



DS5002

Centralines'

Default Price Quality Path

Annual Compliance Statement

2018-2019

For the assessment period ending 31 March 2019

Pursuant to
Electricity Distribution Services Default Price-Quality Path Determination 2015

Data Classification: Public
Published Date: 06/06/2019

DS5002 Centralines' Default Price Quality-Path Annual Compliance Statement 2018-2019

Overview

Document status
Draft ☐In Service ☒Under Review ☐Archived ☐
Document purpose

Regulatory disclosure demonstrating Centralines' compliance with the Default Price-Quality Path for the 2018-19 disclosure year.

Intended audience

Publically disclosed.

Document contributors

Contributors	Name and Position Title	Approval Date
Creator	Amanda Watson Senior Regulatory Affairs Advisor	05/06/2019
Authoriser	Nathan Strong General Manager – Business Assurance	05/06/2019
Approver	Nathan Strong General Manager – Business Assurance	05/06/2019

Disclaimer

The information presented in this Annual Compliance Statement has been prepared solely for the purpose of complying with the requirements of the Electricity Distribution Services Default Price-Quality Path Determination 2015. This statement has not been prepared for any other purpose. Centralines Limited expressly disclaims any liability to any other party who may rely on this statement for any other purpose.

Continued on next page

Overview, Continued

Certification of Annual Compliance Statement



DIRECTORS' CERTIFICATE ON ANNUAL COMPLIANCE STATEMENT

We, Jon Edmond Nichols and Derek Neil Walker, being directors of Centralines Limited certify that, having made all reasonable enquiry, to the best of our knowledge and belief, the attached Annual Compliance Statement of Centralines Limited, and related information, prepared for the purposes of the *Electricity Distribution Services Default Price Quality Path Determination 2015* are true and accurate.



Jon Nichols, Board Chairman

Date: 28th May 2019



Derek Walker, Audit and Risk Committee Chairman

Date: 28th May 2019

Continued on next page

Overview, Continued

Key dates	Published Date	06/06/2019
------------------	-----------------------	------------

Related references	Legislation <ul style="list-style-type: none"> Electricity Distribution Services Default Price-Quality Path Determination 2015 (the Determination)
---------------------------	--

Clarification	<p>Clarification of any matter referred to in this document should be directed to:</p> <p>General Manager Business Assurance Unison Networks Ltd PO Box 555 1101 Omaha Rd Hastings Ph. (06) 873 9300 Fax (06) 873 9311</p>
----------------------	--

Content	This document contains the following topics:
----------------	--

Topic	See Page
1. Statement of Compliance	5
2. Compliance with the Price Path.....	6
3. Compliance with the Quality Standards	8
Appendix A – Independent Auditor’s Report	10
Appendix B – Price Path Compliance Calculations (Clauses 11.4(c), (g) and (k)).....	13
Appendix C – Price and Quantity Schedules (Clause 11.4(c))	16
Appendix D – Price Apportionment to Distribution Prices and Pass-through Prices (Clause 11.4(d))	21
Appendix E – Methodology Used to Calculate Distribution Prices and Pass-through Prices (Clause 11.4(e)).....	26
Appendix F – Pass-through Prices and Quantities for 2019 and 2018 Assessment Periods (Clause 11.4(f))	27
Appendix G – Pass-through Costs and Recoverable Costs – Actual and Forecast (Clauses 8.6(b) and 11.4(g), (h), (i) and (j))	35
Appendix H – Quality Standard Compliance Calculations (Clause 11.5(c))	37
Appendix I – Quality Incentive Adjustment Clause 11.5(c) and Schedule 5B.....	41
Appendix J – Policies and Procedures for Recording SAIDI and SAIFI (Clause 11.5(e))	42

1. Statement of Compliance

1.1 Compliance with 11.2(a)

As required by 11.2(a) of the Determination, this statement confirms Centralines' compliance with the price path in clause 8 and quality standards in clause 9 in respect of the assessment period ending 31 March 2019.

1.2 Compliance with 11.2(d)

As required by clause 11.2(d) of the Determination, this statement confirms that the following clauses did not apply in respect of the assessment period ending 31 March 2019:

- 8.8 – Restructuring of prices during an assessment period
 - 10.1-10.4 – Qualifying amalgamation, merger, or major transaction for notification to Commission, and
 - 10.6 – Purchase of transmission assets from (or to) Transpower that become System Fixed Assets.
-

2. Compliance with the Price Path

2.1 Compliance with price path (clause 8.3)

Under clause 8.3 of the Determination an EDB's notional revenue must not exceed the allowable notional revenue during the current assessment period. In this section Centralines demonstrates that it has complied with the price path requirements of the Determination.

$$NR \leq ANR$$

$$\$ 9,255,446 \leq \$ 12,973,349$$

2.2 Allowable notional revenue (clause 8.4)

Allowable notional revenue for the 2019 assessment period:

$$ANR_t = \left(\sum_i DP_{i,t-1} Q_{i,t-2} + (ANR_{t-1} - NR_{t-1}) \right) (1 + \Delta CPI_t) (1 - X)$$

$$ANR_{2019} = \$ 12,973,349$$

2.3 Notional revenue (clause 8.5)

Notional revenue for the 2019 assessment period:

$$\sum_i DP_{i,t} Q_{i,t-2}$$

$$\sum DP_{2019} Q_{2017} = \$ 9,255,446$$

2.4 Pass- through balance for the 2019 assessment period (clause 8.6)

The pass-through balance is the difference between the pass-through price. This is the portion of the price set to recover forecast pass-through costs and recoverable costs, multiplied by actual quantities, less the amount of actual pass-through and recoverable costs incurred. A positive amount denotes that an EDB has over-recovered its pass-through and recoverable costs.

$$PTB_t = \sum PTP_{i,t} Q_{i,t} - K_t - V_t + PTB_{t-1} (1 + r)$$

$$PTB_{2019} = \$ 1,343,316$$

Continued on next page

Compliance with Price Path, Continued

2.5 Supporting evidence

- Appendix A – Independent Auditor's Report
 - Appendix B – Price Path Compliance Calculations
 - Appendix C – Price and Quantity Schedules
 - Appendix D – Price Apportionment to Distribution Prices and Pass-through Prices
 - Appendix E – Methodology Used to Calculate Distribution Prices and Pass-through Prices
 - Appendix F – Pass-through Prices and Quantities for 2019 and 2018 Assessment Periods
 - Appendix G – Pass-through Costs and Recoverable Costs – Actual and Forecast
-

3. Compliance with the Quality Standards

3.1 Compliance with quality standards (clause 9)

Under clause 9 of the Determination an EDB's assessed reliability values must either:

- not exceed the reliability limits for the current assessment period, or
- not have exceeded the reliability limit for either of the two immediately preceding extant assessment periods.

In this section Centralines demonstrates that it has complied with the quality standards of the Determination.

3.2 Reliability assessment (9.1(a))

Clause 9.1(a) requires compliance with clause 9.2: A non-exempt EDB's assessed values for an assessment period must not exceed its reliability limits for that assessment period.

Compliance is demonstrated in the following tables. The first table demonstrates compliance with the SAIDI limit and the second table demonstrates compliance with the SAIFI limit.

Test:	$\frac{SAIDI_{Assess\ 2019}}{SAIDI_{Limit}} \leq 1$
SAIDI _{Assess 2019}	107.730
SAIDI _{Limit}	139.348
Result:	0.773 < 1
Result:	Does not Exceed Limit

Test:	$\frac{SAIFI_{Assess\ 2019}}{SAIFI_{Limit}} \leq 1$
SAIFI _{Assess 2019}	2.060
SAIFI _{Limit}	4.203
Result:	0.490 < 1
Result:	Does not Exceed Limit

Continued on next page

Compliance with the Quality Standards, Continued

3.3 Prior period reliability assessment (9.1(b))

Clause 9.1(b) requires compliance with annual reliability assessments for the two immediately preceding assessment periods.

SAIDI Assess 2018	131.67	SAIFI Assess 2018	2.230
SAIDI Limit	139.35	SAIFI Limit	4.203
0.945	< 1	0.531	< 1
Does not Exceed Limit		Does not Exceed Limit	

SAIDI Assess 2017	92.07	SAIFI Assess 2017	1.668
SAIDI Limit	139.35	SAIFI Limit	4.203
0.66	< 1	0.40	< 1
Does not Exceed Limit		Does not Exceed Limit	

3.4 Compliance summary

Clause 9.1 – A non-exempt EDB, in respect of each assessment period, must either:

- comply with the annual reliability assessment specified in clause 9.2, or
- have complied with those annual reliability assessments for the two immediately preceding assessments periods.

	SAIDI	SAIFI	Compliance
Compliance with 9.1(a)	Does not Exceed Limit	Does not Exceed Limit	<i>Complies</i>
or			
Compliance with 9.1(b)	Does not Exceed Limit	Does not Exceed Limit	<i>Complies</i>
Clause 9.1 Result:	Complies with Quality Standard		

3.5 Supporting evidence

- Appendix H – Quality Standard Compliance Calculations
- Appendix I – Quality Incentive Adjustment Clause
- Appendix J – Policies and Procedures for Recording SAIDI and SAIFI

Appendix A – Independent Auditor's Report



Independent Assurance Report

To the Directors of Centralines Limited and to the Commerce Commission for the year ended 31 March 2019

The Auditor-General is the auditor of Centralines Limited (the company). The Auditor-General has appointed me, Chantelle Gernetzky, using the staff and resources of Audit New Zealand, to provide an opinion, on his behalf, on whether the Annual Compliance Statement for the year ended on 31 March 2019 on pages 5 to 44 has been prepared, in all material respects, with the Electricity Distribution Services Default Price-Quality Path Determination 2015 (the Determination).

