March) River washed away Bank and poles fell over
Start Date	22/03/2022
Start Time	09:02 PM
End Date	31/03/2022
End Time	02:14 PM
SAIDI value of major event before replacement	6.3306
SAIDI value of major event	0.4586
Location of SAIDI major event	Inland Feeder - SH 35 Mangahauini
Main equipment involved in SAIDI major event	11kV Poles/11kV Conductor (H2408-H2405)
How Eastland Network responded to the event	H302 tripped on O/C at 21.02 Faultman patrolled and found fault the next day. Cut Jumpers and made site safe. This was delayed because of access to the site (SH at Tokomary Bay closed). Restored power to all customers. Line isolated and rebuilt line in new location over the next few days.
Mitigating factors that may have prevented or minimised the major event	Severe weather events washed away roadside poles between the river and the roadside. Poles were in good condition. When assets are due to be replaced, asset location should be assessed and all options investigated.
Steps taken to mitigate the risk of future major events	It was possible after landowner consultation to relocate the poles/line away from the River and into an adjacent hillside property.
Location of SAIDI secondary event	Inland Feeder - SH 35 Ihungia
Main equipment involved in SAIDI major event	11kV Conductor - Span H2020 - H2018
How Eastland Network responded to the event	Another fault occurred when changing the network configuration (switching) back to feed the original fault. Faultman patrolled the line and found Multiple Trees Through the Line at H2020-H2018 - Forestry Block. Cut jumpers and restored power from 2nd alternate feed. Cut Trees and made repairs to the conductor. Restore the network to normal status. The first fault significantly impacted customer outage of secondary events.
Mitigating factors that may have prevented or minimised the major event	Negotiation with Forestry Manager of a wider tree corridor.
Steps taken to mitigate the risk of future major events	A wider corridor was negotiated and implemented with Forestry Manager and Harvest plan put in place.



SAIDI Major Event Information	
Cause	Trees came through line
Start Date	22/03/2022
Start Time	08:57 PM
End Date	24/03/2022
End Time	04:14 PM
SAIDI value of major event before replacement	2.8957
SAIDI value of major event	0.450
Location of SAIDI major event	Tapuaeroa
Main equipment involved in SAIDI major event	11 KV lines
How Eastland Network responded to the event	Network fault staff were dispatched the next day after the tripping event. Delay due to multiple faults occurring during the storm event. Lines were checked for fault location and then isolated at J164. Jumpers were cut to ensure minimal numbers of customers were off.
Mitigating factors that may have prevented or minimised the major event	The line runs across a small area of native vegetation. Extreme weather has impacted the area causing the trees to fall and damage the conductor. No ability to remove all vegetation from the area.
Steps taken to mitigate the risk of future major events	Ongoing vegetation assessment across the network. Implement a programme for additional ariel surveys in the top 10 feeders. This will form part of ongoing improvements in network performance.

1/48th of the SAIDI unplanned boundary value	22/03/2022-23/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	22/03/2022 23:30	1.513	0.273
0.27	23/03/2022 0:00	1.690	0.273
0.27	23/03/2022 1:00	1.837	0.273
0.27	23/03/2022 1:30	3.420	0.273
0.27	23/03/2022 2:00	6.682	0.273
0.27	23/03/2022 2:30	8.204	0.010
0.27	23/03/2022 5:00	0.010	0.032
0.27	23/03/2022 6:30	0.032	0.273
0.27	23/03/2022 7:30	0.335	0.122
0.27	23/03/2022 8:00	0.006	0.006
0.27	23/03/2022 8:30	0.122	0.273
0.27	23/03/2022 9:30	0.008	0.008
0.27	23/03/2022 12:30	0.181	0.181
0.27	23/03/2022 15:00	0.054	0.054
0.27	23/03/2022 15:30	0.394	0.273
Total		24.487	2.596



SAIDI Major Event Information	
Cause	Major rain event (March 22-31) River slip and pole and wire fell down
Start Date	23/03/2022
Start Time	12:29 AM
End Date	24/03/2022
End Time	09:42 AM
SAIDI value of major event before replacement	8.2559
SAIDI value of major event	0.8347
Location of SAIDI major event	Mata Feeder - outside Toko Sub
Main equipment involved in SAIDI major event	11kV Pole/ Lines
How Eastland Network responded to the event	CB H300 tripped. Faultman patrolled the line and found the pole had slipped into the river. This caused the Mata and Seaside Feeders to clash and bring wires down. Power restored via second alternate feed. This feeder then also had a secondary fault. When all repairs were complete network was restored to normal status.
Mitigating factors that may have prevented or minimised the major event	In the initial fault, the river washed away the pole, and the placement of assets in close vicinity to known waterways should be considered. The extreme weather event affected the ability to back feed customers via three feeders. This is an unusual circumstance where all three options had faults simultaneously.
Steps taken to mitigate the risk of future major events	Relocate pole further away from washed away river bank.

Location of SAIDI secondary event	Ihungia Road
Main equipment involved in SAIDI major event	11kV Lines
How Eastland Network responded to the event	When feeder was reconfigured for initial outage, the feeder tripped. Faultman patrolled line and found tree through line. Isolated line and made repairs. Then power restored to all but initial site. The timing of the two events impacted the customer outage.
Mitigating factors that may have prevented or minimised the major event	Ongoing talks with landowners in regard to tree clearances around lines.
Steps taken to mitigate the risk of future major events	Cut away trees in vicinity that have potential to cause damage to any ENL assets.

