

Electricity Invercargill limited

DEFAULT PRICE QUALITY PATH ANNUAL COMPLIANCE STATEMENT

1 April 2021 – 31 March 2022 Assessment Period

*Pursuant to the Electricity Distribution Services Default Price-Quality Path
Determination 2020*

30 June 2022

Contents

1. Introduction	3
2. Date prepared.....	3
3. Wash-up amount	4
4. Quality standards	7
5. Transactions	12
6. Director’s certification	12
7. Assurance report	12
Appendix A – Actual Net Allowable Revenue, Pass-through and recoverable costs	13
Appendix B – Prices and quantities	15
Appendix C – Policies and procedures for measuring planned and unplanned interruptions	21
Appendix D – SAIDI and SAIFI major events	26
Appendix E – Director’s certificate	47
Appendix F – Assurance report	48

1. Introduction

Electricity Invercargill Limited 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 Electricity Invercargill Limited 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 30 June 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 Electricity Invercargill Limited 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</i>	18,273
Actual revenue (AR)	<i>Sum of actual revenue from prices plus other regulated income</i>	17,599
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	AAR - AR - RV	674

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.

Table 2

Actual allowable revenue RY22		
Term	Description	Value (\$000)
Actual net allowable revenue (ANAR)	<i>Amount calculated in accordance with Schedule 1.6 of the Determination for the second assessment period</i>	12,908
Actual pass-through costs	<i>Sum of all pass-through costs that were incurred or approved by the Commission in the assessment period</i>	276
Actual recoverable costs	<i>Sum of all recoverable costs that were incurred or approved by the Commission in the assessment period</i>	5,089
Total actual allowable revenue (AAR)	<i>Actual net allowable revenue + actual pass-through costs and actual recoverable</i>	18,273

Further information supporting actual net allowable revenue, 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>	17,684
Other regulated income	<i>Other income associated with supply of electricity distribution services</i>	(85)
Total actual revenue (AR)	<i>Sum of actual revenue from prices plus other regulated income</i>	17,599

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 calculated in accordance with Schedule 1.6 of the Determination for the second assessment period</i>	12,908
Revenue reduction percentage (RRP)	<i>1 - (actual revenue from prices / forecast revenue from prices)</i>	1.12%
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

Electricity Invercargill Limited 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 Electricity Invercargill Limited for the DPP regulatory period and the planned SAIDI and SAIFI assessed values for the first assessment period.

Table 5

Planned interruptions quality standard - SAIDI	
Sum of planned SAIDI assessed values ≤ Planned accumulated SAIDI limit	
Planned accumulated SAIDI limit	114.49
Cumulative Planned SAIDI assessed value for the first and second assessment period	28.42
Compliance result	Compliant

Table 6

Planned interruptions quality standard - SAIFI	
Sum of planned SAIFI assessed values ≤ Planned accumulated SAIFI limit	
Planned accumulated SAIFI limit	0.5183
Cumulative Planned SAIFI assessed value for the first and second assessment period	0.1845
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 Electricity Invercargill Limited’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		0.02
Class B notified interruptions falling outside window		0.08
SAIDI _B	<i>Sum of Class B non-notified interruptions</i>	0.10
Class B notified interruptions falling inside window		29.84
Class B intended interruptions cancelled without notice		0.19
Class B intended interruptions cancelled with notice		0
SAIDI _N	<i>Sum of Class B notified interruptions</i>	30.02
Planned SAIDI assessed value	<i>SAIDI_B + (SAIDI_N/2)</i>	15.11

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>	0.1070

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, Electricity Invercargill Limited has complied with the unplanned interruptions quality standard.

Table 9

Unplanned interruptions quality standard RY22 - SAIDI		
Unplanned SAIDI assessed value ≤ Unplanned SAIDI limit		
Unplanned SAIDI limit		25.86
Unplanned SAIDI assessed value	<i>Sum of normalised SAIDI values for Class C interruptions commencing within the assessment period</i>	15.38
Compliance result		Compliant

Table 10

Unplanned interruptions quality standard RY22 - SAIFI		
Unplanned SAIFI assessed value ≤ Unplanned SAIFI limit		
Unplanned SAIFI limit		0.6956
Unplanned SAIFI assessed value	<i>Sum of normalised SAIFI values for Class C interruptions commencing within the assessment period</i>	0.3231
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.

The SAIDI unplanned major event boundary value is 4.13

The SAIFI unplanned major event boundary value is 0.0804

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
5 April 2021 19:30	7 April 2021 23:00	33.25	0.41
13 April 2021 11:00	16 April 2021 18:00	18.09	0.26
3 May 2021 17:30	5 May 2021 16:30	11.14	0.14

Table 12

Unplanned SAIFI major events RY22			
Start	End	Pre-normalised unplanned SAIFI	Normalised unplanned SAIFI
5 April 2021 19:30	7 April 2021 18:30	0.2127	0.0034
14 April 2021 19:00	16 April 2021 18:00	0.1295	0.0017
3 May 2021 17:30	5 May 2021 16:30	0.1296	0.0017
14 Sept 2021 9:30	16 Sept 2021 8:30	0.2585	0.0017

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 Electricity Invercargill Limited 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
0	Compliant

4.4 Quality Incentive Adjustment

Table 14 below shows Electricity Invercargill Limited's quality incentive adjustment for the assessment period.

Table 14

Quality Incentive Adjustment RY22		
Term	Description	Value (\$000)
SAIDI planned adjustment	$(SAIDI_{planned, target} - SAIDI_{planned, assessed}) \times 0.5 \times IR$	(9.51)
SAIDI unplanned adjustment	$(SAIDI_{unplanned, target} - SAIDI_{unplanned, assessed}) \times IR$	0.03
Total adjustment	$SAIDI_{planned adjustment} + SAIDI_{unplanned adjustment}$	(9.49)
Revenue at risk	$0.02 * ANAR$	258.16
Total penalty/reward		(9.49)
67th percentile estimate of post-tax WACC		4.23%
Quality incentive adjustment		(10.31)

Table 15 below shows Electricity Invercargill Limited'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	22.90	SAIDI unplanned interruption cap	minutes	25.86
SAIDI planned interruption collar	minutes	-	SAIDI unplanned interruption collar	minutes	-
SAIDI planned interruption target	minutes	7.63	SAIDI unplanned interruption target	minutes	15.39
Planned SAIDI assessed value	Minutes	15.11	Unplanned SAIDI assessed value	minutes	15.38
Incentive rate		2,544			
Actual net allowable revenue (ANAR)	\$000	12,908			
SAIDI planned interruption target	minutes	7.63	SAIDI unplanned interruption target	minutes	15.39
Minimum of the planned SAIDI cap and assessed value	minutes	15.11	Minimum of the unplanned SAIDI cap and assessed value	minutes	15.38
Planned SAIDI subject to incentive	minutes	(7.48)	Unplanned SAIDI subject to incentive	minutes	0.01
Adjustment (IR x 0.5)	\$	1,272	Adjustment (IR)	\$	2,544
SAIDI planned adjustment	\$000	(9.51)	SAIDI unplanned adjustment	\$000	0.03

5. Transactions

Electricity Invercargill Limited 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 – Actual Net Allowable Revenue, Pass-through and recoverable costs

Actual Net Allowable Revenue

Table 16

Actual net allowable revenue RY22		
Term	Description	Value (\$000)
ANAR 2020/21	Actual net allowable revenue for the year ending 2021	12,258
$(1 + \Delta CPI_{2021/22})$	Average change in Consumer Price Index	1.053
$(1 - X)$	Annual rate of change	1
Actual net allowable revenue (ANAR)	Actual net allowable revenue for the year ending 2022	12,908

ΔCPI_{2022}			
Numerator	Numerator	Denominator	
CPI Jun 2021	1082	CPI Jun 2020	1047
CPI Sep,2021	1106	CPI Sep,2020	1054
CPI Dec 2021	1122	CPI Dec 2020	1059
CPI Mar,2022	1142	CPI Mar 2021	1068
Total	4452	Total	4228
ΔCPI_{2022}	5.30%		

Pass-through costs

Table 17

Actual and forecast pass-through costs RY22			
Actual pass-through costs	Actual (\$000)	Forecast (\$000)	Forecast variance (\$000)
Rates on system fixed assets	170	138	32
Commerce Act levies	46	53	(7)
Electricity Authority levies	50	54	(4)
Utilities Disputes levies	10	11	(1)
Total actual pass-through costs	276	256	20

Recoverable costs

Table 16

Actual and forecast recoverable costs RY22			
Actual recoverable costs	Actual (\$000)	Forecast (\$000)	Forecast variance (\$000)
IRIS incentive adjustment	(147)	(110)	(37)
Transmission charges	5,166	5,166	-
New investment contract charges	320	320	-
System operator services charges	-	-	-
Avoided transmission charges	-	-	-
Distributed generation allowance	-	-	-
Claw-back	-	-	-
Catastrophic event allowance	-	-	-
Extended reserves allowance	-	-	-
Quality incentive adjustment	(147)	(153)	6
Capex wash-up adjustment	(131)	(130)	(1)
Reconsideration event allowance	-	-	-
Quality standard variation engineers fee	-	-	-
Urgent project allowance	-	-	-
Fire and Emergency NZ levies	28	20	8
Innovation project allowance	-	-	-
Total actual recoverable costs	5,089	5,113	(24)