Directors' responsibilities for the Annual Compliance Statement

The directors of the company are responsible for the preparation of the Annual Compliance Statement in accordance with the Determination, and for such internal control as the directors determine is necessary to enable the preparation of the Annual Compliance Statement that is free from material misstatement.

Our responsibility for the Annual Compliance Statement

Our responsibility is to express an opinion on whether the Annual Compliance Statement has been prepared, in all material respects, in accordance with the Determination.

Basis of opinion

We conducted our engagement in accordance with the International Standard on Assurance Engagements (New Zealand) 3000 (Revised): *Assurance Engagements Other Than Audits or Reviews of Historical Financial Information* and the Standard on Assurance Engagements 3100: *Compliance Engagements* issued by the External Reporting Board. Copies of these standards are available on the External Reporting Board's website.

These standards require that we comply with ethical requirements and plan and perform our assurance engagement to provide reasonable assurance about whether the Annual Compliance Statement has been prepared in all material respects in accordance with the Determination.

We have performed procedures to obtain evidence about the amounts and disclosures in the Annual Compliance Statement. The procedures selected depend on our judgement, including the assessment of the risks of material misstatement of the Annual Compliance Statement, whether due to fraud or error or non-compliance with the Determination. In making those risk assessments, we considered internal control relevant to the company's preparation of the Annual Compliance Statement in order to design procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the company's internal control.

In assessing the disclosures about compliance with the price path in clause 8 of the Determination for the assessment period ended on 31 March 2019, our assurance engagement included examination,

Continued on next page

Appendix A – Independent Auditor's Report, Continued

on a test basis, of evidence relevant to the amounts and disclosures contained on page 6, and pages 13 to 36 of the Annual Compliance Statement.

In assessing the disclosures about compliance with the quality standards in clause 9 of the Determination for the assessment period ended on 31 March 2019, our assurance engagement included examination, on a test basis, of evidence relevant to the amounts and disclosures contained on pages 8 to 9 and 36 to 44 of the Annual Compliance Statement.

Our assurance engagement also included assessment of the significant estimates and judgements, if any, made by the company in the preparation of the Annual Compliance Statement.

We believe that the evidence we have obtained is sufficient and appropriate to provide a basis for our opinion.

Use of this report

This independent assurance report has been prepared solely for the directors of the company and for the Commerce Commission for the purpose of providing those parties with reasonable assurance about whether the Annual Compliance Statement has been prepared, in all material respects, in accordance with the Determination. We disclaim any assumption of responsibility for any reliance on this report to any person other than the directors of the company or the Commerce Commission, or for any other purpose than that for which it was prepared.

Scope and inherent limitations

Because of the inherent limitations of a reasonable assurance engagement, and the test basis of the procedures performed, it is possible that fraud, error or non-compliance may occur and not be detected.

We did not examine every transaction, adjustment or event underlying the Annual Compliance Statement nor do we guarantee complete accuracy of the Annual Compliance Statement. Also we did not evaluate the security and controls over the electronic publication of the Annual Compliance Statement.

The opinion expressed in this independent assurance report has been formed on the above basis.

Independence and quality control

When carrying out the engagement, 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 (Revised) 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.

We also complied with the independent auditor requirements specified in the Determination.

Appendix A – Independent Auditor's Report, Continued

The Auditor-General, and her employees and Audit New Zealand and its 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 business, the audit of the company's disclosure information prepared under the Electricity Distribution Information Disclosure Determination 2012 and the annual audit of the company's financial statements, we have no relationship with or interests in the company.

Opinion

In our opinion:

- as far as appears from an examination, the information used in the preparation of the Annual Compliance Statement has been properly extracted from the company's accounting and other records, and has been sourced, where appropriate, from its financial and non-financial systems; and
- the Annual Compliance Statement of company for the year ended on 31 March 2019, has been prepared, in all material respects, in accordance with the Determination.

In forming our opinion, we have obtained sufficient recorded evidence and all the information and explanations we have required.



Chantelle Gernetzky
Audit New Zealand
On behalf of the Auditor-General
Christchurch, New Zealand
28 May 2019

Appendix B – Price Path Compliance Calculations (Clauses 11.4(c), (g) and (k))

Allowable Notional Revenue 2019		
$ANR_t = \left(\sum_i DP_{i,t-1} Q_{i,t-2} + (ANR_{t-1} - NR_{t-1}) \right) (1 + \Delta CPI_t) (1 - X)$		
Term	Description	Value\$
ANR_{2019}	Allowable Notional Revenue 2019	12,973,349
$DP_{2018} Q_{2017}$	2018 Distribution Prices x 2017 Quantities	10,259,946
ANR_{2018}	Allowable Notional Revenue 2018	11,948,454
NR_{2018}	Notional Revenue 2018	10,296,661
CPI_{2019}	Consumer Price Index 2019	1.79%
X	Annual Rate of Change	-7.0%

Notional Revenue for the year ending March 2019		
$\sum_i DP_{i,t} Q_{i,t-2}$		
Term	Description	Value \$
$DP_{2019} * Q_{2017}$	Prices at 31 March 2019 multiplied by 31 March 2017 Base Quantities	9,255,446

Continued on next page

Appendix B – Price Path Compliance Calculations (Clauses 11.4(c), (g) and (k)), Continued

Pass-through Costs and Recoverable Costs for the year ending 31 March 2019		
$PTB_t = \sum PTP_{i,t} Q_{i,t} - K_t - V_t + PTB_{t-1} (1 + r)$		
Term	Description	Value \$
PTB_{2019}	Pass-through Balance for the year ending 31 March 2019	1,343,316
$PTP_{i,2019} Q_{i,2019}$	Denotes 2019 Prices multiplied by 2019 Quantities	5,020,695
K_{2019}	Rates for year ending 31 March 2019	41,263
	Electricity Authority Levies for year ending 31 March 2019	21,676
	Commerce Act Levies for year ending 31 March 2019	20,339
	Utilities Disputes (formerly Electricity and Gas Complaints Commissioner) Levies for year ending 31 March 2019	4,484
V_{2019}	Transmission Charges for year ending 31 March 2019	2,934,352
	Avoided Transmission Charges	0
	Transpower New Investment Contract Charges for year ending 31 March 2019	0
	Distributed Generation Allowance	0
	Claw-back	474,000
	Capex Wash-up	-78,000
	NPV Wash-up	275,000
	Quality Incentive Adjustment	124,545
PTB_{2018}	Pass-through Balance 2018	132,227
r	Cost of Debt	6.09%

Continued on next page

Appendix B – Price Path Compliance Calculations (Clauses 11.4(c) and (g)), Continued

Pass-through Balance Reconciliation				
Assessment Year Three (2018)		Assessment Year Four (2019)		Difference
	$P_{2018} Q_{2018}$		$P_{2019} Q_{2019}$	
$\sum PTP_{t-1} Q_{t-1}$	3,954,754	$\sum PTP_t Q_t$	5,020,695	1,065,941
K_{t-1}	89,053	K_t	87,761	-1,292
V_{t-1}	3,794,831	V_t	3,729,897	-64,934
$PTB_{t-2} (2017)$	57,835	$PTB_{t-1} (2018)$	132,227	74,392
$R = \text{cost of debt}$	6.09%	$R = \text{cost of debt}$	6.09%	
$PTB_{t-1} (2018)$	132,227	$PTB_t (2019)$	1,343,316	1,211,089

ΔCPI_{2019}			
Numerator		Denominator	
$\text{CPI}_{\text{Dec}2016}$	1214	$\text{CPI}_{\text{Dec}2015}$	1198
$\text{CPI}_{\text{Mar}2017}$	1226	$\text{CPI}_{\text{Mar}2016}$	1200
$\text{CPI}_{\text{Jun}2017}$	1226	$\text{CPI}_{\text{Jun}2016}$	1205
$\text{CPI}_{\text{Sep}2017}$	1232	$\text{CPI}_{\text{Sep}2016}$	1209
Total	4898	Total	4812
$\Delta \text{CPI}_{2019} \quad 1.79\%$			

Appendix C – Price and Quantity Schedules (Clause 11.4(c))

PRICE CODE	Q ₂₀₁₇	Distribution Price 2019 DP ₂₀₁₉	Distribution Revenue DP ₂₀₁₉ x Q ₂₀₁₇	Unit of Measure
F-C-CH1	937,612	0.1500	140,641.80	DAYS
E-C-CH1-24UC	3,980,279	0.1312	522,212.58	kWh
E-C-CH1-AICO	7,825,768	0.1120	876,485.98	kWh
E-C-CH1-CTRL	523,917	0.0880	46,104.71	kWh
E-C-CH1-NITE	134,200	0.0560	7,515.17	kWh
E-C-CH1-CTUD	291,963	0.1600	46,714.08	kWh
E-C-CH1-PROJ	2,020	0.1312	265.02	kWh
F-C-CH1G	256	0.1500	38.40	DAYS
E-C-CH1G-24UC	2,322	0.1312	304.65	kWh
E-C-CH1G-AICO	766	0.1120	85.79	kWh
E-C-CH1G-CTRL	-	0.0880	-	kWh
E-C-CH1G-NITE	-	0.0560	-	kWh
E-C-CH1G-CTUD	-	0.1600	-	kWh
E-C-CH1G-DGEN	1,212	-	-	kWh
F-C-CH2G	1,392	1.4000	1,948.80	DAYS
E-C-CH2G-24UC	14,136	0.0880	1,243.97	kWh
E-C-CH2G-AICO	10,100	0.0600	606.00	kWh
E-C-CH2G-CTRL	-	-	-	kWh
E-C-CH2G-NITE	-	-	-	kWh
E-C-CH2G-CTUD	-	-	-	kWh
E-C-CH2G-DGEN	4,864	-	-	kWh
E-C-CH2G-PROJ	1,644	0.1100	180.84	kWh
F-C-CH2R	1,223,514	1.4000	1,712,919.60	DAYS
E-C-CH2R-24UC	10,128,935	0.0438	444,052.53	kWh
E-C-CH2R-AICO	13,023,664	0.0290	377,165.30	kWh
E-C-CH2R-CTRL	1,124,037	0.0119	13,398.52	kWh
E-C-CH2R-NITE	324,187	0.0070	2,282.28	kWh
E-C-CH2R-CTUD	698,073	0.0338	23,566.94	kWh
E-C-CH2R-PROJ	7,600	0.0438	333.18	kWh
F-C-CH2L	504,264	1.4000	705,969.60	DAYS
E-C-CH2L-24UC	2,587,928	0.0720	186,330.82	kWh
E-C-CH2L-AICO	-	-	-	kWh
E-C-CH2L-CTRL	28,522	0.0480	1,369.06	kWh