SAIDI Major Event Information	
Cause	Major rain event (March 22-31) Flood Water washed away poles and conductor
Start Date	23/03/2022
Start Time	02:15 AM
End Date	31/03/2022
End Time	02:16 PM
SAIDI value of major event before replacement	6.6910
SAIDI value of major event	0.6765
Location of SAIDI major event	Makarika Road, (H344-H3281-H1714)
Main equipment involved in SAIDI major event	11kV Lines/Conductor
How Eastland Network responded to the event	J545 tripped on O/ AT 2.15 am. Faultman patrolled and found fault the following day, cut jumpers and restored power to customers. Generator installed to 2 x customers downstream of fault. Rebuilt line over the next couple of days, removed the generator and restored power to normal status.
Mitigating factors that may have prevented or minimised the major event	Severe weather even in the area washed away poles and conductor located near a water way (River).
Steps taken to mitigate the risk of future major events	Poles are located in positions to service the customers, so they cannot be relocated. New poles were installed with gravel in the base to make it more secure in the same location.
Location of SAIDI secondary event	Matahiia Road
Main equipment involved in SAIDI major event	11kV Lines
How Eastland Network responded to the event	Additional fault downstream of isolated 1st fault. No access caused by road washed away. When Faultman patrolled the line, they found a broken span of 11kV conductor H1660-H1659. Isolated line, cut jumpers. They installed a generator for some customers. 8 Customers were off for eight days because there was no access to the site, and they couldn't install a generator.
Mitigating factors that may have prevented or minimised the major event	No indication of ongoing faults of this type in this area and line condition/inspection has not been done.
Steps taken to mitigate the risk of future major events	A patrol and assets inspection in this area will be undertaken as part of the AMP.



1/48th of the SAIDI unplanned boundary value	23/03/2022-24/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	23/03/2022 16:30	0.007	0.007
0.27	23/03/2022 17:30	0.072	0.072
0.27	23/03/2022 18:30	15.358	0.273
0.27	23/03/2022 19:30	0.005	0.005
0.27	23/03/2022 22:30	1.982	0.273
0.27	24/03/2022 6:30	0.023	0.023
0.27	24/03/2022 7:00	0.008	0.008
0.27	24/03/2022 8:00	0.376	0.273
0.27	24/03/2022 8:30	0.038	0.038
0.27	24/03/2022 9:30	0.035	0.035
0.27	24/03/2022 14:30	0.006	0.006
0.27	24/03/2022 15:00	0.038	0.038
Total		17.949	1.051

SAIDI Major Event Information	
Cause	Trees came through line
Start Date	23/03/2022
Start Time	18:48
End Date	25/03/2022
End Time	09:32 AM
SAIDI value of major event before replacement	15.3633
SAIDI value of major event	0.273
Location of SAIDI major event	Raupunga
Main equipment involved in SAIDI major event	11Kv Conductor
How Eastland Network responded to the event	The network control undertook remote switching to locate the fault. Once the issue was located, fault staff were dispatched to the area. The issue with this location at the time of fault was the state highway was flooded and closed North of the fault location by cafe 287. The team were then dispatched the next day to isolate and start repair. Fault staff and tree cutters had to be flown in and out by helicopter due to no access to state highway. This made repair take longer than estimated and resulted in customers being off for longer.
Mitigating factors that may have prevented or minimised the major event	The tree came from outside of the tree management zone. The network has no legal ability to make sure trees outside of the zone are removed.
Steps taken to mitigate the risk of future major events	Network is working with forest companies around the management of these trees, particularly the future harvesting plans to ensure any at-risk trees are removed and the view to get a wider corridor. Again limits are based on what the current regulations state. More ongoing management with the forest owners is a positive step.

1/48th of the SAIDI unplanned boundary value	24/03/2022-25/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	24/03/2022 16:00	0.176	0.176
0.27	24/03/2022 22:00	5.321	0.273
0.27	25/03/2022 7:30	1.369	0.273
0.27	25/03/2022 8:00	0.770	0.273
0.27	25/03/2022 8:30	0.464	0.273
0.27	25/03/2022 9:00	0.789	0.273
0.27	25/03/2022 9:30	0.211	0.211
0.27	25/03/2022 10:00	0.051	0.051
0.27	25/03/2022 11:00	0.049	0.049
0.27	25/03/2022 11:30	0.016	0.016
0.27	25/03/2022 13:00	0.112	0.112
0.27	25/03/2022 14:30	8.668	0.273
0.27	25/03/2022 15:00	0.178	0.178
Total		18.173	2.430



SAIDI Major Event Information	
Cause	Trees came through line
Start Date	25/03/2022
Start Time	02:38 PM
End Date	27/03/2022
End Time	16:45
SAIDI value of major event before replacement	4.879
SAIDI value of major event	0.723
Location of SAIDI major event	Mata
Main equipment involved in SAIDI major event	11 KV conductor
How Eastland Network responded to the event	The Seaside was already feeding the area due to multiple faults in the area because of the storm. Network staff undertook to switch to determine where the fault was, faultman located the fault. Area identified following day. The tree team was dispatched to the area to remove trees from the line. Access to the area was limited due to major flooding, slips on Mata and coast roads, and high winds on Saturday. Once trees were removed, the line crew were sent to put the conductor back up. The repair was minor but impacted significantly by the weather at the time.
Mitigating factors that may have prevented or minimised the major event	Better road access, however, very isolated area. The tree was from outside of the tree management zone and in an area where harvesting has occurred, but this area of trees has been left as is difficult to harvest. Forestry ownership has also changed, which has meant the company delayed the required work to remove trees.
Steps taken to mitigate the risk of future major events	Network has agreed with forest company PF Olsen on how and when the area will be harvested. By summer, this area will be removed, and replanting will be managed to ensure no trees on the roadside of the lines.