Appendix B – Prices and quantities

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

Table 17

Actual revenue from prices RY22				
Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$000)
ND08P	\$/day	\$ 0.5977	34	\$ 7.35
ND08Q	\$/day	\$ 0.4158	91	\$ 13.88
ND20P	\$/day	\$ 1.1045	1,207	\$ 486.77
ND20Q	\$/day	\$ 0.7670	7,652	\$ 2,142.12
NDL20P	\$/day	\$ 0.1500	1,056	\$ 57.82
NDL20Q	\$/day	\$ 0.1000	5,242	\$ 191.32
NDL08P	\$/day	\$ 0.1500	23	\$ 1.26
NDL08Q	\$/day	\$ 0.1000	99	\$ 3.63
NS001L	\$/day	\$ 0.0916	5,585	\$ 186.73
NS001P	\$/day	\$ 0.4288	44	\$ 6.91
NS008P	\$/day	\$ 0.5977	179	\$ 39.01
NS008Q	\$/day	\$ 0.4158	9	\$ 1.42
NS020P	\$/day	\$ 1.1045	271	\$ 109.42
NS020Q	\$/day	\$ 0.7670	83	\$ 23.22
NT015P	\$/day	\$ 0.9234	67	\$ 22.71
NT015Q	\$/day	\$ 0.5977	8	\$ 1.75
NT030P	\$/day	\$ 1.5466	539	\$ 304.44
NT030Q	\$/day	\$ 1.0526	114	\$ 43.78
NT050P	\$/day	\$ 3.1579	323	\$ 371.90
NT050Q	\$/day	\$ 2.1443	65	\$ 51.23
NT075P	\$/day	\$ 6.4847	120	\$ 283.45
NT075Q	\$/day	\$ 4.7175	15	\$ 25.83
NT100P	\$/day	\$ 7.8881	70	\$ 202.07
NT100Q	\$/day	\$ 5.7181	7	\$ 14.61
Residential & General	\$/MWh	\$ 63.67	112,576.17	\$ 7,168
EIL 20 KVA Low	\$/MWh	\$ 98.27	31,810.40	\$ 3,126
EIL 8 KVA Low	\$/MWh	\$ 80.05	589.51	\$ 47
Total				\$ 14,934

Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Actual Total revenue (\$000)
7227954NV-421	\$/day	3.23	1.00	\$ 1.18	\$/MWh	63.67	0.00	\$ -	\$ 1.18
724187NV-3BD	\$/day	-7.92	0.20	-\$ 0.57	\$/MWh	63.67	0.00	\$ -	-\$ 0.57
7302304NV-CA2	\$/day	1.35	1.00	\$ 0.49	\$/MWh	63.67	0.00	\$ -	\$ 0.49
730262NV-92A	\$/day	-2.42	1.00	-\$ 0.88	\$/MWh	63.67	0.00	\$ -	-\$ 0.88
731881NV-4FA	\$/day	12.38	0.50	\$ 2.25	\$/MWh	63.67	0.00	\$ -	\$ 2.25
733395NV-F13	\$/day	1.47	1.00	\$ 0.54	\$/MWh	63.67	0.00	\$ -	\$ 0.54
734325NV-9C1	\$/day	6.18	1.00	\$ 2.25	\$/MWh	63.67	0.00	\$ -	\$ 2.25
734326NV-501	\$/day	3.19	1.00	\$ 1.17	\$/MWh	63.67	0.00	\$ -	\$ 1.17
734355NV-C9C	\$/day	13.70	1.00	\$ 5.00	\$/MWh	63.67	0.00	\$ -	\$ 5.00
734360NV-62B	\$/day	-5.66	1.00	-\$ 2.07	\$/MWh	63.67	0.00	\$ -	-\$ 2.07
7344583NV-C71	\$/day	3.96	1.00	\$ 1.45	\$/MWh	63.67	0.00	\$ -	\$ 1.45
734470NV-384	\$/day	29.62	0.59	\$ 6.43	\$/MWh	63.67	0.00	\$ -	\$ 6.43
734846NV-9FF	\$/day	4.29	1.00	\$ 1.56	\$/MWh	63.67	0.00	\$ -	\$ 1.56
7350005NV-3D0	\$/day	2.04	1.00	\$ 0.74	\$/MWh	63.67	0.00	\$ -	\$ 0.74
7350693NV-BBE	\$/day	3.27	1.00	\$ 1.19	\$/MWh	63.67	0.00	\$ -	\$ 1.19
735249NV-D8B	\$/day	8.30	1.00	\$ 3.03	\$/MWh	63.67	0.00	\$ -	\$ 3.03
740340NV-747	\$/day	-6.94	1.00	-\$ 2.53	\$/MWh	63.67	0.00	\$ -	-\$ 2.53
740394NV-B0F	\$/day	7.44	1.00	\$ 2.71	\$/MWh	63.67	0.00	\$ -	\$ 2.71
7433294NV-FC6	\$/day	14.20	1.00	\$ 5.18	\$/MWh	63.67	0.00	\$ -	\$ 5.18
743331NV-CBF	\$/day	3.72	1.00	\$ 1.36	\$/MWh	63.67	0.00	\$ -	\$ 1.36
7433753NV-0E6	\$/day	-9.10	1.00	-\$ 3.32	\$/MWh	63.67	0.00	\$ -	-\$ 3.32
744592NV-A06	\$/day	5.90	1.00	\$ 2.15	\$/MWh	63.67	0.00	\$ -	\$ 2.15
7447592NV-D72	\$/day	3.62	1.00	\$ 1.32	\$/MWh	63.67	0.00	\$ -	\$ 1.32
7501257NV-2E9	\$/day	5.90	1.00	\$ 2.15	\$/MWh	63.67	0.00	\$ -	\$ 2.15
750191NV-4A6	\$/day	0.48	1.00	\$ 0.18	\$/MWh	63.67	0.00	\$ -	\$ 0.18
7501996NV-A4D	\$/day	-2.27	1.00	-\$ 0.83	\$/MWh	63.67	0.00	\$ -	-\$ 0.83
755825NV-937	\$/day	18.62	1.00	\$ 6.80	\$/MWh	63.67	0.00	\$ -	\$ 6.80
82029943NV-B5B	\$/day	10.42	1.00	\$ 3.80	\$/MWh	63.67	0.00	\$ -	\$ 3.80
836598NV-F14	\$/day	-16.38	1.00	-\$ 5.98	\$/MWh	63.67	0.00	\$ -	-\$ 5.98
8541431NV-DF3	\$/day	12.96	1.00	\$ 4.73	\$/MWh	63.67	0.00	\$ -	\$ 4.73
8665382NV-F7A	\$/day	0.64	1.00	\$ 0.23	\$/MWh	63.67	0.00	\$ -	\$ 0.23
8665408NV-7A3	\$/day	7.96	0.65	\$ 1.88	\$/MWh	63.67	0.00	\$ -	\$ 1.88
880344NV-C87	\$/day	-31.65	1.00	-\$ 11.55	\$/MWh	63.67	0.00	\$ -	-\$ 11.55
8803601NV-E7B	\$/day	7.51	1.00	\$ 2.74	\$/MWh	63.67	0.00	\$ -	\$ 2.74
880375NV-73A	\$/day	5.39	1.00	\$ 1.97	\$/MWh	63.67	0.00	\$ -	\$ 1.97
8803767NV-900	\$/day	-1.75	1.00	-\$ 0.64	\$/MWh	63.67	0.00	\$ -	-\$ 0.64
900319NV-09D	\$/day	5.66	1.00	\$ 2.07	\$/MWh	63.67	0.00	\$ -	\$ 2.07
900356NV-DE6	\$/day	5.52	0.69	\$ 1.39	\$/MWh	63.67	0.00	\$ -	\$ 1.39
9003573NV-568	\$/day	1.44	1.00	\$ 0.52	\$/MWh	63.67	0.00	\$ -	\$ 0.52
900390NV-B86	\$/day	21.21	0.67	\$ 5.18	\$/MWh	63.67	0.00	\$ -	\$ 5.18
930505NV-E04	\$/day	9.19	1.00	\$ 3.35	\$/MWh	63.67	0.00	\$ -	\$ 3.35
930921NV-E57	\$/day	22.95	0.08	\$ 0.69	\$/MWh	63.67	0.00	\$ -	\$ 0.69
931326NV-837	\$/day	17.18	1.00	\$ 6.27	\$/MWh	63.67	0.00	\$ -	\$ 6.27
931746NV-BC6	\$/day	17.97	1.00	\$ 6.56	\$/MWh	63.67	0.00	\$ -	\$ 6.56
931760NV-71C	\$/day	4.96	1.00	\$ 1.81	\$/MWh	63.67	0.00	\$ -	\$ 1.81

Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Actual Total revenue (\$000)
931775NV-0FE	\$/day	8.07	0.97	\$ 2.86	\$/MWh	63.67	0.00	\$ -	\$ 2.86
931776NV-C3E	\$/day	23.01	1.00	\$ 8.40	\$/MWh	63.67	0.00	\$ -	\$ 8.40
934525NV-5D1	\$/day	5.53	1.00	\$ 2.02	\$/MWh	63.67	0.00	\$ -	\$ 2.02
7205085NV-6A2	\$/day	9.12	1.00	\$ 3.33	\$/MWh	21.60	182.21	\$ 3.94	\$ 7.26
721862NV-A61	\$/day	3.60	1.00	\$ 1.31	\$/MWh	30.58	39.32	\$ 1.20	\$ 2.52
721876NV-1C6	\$/day	10.16	1.00	\$ 3.71	\$/MWh	41.74	88.11	\$ 3.68	\$ 7.38
7227011NV-2C2	\$/day	12.13	1.00	\$ 4.43	\$/MWh	55.56	74.34	\$ 4.13	\$ 8.56
722703NV-43B	\$/day	16.35	1.00	\$ 5.97	\$/MWh	23.52	269.03	\$ 6.33	\$ 12.30
7229001NV-0AF	\$/day	9.05	1.00	\$ 3.30	\$/MWh	32.09	115.48	\$ 3.71	\$ 7.01
724179NV-031	\$/day	4.46	1.00	\$ 1.63	\$/MWh	47.49	29.46	\$ 1.40	\$ 3.03
724111NV-DD5	\$/day	12.42	1.00	\$ 4.53	\$/MWh	64.74	72.08	\$ 4.67	\$ 9.20
73015753NV-A0E	\$/day	11.25	1.00	\$ 4.11	\$/MWh	23.36	186.21	\$ 4.35	\$ 8.46
7301908NV-756	\$/day	8.91	1.00	\$ 3.25	\$/MWh	20.05	148.94	\$ 2.99	\$ 6.24
7301973NV-CDF	\$/day	9.97	1.00	\$ 3.64	\$/MWh	21.45	168.05	\$ 3.60	\$ 7.24
7302313NV-BC5	\$/day	4.77	1.00	\$ 1.74	\$/MWh	55.49	27.99	\$ 1.55	\$ 3.29
7302953NV-36A	\$/day	14.52	1.00	\$ 5.30	\$/MWh	30.58	171.57	\$ 5.25	\$ 10.55
7317032NV-617	\$/day	21.30	1.00	\$ 7.77	\$/MWh	32.60	190.28	\$ 6.20	\$ 13.98
733399NV-C0D	\$/day	7.91	1.00	\$ 2.89	\$/MWh	27.09	113.74	\$ 3.08	\$ 5.97
734110NV-971	\$/day	15.95	1.00	\$ 5.82	\$/MWh	38.61	199.02	\$ 7.68	\$ 13.51
7341272NV-801	\$/day	7.53	1.00	\$ 2.75	\$/MWh	41.04	56.80	\$ 2.33	\$ 5.08
7341276NV-90B	\$/day	11.57	1.00	\$ 4.22	\$/MWh	27.47	157.74	\$ 4.33	\$ 8.56
734165NV-163	\$/day	41.48	1.00	\$ 15.14	\$/MWh	32.74	473.58	\$ 15.50	\$ 30.65
7341792NV-7BE	\$/day	15.43	1.00	\$ 5.63	\$/MWh	25.61	242.46	\$ 6.21	\$ 11.84
7341793NV-BFB	\$/day	11.04	1.00	\$ 4.03	\$/MWh	28.36	139.34	\$ 3.95	\$ 7.98
734188NV-482	\$/day	44.16	1.00	\$ 16.12	\$/MWh	20.14	837.71	\$ 16.87	\$ 32.99
734318NV-162	\$/day	15.25	1.00	\$ 5.56	\$/MWh	35.37	155.75	\$ 5.51	\$ 11.07
734424NV-A86	\$/day	6.10	1.00	\$ 2.23	\$/MWh	35.61	61.89	\$ 2.20	\$ 4.43
734460NV-929	\$/day	8.62	1.00	\$ 3.15	\$/MWh	62.54	53.15	\$ 3.32	\$ 6.47
734802NV-A50	\$/day	15.73	1.00	\$ 5.74	\$/MWh	31.04	168.27	\$ 5.22	\$ 10.96
7403555NV-A42	\$/day	17.99	1.00	\$ 6.56	\$/MWh	29.70	170.98	\$ 5.08	\$ 11.64
740373NV-C7F	\$/day	15.89	1.00	\$ 5.80	\$/MWh	46.45	129.47	\$ 6.01	\$ 11.81
740385NV-DE7	\$/day	19.45	1.00	\$ 7.10	\$/MWh	22.45	343.65	\$ 7.71	\$ 14.81
740630NV-71F	\$/day	17.34	1.00	\$ 6.33	\$/MWh	29.35	161.46	\$ 4.74	\$ 11.07
740649NV-C13	\$/day	5.33	1.00	\$ 1.94	\$/MWh	38.87	75.97	\$ 2.95	\$ 4.90
7433014NV-08B	\$/day	40.66	1.00	\$ 14.84	\$/MWh	29.36	542.12	\$ 15.92	\$ 30.76
7433292NV-E49	\$/day	32.23	1.00	\$ 11.76	\$/MWh	38.41	346.64	\$ 13.31	\$ 25.08
744103NV-5A5	\$/day	48.77	1.00	\$ 17.80	\$/MWh	22.36	813.71	\$ 18.19	\$ 36.00
744608NV-473	\$/day	21.97	1.00	\$ 8.02	\$/MWh	28.22	281.22	\$ 7.94	\$ 15.95
744611NV-08F	\$/day	23.55	1.00	\$ 8.59	\$/MWh	31.30	281.94	\$ 8.82	\$ 17.42
744655NV-320	\$/day	13.92	1.00	\$ 5.08	\$/MWh	26.17	187.64	\$ 4.91	\$ 9.99
7447142NV-C31	\$/day	13.64	1.00	\$ 4.98	\$/MWh	27.49	183.70	\$ 5.05	\$ 10.03
754696NV-0EE	\$/day	24.40	1.00	\$ 8.91	\$/MWh	30.45	275.72	\$ 8.40	\$ 17.30
7551948NV-7E0	\$/day	25.42	1.00	\$ 9.28	\$/MWh	30.37	285.17	\$ 8.66	\$ 17.94
755884NV-D6D	\$/day	11.30	1.00	\$ 4.12	\$/MWh	59.34	82.33	\$ 4.89	\$ 9.01
760735NV-A99	\$/day	11.75	1.00	\$ 4.29	\$/MWh	39.37	102.66	\$ 4.04	\$ 8.33

Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Actual Total revenue (\$000)
760737NV-A1C	\$/day	35.94	1.00	\$ 13.12	\$/MWh	41.62	316.84	\$ 13.19	\$ 26.30
7757907NV-783	\$/day	38.34	1.00	\$ 14.00	\$/MWh	36.77	377.90	\$ 13.90	\$ 27.89
7757994NV-4A4	\$/day	16.82	1.00	\$ 6.14	\$/MWh	40.44	157.01	\$ 6.35	\$ 12.49
810201NV-DAD	\$/day	8.71	1.00	\$ 3.18	\$/MWh	40.32	80.60	\$ 3.25	\$ 6.43
8102959NV-5D5	\$/day	31.80	1.00	\$ 11.61	\$/MWh	33.87	334.64	\$ 11.33	\$ 22.94
8144266NV-0A8	\$/day	20.20	1.00	\$ 7.37	\$/MWh	24.06	304.13	\$ 7.32	\$ 14.69
825292NV-886	\$/day	49.04	1.00	\$ 17.90	\$/MWh	26.91	719.90	\$ 19.37	\$ 37.27
8305967NV-D0E	\$/day	16.70	1.00	\$ 6.10	\$/MWh	115.66	52.72	\$ 6.10	\$ 12.19
8305981NV-63B	\$/day	46.07	1.00	\$ 16.81	\$/MWh	38.82	447.31	\$ 17.36	\$ 34.18
831121NV-B96	\$/day	12.47	1.00	\$ 4.55	\$/MWh	41.55	99.13	\$ 4.12	\$ 8.67
832431NV-6DE	\$/day	38.80	1.00	\$ 14.16	\$/MWh	54.65	264.88	\$ 14.48	\$ 28.64
835083NV-C88	\$/day	10.13	1.00	\$ 3.70	\$/MWh	187.30	28.78	\$ 5.39	\$ 9.09
835871NV-C17	\$/day	26.62	1.00	\$ 9.72	\$/MWh	36.00	300.72	\$ 10.83	\$ 20.54
8365737NV-155	\$/day	36.94	1.00	\$ 13.48	\$/MWh	35.37	370.20	\$ 13.09	\$ 26.58
8425758NV-FE5	\$/day	10.99	1.00	\$ 4.01	\$/MWh	20.43	194.52	\$ 3.97	\$ 7.99
8509006NV-D55	\$/day	13.50	1.00	\$ 4.93	\$/MWh	20.93	259.27	\$ 5.43	\$ 10.36
8509025NV-CC0	\$/day	28.29	1.00	\$ 10.32	\$/MWh	23.74	463.70	\$ 11.01	\$ 21.33
8509026NV-000	\$/day	27.39	1.00	\$ 10.00	\$/MWh	29.90	352.76	\$ 10.55	\$ 20.55
850908NV-B67	\$/day	76.62	1.00	\$ 27.97	\$/MWh	20.69	1,446.05	\$ 29.92	\$ 57.89
8509245NV-937	\$/day	20.50	1.00	\$ 7.48	\$/MWh	20.02	412.24	\$ 8.25	\$ 15.74
850948NV-9C2	\$/day	2.86	1.00	\$ 1.04	\$/MWh	24.16	40.64	\$ 0.98	\$ 2.03
8509962NV-AA6	\$/day	3.95	1.00	\$ 1.44	\$/MWh	30.95	49.95	\$ 1.55	\$ 2.99
8665558NV-6AF	\$/day	11.37	1.00	\$ 4.15	\$/MWh	49.79	86.71	\$ 4.32	\$ 8.47
880302NV-FAD	\$/day	10.12	1.00	\$ 3.69	\$/MWh	16.38	219.67	\$ 3.60	\$ 7.29
8803031NV-F85	\$/day	18.40	1.00	\$ 6.71	\$/MWh	20.70	368.55	\$ 7.63	\$ 14.34
8803032NV-345	\$/day	11.92	1.00	\$ 4.35	\$/MWh	31.53	136.79	\$ 4.31	\$ 8.66
8803047NV-B57	\$/day	7.49	1.00	\$ 2.73	\$/MWh	35.09	86.82	\$ 3.05	\$ 5.78
880308NV-D3C	\$/day	10.76	1.00	\$ 3.93	\$/MWh	21.72	163.95	\$ 3.56	\$ 7.49
880309NV-179	\$/day	21.27	1.00	\$ 7.76	\$/MWh	23.84	323.75	\$ 7.72	\$ 15.48
8803164NV-3C6	\$/day	9.57	1.00	\$ 3.49	\$/MWh	27.07	136.16	\$ 3.69	\$ 7.18
8803165NV-F83	\$/day	6.60	1.00	\$ 2.41	\$/MWh	28.21	84.87	\$ 2.39	\$ 4.80
880317NV-84F	\$/day	9.12	1.00	\$ 3.33	\$/MWh	93.70	36.58	\$ 3.43	\$ 6.76
880321NV-E38	\$/day	17.68	1.00	\$ 6.45	\$/MWh	20.38	343.42	\$ 7.00	\$ 13.45
880323NV-EBD	\$/day	23.57	1.00	\$ 8.60	\$/MWh	23.12	396.61	\$ 9.17	\$ 17.77
880327NV-FB7	\$/day	42.22	1.00	\$ 15.41	\$/MWh	19.32	765.42	\$ 14.79	\$ 30.20
8803283NV-7B5	\$/day	21.94	1.00	\$ 8.01	\$/MWh	23.60	375.12	\$ 8.85	\$ 16.86
8803298NV-3CC	\$/day	47.93	1.00	\$ 17.49	\$/MWh	32.38	448.06	\$ 14.51	\$ 32.00
880329NV-C2C	\$/day	127.62	1.00	\$ 46.58	\$/MWh	25.41	1,899.55	\$ 48.27	\$ 94.85
880336NV-95F	\$/day	56.16	1.00	\$ 20.50	\$/MWh	27.30	823.26	\$ 22.47	\$ 42.97
880361NV-C9D	\$/day	72.84	1.00	\$ 26.59	\$/MWh	19.76	1,227.34	\$ 24.25	\$ 50.84
8803625NV-224	\$/day	19.01	1.00	\$ 6.94	\$/MWh	19.84	350.37	\$ 6.95	\$ 13.89
880363NV-C18	\$/day	10.80	1.00	\$ 3.94	\$/MWh	30.73	138.41	\$ 4.25	\$ 8.20
880397NV-D05	\$/day	45.14	1.00	\$ 16.48	\$/MWh	31.89	426.99	\$ 13.62	\$ 30.09
9003051NV-DBD	\$/day	29.47	1.00	\$ 10.76	\$/MWh	25.58	417.49	\$ 10.68	\$ 21.44
900305NV-92E	\$/day	36.34	1.00	\$ 13.26	\$/MWh	43.31	283.28	\$ 12.27	\$ 25.53

Price Category	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Unit	Unit price	Actual quantity	Actual revenue (\$000)	Actual Total revenue (\$000)
900306NV-5EE	\$/day	30.18	1.00	\$ 11.02	\$/MWh	61.02	288.27	\$ 17.59	\$ 28.61
9003071NV-0E8	\$/day	59.20	1.00	\$ 21.61	\$/MWh	22.93	932.67	\$ 21.39	\$ 43.00
90030815NV-060	\$/day	32.55	1.00	\$ 11.88	\$/MWh	27.18	494.50	\$ 13.44	\$ 25.32
9003081NV-0FF	\$/day	12.69	1.00	\$ 4.63	\$/MWh	45.32	89.16	\$ 4.04	\$ 8.67
900358NV-E7D	\$/day	27.99	1.00	\$ 10.22	\$/MWh	83.07	152.32	\$ 12.65	\$ 22.87
9003083NV-07A	\$/day	35.23	1.00	\$ 12.86	\$/MWh	20.43	671.06	\$ 13.71	\$ 26.57
900308NV-675	\$/day	52.64	1.00	\$ 19.21	\$/MWh	29.74	615.18	\$ 18.30	\$ 37.51
9003117NV-793	\$/day	46.58	1.00	\$ 17.00	\$/MWh	25.89	620.26	\$ 16.06	\$ 33.06
900313NV-20C	\$/day	15.24	1.00	\$ 5.56	\$/MWh	32.93	199.29	\$ 6.56	\$ 12.12
9003212NV-9DF	\$/day	7.37	1.00	\$ 2.69	\$/MWh	21.99	113.47	\$ 2.50	\$ 5.19
9003235NV-940	\$/day	65.47	1.00	\$ 23.90	\$/MWh	23.40	950.76	\$ 22.25	\$ 46.14
9003243NV-D92	\$/day	18.33	1.00	\$ 6.69	\$/MWh	25.01	303.75	\$ 7.60	\$ 14.29
9003244NV-058	\$/day	26.87	1.00	\$ 9.81	\$/MWh	20.64	513.67	\$ 10.60	\$ 20.41
900325NV-47B	\$/day	83.07	1.00	\$ 30.32	\$/MWh	18.45	1,748.06	\$ 32.25	\$ 62.57
900327NV-4FE	\$/day	6.87	1.00	\$ 2.51	\$/MWh	20.92	108.90	\$ 2.28	\$ 4.79
900330NV-399	\$/day	79.27	1.00	\$ 28.93	\$/MWh	19.57	1,349.22	\$ 26.40	\$ 55.34
9003385NV-2F6	\$/day	13.61	1.00	\$ 4.97	\$/MWh	24.92	229.98	\$ 5.73	\$ 10.70
900342NV-641	\$/day	11.22	1.00	\$ 4.10	\$/MWh	27.11	126.55	\$ 3.43	\$ 7.53
9003503NV-035	\$/day	15.95	1.00	\$ 5.82	\$/MWh	36.58	153.57	\$ 5.62	\$ 11.44
900350NV-C69	\$/day	8.79	1.00	\$ 3.21	\$/MWh	35.67	88.54	\$ 3.16	\$ 6.37
900351NV-02C	\$/day	26.01	1.00	\$ 9.50	\$/MWh	16.93	517.10	\$ 8.75	\$ 18.25
900356NV-DE6	\$/day	9.59	0.31	\$ 1.08	\$/MWh	29.78	98.71	\$ 2.94	\$ 4.02
9003603NV-336	\$/day	52.98	1.00	\$ 19.34	\$/MWh	24.42	737.18	\$ 18.00	\$ 37.34
900383NV-DEB	\$/day	24.96	1.00	\$ 9.11	\$/MWh	43.07	150.21	\$ 6.47	\$ 15.58
900384NV-021	\$/day	67.73	1.00	\$ 24.72	\$/MWh	28.65	873.49	\$ 25.03	\$ 49.75
9003995NV-251	\$/day	22.86	1.00	\$ 8.35	\$/MWh	30.67	198.79	\$ 6.10	\$ 14.44
920755NV-4EA	\$/day	20.47	1.00	\$ 7.47	\$/MWh	26.88	308.19	\$ 8.28	\$ 15.76
930503NV-F8B	\$/day	7.21	1.00	\$ 2.63	\$/MWh	59.66	88.73	\$ 5.29	\$ 7.93
931704NV-9E6	\$/day	12.14	1.00	\$ 4.43	\$/MWh	35.03	142.75	\$ 5.00	\$ 9.43
931741NV-60C	\$/day	47.31	1.00	\$ 17.27	\$/MWh	27.67	578.14	\$ 16.00	\$ 33.27
931749NV-418	\$/day	23.83	1.00	\$ 8.70	\$/MWh	34.41	268.76	\$ 9.25	\$ 17.95
933534NV-759	\$/day	19.46	1.00	\$ 7.10	\$/MWh	33.42	267.14	\$ 8.93	\$ 16.03
9406011NV-187	\$/day	69.92	1.00	\$ 25.52	\$/MWh	28.53	863.21	\$ 24.63	\$ 50.15
9406013NV-102	\$/day	30.46	1.00	\$ 11.12	\$/MWh	47.59	269.15	\$ 12.81	\$ 23.93
9408016NV-48D	\$/day	425.68	1.00	\$ 155.37	\$/MWh	29.80	4,917.96	\$ 146.56	\$ 301.93
880395NV-D80	\$/day	46.07	1.00	\$ 16.82	\$/MWh	42.33	551.72	\$ 23.35	\$ 40.17
900392NV-B03	\$/day	65.18	1.00	\$ 23.79	\$/MWh	23.21	1,170.31	\$ 27.16	\$ 50.95
7302939NV-E0B	\$/day	11.59	1.00	\$ 4.23	\$/MWh	29.37	140.13	\$ 4.12	\$ 8.35
7447401NV-751	\$/day	40.25	0.20	\$ 2.90	\$/MWh	30.67	29.67	\$ 0.91	\$ 3.81
7446911NV-954	\$/day	20.75	0.58	\$ 4.40	\$/MWh	63.10	85.00	\$ 5.36	\$ 9.76
7559027NV-3C7	\$/day	21.51	0.58	\$ 4.56	\$/MWh	34.89	101.76	\$ 3.55	\$ 8.11
724187NV-3BD	\$/day	15.27	0.80	\$ 4.47	\$/MWh	27.05	168.22	\$ 4.55	\$ 9.02
7447635NV-BA4	\$/day	55.86	0.33	\$ 6.76	\$/MWh	29.13	60.78	\$ 1.77	\$ 8.53
9003387NV-273	\$/day	30.71	0.75	\$ 8.41	\$/MWh	0.00	14.33	\$ -	\$ 8.41
7301152NV-DC2	\$/day	19.36	0.58	\$ 4.10	\$/MWh	321.18	13.20	\$ 4.24	\$ 8.34
Total									\$2,751