PRICE CODE	Q ₂₀₁₇	Distribution Price 2019 DP ₂₀₁₉	Distribution Revenue DP ₂₀₁₉ x Q ₂₀₁₇	Unit of Measure
E-C-CH2L-CTUD	90,129	0.1040	9,373.42	kWh
E-C-CH2L-NITE	45,971	0.0320	1,471.07	kWh
E-C-CH2L-PROJ	425	0.0800	34.00	kWh
E-C-CH2L-TAIC	-	-	-	kWh
F-C-CH2H	194,816	1.4000	272,742.40	DAYS
E-C-CH2H-24UC	8,382,478	0.0800	670,598.23	kWh
E-C-CH2H-AICO	-	-	-	kWh
E-C-CH2H-CTRL	107,258	0.0480	5,148.38	kWh
E-C-CH2H-CTUD	759,849	0.1040	79,024.34	kWh
E-C-CH2H-NITE	368,389	0.0320	11,788.45	kWh
E-C-CH2H-PROJ	794	0.0800	63.52	kWh
E-C-CH2H-TAIC	-	-	-	kWh
F-C-CH2I	26,888	5.0000	134,440.00	DAYS
E-C-CH2I-24UC	3,330,016	0.0736	245,089.18	kWh
E-C-CH2I-CTRL	-23,250	0.0512	-6,310.40	kWh
E-C-CH2I-CTUD	2,813,266	0.0960	270,073.54	kWh
E-C-CH2I-NITE	1,496,138	0.0288	43,088.77	kWh
E-C-CH2I-PROJ	-	0.0736	-	kWh
E-C-CH2I-TAIC	-	-	-	kWh
E-C-CH2I-KVAR	-	-	-	kVAR
E-C-CH2I-SOPD	-	6.8000	-	kW
E-C-CH2I-WOPD	-	6.8000	-	kW
E-C-CH2I-DMND	-	4.4000	-	kW
F-C-CH3	24,738	5.0000	123,690.00	DAYS
E-C-CH3-24UC	3,730,386	0.0880	328,273.93	kWh
E-C-CH3-CTRL	31,999	0.0640	2,047.94	kWh
E-C-CH3-CTUD	918,976	0.1080	99,249.37	kWh
E-C-CH3-NITE	389,278	0.0333	12,970.75	kWh
E-C-CH3-PROJ	4,701	0.0880	413.69	kWh
E-C-CH3-TAIC	599,247	-	-	kWh
E-C-CH3-KVAR	545	-	-	kVAR
E-C-CH3-SOPD	1,772	6.8000	12,049.74	kW
E-C-CH3-WOPD	-	6.8000	-	kW
E-C-CH3-DMND	1,840	4.4000	8,096.70	kW

PRICE CODE	Q ₂₀₁₇	Distribution Price 2019 DP ₂₀₁₉	Distribution Revenue DP ₂₀₁₉ x Q ₂₀₁₇	Unit of Measure
F-C-CH4	9,155	29.0000	265,495.00	DAYS
E-C-CH4-24UC	2,129,108	0.0480	102,197.18	kWh
E-C-CH4-CTRL	-	0.0344	-	kWh
E-C-CH4-CTUD	1,176,361	0.0608	71,522.74	kWh
E-C-CH4-NITE	360,579	0.0200	7,211.58	kWh
E-C-CH4-PROJ	-	0.0480	-	kWh
E-C-CH4-TAIC	2,039,493	-	-	kWh
E-C-CH4-KVAR	964	-	-	kVAR
E-C-CH4-SOPD	5,211	6.8000	35,433.44	kW
E-C-CH4-WOPD	-	6.8000	-	kW
E-C-CH4-DMND	5,342	4.4000	23,503.92	kW
F-C-CH5	3,011	45.0000	135,495.00	DAYS
E-C-CH5-TAIC	4,802,608	-	-	kWh
E-C-CH5-KVAR	2,287	-	-	kVAR
E-C-CH5-SOPD	14,851	6.8000	100,986.80	kW
E-C-CH5-WOPD	-	6.8000	-	kW
E-C-CH5-DMND	15,375	3.2000	49,199.55	kW
E-C-CH5-DEFT	-	0.0520	-	kWh
F-C-CH6	639	60.0000	38,340.00	DAYS
E-C-CH6-TAIC	909,173	-	-	kWh
E-C-CH6-KVAR	745	-	-	kVAR
E-C-CH6-SOPD	4,202	6.8000	28,573.33	kW
E-C-CH6-WOPD	-	6.8000	-	kW
E-C-CH6-DMND	4,316	3.2000	13,810.24	kW
E-C-CH6-DEFT	-	0.0520	-	kWh
F-C-CH7	-	62.5000	-	DAYS
E-C-CH7-TAIC	-	-	-	kWh
E-C-CH7-KVAR	-	-	-	kVAR
E-C-CH7-SOPD	-	6.8000	-	kW
E-C-CH7-WOPD	-	6.8000	-	kW
E-C-CH7-DMND	-	3.2000	-	kW
E-C-CH7-DEFT	-	0.0520	-	kWh
F-C-CH8	365	79.5000	29,017.50	DAYS
E-C-CH8-TAIC	780,526	-	-	kWh

PRICE CODE	Q ₂₀₁₇	Distribution Price 2019 DP ₂₀₁₉	Distribution Revenue DP ₂₀₁₉ x Q ₂₀₁₇	Unit of Measure
E-C-CH8-KVAR	86	-	-	kVAR
E-C-CH8-SOPD	-	6.8000	-	kW
E-C-CH8-WOPD	2,134	6.8000	14,510.93	kW
E-C-CH8-DMND	2,217	2.8000	6,208.05	kW
E-C-CH8-DEFT	-	0.0320	-	kWh
F-C-CH9	-	89.5000	-	DAYS
E-C-CH9-TAIC	-	-	-	kWh
E-C-CH9-KVAR	-	-	-	kVAR
E-C-CH9-SOPD	-	6.8000	-	kW
E-C-CH9-WOPD	-	6.8000	-	kW
E-C-CH9-DMND	-	2.8000	-	kW
E-C-CH9-DEFT	-	0.0320	-	kWh
F-C-CH10	-	89.5000	-	DAYS
E-C-CH10-TAIC	-	-	-	kWh
E-C-CH10-KVAR	-	-	-	kVAR
E-C-CH10-SOPD	-	6.8000	-	kW
E-C-CH10-WOPD	-	6.8000	-	kW
E-C-CH10-DMND	-	2.8000	-	kW
E-C-CH10-DEFT	-	0.0320	-	kWh
F-C-CH11	365	89.5000	32,667.50	DAYS
E-C-CH11-TAIC	6,892,900	-	-	kWh
E-C-CH11-KVAR	439	-	-	kVAR
E-C-CH11-SOPD	13,960	6.8000	94,925.28	kW
E-C-CH11-WOPD	-	6.8000	-	kW
E-C-CH11-DMND	14,429	2.8000	40,400.64	kW
E-C-CH11-DEFT	-	0.0200	-	kWh
F-C-CH12	365	495.0000	180,675.00	DAYS
E-C-CH12-TAIC	21,616,164	-	-	kWh
E-C-CH12-KVAR	16,444	-	-	kVAR
E-C-CH12-SOPD	47,014	6.8000	319,697.92	kW
E-C-CH12-WOPD	-	6.8000	-	kW
E-C-CH12-DMND	47,555	2.8000	133,152.82	kW
E-C-CH12-DEFT	-	0.0200	-	kWh
E-C-U01-UNMT	312,304	0.0952	29,731.33	kWh

PRICE CODE	Q ₂₀₁₇	Distribution Price 2019 DP ₂₀₁₉	Distribution Revenue DP ₂₀₁₉ x Q ₂₀₁₇	Unit of Measure
F-C-U02	362,694	0.0500	18,134.70	DAYS
E-C-U02	-	-	-	kWh
E-C-U02-UNMT	510,307	0.0952	48,581.20	kWh
E-C-U03	-	-	-	kWh
E-C-U03-UNMT	-	0.0918	-	kWh
E-C-T1P-24UC	114	0.0800	9.12	kWh
F-C-T1P	524	1.5500	812.20	DAYS
E-C-CH1-DGEN	75,473	-	-	kWh
E-C-CH2R-DGEN	95,321	-	-	kWh
E-C-CH2L-DGEN	-	-	-	kWh
E-C-CH2H-DGEN	-	-	-	kWh
E-C-CH2I-DGEN	-	-	-	kWh
E-C-CH3-DGEN	1,936	-	-	kWh
E-C-CH4-DGEN	1,900	-	-	kWh
F-C-CH1T	-	0.1500	-	DAYS
E-C-CH1T-ONPK	-	0.1972	-	kWh
E-C-CH1T-OFPK	-	0.0748	-	kWh
E-C-CH1T-CTRL	-	0.0748	-	kWh
E-C-CH1T-NITE	-	0.0560	-	kWh
E-C-CH1T-KVAR	-	-	-	kVAR
E-C-CH1T-PROJ	-	0.1972	-	kWh
E-C-CH1T-DGEN	-	-	-	kWh
F-C-CH2T	-	1.4000	-	DAYS
E-C-CH2T-ONPK	-	0.1564	-	kWh
E-C-CH2T-OFPK	-	0.0408	-	kWh
E-C-CH2T-CTRL	-	0.0408	-	kWh
E-C-CH2T-NITE	-	0.0070	-	kWh
E-C-CH2T-KVAR	-	-	-	kVAR
E-C-CH2T-PROJ	-	0.1564	-	kWh
E-C-CH2T-DGEN	-	-	-	kWh
Total	108,858,777		9,255,445.61	