SAIDI Major Event Information	
Cause	Tree on line
Start Date	24/03/2022
Start Time	10:03 PM
End Date	30/03/2022
End Time	04:11 PM
SAIDI value of major event before replacement	5.3211
SAIDI value of major event	0.2729
Location of SAIDI major event	Whatatutu
Main equipment involved in SAIDI major event	11Kv conductor
How Eastland Network responded to the event	Fault staff attended the area at first light. The line is isolated from access; it leaves council road and heads through private forest and inland over the farm. The main river cuts access off from the road; the only way in is via helicopter. Fault staff were flown in to assess the area and make plans. Generator as installed to bring customers on. This was done in two stages as the first generator was too small, so a larger generator was installed. Tree teams were flown in to cut trees off the conductor plus clear any at-risk trees. The line crew flew in to make repairs. Had to wait for the weather to clear to enable helicopter flying.
Mitigating factors that may have prevented or minimised the major event	Once again, trees came from outside of the management zone. Forest is a permanent carbon forest, so the reluctance of the owner to remove any trees does not need to be removed. Lines have been in place since before it was a forest as previous land use was farming.
Steps taken to mitigate the risk of future major events	The land owner has now agreed to cut a 30-metre corridor to reduce the risk of recurrence in this area. Work is being undertaken ASAP to ensure better clearance in this area. The network also understands load requirements for the generator for future issues and only to install a large generator.

SAIDI & SAIFI Major Event Information	
Cause	Trees came through line
Start Date	25/03/2022
Start Time	02:38 PM
End Date	25/03/2022
End Time	05:24 PM
SAIDI value of major event before replacement	4.8932
SAIDI value of major event	0.6760
SAIFI value of major event before replacement	0.2163
SAIFI value of major event	0.0126
Location of SAIDI major event	East Coast
Main equipment involved in SAIDI major event	50kv conductor
How Eastland Network responded to the event	Network brought gen-sets online one at a time. The limiting factor was network reconfiguration due to the storm events, so the load was higher in some areas than normal. This took additional time to bring customers on. At the same time, fault staff were dispatched on foot and by helicopter to locate the fault. The tree was found in a conductor off Dryden street, which heads over to Riverside road through a plantation forest.
Mitigating factors that may have prevented or minimised the major event	The tree was from outside of the tree management zone. Work with the land owner to identify potential at-risk trees that could cause issues. It was a major storm event with extreme weather at the time of fault. Heavy rain and wind make the ground unstable, causing the tree to uproot.
Steps taken to mitigate the risk of future major events	Talks are underway with the landowner over plans for the forest. Potential that this is a permanent carbon forest sop reluctance of owner to make corridor wider. Transmission manager working with owners. Work is also being done to convert coast 110 to 50kv, giving a loop from Gisborne to Toko. Work to be completed in FY23.



1/48th of the SAIDI unplanned boundary value	25/03/2022-26/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	25/03/2022 16:00	0.176	0.176
0.27	25/03/2022 16:30	5.911	0.273
0.27	25/03/2022 17:00	0.323	0.273
0.27	25/03/2022 18:00	4.776	0.273
0.27	25/03/2022 19:30	1.467	0.273
0.27	25/03/2022 21:00	0.196	0.196
0.27	26/03/2022 9:00	0.049	0.049
0.27	26/03/2022 10:30	0.025	0.025
0.27	26/03/2022 11:30	0.476	0.273
0.27	26/03/2022 12:30	0.032	0.032
0.27	26/03/2022 14:30	0.003	0.003
0.27	26/03/2022 15:30	0.976	0.273
Total		14.409	2.118

SAIDI Major Event Information	
Cause	Major rain event (March 23-31) Multiple Faults of Trees through Lines
Start Date	25/03/2022
Start Time	06:25 PM
End Date	26/03/2022
End Time	06:19 PM
SAIDI value of major event before replacement	4.9224
SAIDI value of major event	0.6029
Location of SAIDI major event	Tiniroto Road D3834-D3835 and D459-D248
Main equipment involved in SAIDI major event	11kV Conductor
How Eastland Network responded to the event	D675 Tripped E/F. Patrolled and started restoring power to the feeder. Could not fully restore some left off overnight and patrolled the following day. Original fault not found, came across trees had come through lines.
Mitigating factors that may have prevented or minimised the major event	Weather hindered patrolling at night. Original fault cause not found.
Steps taken to mitigate the risk of future major events	Trees were cut away from the line. The original fault tree was removed.

SAIDI Major Event Information	
Cause	Major Rain Event (March 22-31) Land slipped and Pole fell over
Start Date	25/03/2022
Start Time	04:41 PM
End Date	28/03/2022
End Time	06:57 PM
SAIDI value of major event before replacement	3.0187
SAIDI value of major event	0.3697
Location of SAIDI major event	Tauwhareparae Feeder - Paramata Road G1850
Main equipment involved in SAIDI major event	11kV Pole/Conductor
How Eastland Network responded to the event	Feeder Tripped at 4.41 pm on E/F, left off overnight. Patrolled the line the next day and found the pole down. Land slipped due to a weather event. Cut jumpers and isolated area. Made repairs two days later and restored the network to normal status.
Mitigating factors that may have prevented or minimised the major event	Legacy location of poles, when they were installed, there were no issues with landslips or flooding. When being replaced as part of the AMP, sites need to be assessed whether the location is still suitable and other locations investigated.
Steps taken to mitigate the risk of future major events	Poles installed in the same vicinity of old poles could not be re-aligned. Land condition and stability are taken into consideration with the placement of new poles.

1/48th of the SAIDI unplanned boundary value	27/03/2022-28/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	27/03/2022 22:30	1.703	0.273
0.27	28/03/2022 7:30	0.315	0.273
0.27	28/03/2022 8:30	0.023	0.023
0.27	28/03/2022 10:00	0.126	0.126
0.27	28/03/2022 13:00	0.593	0.273
0.27	28/03/2022 14:00	0.044	0.044
0.27	28/03/2022 15:00	0.889	0.273
0.27	28/03/2022 15:30	8.459	0.273
Total		12.153	1.558



SAIDI Major Event Information	
Cause	Major Rain event (March 22-31) Slip caused Line to move.
Start Date	28/03/2022
Start Time	03:56 PM
End Date	1/04/2022
End Time	12:00 AM
SAIDI value of major event before replacement	8.4587
SAIDI value of major event	0.273
Location of SAIDI major event	Mangapoike
Main equipment involved in SAIDI major event	11kV Poles/Lines
How Eastland Network responded to the event	W812 Earth Fault. Patrolled line as far as possible. No access because of flooding. Opened ABS and closed sectionaliser to restore power to some customers. Left customers are downstream of W6600 off. Returned to site on 31/03 to install a generator.
Mitigating factors that may have prevented or minimised the major event	Severe weather events in the area created land to slip and poles and conductors to fall. Assets were in good condition; asset location should be assessed and all options investigated when assets are due to be replaced.
Steps taken to mitigate the risk of future major events	It was possible after landowner consultation to re-align the pole and other poles away from the unstable land into the adjacent property. (New alignment).