Total actual revenue from prices	\$ 17,684
---	------------------

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

Table 18

Forecast revenue from prices RY22	Value (\$000)
Total forecast revenue from prices	17,884

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

Electricity Invercargill Limited contracts PowerNet to manage its network via a Network Management Agreement. PowerNet has a range of quality controlled documentation that govern the operational processes that surround the interruption, restoration and quality of supply to its customers and by which power interruptions are managed, recorded and reported at PowerNet.

The below processes and documentation are designed to cover the relevant information relating to the recording and reporting of SAIDI and SAIFI.

- OP-SC01 System Control Faults/Defects Processes
- OP-SC02 System Control Outages Processes
- OP-SC04 System Control Reporting Processes
- OP-STD-005 Planned Outages and Operating Orders Standard
- OP-STD-0001 Network Faults, Defects and Supply Complaints Standard
- OP-STD-011 Operating Sequence Standard

Key information includes:

- Responsibilities and critical tasks for preparation, checking, actioning and altering operating sequences.
- Responsibilities for recording faults and unplanned interruptions at the system control operator level, through to reviewing and reporting of faults and interruptions.
- Methods by which notification of unplanned interruptions are identified and captured from various sources such as customers, network equipment, contractors, Transpower, the public or emergency services.
- The use of operating sequences for planned maintenance and unplanned fault restoration and how the information from these orders flow through to the Outage Reporting System in the form of duration of power interruptions and the number of customers affected.
- The method of notifying customers of planned or notified planned interruptions, including where and how this information is stored for future reference.
- The method of calculating raw SAIDI and SAIFI for both planned and unplanned interruptions.
- The process for uploading raw data extracted from the Outage Reporting System to calculate SAIDI and SAIFI assessed values, including the normalisation of unplanned major events.
- The preparation, retention and archiving of supporting records and data.

PowerNet interprets an “Interruption” (as defined in the Default Price-Quality Path Determinations) as the loss of power to a single consumer due to a single root cause. Cases where a customer receives multiple power cuts during the remediation of a single root cause are considered single interruptions for the purposes of SAIFI calculation. This interpretation maintains consistency with the approach used to calculate the quality limits under which Electricity Invercargill Limited operates.

The process for operating sequence reporting related to planned outages is described below.

When an Operating Sequence Number record is created in the ORS database application, there are a number of checks before the record can be saved. This particularly applies to an Operating Sequence that is for a 'Planned Interruption' that involves an 'ICP Outage'.

All of the fields need to be populated except the 'Project Number' and 'Project Manager'.

If the 'Alternate Date Requirement' flag is set to 'Alternate Date Not Required', then the 'Alt Date Off', 'Time Off', 'Alt Date On' and 'Time On' can be left blank.

Once the 'Interruption Window' is populated with a 'Date Off' and 'Time Off' the duration (in minutes) is displayed and the 'Must Publish Before' dates and time are populated by the application for 'Planned & Notified' and 'Regular Planned' options.

The calculation of the 'Must Publish Before' date for the interruption to be considered as 'Planned and Notified' takes into account the number of available work days before the Planned Interruption. This excludes Saturdays and Sundays, as well as any Public Holiday recorded in the ORS System. These Public Holiday Dates are published by the EA. There are notes on how the ORS System uses these 'Must Publish Before' dates later in this document.

Planned / Unplanned	Planned Interruption							
Interruption Type	ICP Outage							
Network	ELIN - Electricity Invercargill Network							
Station	DOON ST S/S							
POS	Invercargill POS - EIL							
PowerNet Substation	Doon Street Sub							
	Planned & Notified 50% SAIDI Weighting	Regular Planned 100% SAIDI Weighting						
Must Publish Before	Fri 7/05/2021		Sat 22/05/21 8:00					
Interruption Window								
Date Off	Sun 23/05/2021	Time Off	8:00	Date On	Sun 23/05/2021	Time On	11:30	210 minutes duration
Alternate Date Requirement	Alternate Date Available							Dur Calc - 210
Alt Date Off	Sun 30/05/2021	Time Off	9:00	Alt Date On	Sun 30/05/2021	Time On	11:00	120 minutes duration
<input checked="" type="checkbox"/>	Interruption expected to be for full duration of the Interruption Window (remove the tick to enter a reduced duration)							

There are a number of date checks (in addition to the required fields needing to be populated), around the dates and times that are entered. If any of these checks fail, the Operating Sequence record cannot be saved. These checks include:

1. The Interruption window must be at least 60 minutes in the future
2. The Date / Time Off is not too far in the future (365 days)
3. The Date/Time On must be after the Date/Time Off
4. The minimum duration of the Interruption Window is 30 minutes
5. The maximum duration of the Interruption Window is two days (2880 mins)
6. If an 'Alternate Date Available' has been selected, the Alternate Date must be after the initial Date/Time on

This is also the option to enter an expected duration. If this option is chosen, the value entered must be less than the length of the Interruption Window.

After the Operating Sequence record is saved, the operator can add the details of network equipment to be used and select the ICP's that will be involved. The interruption can then be published, provided it is to occur less than 56 days in the future.

Operating Sequence Control Parameters

Start Offset	60	mins (60)
Max Future Days	365	days (365)
Max Future Pub Days	56	days (56)
Min Interruption Dur	30	mins (30)
Max Interruption Dur	2880	mins (2880)

Close Form

When a Planned Interruption is Published the EIEP5 records are created by the ORS System and automatically transferred to the Registry Hub. In addition the ORS System creates the data on PowerNet Limited's Outage Web page so that customers can enquire on the Outage.

The Outage Planning Manager takes a screen capture of the PowerNet Limited Outage Web Page and saves the file as an audit record of the Web Page publishing process.

The Registry Hub delivers the EIEP5 files to the retailers (25 traders) and if successful, creates an '.AKE' file to confirm the Hub has received the file and can deliver it, and a '.CONFIRM' file that shows when the EIEP5 file is in the Traders Inbox. These '.AKE' and '.CONFIRM' files are downloaded by PowerNet Limited's IT Systems and stored as an audit record.

As part of the ORS System, the date/time the last '.CONFIRM' file is received is recorded, as well as the date/time that the PowerNet Limited Outage Web Site Screen Capture file was created. The later date of these two Date/Time stamps is considered as the Operating Sequence Publish Confirmation Time for the individual Operating Sequence. This time is compared to the previously recorded 'Must Publish Before' times, to determine if the record can be treated as a 'Planned & Notified', 'Regular Planned', or 'Unplanned' Interruption.

This process is programmatically automated for Planned Interruptions provided there are 25 EIEP5 files sent, 25 EIEP5 Confirmation records received, and 1 PowerNet Limited Web Site Screen Capture records. If there are more or less than these numbers, the process is currently handled by an IT Administration person.

The screenshot displays the 'Operating Sequence # 78627 A' interface. It includes fields for 'Interruption Type' (ICP Outage), 'Work Crew' (Gore Field Services), 'Network' (TPCO - The Power Company Network), and 'Station' (GLENHAM S/S). The 'Interruption Window' section shows 'Date Off' as Thu 25/02/2021, 'Time Off' as 9:30, and 'Date On' as Thu 25/02/2021, 'On' as 15:30. Below this is a table of 'Audit file Link (eg CTCT)' with columns for 'File Date / Time' and 'Trader'. The table lists 25 'EIEP5 File Sent' records for various traders (CTCS, ECOT, ELKI, EMHT, FLCK, GBUG, GENE, GENH, GEOL, MEEN, MERI, MERX, PION, PLUS, PPPP, PRME, PSNZ, PUNZ, SELS, SIMP, SWCH, TODD, TRUS, YESP) and one 'Registry Hub Confirm File' for CTCS. To the right, there are sections for 'Planned & Notified' and 'Regular Planned' with 'Must Publish Before' dates of Thu 11/02/2021 and Wed 24/02/21 9:30 respectively. A 'Published' date of Tue 2/02/2021 and 'Confirmed' date of 4/02/21 14:33 are also shown. A summary table at the bottom right lists 'Type', 'Count', 'First File Date', 'Last', 'Time dif. 1st to last (mins)', and 'elapsed time before confirm (mins)'. The 'Type' table shows 25 EIEP5 File Sent, 25 AKE, 25 Confirms, and 1 Web Screens. Other interface elements include 'Show on Web Page', 'Set Confirmed Time', 'Alt Day Used Flg: 662', 'Refresh', 'Show Current Month', and 'Show Manual File Log Check Variations'.