Appendix D – Price Apportionment to Distribution Prices and Pass-through Prices (Clause 11.4(d))

Price Summary 2018-19			
Price Code	Distribution Price \$	Pass-through Price \$	Total Price \$
F-C-CH1	0.1500	0.0000	0.1500
E-C-CH1-24UC	0.1312	0.0641	0.1953
E-C-CH1-AICO	0.1120	0.0550	0.1670
E-C-CH1-CTRL	0.0880	0.0370	0.1250
E-C-CH1-CTUD	0.1600	0.0860	0.2460
E-C-CH1-DGEN	0.0000	0.0000	0.0000
E-C-CH1-NITE	0.0560	0.0220	0.0780
E-C-CH1-PROJ	0.1312	0.0641	0.1953
F-C-CH2R	1.4000	0.0000	1.4000
E-C-CH2R-24UC	0.0438	0.0945	0.1383
E-C-CH2R-AICO	0.0290	0.0810	0.1100
E-C-CH2R-CTRL	0.0119	0.0561	0.0680
E-C-CH2R-CTUD	0.0338	0.1412	0.1750
E-C-CH2R-DGEN	0.0000	0.0000	0.0000
E-C-CH2R-NITE	0.0070	0.0490	0.0560
E-C-CH2R-PROJ	0.0438	0.0945	0.1383
F-C-CH1T	0.1500	0.0000	0.1500
E-C-CH1T-ONPK	0.1972	0.0928	0.2900
E-C-CH1T-OFPK	0.0748	0.0352	0.1100
E-C-CH1T-CTRL	0.0748	0.0352	0.1100
E-C-CH1T-DGEN	0.0000	0.0000	0.0000
E-C-CH1T-KVAR	0.0000	7.7500	7.7500
E-C-CH1T-NITE	0.0560	0.0220	0.0780
E-C-CH1T-PROJ	0.1972	0.0928	0.2900
F-C-CH2T	1.4000	0.0000	1.4000
E-C-CH2T-ONPK	0.1564	0.0736	0.2300
E-C-CH2T-OFPK	0.0408	0.0192	0.0600
E-C-CH2T-CTRL	0.0408	0.0192	0.0600
E-C-CH2T-DGEN	0.0000	0.0000	0.0000
E-C-CH2T-KVAR	0.0000	7.7500	7.7500
E-C-CH2T-NITE	0.0070	0.0490	0.0560
E-C-CH2T-PROJ	0.1564	0.0736	0.2300
F-C-CH1G	0.1500	0.0000	0.1500
E-C-CH1G-24UC	0.1312	0.0954	0.2266
E-C-CH1G-AICO	0.1120	0.0820	0.1940
E-C-CH1G-CTRL	0.0880	0.0570	0.1450
E-C-CH1G-CTUD	0.1600	0.1250	0.2850
E-C-CH1G-DGEN	0.0000	0.0000	0.0000
E-C-CH1G-NITE	0.0560	0.0350	0.0910
E-C-CH1G-PROJ	0.1312	0.0954	0.2266

Price Summary 2018-19			
Price Code	Distribution Price \$	Pass-through Price \$	Total Price \$
F-C-CH2G	1.4000	0.6860	2.0860
E-C-CH2G-24UC	0.0880	0.0503	0.1383
E-C-CH2G-AICO	0.0600	0.0500	0.1100
E-C-CH2G-CTRL	0.0000	0.0680	0.0680
E-C-CH2G-CTUD	0.0000	0.1750	0.1750
E-C-CH2G-NITE	0.0000	0.0560	0.0560
E-C-CH2G-DGEN	0.0000	0.0000	0.0000
E-C-CH2G-PROJ	0.1100	0.0283	0.1383
F-C-CH2L	1.4000	0.2500	1.6500
E-C-CH2L-24UC	0.0720	0.0430	0.1150
E-C-CH2L-CTRL	0.0480	0.0190	0.0670
E-C-CH2L-CTUD	0.1040	0.0410	0.1450
E-C-CH2L-DGEN	0.0000	0.0000	0.0000
E-C-CH2L-NITE	0.0320	0.0140	0.0460
E-C-CH2L-PROJ	0.0800	0.0350	0.1150
F-C-CH2H	1.4000	0.0000	1.4000
E-C-CH2H-24UC	0.0800	0.0505	0.1305
E-C-CH2H-CTRL	0.0480	0.0320	0.0800
E-C-CH2H-CTUD	0.1040	0.0610	0.1650
E-C-CH2H-DGEN	0.0000	0.0000	0.0000
E-C-CH2H-NITE	0.0320	0.0200	0.0520
E-C-CH2H-PROJ	0.0800	0.0505	0.1305
F-C-CH2I	5.0000	0.0000	5.0000
E-C-CH2I-24UC	0.0736	0.0364	0.1100
E-C-CH2I-CTRL	0.0512	0.0258	0.0770
E-C-CH2I-CTUD	0.0960	0.0500	0.1460
E-C-CH2I-DGEN	0.0000	0.0000	0.0000
E-C-CH2I-DMND	4.4000	2.4000	6.8000
E-C-CH2I-KVAR	0.0000	7.7500	7.7500
E-C-CH2I-NITE	0.0288	0.0152	0.0440
E-C-CH2I-PROJ	0.0736	0.0364	0.1100
E-C-CH2I-SOPD	6.8000	3.7000	10.5000
E-C-CH2I-TAIC	0.0000	0.0000	0.0000
E-C-CH2I-WOPD	6.8000	3.7000	10.5000
F-C-CH3	5.0000	0.0000	5.0000
E-C-CH3-24UC	0.0880	0.0350	0.1230
E-C-CH3-CTRL	0.0640	0.0220	0.0860
E-C-CH3-CTUD	0.1080	0.0550	0.1630
E-C-CH3-DGEN	0.0000	0.0000	0.0000
E-C-CH3-DMND	4.4000	2.4000	6.8000
E-C-CH3-KVAR	0.0000	7.7500	7.7500
E-C-CH3-NITE	0.0333	0.0157	0.0490
E-C-CH3-PROJ	0.0880	0.0350	0.1230

Price Summary 2018-19			
Price Code	Distribution Price \$	Pass-through Price \$	Total Price \$
E-C-CH3-SOPD	6.8000	3.7000	10.5000
E-C-CH3-TAIC	0.0000	0.0000	0.0000
E-C-CH3-WOPD	6.8000	3.7000	10.5000
F-C-CH4	29.0000	0.0000	29.0000
E-C-CH4-24UC	0.0480	0.0260	0.0740
E-C-CH4-CTRL	0.0344	0.0176	0.0520
E-C-CH4-CTUD	0.0608	0.0372	0.0980
E-C-CH4-DGEN	0.0000	0.0000	0.0000
E-C-CH4-DMND	4.4000	2.4000	6.8000
E-C-CH4-KVAR	0.0000	7.7500	7.7500
E-C-CH4-NITE	0.0200	0.0100	0.0300
E-C-CH4-PROJ	0.0480	0.0260	0.0740
E-C-CH4-SOPD	6.8000	3.7000	10.5000
E-C-CH4-TAIC	0.0000	0.0000	0.0000
E-C-CH4-WOPD	6.8000	3.7000	10.5000
F-C-CH5	45.0000	0.0000	45.0000
E-C-CH5-DEFT	0.0520	0.0280	0.0800
E-C-CH5-DMND	3.2000	1.6000	4.8000
E-C-CH5-KVAR	0.0000	7.7500	7.7500
E-C-CH5-SOPD	6.8000	3.7000	10.5000
E-C-CH5-TAIC	0.0000	0.0000	0.0000
E-C-CH5-WOPD	6.8000	3.7000	10.5000
F-C-CH6	60.0000	0.0000	60.0000
E-C-CH6-DEFT	0.0520	0.0280	0.0800
E-C-CH6-DMND	3.2000	1.6000	4.8000
E-C-CH6-KVAR	0.0000	7.7500	7.7500
E-C-CH6-SOPD	6.8000	3.7000	10.5000
E-C-CH6-TAIC	0.0000	0.0000	0.0000
E-C-CH6-WOPD	6.8000	3.7000	10.5000
F-C-CH7	62.5000	0.0000	62.5000
E-C-CH7-DEFT	0.0520	0.0280	0.0800
E-C-CH7-DMND	3.2000	1.1000	4.3000
E-C-CH7-KVAR	0.0000	7.7500	7.7500
E-C-CH7-SOPD	6.8000	3.7000	10.5000
E-C-CH7-TAIC	0.0000	0.0000	0.0000
E-C-CH7-WOPD	6.8000	3.7000	10.5000
F-C-CH8	79.5000	0.0000	79.5000
E-C-CH8-DEFT	0.0320	0.0280	0.0600
E-C-CH8-DMND	2.8000	1.5000	4.3000
E-C-CH8-KVAR	0.0000	7.7500	7.7500
E-C-CH8-SOPD	6.8000	3.7000	10.5000
E-C-CH8-TAIC	0.0000	0.0000	0.0000
E-C-CH8-WOPD	6.8000	3.7000	10.5000