1/48th of the SAIDI unplanned boundary value	28/03/2022-29/03/2022		
	Half hour commencing	Raw SAIDI value for Class C interruption	Normalised SAIDI value for Class C interruption
0.27	28/03/2022 16:30	4.923	0.273
0.27	28/03/2022 17:30	0.023	0.023
0.27	28/03/2022 20:30	0.001	0.001
0.27	28/03/2022 21:30	7.736	0.273
0.27	29/03/2022 2:00	0.005	0.005
0.27	29/03/2022 4:30	0.699	0.273
0.27	29/03/2022 8:30	0.081	0.081
0.27	29/03/2022 9:00	0.009	0.009
0.27	29/03/2022 9:30	0.061	0.061
0.27	29/03/2022 10:00	0.001	0.001
0.27	29/03/2022 12:00	0.878	0.273
0.27	29/03/2022 14:30	0.001	0.001
0.27	29/03/2022 16:00	0.010	0.010
Total		14.4283	1.2843

SAIDI Major Event Information	
Cause	Trees came through line
Start Date	28/03/2022
Start Time	04:41 PM
End Date	29/03/2022
End Time	05:10 PM
SAIDI value of major event before replacement	4.3989
SAIDI value of major event	0.3847
Location of SAIDI major event	Marumaru
Main equipment involved in SAIDI major event	11 KV conductor
How Eastland Network responded to the event	Access to fault was on Brownlie Road, blocked due to flooding on State highway and slipped on Brownlie road. The storm event extremely impacted the area with multiple slips and flooding. The fault area was isolated, the line crew and tree cutters removed the trees from the lines and road, and the conductor was put back in place.
Mitigating factors that may have prevented or minimised the major event	Tree from outside tree management zone. Roadside tree. Restoration times were delayed due to major flooding and slipping. Minimal ability to access area.
Steps taken to mitigate the risk of future major events	Continue to undertake a risk assessment of vegetation on the distribution network. Tree resource to focus on highest impacted areas and work through network area. Look at resource placement to achieve.



SAIDI Major Event Information	
Cause	Multiple trees through lines. Forestry block
Start Date	28/03/2022
Start Time	08:45 PM
End Date	31/03/2022
End Time	04:39 PM
SAIDI value of major event before replacement	7.7412
SAIDI value of major event	0.6771
Location of SAIDI major event	Raupunga
Main equipment involved in SAIDI major event	11 KV conductor and poles
How Eastland Network responded to the event	Fault staff were dispatched to isolate the area. At the time of the event, the storm that was impacting the region was still hitting the Wairoa area. The Raupunga feeder was hit in an earlier event. It was agreed to patrol the area in the morning during daylight. The patrol found multiple trees with broken conductors and poles in the morning. These were trees from outside the management zone and were in three locations along an area of about 3km. Once assessed, it was agreed to bring a large generator in to ensure customers can have power. This took the day to achieve due to a large slip on the State highway on Mohaka hill blocking the generator's access. Crews fixed sections at a time to bring on the last customers on the line and then made final repairs. Last section of the line required full traffic management on state highway to achieve a safe work site. Network management met on-site with forest owners to look at the damage.
Mitigating factors that may have prevented or minimised the major event	Having a large feeder with limited ability to back feed, plus the fact that the normal on-site generator was removed months earlier, has impacted the time customers were out. The area in question where faults occurred has not provided areas of concern previously; however, further south has had a few issues. Trees in this area are set back further than in most cases but still within a tree length, hence why damage has occurred. The area sustained major damage due to flooding and wind in this event, which lasted ten days.
Steps taken to mitigate the risk of future major events	Network management is working with forest owners in this area to look at trees at risk. Work is required to look at the long-term plan for the harvest of these areas, plus replanting. The ability to have alternative generation on this feeder is to be addressed in the FY23 year as Network has limited ability to back feed such a large area.



Table 22

Normalisation of unplanned SAIFI major events RY22			
SAIFI unplanned boundary value			0.1765
1/48th of the SAIFI unplanned boundary value	16/07/2021 to 17/07/2021		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	16/07/2021 15:30	0.0040	0.0037
0.0037	17/07/2021 2:00	0.8148	0.0037
0.0037	17/07/2021 2:30	0.0012	0.0012
0.0037	17/07/2021 8:00	0.0023	0.0023
0.0037	17/07/2021 8:30	0.0023	0.0023
0.0037	17/07/2021 11:30	0.0151	0.0037
0.0037	17/07/2021 12:00	0.0066	0.0037
0.0037	17/07/2021 13:30	0.0015	0.0015
0.0037	17/07/2021 14:00	0.0026	0.0026
0.0037	17/07/2021 14:30	0.0014	0.0014
0.0037	17/07/2021 15:00	0.0064	0.0037
0.0037	17/07/2021 15:30	0.0058	0.0037
Total		0.8639	0.0333