In addition to these processes, PowerNet Limited Administration Reception Staff currently view each Web Site Screen Capture File and manually enter the Operating Sequence Number, the Interruption Start Date and the Number of ICPs Affected. This process allows the ORS System to verify EIL have a screen dump for each Planned Interruption and that the file is named correctly (linked to the correct Operating Sequence record). This allows EIL to create a new screen capture if required, ideally before the 'Must Publish Before' 'Planned & Notified' date, so that the Interruption is entitled to the 50% reduction in SAIDI for any minutes occurring within the notification window.

Power Outage - Manual Validation of Website data

This process is required to ensure PowerNet have an Audit record of the Power Outage web site publication. When you enter this form only new records will be shown. Click on the '1. Link' and a saved image will open that displays the Audit record. From this image please enter;

2. Outage Reference Number
3. The Start Date of the Interruption
4. The number of customers affected.

If you are unsure of any details or something seems incorrect, enter a comment into the '5. Data Question / Comment' box

After you have entered these details you can click the right arrow to move to the next record and repeat the process.

1. Link

2. Outage Reference No.

3. Interruption Window - Start Date

4. No. of customers affected

5. Data Question / Comment



Form is now Read Only

- Close it and Open it again to continue updating records.

The screenshot shows a Windows Photo Viewer window displaying a PowerNet website page. The page title is "Power Outage Reference No. 80233A". The page content includes a navigation menu with "Planned Outage" and "Unplanned Outage" buttons. Below the navigation menu, there is a section for "Power Outage Reference No. 80233A" with the following details:

- Browser Time: Fri Apr 30 2021 08:53:39 GMT+1200 (New Zealand Standard Time)
- Published Time: Fri Apr 30 2021 08:53:39 GMT+1200 (New Zealand Standard Time)
- Inter-upture Window:

Start Date	Thursday, 27/05/2021
Start Time	10:20 pm
Finish Date	Fri May 28/05/2021
Finish Time	08:00 am
Expected Duration	09 Hours 39 Minutes
- Reason for Interruption: Network Maintenance
- Outage Reference No.: 80233A
- No. of customers affected: 86
- Type: Planned and Notified
- Route: ACHER STREET | GARDING STREET | EDWARD STREET | ELDEREE STREET | HIGH STREET | JONASIA STGE | CLONIFF STREET | WALL STREET | NELSON HIGHWAY | NELSON STREET | OSMAN STREET | QUEEN STREET | SPIN STREET | WILSON STREET

Appendix D – SAIDI and SAIFI major events

The tables below 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.

Table 21

Normalisation of unplanned SAIDI major events RY22					
SAIDI unplanned boundary value					4.13
1/48th of the SAIDI unplanned boundary value	Half hour commencing	Sum SAIDI (half-hour)	Sum SAIDI (previous 24-hour)	Max SAIDI (rolling 24-hour)	SAIDI assessed value
0.086	5/04/2021 19:30	0.00	0.24	27.80	0.00
0.086	5/04/2021 20:00	0.00	0.24	27.80	0.00
0.086	5/04/2021 20:30	0.00	0.24	27.80	0.00
0.086	5/04/2021 21:00	0.00	0.24	28.14	0.00
0.086	5/04/2021 21:30	0.00	0.24	28.14	0.00
0.086	5/04/2021 22:00	0.00	0.24	28.14	0.00
0.086	5/04/2021 22:30	0.00	0.24	28.15	0.00
0.086	5/04/2021 23:00	0.00	0.24	28.15	0.00
0.086	5/04/2021 23:30	0.00	0.24	28.15	0.00
0.086	6/04/2021 0:00	0.00	0.24	33.20	0.00
0.086	6/04/2021 0:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 1:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 1:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 2:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 2:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 3:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 3:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 4:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 4:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 5:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 5:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 6:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 6:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 7:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 7:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 8:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 8:30	0.00	0.24	33.25	0.00
0.086	6/04/2021 9:00	0.00	0.24	33.25	0.00
0.086	6/04/2021 9:30	0.00	0.00	33.25	0.00
0.086	6/04/2021 10:00	1.03	1.03	33.25	0.09
0.086	6/04/2021 10:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 11:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 11:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 12:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 12:30	0.00	1.03	33.25	0.00

0.086	6/04/2021 13:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 13:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 14:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 14:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 15:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 15:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 16:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 16:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 17:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 17:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 18:00	0.00	1.03	33.25	0.00
0.086	6/04/2021 18:30	0.00	1.03	33.25	0.00
0.086	6/04/2021 19:00	26.77	27.80	33.25	0.09
0.086	6/04/2021 19:30	0.00	27.80	33.25	0.00
0.086	6/04/2021 20:00	0.00	27.80	33.25	0.00
0.086	6/04/2021 20:30	0.34	28.14	33.25	0.09
0.086	6/04/2021 21:00	0.00	28.14	33.25	0.00
0.086	6/04/2021 21:30	0.00	28.14	33.25	0.00
0.086	6/04/2021 22:00	0.01	28.15	33.25	0.01
0.086	6/04/2021 22:30	0.00	28.15	33.25	0.00
0.086	6/04/2021 23:00	0.00	28.15	33.25	0.00
0.086	6/04/2021 23:30	5.05	33.20	33.25	0.09
0.086	7/04/2021 0:00	0.05	33.25	33.25	0.05
0.086	7/04/2021 0:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 1:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 1:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 2:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 2:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 3:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 3:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 4:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 4:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 5:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 5:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 6:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 6:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 7:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 7:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 8:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 8:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 9:00	0.00	33.25	33.25	0.00
0.086	7/04/2021 9:30	0.00	33.25	33.25	0.00
0.086	7/04/2021 10:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 10:30	0.00	32.22	32.22	0.00

0.086	7/04/2021 11:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 11:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 12:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 12:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 13:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 13:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 14:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 14:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 15:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 15:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 16:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 16:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 17:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 17:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 18:00	0.00	32.22	32.22	0.00
0.086	7/04/2021 18:30	0.00	32.22	32.22	0.00
0.086	7/04/2021 19:00	0.00	5.45	5.45	0.00
0.086	7/04/2021 19:30	0.00	5.45	5.45	0.00
0.086	7/04/2021 20:00	0.00	5.45	5.45	0.00
0.086	7/04/2021 20:30	0.00	5.11	5.11	0.00
0.086	7/04/2021 21:00	0.00	5.11	5.11	0.00
0.086	7/04/2021 21:30	0.00	5.11	5.11	0.00
0.086	7/04/2021 22:00	0.00	5.10	5.10	0.00
0.086	7/04/2021 22:30	0.00	5.10	5.10	0.00
0.086	7/04/2021 23:00	0.00	5.10	5.10	0.00
TOTAL		33.45			0.41

- (i) Cause; Defective equipment – cable fault
- (ii) Start date; 05/04/21
- (iii) Start time; 19:30
- (iv) End date; 07/04/21
- (v) End time; 23:00
- (vi) SAIDI before; 33.35
- (vii) SAIDI normalised; 0.41
- (viii) Location; Mavora Crescent - Invercargill
- (ix) Equipment; 11kV cable 'SF' older 35mm
- (x) Response; Switch to find and isolate the faulty cable section and restore customers
- (xi) Mitigating factors; Operating restrictions on some RMUs meant isolation from substation and actual fault was close to open point between 2 feeders, doubling the customers affected
- (xii) Proposed mitigation: Ongoing health analysis of underground cable fleet and VLF TD testing

Normalisation of unplanned SAIDI major events RY22					
SAIDI unplanned boundary value					4.13
1/48th of the SAIDI unplanned boundary value	Half hour commencing	Sum SAIDI (half-hour)	Sum SAIDI (previous 24-hour)	Max SAIDI (rolling 24-hour)	SAIDI assessed value
0.086	13/04/2021 11:00	0.00	0.88	4.83	0.00
0.086	13/04/2021 11:30	0.00	0.88	4.83	0.00
0.086	13/04/2021 12:00	0.00	0.88	4.83	0.00
0.086	13/04/2021 12:30	0.00	0.88	4.83	0.00
0.086	13/04/2021 13:00	0.00	0.88	4.83	0.00
0.086	13/04/2021 13:30	0.00	0.88	4.83	0.00
0.086	13/04/2021 14:00	0.00	0.88	4.83	0.00
0.086	13/04/2021 14:30	0.00	0.88	4.83	0.00
0.086	13/04/2021 15:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 15:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 16:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 16:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 17:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 17:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 18:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 18:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 19:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 19:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 20:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 20:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 21:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 21:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 22:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 22:30	0.00	0.00	4.83	0.00
0.086	13/04/2021 23:00	0.00	0.00	4.83	0.00
0.086	13/04/2021 23:30	0.00	0.00	4.83	0.00
0.086	14/04/2021 0:00	1.42	1.42	4.83	0.09
0.086	14/04/2021 0:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 1:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 1:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 2:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 2:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 3:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 3:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 4:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 4:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 5:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 5:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 6:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 6:30	0.00	1.42	4.83	0.00