Price Summary 2018-19			
Price Code	Distribution Price \$	Pass-through Price \$	Total Price \$
F-C-CH9	89.5000	0.0000	89.5000
E-C-CH9-DEFT	0.0320	0.0280	0.0600
E-C-CH9-DMND	2.8000	1.5000	4.3000
E-C-CH9-KVAR	0.0000	7.7500	7.7500
E-C-CH9-SOPD	6.8000	3.7000	10.5000
E-C-CH9-TAIC	0.0000	0.0000	0.0000
E-C-CH9-WOPD	6.8000	3.7000	10.5000
F-C-CH10	89.5000	0.0000	89.5000
E-C-CH10-DEFT	0.0320	0.0280	0.0600
E-C-CH10-DMND	2.8000	1.5000	4.3000
E-C-CH10-KVAR	0.0000	7.7500	7.7500
E-C-CH10-SOPD	6.8000	3.7000	10.5000
E-C-CH10-TAIC	0.0000	0.0000	0.0000
E-C-CH10-WOPD	6.8000	3.7000	10.5000
F-C-CH11	89.5000	0.0000	89.5000
E-C-CH11-DEFT	0.0200	0.0200	0.0400
E-C-CH11-DMND	2.8000	1.5000	4.3000
E-C-CH11-KVAR	0.0000	7.7500	7.7500
E-C-CH11-SOPD	6.8000	3.7000	10.5000
E-C-CH11-TAIC	0.0000	0.0000	0.0000
E-C-CH11-WOPD	6.8000	3.7000	10.5000
F-C-CH12	495.0000	0.0000	495.0000
E-C-CH12-DEFT	0.0200	0.0200	0.0400
E-C-CH12-DMND	2.8000	1.5000	4.3000
E-C-CH12-KVAR	0.0000	7.7500	7.7500
E-C-CH12-SOPD	6.8000	3.7000	10.5000
E-C-CH12-TAIC	0.0000	0.0000	0.0000
E-C-CH12-WOPD	6.8000	3.7000	10.5000
F-C-CH13	0.0000	0.0000	0.0000
E-C-CH13-DMND	0.0000	0.0000	0.0000
E-C-CH13-KVAR	0.0000	0.0000	0.0000
E-C-CH13-SOPD	0.0000	0.0000	0.0000
E-C-CH13-TAIC	0.0000	0.0000	0.0000
E-C-CH13-WOPD	0.0000	0.0000	0.0000
E-C-U01-UNMT	0.0952	0.0448	0.1400
F-C-U02	0.0500	0.0000	0.0500
E-C-U02-UNMT	0.0952	0.0448	0.1400
F-C-U03	0.0500	0.0000	0.0500
E-C-U03-UNMT	0.0918	0.0432	0.1350
F-C-T1P	1.5500	0.0000	1.5500
E-C-T1P-24UC	0.0800	0.0583	0.1383
F-C-U02-1	0.0500	0.0000	0.0500
F-C-U02-3	0.0500	0.0000	0.0500

Price Summary 2018-19			
Price Code	Distribution Price \$	Pass-through Price \$	Total Price \$
F-C-U02-4	0.0500	0.0000	0.0500
E-C-U02-1	0.0952	0.0448	0.1400
E-C-U02-2	0.0952	0.0448	0.1400
E-C-U02-3	0.0952	0.0448	0.1400
E-C-U02-4	0.0952	0.0448	0.1400

Appendix E – Methodology Used to Calculate Distribution Prices and Pass-through Prices (Clause 11.4(e))

The Centralines' Board of Directors established a desired level of overall price increase for the network of 0%. This was due to concerns about rate shock and a desire to smooth price increases to consumers over time.

To achieve this, distribution prices were set to under-achieve the Allowable Notional Revenue, while simultaneously seeking to ensure that forecast pass-through revenue would fully recover forecast pass-through and recoverable costs in the year they are incurred.

As a general principle, price codes that had a higher proportion allocated to the distribution component, where the price code:

- delivered more predictable revenue flows, and
- had less opportunity for fluctuation due to outside influences.

By setting price codes in this way, it served to:

- protect Centralines from excessive fluctuation of revenue from one year to the next in order to be able to cover distribution costs, and
- reduce individual price fluctuations for consumers from one year to the next for the same reason.

As a result of the above, Centralines has significantly under-recovered the Allowable Notional Revenue for the year, with an over-recovery of pass-through and recoverable costs. This is primarily because actual billed volumes have exceeded forecast billed volumes.

Appendix F – Pass-through Prices and Quantities for 2019 and 2018 Assessment Periods (Clause 11.4(f))

2019 Assessment Period

Price Code	Quantity	Pass-through Price \$	Total Pass-through Revenue \$
	Q ₂₀₁₉	PTP ₂₀₁₉	PTP ₂₀₁₉ x Q ₂₀₁₉
E-C-CH11-DMND	14,900.40	1.5000	22,350.60
E-C-CH11-KVAR	76.00	7.7500	589.00
E-C-CH11-SOPD	14,556.60	3.7000	53,859.42
E-C-CH11-TAIC	7,089,277.00	0.0000	0.00
E-C-CH1-24UC	4,639,615.27	0.0641	297,399.34
E-C-CH12-DMND	48,677.22	1.5000	73,015.83
E-C-CH12-KVAR	8,582.46	7.7500	66,514.07
E-C-CH12-SOPD	47,741.90	3.7000	176,645.03
E-C-CH12-TAIC	22,746,017.00	0.0000	0.00
E-C-CH1-AICO	8,731,973.65	0.0550	480,258.55
E-C-CH1-CTRL	580,950.99	0.0370	21,495.19
E-C-CH1-CTUD	315,676.39	0.0860	27,148.17
E-C-CH1-DGEN	70,417.92	0.0000	0.00
E-C-CH1G-24UC	51,300.00	0.0954	4,894.02
E-C-CH1G-AICO	413.00	0.0820	33.87
E-C-CH1G-DGEN	27,918.00	0.0000	0.00
E-C-CH1-NITE	139,399.76	0.0220	3,066.79
E-C-CH1-PROJ	3,058.00	0.0641	196.02
E-C-CH1T-CTRL	12,479.08	0.0352	439.26
E-C-CH1T-OFPK	255,253.08	0.0352	8,984.91
E-C-CH1T-ONPK	136,790.34	0.0928	12,694.14
E-C-CH1T-PROJ	12,188.85	0.0928	1,131.13
E-C-CH2G-24UC	117,641.00	0.0503	5,917.34
E-C-CH2G-AICO	68,856.00	0.0500	3,442.80
E-C-CH2G-CTUD	288.00	0.1750	50.40
E-C-CH2G-DGEN	61,474.00	0.0000	0.00
E-C-CH2G-NITE	237.00	0.0560	13.27
E-C-CH2G-PROJ	894.00	0.0283	25.30
E-C-CH2H-24UC	8,326,001.31	0.0505	420,463.07
E-C-CH2H-CTRL	98,973.00	0.0320	3,167.14
E-C-CH2H-CTUD	870,304.74	0.0610	53,088.59
E-C-CH2H-NITE	348,598.11	0.0200	6,971.96
E-C-CH2H-PROJ	120,398.94	0.0505	6,080.15
E-C-CH2I-24UC	1,966,713.55	0.0364	71,588.37
E-C-CH2I-CTRL	35.00	0.0258	0.90

Price Code	Quantity	Pass-through Price \$	Total Pass-through Revenue \$
	Q ₂₀₁₉	PTP ₂₀₁₉	PTP ₂₀₁₉ x Q ₂₀₁₉
E-C-CH2I-CTUD	2,232,806.00	0.0500	111,640.30
E-C-CH2I-NITE	1,109,561.00	0.0152	16,865.33
E-C-CH2I-PROJ	30,931.00	0.0364	1,125.89
E-C-CH2L-24UC	2,596,015.07	0.0430	111,628.65
E-C-CH2L-CTRL	26,178.00	0.0190	497.38
E-C-CH2L-CTUD	22,208.00	0.0410	910.53
E-C-CH2L-NITE	9,951.00	0.0140	139.31
E-C-CH2L-PROJ	3,549.00	0.0350	124.22
E-C-CH2R-24UC	10,850,477.71	0.0945	1,024,936.12
E-C-CH2R-AICO	13,575,993.10	0.0810	1,100,198.48
E-C-CH2R-CTRL	1,025,762.16	0.0561	57,524.74
E-C-CH2R-CTUD	637,387.64	0.1412	90,024.63
E-C-CH2R-DGEN	87,063.30	0.0000	0.00
E-C-CH2R-NITE	291,437.64	0.0490	14,268.79
E-C-CH2R-PROJ	-1,535.00	0.0945	-145.00
E-C-CH2T-CTRL	440.79	0.0192	8.46
E-C-CH2T-OFPK	151,032.14	0.0192	2,899.82
E-C-CH2T-ONPK	71,163.15	0.0736	5,237.61
E-C-CH2T-PROJ	1,679.79	0.0736	123.63
E-C-CH3-24UC	3,968,220.88	0.0350	138,887.73
E-C-CH3-CTRL	24,806.00	0.0220	545.73
E-C-CH3-CTUD	1,042,031.26	0.0550	57,311.72
E-C-CH3-DGEN	1,112.00	0.0000	0.00
E-C-CH3-DMND	2,111.88	2.4000	5,068.51
E-C-CH3-KVAR	367.62	7.7500	2,849.05
E-C-CH3-NITE	408,679.75	0.0157	6,408.10
E-C-CH3-PROJ	204.00	0.0350	7.14
E-C-CH3-SOPD	2,004.80	3.7000	7,417.76
E-C-CH3-TAIC	786,302.00	0.0000	0.00
E-C-CH4-24UC	2,401,440.21	0.0260	62,437.45
E-C-CH4-CTUD	1,128,327.00	0.0372	41,973.76
E-C-CH4-DGEN	1,601.00	0.0000	0.00
E-C-CH4-DMND	5,521.76	2.4000	13,252.22
E-C-CH4-KVAR	1,020.66	7.7500	7,910.11
E-C-CH4-NITE	315,431.00	0.0100	3,154.31
E-C-CH4-PROJ	27,007.00	0.0260	702.18
E-C-CH4-SOPD	5,375.44	3.7000	19,889.13
E-C-CH4-TAIC	2,030,428.00	0.0000	0.00
E-C-CH5-DMND	17,235.08	1.6000	27,576.13
E-C-CH5-KVAR	1,819.07	7.7500	14,097.82