SAIDI and SAIFI Major Event Information	
Cause	High winds causing clashing of 110kV conductor lines
Start Date	17/07/2021
Start Time	02:03 AM
End Date	17/07/2021
End Time	02:55 AM
SAIDI value of major event before replacement	41.3420
SAIDI value of major event	0.2729
SAIFI value of major event before replacement	0.8148
SAIFI value of major event	0.0314
Location of SAIDI major event	Tuai - Gisborne 110kV Circuits Other normalised outages: Frasertown - Faulty HV line - 0.28 SAIDI
Main equipment involved in SAIDI major event	110kV Conductor
How Eastland Network responded to the event	<p>During an adverse weather event, the Gisborne - Tuai 110kV circuits were subject to high winds during the early morning hours.</p> <p>The Gis - Tuai 110kV is a double circuit for most of its length and shares a single steel lattice tower to support both circuits for some sections of the line. The wind was strong enough to cause a clashing between the two circuits, resulting in an overcurrent tripping at the Tuai and Gisborne substations.</p> <p>An assessment was made in consultation with fellow Eastland Network employees about the risk involved with reclosing the circuit. As strong winds were the probable cause, it was determined that it was best to allow some time for the wind to subside before attempting a reclose.</p> <p>Staff were confident that there were no other causes or sources of the tripping other than strong winds. Following this stand-down period, a single circuit was reclosed at 02:52, and the supply to the region restored at 02:55</p>
Mitigating factors that may have prevented or minimised the major event	Inter-circuit spacers would have eliminated the possibility of clashing between both circuits. However, it was found that the weight of the spacers would overload the line and was therefore not recommended.
Steps taken to mitigate the risk of future major events	<p>An external consultant was used to assess the relay protection data to identify the location of the clashing conductor. It was found that the Blue Phase of Cct1 clashed with the Yellow phase of Cct 2. Following the review, if the protection data and software modelling it was found that the clash occurred at a distance of approximately 55% along the length of the line beginning from the Gisborne sub. Further modelling will prove that historic clashing along the circuit has occurred in a similar location.</p> <p>Work has been programmed to change the rotation of the circuits to align the phases of each circuit. By doing this, if future clashes were to occur, the existing protection relays could better identify where the clashing occurs by detecting phase-to-phase faults. Currently, the clashing of different phases from different circuits provides negligible results in terms of fault data, as the relays cannot distinguish the exact fault type.</p> <p>A protection matrix has also been developed to inform control room operators on the fault conditions in which auto reclosing will be possible if certain conditions are met, i.e. the risk of re-tripping is low. It will also outline the areas of the line where clashing is most likely to occur.</p> <p>A condition assessment of the identified clashing area was also conducted, and obvious arcing signs were found, confirming that the location specified in the post-analysis report is more than likely responsible for the tripping.</p>



1/48th of the SAIFI unplanned boundary value	31/07/2021		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	31/07/2021 0:30	0.2839	0.0037

SAIFI Major Event Information	
Cause	Car VS Pole 50kV - Third party interference
Start Date	31/07/2021
Start Time	12:34 AM
End Date	31/07/2021
End Time	01:11 AM
SAIFI value of major event before replacement	0.2839
SAIFI value of major event	0.0037
Location of SAIFI major event	Anzac Road, Gisborne - Carnarvon 50kV Line
Main equipment involved in SAIFI major event	50kV pole and conductor
How Eastland Network responded to the event	<p>A report of a car vs pole incident was confirmed to the network controller at approximately 12.45am on the 31/07/2021. The vehicle took out a 50kV pole disrupting the supply to two of the networks zone substations. Both substations supply a large number of customers located within the city centre and surrounding areas.</p> <p>Once the location of the car vs pole was identified, part restoration could be conducted as the back-feeding process did not affect the accident site. Power was restored to the 50kV Port zone substation through the 11kV network at approximately 12.59.</p> <p>When proceeding through reclose procedures, difficulties in identifying assets on the network geographic map resulted in the accidental re-livening of the affected feeder. Following this, the network was configured to re-route the supply to the Carnarvon sub via a different ring and power restored to all customers approximately 40mins after the initial tripping.</p>
Mitigating factors that may have prevented or minimised the major event	New GIS software was introduced, training on how to use it before issue may have prevented the misidentification of pole asset. Preventing drunk driver hitting pole could only be done through undergrounding the line, however this would come at an extreme cost to network.
Steps taken to mitigate the risk of future major events	<p>A display change update to our geographic mapping system has been developed. This will filter out unnecessary labels and icons within the mapping software to help better differentiate assets and make navigation of the map more user friendly.</p> <p>This will help make identification of assets easier and restoration planning more accurate when assessing available options.</p> <p>Feeder names to be marked on poles where subtransmission lines run in parallel to each other.</p>

1/48th of the SAIFI unplanned boundary value	2/09/2021 to 3/09/2021		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	2/09/2021 15:00	0.0035	0.0035
0.0037	3/09/2021 8:30	0.1767	0.0037
Total		0.1802	0.0072



SAIFI Major Event Information	
Cause	Bird Strike (Duck Through Line)
Start Date	3/09/2021
Start Time	09:00 AM
End Date	3/09/2021
End Time	09:42 AM
SAIFI value of major event before replacement	0.1767
SAIFI value of major event	0.0037
Location of SAIFI major event	Makaraka 50kV Line
Main equipment involved in SAIFI major event	50kV Conductor
How Eastland Network responded to the event	After notification of 50kV tripping a patrol of 50kV circuit between Gisborne substation, Makaraka Substation and Parkinson substation occurred. Following this patrol, a member of the public notified the control room that there was smoke coming from the powerlines near their home. On arrival a bird was found to have hit the powerline causing the tripping. Once identification of the cause was discovered, switching was developed to re-instate network to original status. During efforts to backfeed and restore power, failure of other assets prolonged the restoration time (i.e. failure of circuit breakers and remote switches to close or open). Switching was conducted to mitigate the effect this had on restoring the power and full restoration of supply occurred 42 minutes after tripping.
Mitigating factors that may have prevented or minimised the major event	Maintenance of secondary assets could have minimised the time it took to restore power to the network. Faulty operation of some assets meant more work was required to restore power.
Steps taken to mitigate the risk of future major events	Circuit breaker maintenance and remote switch maintenance occurred directly after power was restored to network. All assets were examined and serviced to prevent further disruption to the network and restoration efforts.