0.086	14/04/2021 7:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 7:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 8:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 8:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 9:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 9:30	0.00	1.42	4.83	0.00
0.086	14/04/2021 10:00	0.00	1.42	4.83	0.00
0.086	14/04/2021 10:30	3.41	4.83	4.83	0.09
0.086	14/04/2021 11:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 11:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 12:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 12:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 13:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 13:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 14:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 14:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 15:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 15:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 16:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 16:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 17:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 17:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 18:00	0.00	4.83	4.83	0.00
0.086	14/04/2021 18:30	0.00	4.83	4.83	0.00
0.086	14/04/2021 19:00	0.00	4.83	13.26	0.00
0.086	14/04/2021 19:30	0.00	4.83	13.26	0.00
0.086	14/04/2021 20:00	0.00	4.83	13.26	0.00
0.086	14/04/2021 20:30	0.00	4.83	13.26	0.00
0.086	14/04/2021 21:00	0.00	4.83	13.26	0.00
0.086	14/04/2021 21:30	0.00	4.83	13.26	0.00
0.086	14/04/2021 22:00	0.00	4.83	13.26	0.00
0.086	14/04/2021 22:30	0.00	4.83	13.26	0.00
0.086	14/04/2021 23:00	0.00	4.83	13.26	0.00
0.086	14/04/2021 23:30	0.00	4.83	13.26	0.00
0.086	15/04/2021 0:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 0:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 1:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 1:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 2:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 2:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 3:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 3:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 4:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 4:30	0.00	3.41	13.26	0.00

0.086	15/04/2021 5:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 5:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 6:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 6:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 7:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 7:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 8:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 8:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 9:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 9:30	0.00	3.41	13.26	0.00
0.086	15/04/2021 10:00	0.00	3.41	13.26	0.00
0.086	15/04/2021 10:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 11:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 11:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 12:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 12:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 13:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 13:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 14:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 14:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 15:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 15:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 16:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 16:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 17:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 17:30	0.00	0.00	13.26	0.00
0.086	15/04/2021 18:00	0.00	0.00	13.26	0.00
0.086	15/04/2021 18:30	13.26	13.26	13.26	0.09
0.086	15/04/2021 19:00	0.00	13.26	13.26	0.00
0.086	15/04/2021 19:30	0.00	13.26	13.26	0.00
0.086	15/04/2021 20:00	0.00	13.26	13.26	0.00
0.086	15/04/2021 20:30	0.00	13.26	13.26	0.00
0.086	15/04/2021 21:00	0.00	13.26	13.26	0.00
0.086	15/04/2021 21:30	0.00	13.26	13.26	0.00
0.086	15/04/2021 22:00	0.00	13.26	13.26	0.00
0.086	15/04/2021 22:30	0.00	13.26	13.26	0.00
0.086	15/04/2021 23:00	0.00	13.26	13.26	0.00
0.086	15/04/2021 23:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 0:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 0:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 1:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 1:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 2:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 2:30	0.00	13.26	13.26	0.00

0.086	16/04/2021 3:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 3:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 4:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 4:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 5:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 5:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 6:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 6:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 7:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 7:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 8:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 8:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 9:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 9:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 10:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 10:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 11:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 11:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 12:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 12:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 13:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 13:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 14:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 14:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 15:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 15:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 16:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 16:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 17:00	0.00	13.26	13.26	0.00
0.086	16/04/2021 17:30	0.00	13.26	13.26	0.00
0.086	16/04/2021 18:00	0.00	13.26	13.26	0.00
TOTAL		18.09			0.26

- (i) Cause; Defective equipment
- (ii) Start date; 13/04/21
- (iii) Start time; 11:00
- (iv) End date; 16/04/21
- (v) End time; 18:00
- (vi) SAIDI before; 18.09
- (vii) SAIDI normalised; 0.26
- (viii) Location; Eye Street & Mavora Crescent - Invercargill
- (ix) Equipment; Transformer 257 & 11 kV cable "MY"
- (x) Response; Isolate RMU to change fuses then change transformer
Switching to confirm, isolate and restore customers
- (xi) Mitigating factors; RMU operating restrictions and switching wait times

Operating restrictions on some RMUs means isolation from zone substation and delays

- (xii) Proposed mitigation. Ongoing inspection of substation equipment; and ongoing health analysis of underground cable fleet and VLF testing.

Normalisation of unplanned SAIDI major events RY22					
SAIDI unplanned boundary value					4.13
1/48th of the SAIDI unplanned boundary value	Half hour commencing	Sum SAIDI (half-hour)	Sum SAIDI (previous 24-hour)	Max SAIDI (rolling 24-hour)	SAIDI assessed value
0.086	3/05/2021 17:30	0.00	0.00	11.09	0.00
0.086	3/05/2021 18:00	0.00	0.00	11.09	0.00
0.086	3/05/2021 18:30	0.00	0.00	11.09	0.00
0.086	3/05/2021 19:00	0.00	0.00	11.09	0.00
0.086	3/05/2021 19:30	0.00	0.00	11.14	0.00
0.086	3/05/2021 20:00	0.00	0.00	11.14	0.00
0.086	3/05/2021 20:30	0.00	0.00	11.14	0.00
0.086	3/05/2021 21:00	0.00	0.00	11.14	0.00
0.086	3/05/2021 21:30	0.00	0.00	11.14	0.00
0.086	3/05/2021 22:00	0.00	0.00	11.14	0.00
0.086	3/05/2021 22:30	0.00	0.00	11.14	0.00
0.086	3/05/2021 23:00	0.00	0.00	11.14	0.00
0.086	3/05/2021 23:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 0:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 0:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 1:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 1:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 2:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 2:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 3:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 3:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 4:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 4:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 5:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 5:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 6:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 6:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 7:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 7:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 8:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 8:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 9:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 9:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 10:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 10:30	0.00	0.00	11.14	0.00

0.086	4/05/2021 11:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 11:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 12:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 12:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 13:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 13:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 14:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 14:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 15:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 15:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 16:00	0.00	0.00	11.14	0.00
0.086	4/05/2021 16:30	0.00	0.00	11.14	0.00
0.086	4/05/2021 17:00	11.09	11.09	11.14	0.09
0.086	4/05/2021 17:30	0.00	11.09	11.14	0.00
0.086	4/05/2021 18:00	0.00	11.09	11.14	0.00
0.086	4/05/2021 18:30	0.00	11.09	11.14	0.00
0.086	4/05/2021 19:00	0.05	11.14	11.14	0.05
0.086	4/05/2021 19:30	0.00	11.14	11.14	0.00
0.086	4/05/2021 20:00	0.00	11.14	11.14	0.00
0.086	4/05/2021 20:30	0.00	11.14	11.14	0.00
0.086	4/05/2021 21:00	0.00	11.14	11.14	0.00
0.086	4/05/2021 21:30	0.00	11.14	11.14	0.00
0.086	4/05/2021 22:00	0.00	11.14	11.14	0.00
0.086	4/05/2021 22:30	0.00	11.14	11.14	0.00
0.086	4/05/2021 23:00	0.00	11.14	11.14	0.00
0.086	4/05/2021 23:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 0:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 0:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 1:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 1:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 2:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 2:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 3:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 3:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 4:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 4:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 5:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 5:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 6:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 6:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 7:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 7:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 8:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 8:30	0.00	11.14	11.14	0.00

0.086	5/05/2021 9:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 9:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 10:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 10:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 11:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 11:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 12:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 12:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 13:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 13:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 14:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 14:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 15:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 15:30	0.00	11.14	11.14	0.00
0.086	5/05/2021 16:00	0.00	11.14	11.14	0.00
0.086	5/05/2021 16:30	0.00	11.14	11.14	0.00
TOTAL		11.14			0.14

- (i) Cause; Defective equipment – cable fault
- (ii) Start date; 03/05/21
- (iii) Start time; 17:30
- (iv) End date; 05/05/21
- (v) End time; 16:30
- (vi) SAIDI before; 11.14
- (vii) SAIDI normalised; 0.14
- (viii) Location; Mavora Crescent / John Street - Invercargill
- (ix) Equipment; 11 kV cable 'SF'
- (x) Response; Switch to find and isolate faulty cable section and restore customers
- (xi) Mitigating factors; Operating restrictions on some RMUs meant isolation from substation and actual fault was close to open point between 2 feeders, doubling the customers affected
- (xii) Proposed mitigation: Ongoing health analysis of underground cable fleet and VLF TD testing

Table 19

Normalisation of unplanned SAIFI major events RY22					
SAIFI unplanned boundary value					0.0804
1/48th of the SAIFI unplanned boundary value	Half hour commencing	Sum SAIFI (half-hour)	Sum SAIFI (previous 24-hour)	Max SAIFI (rolling 24-hour)	SAIFI assessed value
0.001675	5/04/2021 19:30	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 20:00	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 20:30	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 21:00	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 21:30	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 22:00	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 22:30	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 23:00	0.0000	0.0069	0.2127	0.0000
0.001675	5/04/2021 23:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 0:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 0:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 1:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 1:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 2:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 2:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 3:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 3:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 4:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 4:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 5:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 5:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 6:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 6:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 7:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 7:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 8:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 8:30	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 9:00	0.0000	0.0069	0.2127	0.0000
0.001675	6/04/2021 9:30	0.0000	0.0000	0.2127	0.0000
0.001675	6/04/2021 10:00	0.0271	0.0271	0.2127	0.0017
0.001675	6/04/2021 10:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 11:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 11:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 12:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 12:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 13:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 13:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 14:00	0.0000	0.0271	0.2127	0.0000