Price Code	Quantity	Pass-through Price \$	Total Pass-through Revenue \$
	Q ₂₀₁₉	PTP ₂₀₁₉	PTP ₂₀₁₉ X Q ₂₀₁₉
E-C-CH5-SOPD	16,713.36	3.7000	61,839.43
E-C-CH5-TAIC	5,302,950.00	0.0000	0.00
E-C-CH6-DMND	1,847.08	1.6000	2,955.33
E-C-CH6-KVAR	357.75	7.7500	2,772.59
E-C-CH6-SOPD	1,746.76	3.7000	6,463.01
E-C-CH6-TAIC	530,217.00	0.0000	0.00
E-C-CH8-DMND	1,824.80	1.5000	2,737.20
E-C-CH8-KVAR	34.55	7.7500	267.74
E-C-CH8-TAIC	630,521.00	0.0000	0.00
E-C-CH8-WOPD	1,795.04	3.7000	6,641.65
E-C-T1P-24UC	7,115.00	0.0583	414.80
E-C-U01-UNMT	322,813.80	0.0448	14,462.06
E-C-U02-1	394,508.10	0.0448	17,673.96
E-C-U02-2	33,533.12	0.0448	1,502.28
E-C-U02-3	57,826.40	0.0448	2,590.62
E-C-U02-4	2,123.13	0.0448	95.12
E-C-U03-UNMT	47,767.00	0.0432	2,063.53
F-C-CH1	985,334.00	0.0000	0.00
F-C-CH11	365.00	0.0000	0.00
F-C-CH12	365.00	0.0000	0.00
F-C-CH1G	4,058.00	0.0000	0.00
F-C-CH1T	26,805.00	0.0000	0.00
F-C-CH2G	8,785.00	0.6860	6,026.51
F-C-CH2H	186,137.00	0.0000	0.00
F-C-CH2I	27,399.00	0.0000	0.00
F-C-CH2L	492,669.00	0.2500	123,167.25
F-C-CH2R	1,185,756.00	0.0000	0.00
F-C-CH2T	8,319.00	0.0000	0.00
F-C-CH3	28,821.00	0.0000	0.00
F-C-CH4	9,147.00	0.0000	0.00
F-C-CH5	3,285.00	0.0000	0.00
F-C-CH6	365.00	0.0000	0.00
F-C-CH8	365.00	0.0000	0.00
F-C-T1P	1,172.00	0.0000	0.00
F-C-U02-1	323,387.00	0.0000	0.00
F-C-U02-3	24,339.00	0.0000	0.00
F-C-U02-4	2,190.00	0.0000	0.00
F-C-U03-3	26,936.00	0.0000	0.00
		PTP₂₀₁₉ X Q₂₀₁₉	\$5,020,695.46

2018 Assessment Period

Price Code	Quantity Q ₂₀₁₈	Pass-through Price \$ PTP ₂₀₁₈	Total Pass-through Revenue \$ PTP ₂₀₁₈ X Q ₂₀₁₈
F-C-CH1	954,901.00	0.0000	0.00
E-C-CH1-24UC	4,225,009.62	0.0313	132,242.80
E-C-CH1-AICO	8,234,206.94	0.0270	222,323.59
E-C-CH1-CTRL	536,302.67	0.0150	8,044.54
E-C-CH1-CTUD	318,312.11	0.0460	14,642.36
E-C-CH1-DGEN	69,678.00	0.0000	0.00
E-C-CH1-NITE	143,249.57	0.0080	1,146.00
E-C-CH1-PROJ	5,194.00	0.0313	162.57
F-C-CH1G	1,617.00	0.0000	0.00
E-C-CH1G-24UC	12,697.00	0.0626	794.83
E-C-CH1G-AICO	1,872.00	0.0540	101.09
E-C-CH1G-CTRL	0.00	0.0350	0.00
E-C-CH1G-CTUD	0.00	0.0850	0.00
E-C-CH1G-DGEN	10,755.00	0.0000	0.00
E-C-CH1G-NITE	0.00	0.0210	0.00
F-C-CH1T	10,228.00	0.0000	0.00
E-C-CH1T-ONPK	43,485.42	0.0435	1,891.62
E-C-CH1T-OFPK	95,849.02	0.0165	1,581.51
E-C-CH1T-CTRL	4,330.84	0.0165	71.46
E-C-CH1T-KVAR	0.00	7.7500	0.00
E-C-CH1T-DGEN	0.00	0.0000	0.00
E-C-CH1T-PROJ	1,837.20	0.0435	79.92
F-C-CH2G	5,540.00	0.6860	3,800.44
E-C-CH2G-24UC	63,876.00	0.0283	1,807.69
E-C-CH2G-AICO	46,550.00	0.0350	1,629.25
E-C-CH2G-CTRL	0.00	0.0180	0.00
E-C-CH2G-CTUD	0.00	0.0450	0.00
E-C-CH2G-DGEN	46,288.00	0.0000	0.00
E-C-CH2G-NITE	0.00	0.0160	0.00
E-C-CH2G-PROJ	-1,341.00	0.0283	-37.95
F-C-CH2R	1,216,040.00	0.2951	358,853.40
E-C-CH2R-24UC	10,754,375.07	0.0835	897,990.32
E-C-CH2R-AICO	13,618,385.05	0.0738	1,005,036.82
E-C-CH2R-CTRL	1,080,345.03	0.0531	57,366.32
E-C-CH2R-CTUD	667,044.23	0.1328	88,583.47
E-C-CH2R-DGEN	87,849.00	0.0000	0.00
E-C-CH2R-NITE	311,326.07	0.0472	14,694.59
E-C-CH2R-PROJ	19,899.00	0.0835	1,661.57
F-C-CH2T	2,797.00	0.1000	279.70
E-C-CH2T-ONPK	19,320.70	0.0345	666.56

Price Code	Quantity Q ₂₀₁₈	Pass-through Price \$ PTP ₂₀₁₈	Total Pass-through Revenue \$ PTP ₂₀₁₈ X Q ₂₀₁₈
E-C-CH2T-OFPK	41,658.16	0.0090	374.92
E-C-CH2T-CTRL	486.78	0.0090	4.38
E-C-CH2T-KVAR	0.00	7.7500	0.00
E-C-CH2T-DGEN	0.00	0.0000	0.00
E-C-CH2T-PROJ	31.21	0.0345	1.08
F-C-CH2L	497,143.00	0.2500	124,285.75
E-C-CH2L-24UC	2,608,962.55	0.0250	65,224.06
E-C-CH2L-AICO	0.00	0.0000	0.00
E-C-CH2L-CTRL	25,415.00	0.0070	177.91
E-C-CH2L-CTUD	61,522.00	0.0150	922.83
E-C-CH2L-DGEN	0.00	0.0000	0.00
E-C-CH2L-NITE	27,803.00	0.0060	166.82
E-C-CH2L-PROJ	5,086.00	0.0150	76.29
E-C-CH2L-TAIC	0.00	0.0000	0.00
F-C-CH2H	189,164.00	0.0000	0.00
E-C-CH2H-24UC	8,173,238.87	0.0305	249,283.79
E-C-CH2H-AICO	-70,309.20	0.0000	0.00
E-C-CH2H-CTRL	100,252.00	0.0200	2,005.04
E-C-CH2H-CTUD	878,464.35	0.0350	30,746.25
E-C-CH2H-DGEN	0.00	0.0000	0.00
E-C-CH2H-NITE	324,834.99	0.0120	3,898.02
E-C-CH2H-PROJ	189,557.36	0.0305	5,781.50
E-C-CH2H-TAIC	0.00	0.0000	0.00
F-C-CH2I	27,375.00	0.0000	0.00
E-C-CH2I-24UC	2,330,717.00	0.0180	41,952.91
E-C-CH2I-CTRL	221.00	0.0130	2.87
E-C-CH2I-CTUD	2,053,478.00	0.0260	53,390.43
E-C-CH2I-DGEN	0.00	0.0000	0.00
E-C-CH2I-NITE	975,416.00	0.0080	7,803.33
E-C-CH2I-PROJ	0.00	0.0180	0.00
E-C-CH2I-TAIC	0.00	0.0000	0.00
E-C-CH2I-KVAR	0.00	7.7500	0.00
E-C-CH2I-SOPD	0.00	2.0000	0.00
E-C-CH2I-WOPD	0.00	2.0000	0.00
E-C-CH2I-DMND	0.00	1.3000	0.00
F-C-CH3	26,102.00	0.0000	0.00
E-C-CH3-24UC	3,831,778.74	0.0130	49,813.12
E-C-CH3-CTRL	27,691.00	0.0060	166.15
E-C-CH3-CTUD	902,068.27	0.0280	25,257.91
E-C-CH3-DGEN	1,711.00	0.0000	0.00
E-C-CH3-NITE	366,076.23	0.0074	2,690.66
E-C-CH3-PROJ	0.00	0.0130	0.00