1/48th of the SAIFI unplanned boundary value	17/11/2021		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	17/11/2021 18:00	0.0045	0.0037
0.0037	17/11/2021 19:30	0.2839	0.0037
0.0037	18/11/2021 11:00	0.0032	0.0032
Total		0.2916	0.0106

SAIFI Major Event Information	
Cause	Helium Balloon Hit 50kV Lines
Start Date	17/11/2021
Start Time	07:46 PM
End Date	17/11/2021
End Time	07:57 PM
SAIFI value of major event before replacement	0.2839
SAIFI value of major event	0.0037
Location of SAIFI major event	50kV Line Between Gisborne and Port. Affected the Carnarvon and Port substations.
Main equipment involved in SAIFI major event	50kV Line (Gis - Carn)
How Eastland Network responded to the event	When the line tripped, staff were quickly notified of the situation. Multiple staff were dispatched to patrol the line. An electrician faultman talked to members of the public in the Mangapapa area / Stout st, who advised that they had released a helium balloon into the lines above. Control room was advised of this, and the line was quickly restored.
Mitigating factors that may have prevented or minimised the major event	This was a situation beyond our control. Undergrounding the 50kV line would have prevented this event, however the cost of doing so far outweighs the benefits.
Steps taken to mitigate the risk of future major events	We are currently looking at our protection layout of the 50kV ring. Tesla has constructed a model of the subtransmission lines (33kV/50kV and 110kV), which will be used to determine where we may gain benefits from protection enhancements.

1/48th of the SAIFI unplanned boundary value	22/03/2022		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	22/03/2022 9:00	0.0371	0.0037
0.0037	22/03/2022 18:30	0.0002	0.0002
0.0037	22/03/2022 20:30	0.0014	0.0014
0.0037	22/03/2022 21:00	0.0064	0.0037
0.0037	22/03/2022 23:00	0.1874	0.0037
Total		0.2326	0.0127



SAIDI & SAIFI Major Event Information	
Cause	Lightning
Start Date	22/03/2022
Start Time	11:02 PM
End Date	22/03/2022
End Time	11:46 PM
SAIDI value of major event before replacement	6.6131
SAIDI value of major event	0.5458
SAIFI value of major event before replacement	0.1874
SAIFI value of major event	0.0037
Location of SAIDI major event	Tuia & Wairoa
Main equipment involved in SAIDI major event	Lightning
How Eastland Network responded to the event	Normal fault restoration Practices
Mitigating factors that may have prevented or minimised the major event	Installation of Protection so auto reclose can be enabled
Steps taken to mitigate the risk of future major events	A Protection Review of Mahia and Waihi Lines has been carried out. Eastland Network will need an intertrip to disconnect the generator at Waihi, so Transpower will enable Auto to reclose. Or agreement during big events that the generator will be disabled and protection can have the Auto reclose enabled.

SAIFI Major Event Information	
Cause	SW/GR fault had tripped day before flashover at coupling point of SW/GR
Start Date	22/03/2022
Start Time	09:16 AM
End Date	22/03/2022
End Time	11:25 AM
SAIFI value of major event before replacement	0.0371
SAIFI value of major event	0.0037
Location of SAIFI major event	Haisman feeder
Main equipment involved in SAIFI major event	11kV SWGR (B984)
How Eastland Network responded to the event	CB C95 Tripped on O/C at 9:16 am. The overhead lines were patrolled, but nothing was found, so a reclose was attempted. Relclose Failed, so the switchgear was then patrolled and found damage to the 11kV switchgear coupler unit in Potae Ave. Unit Isolated and power restored to all customers except the ones from the transformer connected to faulty SWGR. Generator Installed at TX. Made repairs, removed the generator and restored the network to normal status.
Mitigating factors that may have prevented or minimised the major event	Switching was carried out as per fault management principles. Any steps are taken to quicken the process could have increased public risk. In terms of preventative maintenance, this type of fault is hard to determine as moisture can seep into the termination box at any point in time.
Steps taken to mitigate the risk of future major events	Implement a maintenance program to check that couplings are sealed, clean terminations/change coupling if required and reseal in a guroflex compound to stop this type of fault from occurring. We are currently in the early stages of phasing out this type of SWGR as it is no longer manufactured.

1/48th of the SAIFI unplanned boundary value	23/03/2022		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	23/03/2022 0:00	0.0026	0.0026
0.0037	23/03/2022 1:00	0.0001	0.0001
0.0037	23/03/2022 1:30	0.0856	0.0037
0.0037	23/03/2022 2:00	0.0045	0.0037
0.0037	23/03/2022 2:30	0.0147	0.0037
0.0037	23/03/2022 6:30	0.0001	0.0001
0.0037	23/03/2022 7:30	0.0048	0.0037
0.0037	23/03/2022 8:00	0.0000	0.0000
0.0037	23/03/2022 8:30	0.0006	0.0006
0.0037	23/03/2022 9:30	0.0002	0.0002
0.0037	23/03/2022 12:30	0.0084	0.0037
0.0037	23/03/2022 15:00	0.0006	0.0006
0.0037	23/03/2022 15:30	0.0120	0.0037
0.0037	23/03/2022 16:30	0.0001	0.0001
0.0037	23/03/2022 17:30	0.0001	0.0001
0.0037	23/03/2022 18:30	0.0133	0.0037
0.0037	23/03/2022 22:30	0.0147	0.0037
Total		0.1625	0.0339



SAIFI Major Event Information	
Cause	Lightning
Start Date	23/03/2022
Start Time	01:49 AM
End Date	23/03/2022
End Time	01:59 AM
SAIFI value of major event before replacement	0.0772
SAIFI value of major event	0.0161
Location of SAIFI major event	All Coast
Main equipment involved in SAIFI major event	Lightning
How Eastland Network responded to the event	Normal Fault restoration Practices
Mitigating factors that may have prevented or minimised the major event	Installation of Protection so auto reclose can be enabled, Installation of 2nd 50kV line via existing 110kV to Tokomaru Bay to Gisborne Sub.
Steps taken to mitigate the risk of future major events	On-going inspection of the line to remove security risk, a new structure builds at Gisborne Sub for 110kV conversion.