0.001675	6/04/2021 14:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 15:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 15:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 16:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 16:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 17:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 17:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 18:00	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 18:30	0.0000	0.0271	0.2127	0.0000
0.001675	6/04/2021 19:00	0.1856	0.2127	0.2127	0.0017
0.001675	6/04/2021 19:30	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 20:00	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 20:30	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 21:00	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 21:30	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 22:00	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 22:30	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 23:00	0.0000	0.2127	0.2127	0.0000
0.001675	6/04/2021 23:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 0:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 0:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 1:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 1:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 2:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 2:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 3:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 3:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 4:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 4:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 5:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 5:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 6:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 6:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 7:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 7:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 8:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 8:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 9:00	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 9:30	0.0000	0.2127	0.2127	0.0000
0.001675	7/04/2021 10:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 10:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 11:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 11:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 12:00	0.0000	0.1856	0.1856	0.0000

0.001675	7/04/2021 12:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 13:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 13:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 14:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 14:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 15:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 15:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 16:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 16:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 17:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 17:30	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 18:00	0.0000	0.1856	0.1856	0.0000
0.001675	7/04/2021 18:30	0.0000	0.1856	0.1856	0.0000
TOTAL		0.2127			0.0034

- (i) Cause; Defective equipment – cable fault
- (ii) Start date; 05/04/21
- (iii) Start time; 19:30
- (iv) End date; 07/04/21
- (v) End time; 18:30
- (vi) SAIFI before; 0.2127
- (vii) SAIFI normalised; 0.0034
- (viii) Location; Mavora Crescent - Invercargill
- (ix) Equipment; 11kV cable 'SF' older 35mm
- (x) Response; Switch to find and isolate the faulty cable section and restore customers
- (xi) Mitigating factors; Operating restrictions on some RMUs meant isolation from substation and actual fault was close to open point between 2 feeders, doubling the customers affected
- (xii) Proposed mitigation: Ongoing health analysis of underground cable fleet and VLF TD testing

SAIFI unplanned boundary value					0.0804
1/48th of the SAIFI unplanned boundary value	Half hour commencing	Sum SAIFI (half-hour)	Sum SAIFI (previous 24-hour)	Max SAIFI (rolling 24-hour)	SAIFI assessed value
0.001675	14/04/2021 19:00	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 19:30	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 20:00	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 20:30	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 21:00	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 21:30	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 22:00	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 22:30	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 23:00	0.0000	0.0056	0.1295	0.0000
0.001675	14/04/2021 23:30	0.0000	0.0056	0.1295	0.0000
0.001675	15/04/2021 0:00	0.0000	0.0056	0.1295	0.0000
0.001675	15/04/2021 0:30	0.0000	0.0056	0.1295	0.0000

0.001675	15/04/2021 23:00	0.0000	0.1295	0.1295	0.0000
0.001675	15/04/2021 23:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 0:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 0:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 1:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 1:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 2:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 2:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 3:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 3:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 4:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 4:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 5:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 5:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 6:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 6:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 7:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 7:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 8:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 8:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 9:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 9:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 10:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 10:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 11:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 11:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 12:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 12:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 13:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 13:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 14:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 14:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 15:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 15:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 16:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 16:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 17:00	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 17:30	0.0000	0.1295	0.1295	0.0000
0.001675	16/04/2021 18:00	0.0000	0.1295	0.1295	0.0000
TOTAL		0.1295			0.0017

- (i) Cause; Defective equipment
- (ii) Start date; 14/04/21
- (iii) Start time; 19:00
- (iv) End date; 16/04/21

- (v) End time; 18:00
- (vi) SAIFI before; 0.1295
- (vii) SAIFI normalised; 0.0017
- (viii) Location; Eye Street & Mavora Crescent - Invercargill
- (ix) Equipment; Transformer 257 & 11 kV cable "MY"
- (x) Response; Isolate RMU to change fuses then change transformer
Switching to confirm, isolate and restore customers
- (xi) Mitigating factors; RMU operating restrictions and switching wait times
Operating restrictions on some RMUs means isolation from zone substation and delays
- (xii) Proposed mitigation. Ongoing inspection of substation equipment; and ongoing health analysis of underground cable fleet and VLF testing.

SAIFI unplanned boundary value					0.0804
1/48th of the SAIFI unplanned boundary value	Half hour commencing	Sum SAIFI (half-hour)	Sum SAIFI (previous 24-hour)	Max SAIFI (rolling 24-hour)	SAIFI assessed value
0.001675	3/05/2021 17:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 18:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 18:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 19:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 19:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 20:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 20:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 21:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 21:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 22:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 22:30	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 23:00	0.0000	0.0000	0.1296	0.0000
0.001675	3/05/2021 23:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 0:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 0:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 1:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 1:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 2:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 2:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 3:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 3:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 4:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 4:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 5:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 5:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 6:00	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 6:30	0.0000	0.0000	0.1296	0.0000
0.001675	4/05/2021 7:00	0.0000	0.0000	0.1296	0.0000

0.001675	5/05/2021 5:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 6:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 6:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 7:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 7:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 8:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 8:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 9:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 9:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 10:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 10:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 11:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 11:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 12:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 12:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 13:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 13:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 14:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 14:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 15:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 15:30	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 16:00	0.0000	0.1296	0.1296	0.0000
0.001675	5/05/2021 16:30	0.0000	0.1296	0.1296	0.0000
TOTAL		0.1296			0.0017

- (i) Cause; Defective equipment – cable fault
- (ii) Start date; 03/05/21
- (iii) Start time; 17:30
- (iv) End date; 05/05/21
- (v) End time; 16:30
- (vi) SAIFI before; 0.1296
- (vii) SAIFI normalised; 0.0017
- (viii) Location; Mavora Crescent / John Street - Invercargill
- (ix) Equipment; 11 kV cable 'SF'
- (x) Response; Switch to find and isolate faulty cable section and restore customers
- (xi) Mitigating factors; Operating restrictions on some RMUs meant isolation from substation and actual fault was close to open point between 2 feeders, doubling the customers affected
- (xii) Proposed mitigation: Ongoing health analysis of underground cable fleet and VLF TD testing

SAIFI unplanned boundary value					0.0804
1/48th of the SAIFI unplanned boundary value	Half hour commencing	Sum SAIFI (half-hour)	Sum SAIFI (previous 24-hour)	Max SAIFI (rolling 24-hour)	SAIFI assessed value
0.001675	14/09/2021 9:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 10:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 10:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 11:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 11:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 12:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 12:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 13:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 13:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 14:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 14:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 15:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 15:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 16:00	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 16:30	0.0000	0.0009	0.2585	0.0000
0.001675	14/09/2021 17:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 17:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 18:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 18:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 19:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 19:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 20:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 20:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 21:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 21:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 22:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 22:30	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 23:00	0.0000	0.0000	0.2585	0.0000
0.001675	14/09/2021 23:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 0:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 0:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 1:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 1:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 2:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 2:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 3:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 3:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 4:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 4:30	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 5:00	0.0000	0.0000	0.2585	0.0000
0.001675	15/09/2021 5:30	0.0000	0.0000	0.2585	0.0000

0.001675	16/09/2021 4:00	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 4:30	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 5:00	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 5:30	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 6:00	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 6:30	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 7:00	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 7:30	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 8:00	0.0000	0.2585	0.2585	0.0000
0.001675	16/09/2021 8:30	0.0000	0.2585	0.2585	0.0000
TOTAL		0.2585			0.0017

- (i) Cause; Human error
- (ii) Start date; 14/09/21
- (iii) Start time; 09:30
- (iv) End date; 16/09/21
- (v) End time; 08:30
- (vi) SAIFI before; 0.2585
- (vii) SAIFI normalised; 0.0017
- (viii) Location; Southern Substation
- (ix) Equipment; VT Fuse removed – tripped transformers
- (x) Response; Reliven both transformers
- (xi) Mitigating factors; Cross trips associated with NER installation
- (xii) Proposed mitigation. Training and care

Director Certification (Clause 11.5(d))

I, Robert Datema Jamieson, being director of Electricity Invercargill Limited certify that, having made all reasonable enquiry, to the best of my knowledge and belief, the attached annual compliance statement of Electricity Invercargill 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 the relevant requirements.



Robert Datema Jamieson

30 June 2022



Independent Assurance Report

To the Directors of Electricity Invercargill 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 Electricity Invercargill Limited (the Company). The Auditor-General has appointed me, Elizabeth Adriana (Adri) Smit, using the staff and resources of PricewaterhouseCoopers, to undertake a reasonable assurance engagement, on his behalf, on whether the Annual Compliance Statement on pages 4 to 46 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 and 13 to 20 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 and 21 to 46 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.



The Auditor-General, and his employees, and PricewaterhouseCoopers 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.

A handwritten signature in black ink, appearing to read 'Adri Smit', is written over a large, loopy, circular scribble.

Elizabeth Adriana (Adri) Smit
PricewaterhouseCoopers
On behalf of the Auditor-General
Christchurch, New Zealand
30 June 2022