Price Code	Quantity Q ₂₀₁₈	Pass-through Price \$ PTP ₂₀₁₈	Total Pass-through Revenue \$ PTP ₂₀₁₈ X Q ₂₀₁₈
E-C-CH3-TAIC	671,131.00	0.0000	0.00
E-C-CH3-KVAR	489.54	7.7500	3,793.94
E-C-CH3-SOPD	1,915.16	2.0000	3,830.32
E-C-CH3-WOPD	0.00	2.0000	0.00
E-C-CH3-DMND	1,994.02	1.3000	2,592.23
F-C-CH4	9,166.00	0.0000	0.00
E-C-CH4-24UC	2,356,020.54	0.0140	32,984.29
E-C-CH4-CTRL	0.00	0.0090	0.00
E-C-CH4-CTUD	1,124,531.15	0.0220	24,739.69
E-C-CH4-DGEN	1,600.00	0.0000	0.00
E-C-CH4-NITE	354,810.86	0.0050	1,774.05
E-C-CH4-PROJ	0.00	0.0140	0.00
E-C-CH4-TAIC	1,908,381.00	0.0000	0.00
E-C-CH4-KVAR	922.48	7.7500	7,149.22
E-C-CH4-SOPD	5,129.02	2.0000	10,258.04
E-C-CH4-WOPD	0.00	2.0000	0.00
E-C-CH4-DMND	5,412.94	1.3000	7,036.82
F-C-CH5	2,925.00	0.0000	0.00
E-C-CH5-TAIC	4,760,476.00	0.0000	0.00
E-C-CH5-KVAR	2,041.19	7.7500	15,819.20
E-C-CH5-SOPD	13,878.16	2.0000	27,756.32
E-C-CH5-WOPD	0.00	2.0000	0.00
E-C-CH5-DMND	14,285.82	0.8000	11,428.66
E-C-CH5-DEFT	0.00	0.0150	0.00
F-C-CH6	725.00	0.0000	0.00
E-C-CH6-TAIC	834,123.00	0.0000	0.00
E-C-CH6-KVAR	514.59	7.7500	3,988.05
E-C-CH6-SOPD	4,256.34	2.0000	8,512.68
E-C-CH6-WOPD	0.00	2.0000	0.00
E-C-CH6-DMND	4,357.46	0.8000	3,485.97
E-C-CH6-DEFT	0.00	0.0150	0.00
F-C-CH7	0.00	0.0000	0.00
E-C-CH7-TAIC	0.00	0.0000	0.00
E-C-CH7-KVAR	0.00	7.7500	0.00
E-C-CH7-SOPD	0.00	2.0000	0.00
E-C-CH7-WOPD	0.00	2.0000	0.00
E-C-CH7-DMND	0.00	0.3000	0.00
E-C-CH7-DEFT	0.00	0.0150	0.00
F-C-CH8	365.00	0.0000	0.00
E-C-CH8-TAIC	716,334.00	0.0000	0.00
E-C-CH8-KVAR	55.97	7.7500	433.79
E-C-CH8-SOPD	0.00	2.0000	0.00

Price Code	Quantity Q ₂₀₁₈	Pass-through Price \$ PTP ₂₀₁₈	Total Pass-through Revenue \$ PTP ₂₀₁₈ X Q ₂₀₁₈
E-C-CH8-WOPD	2,140.04	2.0000	4,280.08
E-C-CH8-DMND	2,186.48	0.8000	1,749.18
E-C-CH8-DEFT	0.00	0.0200	0.00
F-C-CH9	0.00	0.0000	0.00
E-C-CH9-TAIC	0.00	0.0000	0.00
E-C-CH9-KVAR	0.00	7.7500	0.00
E-C-CH9-SOPD	0.00	2.0000	0.00
E-C-CH9-WOPD	0.00	2.0000	0.00
E-C-CH9-DMND	0.00	0.8000	0.00
E-C-CH9-DEFT	0.00	0.0200	0.00
F-C-CH10	0.00	0.0000	0.00
E-C-CH10-TAIC	0.00	0.0000	0.00
E-C-CH10-KVAR	0.00	7.7500	0.00
E-C-CH10-SOPD	0.00	2.0000	0.00
E-C-CH10-WOPD	0.00	2.0000	0.00
E-C-CH10-DMND	0.00	0.8000	0.00
E-C-CH10-DEFT	0.00	0.0200	0.00
F-C-CH11	365.00	0.0000	0.00
E-C-CH11-TAIC	6,575,009.00	0.0000	0.00
E-C-CH11-KVAR	516.40	7.7500	4,002.10
E-C-CH11-SOPD	13,646.40	2.0000	27,292.80
E-C-CH11-WOPD	0.00	2.0000	0.00
E-C-CH11-DMND	14,355.00	0.8000	11,484.00
E-C-CH11-DEFT	0.00	0.0150	0.00
F-C-CH12	365.00	0.0000	0.00
E-C-CH12-TAIC	22,128,059.00	0.0000	0.00
E-C-CH12-KVAR	14,137.02	7.7500	109,561.91
E-C-CH12-SOPD	47,578.20	2.0000	95,156.40
E-C-CH12-WOPD	0.00	2.0000	0.00
E-C-CH12-DMND	47,892.76	0.8000	38,314.21
E-C-CH12-DEFT	0.00	0.0150	0.00
F-C-CH13	0.00	0.0000	0.00
E-C-CH13-TAIC	0.00	0.0000	0.00
E-C-CH13-KVAR	0.00	7.7500	0.00
E-C-CH13-SOPD	0.00	2.0000	0.00
E-C-CH13-WOPD	0.00	2.0000	0.00
E-C-CH13-DMND	0.00	0.8000	0.00
F-C-U02	373,760.00	0.0000	0.00
F-C-U03	0.00	0.0000	0.00
E-C-U01-UNMT	318,409.77	0.0210	6,686.61
E-C-U02-UNMT	532,169.10	0.0210	11,175.55
E-C-U03-UNMT	0.00	0.0203	0.00

Price Code	Quantity Q_{2018}	Pass-through Price \$ PTP_{2018}	Total Pass-through Revenue \$ $PTP_{2018} \times Q_{2018}$
E-C-T1P-24UC	713.00	0.0383	27.31
F-C-T1P	998.00	0.0000	0.00
	109,071,905.25	$PTP_{2017} \times Q_{2017}$	\$3,954,753.87

Appendix G – Pass-through Costs and Recoverable Costs – Actual and Forecast (Clauses 8.6(b) and 11.4(g), (h), (i) and (j))

Pass-through and recoverable costs table The table below shows the pass-through costs and recoverable costs for the year ending March 2019.

Pass-through and Recoverable Costs for year ending March 2019				
V ₂₀₁₉	Actual (\$)	Forecast (\$)	Variance (\$)	Variance (%)
Transmission Charges	2,934,352	2,934,352	-	0.0%
Avoided Transmission Charges	-	-	-	0.0%
Transpower New Investment Contract Charges	-	-	-	0.0%
Distributed Generation Allowance	-	-	-	0.0%
Claw Back	474,000	474,000	-	0.0%
NPV Wash-up	275,000	275,000	-	0.0%
Capex Wash-up	-78,000	-78,000	-	0.0%
Quality Incentive Adjustment	124,545	124,545	-	0.0%
K ₂₀₁₉	Actual (\$)	Forecast (\$)	Variance (\$)	Variance (%)
Local Authority Rates	41,263	42,696	-1,432	-3.4%
Electricity Authority Levies	21,676	23,490	-1,815	-7.7%
Commerce Act Levies	20,339	16,320	4,019	24.6%
Utilities Disputes (formerly Electricity and Gas Complaints Commissioner) Levies	4,484	4,484	-	0.0%
Total Pass-through and Recoverable Costs	3,817,659	3,816,886	773	0.02%

Continued on next page

Appendix G – Pass-through Costs and Recoverable Pass-through Costs – Actual and Forecast (Clauses 8.6(b) and 11.4(g), (h), (i) and (j)), Continued

Explanations for variances	<p>None of these costs are fully fixed and variances will naturally occur. Listed below are explanations for variances.</p> <ul style="list-style-type: none">• Transmission – Transmission as forecast.• Avoided Transmission – No avoided transmission.• Rates – Minimal variation from rates forecasts.• Electricity Authority Levies – Minimal variation from forecast.• Commerce Act Levies – Lower levies and wash-up invoiced than forecast.• Utilities Disputes' Levies – As forecast.
-----------------------------------	---

Appendix H – Quality Standard Compliance Calculations (Clause 11.5(c))

Reliability Data (before Normalisation)

Year	SAIDI (Interruption Duration)			SAIFI (Interruption Frequency)		
	Class B	Class C	Total	Class B	Class C	Total
2019	101.403	57.029	107.730	0.592	1.764	2.060

SAIDI and SAIFI Limits, Unplanned Boundary Values, Caps, Collars, and the Targets for the Regulatory Period 1 April 2015 – 31 March 2020

SAIDI Quality Measures

<i>SAIDI_{Boundary}</i>	8.517	SAIDI Unplanned Boundary value: 23 rd highest daily unplanned SAIDI value in the Reference Dataset.
<i>Daily_{planned}</i>	560.897	The sum of all daily planned SAIDI values in the Reference Dataset.
<i>Daily_{unplanned}</i>	910.270	The sum of all daily unplanned SAIDI values in the Reference Dataset, where any daily unplanned SAIDI Values greater than the SAIDI Unplanned Boundary Value equals that value.
<i>SAIDI_{Target}</i>	119.072	$(\text{Daily}_{\text{planned}} * 0.5) + \text{Daily}_{\text{unplanned}} / 10$
<i>SAIDI_{deviation}</i>	1.061	The standard deviation of the daily SAIDI assessed values (daily planned value * 0.5 + normalised daily unplanned value).
<i>SAIDI_{Limit} / SAIDI_{Cap}</i>	139.348	$\text{SAIDI}_{\text{target}} + (\text{SAIDI}_{\text{deviation}} \times \sqrt{365})$
<i>SAIDI_{Collar}</i>	98.796	$\text{SAIDI}_{\text{target}} - (\text{SAIDI}_{\text{deviation}} \times \sqrt{365})$