1/48th of the SAIFI unplanned boundary value	24/03/2022 to 25/03/2022		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	24/03/2022 15:00	0.0007	0.0007
0.0037	24/03/2022 16:00	0.0002	0.0002
0.0037	24/03/2022 22:00	0.0035	0.0035
0.0037	25/03/2022 7:30	0.0365	0.0037
0.0037	25/03/2022 8:00	0.0032	0.0032
0.0037	25/03/2022 8:30	0.0024	0.0024
0.0037	25/03/2022 9:00	0.0151	0.0037
0.0037	25/03/2022 9:30	0.0003	0.0003
0.0037	25/03/2022 11:00	0.0003	0.0003
0.0037	25/03/2022 11:30	0.0002	0.0002
0.0037	25/03/2022 13:00	0.0048	0.0037
Total		0.0672	0.0218

SAIFI Major Event Information	
Cause	Major Rain event (March 23-31) Pole Slipped and leaning over Road
Start Date	25/03/2022
Start Time	09:04 AM
End Date	25/03/2022
End Time	01:33 PM
SAIFI value of major event before replacement	0.0151
SAIFI value of major event	0.0037
Location of SAIFI major event	SH 2 Matawai Road
Main equipment involved in SAIFI major event	11kV Pole/Lines (Pole F1134)
How Eastland Network responded to the event	Concerned Party phoned in about Pole on a lean over the State Highway. Faultman attended site and found road slipped and pole leaning. Isolated site and removed pole. Clearance safe so re lived line.
Mitigating factors that may have prevented or minimised the major event	Location of Pole was determined by NZTA through roading project.
Steps taken to mitigate the risk of future major events	It was possible after landowner consultation to re-align the pole/s away from the unstable road into the adjacent property/

SAIFI Major Event Information	
Cause	Major rain event (March 22-31) Wire Down
Start Date	25/03/2022
Start Time	07:51 AM
End Date	25/03/2022
End Time	01:06 PM
SAIFI value of major event before replacement	0.0365
SAIFI value of major event	0.0037
Location of SAIFI major event	Nuhaka - Oputama Rd W8756-W8757
Main equipment involved in SAIFI major event	11kV Lines
How Eastland Network responded to the event	CB W808 Tripped. W808 to A/R Off. Started Mahia Generator. Patrolled for fault - found wire down W8756-W8757. High Wind at the time clashed and broke the conductor. Made repairs and restored network to normal status.
Mitigating factors that may have prevented or minimised the major event	Reconductoring 11kV lines along the Mahia Peninsula would mitigate further breaks in the conductor when subject to high winds. The peninsula is susceptible to conductor wear and tear due to its close proximity to the sea, which causes corrosion to manifest faster.
Steps taken to mitigate the risk of future major events	Future works have been developed to reconductor sections of the Mahia feeder to increase the resiliency of the line. An Inspection of this line is planned to assess asset condition. (due to be undertaken this FY via drone).



1/48th of the SAIFI unplanned boundary value	25/03/2022 to 26/03/2022		
	Half hour commencing	Raw SAIFI value for Class C interruption	Normalised SAIFI value for Class C interruption
0.0037	25/03/2022 14:30	0.2186	0.0037
0.0037	25/03/2022 16:30	0.0278	0.0037
0.0037	25/03/2022 18:00	0.0073	0.0037
0.0037	25/03/2022 19:30	0.0376	0.0037
0.0037	25/03/2022 21:00	0.0133	0.0037
0.0037	26/03/2022 9:00	0.0008	0.0008
0.0037	26/03/2022 11:30	0.0217	0.0037
Total		0.3269	0.0228

SAIDI & SAIFI Major Event Information	
Cause	Trees came through line
Start Date	25/03/2022
Start Time	02:38 PM
End Date	25/03/2022
End Time	05:24 PM
SAIDI value of major event before replacement	4.8932
SAIDI value of major event	0.6760
SAIFI value of major event before replacement	0.2163
SAIFI value of major event	0.0126
Location of SAIDI major event	East Coast
Main equipment involved in SAIDI major event	50kv conductor
How Eastland Network responded to the event	Network brought gen-sets online one at a time. The limiting factor was network reconfiguration due to the storm events, so the load was higher in some areas than normal. This took additional time to bring customers on. At the same time, fault staff were dispatched on foot and by helicopter to locate the fault. The tree was found in a conductor off Dryden street, which heads over to Riverside road through a plantation forest.
Mitigating factors that may have prevented or minimised the major event	The tree was from outside of the tree management zone. Work with the land owner to identify potential at-risk trees that could cause issues. It was a major storm event with extreme weather at the time of fault. Heavy rain and wind make the ground unstable, causing the tree to uproot.
Steps taken to mitigate the risk of future major events	Talks are underway with the landowner over plans for the forest. Potential that this is a permanent carbon forest sop reluctance of owner to make corridor wider. Transmission manager working with owners. Work is also being done to convert coast 110 to 50kv, giving a loop from Gisborne to Toko. Work to be completed in FY23.



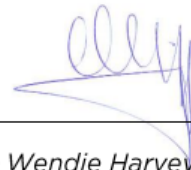
Appendix E – Director’s certificate

Director’s Certificate on Annual Compliance Statement

We, Jon Nichols and Wendie Harvey, being directors of Eastland Network Limited certify that, having made all reasonable enquiry, to the best of our knowledge and belief, the attached Annual Compliance Statement of Eastland Network Limited, and related information, prepared for the purposes of the *Electricity Distribution Services Default Price-Quality Path Determination 2020* has been prepared in accordance with all relevant requirements.



Director – Jon Nichols



Director – Wendie Harvey

Date 18 August 2022

Date 18 August 2022

Note: Section 103(2) of the Commerce Act 1986 provides that no person shall attempt to deceive or knowingly mislead the Commission in relation to any matter before it. It is an offence to contravene section 103(2) and any person who does so is liable on summary conviction to a fine not exceeding \$100,000 in the case of an individual or \$300,000 in the case of a body corporate.



Appendix F – Assurance report



**INDEPENDENT ASSURANCE REPORT
TO THE DIRECTORS OF EASTLAND NETWORK LIMITED AND TO THE COMMERCE COMMISSION
ON THE ANNUAL COMPLIANCE STATEMENT
FOR THE ASSESSMENT PERIOD ENDED 31 MARCH 2022
AS REQUIRED BY THE ELECTRICITY DISTRIBUTION SERVICES DEFAULT PRICE-QUALITY PATH DETERMINATION
2020 (CONSOLIDATED 20 MAY 2020)**

The Auditor-General is the auditor of Eastland Network Limited (the company). The Auditor-General has appointed me, Brett Tomkins, using the staff and resources of Deloitte Limited, to undertake a reasonable assurance engagement, on his behalf, on whether the Annual Compliance Statement on pages 4 to 12 and 13 to 37 for the assessment period ended on 31 March 2022 has been prepared, in all material respects, in compliance with the Electricity Distribution Services Default Price-Quality Path Determination 2020 (consolidated 20 May 2020) (the Determination).

Opinion

In our opinion, in all material respects:

- as far as appears from our examination, the information used in the preparation of the Annual Compliance Statement has been properly extracted from the company's accounting and other records, sourced from its financial and non-financial systems; and
- the company has complied with clauses 11.5 and 11.6 of the Determination in preparing the Annual Compliance Statement for the assessment period ended 31 March 2022.

Basis for opinion

We conducted our engagement in accordance with the Standard on Assurance Engagements (SAE) 3100 (Revised) *Assurance Engagements on Compliance*, issued by the New Zealand Auditing and Assurance Standards Board. An engagement conducted in accordance with SAE 3100 (Revised) requires that we also comply with the International Standard on Assurance Engagements (New Zealand) 3000 (Revised) *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information*.

We have obtained sufficient recorded evidence and explanations that we required to provide a basis for our opinion.

Directors' responsibilities

The directors of the company are responsible for the:

- preparation of the Annual Compliance Statement under clause 11.4 and in accordance with the requirements in clauses 11.5 and 11.6 of the Determination; and
- identification of risks that may threaten compliance with the clauses identified above and controls which will mitigate those risks and monitor ongoing compliance.

Auditor's responsibilities

Our responsibilities in terms of clause 11.5(e) and schedule 8(1)(b)(vi) and 8(1)(c) of the Determination, are to express an opinion on whether:

- as far as appears from our examination, the information used in the preparation of the Annual Compliance Statement has been properly extracted from the company's accounting and other records, sourced from its financial and non-financial systems; and



- the Annual Compliance Statement, for the assessment period ended 31 March 2022, has been prepared, in all material respects, in accordance with the requirements in clauses 11.5 and 11.6 of the Determination. To meet these responsibilities, we planned and performed procedures in accordance with SAE 3100 (Revised), to obtain reasonable assurance about whether the company has complied, in all material respects, with clauses 11.5 and 11.6 of the Determination.

In relation to the wash-up amount set out in clause 8.6 of the Determination, our procedures included recalculation of the wash-up amount in accordance with schedule 1.6 of the Determination and assessing it against the amounts and disclosures contained on pages 4 to 6 of the Annual Compliance Statement.

In relation to the quality standards in clause 9 of the Determination, our procedures included examination, on a test basis, of evidence relevant to the values and disclosures contained on pages 7 to 10 of the Annual Compliance Statement.

In relation to the quality incentive adjustment set out in Schedule 4 of the Determination, our procedures included recalculation of the quality incentive adjustment in accordance with Schedule 4 of the Determination and assessing it against the amounts and disclosures contained on pages 11 to 12 of the Annual Compliance Statement.

An assurance engagement to report on the company's compliance with the Determination involves performing procedures to obtain evidence about the compliance activity and controls implemented to meet the requirements. The procedures selected depend on our judgement, including the identification and assessment of the risks of material non-compliance with the requirements.

Inherent limitations

Because of the inherent limitations of an assurance engagement, together with the internal control structure, it is possible that fraud, error or non-compliance with clauses 11.5 and 11.6 of the Determination may occur and not be detected. A reasonable assurance engagement throughout the assessment period does not provide assurance on whether compliance with clauses 11.5 and 11.6 of the Determination will continue in the future.

Restricted use

This report has been prepared for use by the directors of the company and the Commerce Commission in accordance with clause 11.5 (e) of the Determination and is provided solely for the purpose of establishing whether the compliance requirements have been met. We disclaim any assumption of responsibility for any reliance on this report to any person other than the directors of the company and the Commerce Commission, or for any other purpose than that for which it was prepared.

Independence and quality control

We complied with the Auditor-General's:

- independence and other ethical requirements, which incorporate the independence and ethical requirements of Professional and Ethical Standard 1 issued by the New Zealand Auditing and Assurance Standards Board; and
- quality control requirements, which incorporate the quality control requirements of Professional and Ethical Standard 3 (Amended) issued by the New Zealand Auditing and Assurance Standards Board.



Deloitte.

The Auditor-General, and his employees, Deloitte Limited and its partners and employees may deal with the company on normal terms within the ordinary course of trading activities of the company. Other than any dealings on normal terms within the ordinary course of trading activities of the company, this engagement, the assurance engagement on the Information Disclosures and the annual audit of the company's financial statements and performance information, we have no relationship with, or interests in, the company.



Brett Tomkins
Deloitte Limited
On behalf of the Auditor-General
Auckland, New Zealand
18 August 2022