Continued on next page

Appendix H – Quality Standard Compliance Calculations (Clause 11.5(c)), Continued

SAIFI Quality Measures

<i>SAIFI_{Boundary}</i>	0.294	SAIFI Unplanned Boundary value: 23 rd highest daily unplanned SAIFI value in the Reference Dataset.
<i>Daily_{planned}</i>	2.549	The sum of all daily planned SAIFI values in the Reference Dataset.
<i>Daily_{unplanned}</i>	33.939	The sum of all daily unplanned SAIFI values in the Reference Dataset, where any daily unplanned SAIFI Values greater than the SAIFI Unplanned Boundary Value equals that value.
<i>SAIFI_{Target}</i>	3.521	$(\text{Daily}_{\text{planned}} * 0.5) + \text{Daily}_{\text{unplanned}} / 10$
<i>SAIFI_{deviation}</i>	0.036	The standard deviation of the daily SAIFI assessed values (daily planned value * 0.5 + normalised daily unplanned value).
<i>SAIFI_{Limit} / SAIFI_{Cap}</i>	4.203	$\text{SAIFI}_{\text{target}} + (\text{SAIFI}_{\text{deviation}} \times \sqrt{365})$
<i>SAIFI_{Collar}</i>	2.840	$\text{SAIFI}_{\text{target}} - (\text{SAIFI}_{\text{deviation}} \times \sqrt{365})$

Continued on next page

Appendix H – Quality Standard Compliance Calculations (Clause 11.5(c)), Continued

Reliability Assessment Calculations (2018/19 Assessment Period)

There have been no Major Event Days in the 2018/19 Assessment Period, where the Daily SAIDI Value for Class C Interruptions Exceeds the SAIDI Unplanned Boundary Value

Date	Pre-Normalised Class C SAIDI	Normalised Class C SAIDI

There have been no Major Event Days in the 2018/19 Assessment Period, where the Daily SAIFI Value for Class C Interruptions Exceeds the SAIFI Unplanned Boundary Value

Date	Pre-Normalised Class C SAIFI	Normalised Class C SAIFI
		-

Calculation of the 2019 SAIDI Assessed Value

$$\begin{aligned} \text{SAIDI}_{\text{assess}} &= (0.5 \times \text{SAIDI}_{\text{B}}) + \text{SAIDI}_{\text{C}} \\ &= (0.5 \times 101.403) + 57.029 \\ &= 107.730 \end{aligned}$$

Assessed SAIDI Value 2019

SAIDI ₂₀₁₉	107.730	The sum of daily SAIDI Values in the 1 April 2018 – 31 March 2019 Normalised Assessment Dataset
-----------------------	---------	---

Calculation of the 2019 SAIFI Assessed Value

$$\begin{aligned} \text{SAIFI}_{\text{assess}} &= (0.5 \times \text{SAIFI}_{\text{B}}) + \text{SAIFI}_{\text{C}} \\ &= (0.5 \times 0.592) + 1.764 \\ &= 2.060 \end{aligned}$$

Assessed SAIFI Value 2019

SAIFI ₂₀₁₉	2.060	The sum of daily SAIFI Values in the 1 April 2018 – 31 March 2019 Normalised Assessment Dataset
-----------------------	-------	---

Continued on next page

Appendix H – Quality Standard Compliance Calculations (Clause 11.5(c)), Continued

Prior Period Assessed Values

Assessed SAIDI Value		
SAIDI ₂₀₁₈	131.67	The sum of daily SAIDI Values in the 1 April 2017 – 31 March 2018 Normalised Assessment Dataset

Assessed SAIFI Value		
SAIFI ₂₀₁₈	2.230	The sum of daily SAIFI Values in the 1 April 2017 – 31 March 2018 Normalised Assessment Dataset

Assessed SAIDI Value		
SAIDI ₂₀₁₇	92.07	The sum of daily SAIDI Values in the 1 April 2016 – 31 March 2017 Normalised Assessment Dataset

Assessed SAIFI Value		
SAIFI ₂₀₁₇	1.668	The sum of daily SAIFI Values in the 1 April 2016 – 31 March 2017 Normalised Assessment Dataset

Appendix I – Quality Incentive Adjustment Clause 11.5(c) and Schedule 5B

SAIDI Quality Incentive Measures for the Regulatory Period 1 April 2015 – 31 March 2020

	SAIDI Target	SAIDI Collar	SAIDI Cap
1 April 2015 – 31 March 2020	119.0718	98.7960	139.3477

SAIFI Quality Incentive Measures for the Regulatory Period 1 April 2015 – 31 March 2020

	SAIFI Target	SAIFI Collar	SAIFI Cap
1 April 2015 – 31 March 2020	3.5214	2.8397	4.2030

Calculation of the Quality Incentive Adjustment

$$S_{TOTAL} = S_{SAIDI} + S_{SAIFI}$$

$$77,842.70 = 27,920.38 + 49,922.32$$

$$S_{SAIDI} = SAIDI_{IR} \times (SAIDI_{target} - SAIDI_{assess})$$

$$27,920.38 = 2461.79 \times (119.0718 - 107.7303)$$

Where $SAIDI_{assess}$ is:

- (i) greater than the $SAIDI_{cap}$, $SAIDI_{assess}$ equals the $SAIDI_{cap}$;
- (ii) less than the $SAIDI_{collar}$, $SAIDI_{assess}$ equals the $SAIDI_{collar}$.

$$SAIDI_{IR} = \frac{0.5 \times REV_{RISK}}{SAIDI_{cap} - SAIDI_{target}}$$

$$2461.79 = \frac{0.5 \times 99,830}{139.3477 - 119.0718}$$

$$S_{SAIFI} = SAIFI_{IR} \times (SAIFI_{target} - SAIFI_{assess})$$

$$49,922.32 = 73,232.10 \times (3.5214 - 2.8397)$$

Where $SAIFI_{assess}$ is:

- (i) greater than the $SAIFI_{cap}$, $SAIFI_{assess}$ equals the $SAIFI_{cap}$;
- (ii) less than the $SAIFI_{collar}$, $SAIFI_{assess}$ equals the $SAIFI_{collar}$.

$$SAIFI_{IR} = \frac{0.5 \times REV_{RISK}}{SAIFI_{cap} - SAIFI_{target}}$$

$$73,232.10 = \frac{0.5 \times 99,830}{4.2030 - 3.5214}$$

Appendix J – Policies and Procedures for Recording SAIDI and SAIFI (Clause 11.5(e))

Centralines systems for recording SAIDI and SAIFI

Centralines uses ADMS SCADA for recording operations of network switches with time stamped data used for calculation of SAIDI and SAIFI. A detailed explanation of how the ADMS system is used to calculate SAIDI and SAIFI can be found in the '*ADMS – All interruptions*' section in this appendix.

SCADA timing

Automatically recorded SCADA data is time stamped at the Remote Terminal Unit (RTU), and the data is time corrected to the master station each half hour.

Centralines' SCADA: Remote devices in ADMS

Centralines' ADMS SCADA system has been designed to capture real-time data.

In Centralines' SCADA, all zone substation 33kV and 11kV circuit breakers are linked by RTUs. The RTUs report automatically and time stamp all changes of state of devices directly to the SCADA ADMS Event Summary.

On the SCADA system, each zone substation and 11kV feeder is represented by a schematic picture and a SCADA tile.

Centralines' SCADA: Non-remote devices in ADMS

Switching devices that have no SCADA link to Centralines have a pseudo point defined in the SCADA database. Each point has an identifier name that relates to the real world switch number.

As Field Operators complete operational items, they report this to the System Control Operator, who in turn manually sets the field device's pseudo point on the appropriate SCADA tile. This action is automatically recorded and time stamped in the SCADA ADMS Event Summary.

Outage data sources

The capture of outage data uses the following data sources and utilities.

Data	Source
(1) Number of ICPs attached to 11kV/400v transformers	GIS
(2) Transformers connected between Isolation Points	GIS
(3) Real time data	ADMS SCADA

Continued on next page

Appendix J – Policies and Procedures for Recording SAIDI and SAIFI (Clause 11.5(e)), Continued

ADMS – All Interruptions

ADMS is updated with customer numbers and connectivity from GIS daily. Zone (33kV/11kV) substation connectivity is maintained manually by the SCADA Team.

The SCADA file is updated by either:

- an operation of a device that is linked via SCADA, or
- a manual update which is a switch status updated by the System Control Operator.

The software is updated to reflect the real-time physical state of the network, including energisation of customers.

If the switching operation de-energises customers, ADMS will create an 'incident' and 'SDP interruptions'.¹ The 'incident' has a unique identifier for the interruption and contains operational information, for example, the cause of the interruption. The 'SDP interruptions' are created in ADMS for each supply disruption to each customer affected. It records the start and end times of the interruption, and contains a link to the parent 'incident'.

When all customers are restored, the System Control Operator updates the relevant general details on the incident and 'archives' it. This removes the incident from the list of current interruptions in ADMS and allows it to be viewed by other systems at Centralines.

Customer Minutes Lost (CML) is calculated for each incident by adding all the minutes from the 'SDP interruptions' associated with that incident. CML is then divided by the number of connected customers to calculate SAIDI for the incident. This task is performed by a Centralines' database script.

SAIFI is calculated for the incident by dividing the number of customers affected by the number of connected customers (the average customers for the disclosure year).

TOAD™

ADMS does not allow manual editing of SAIDI and SAIFI. If there is an error that results in incorrect SAIDI or SAIFI, they must be calculated manually and entered into TOAD. This is then used for reporting SAIDI and SAIFI.

Continued on next page

¹ SDP – Service Delivery Point, the ADMS equivalent of an ICP.

Appendix J – Policies and Procedures for Recording SAIDI and SAIFI (Clause 11.5(e)), Continued

