

CPP FINANCIAL MODEL

Powerco CPP proposal

12 June 2017

Module	Worksheet	Purpose
	Cover Model notes Error checks master IM compliance Direct Inputs	<p>Summarises all of the error checks that are contained within this workbook and shows if they have been satisfied or are in error.</p> <p>Lists all of the CPP relevant IM clauses, references where these requirements have been met and provides clarification comments where necessary.</p> <p>Details all inputs (with the exception of capex and opex forecasts) required to run this model and where they have been sourced from.</p>
1.0 Price path	1.0 INPUTS 1.0 RABx 1.0 TAXx 1.0 DTAXx 1.0 BBARx 1.0 MARx 1.0 OUTPUTS	<p>Provides all main calculations to generate an IM compliant MAR series. This is broadly consistent with the ComCom Final Orion CPP determination model.</p> <p>List all inputs required to perform all calculations within this module.</p> <p>Calculates total depreciation, adjusted depreciation, RAB proportionate investment, TFVCA, revaluations and opening RAB</p> <p>Calculates Regulatory tax adjustments and forecast regulatory tax allowance</p> <p>Calculates opening and closing deferred tax balance</p> <p>Calculates BBAR before and after tax</p> <p>Calculates MAR before and after tax</p> <p>Summarises nine key financial outputs required in a CPP proposal.</p>
3.1 Escalators	3.1 NZIER indices 3.1 CPI index	<p>Calculates price escalation indices for capex and opex inputs.</p> <p>Calculates an IM compliant forecast CPI growth rates, the CPP inflation rate, the revaluation rate and a CPI index.</p>
3.2 Opex aggregation	3.2 Opex price escalation 3.2 Opex aggregation	<p>Details real forecast opex inputs and inflates them into nominal dollar forecasts.</p> <p>Aggregates opex forecast into CPP opex category groupings.</p>
3.3 Capex aggregation and commissioned assets	3.3 Capex price escalation 3.3 COF & VCA	<p>Details real forecast capex inputs and inflates them into nominal dollar forecasts. Maps forecast capex to asset category.</p> <p>Calculates cost of finance, value of commissioned assets, tax value of commissioned assets, WUC roll forward, TFVCA and proportionate value of commissioned assets</p>
4.1 RAB roll forward	4.1 RAB roll forward 4.1 RAB proportionate invest	<p>Calculates a detailed RAB roll forward forecast comprised of existing assets, additional assets and acquired assets.</p> <p>Calculates a forecast of RAB proportionate investment value.</p>
4.2 Tax depreciation and RTAV roll forward	4.2 Tax depreciation	<p>Calculates a forecast tax asset roll forward to provide a forecast tax depreciation. Provides a reconciliation of tax asset value to regulatory tax asset value.</p>
4.3 Tax calculations	4.3 Initial differences	<p>Calculates the forecast amortisation of initial differences in asset values.</p>
4.4 RAB excluding revaluations roll forward	4.4 RAB excl revals roll	<p>Calculates a RAB roll forward excluding revaluations which provides an adjusted depreciation forecast. This module has the same calculations at module 4.1 but excludes revaluations.</p>
4.5 Term credit spread differential	4.5 TCSD	<p>Calculates a forecast term credit spread differential allowance.</p>
Powerco CPP reports	5.1 Opex by portfolio 5.2 Capex by portfolio	<p>Summarises real and nominal opex forecasts by CPP portfolios</p> <p>Summarises real and nominal capex forecasts, cost of finance, forecast value of commissioned assets and forecast closing WUC by CPP portfolios</p>
IM Schedule E reports for a CPP proposal	Schedule E table 1 Schedule E table 2 Schedule E table 3 Schedule E table 4 Schedule E table 5 Schedule E table 6 Schedule E table 7 Schedule E table 8 Schedule E table 9	

Financial model overview

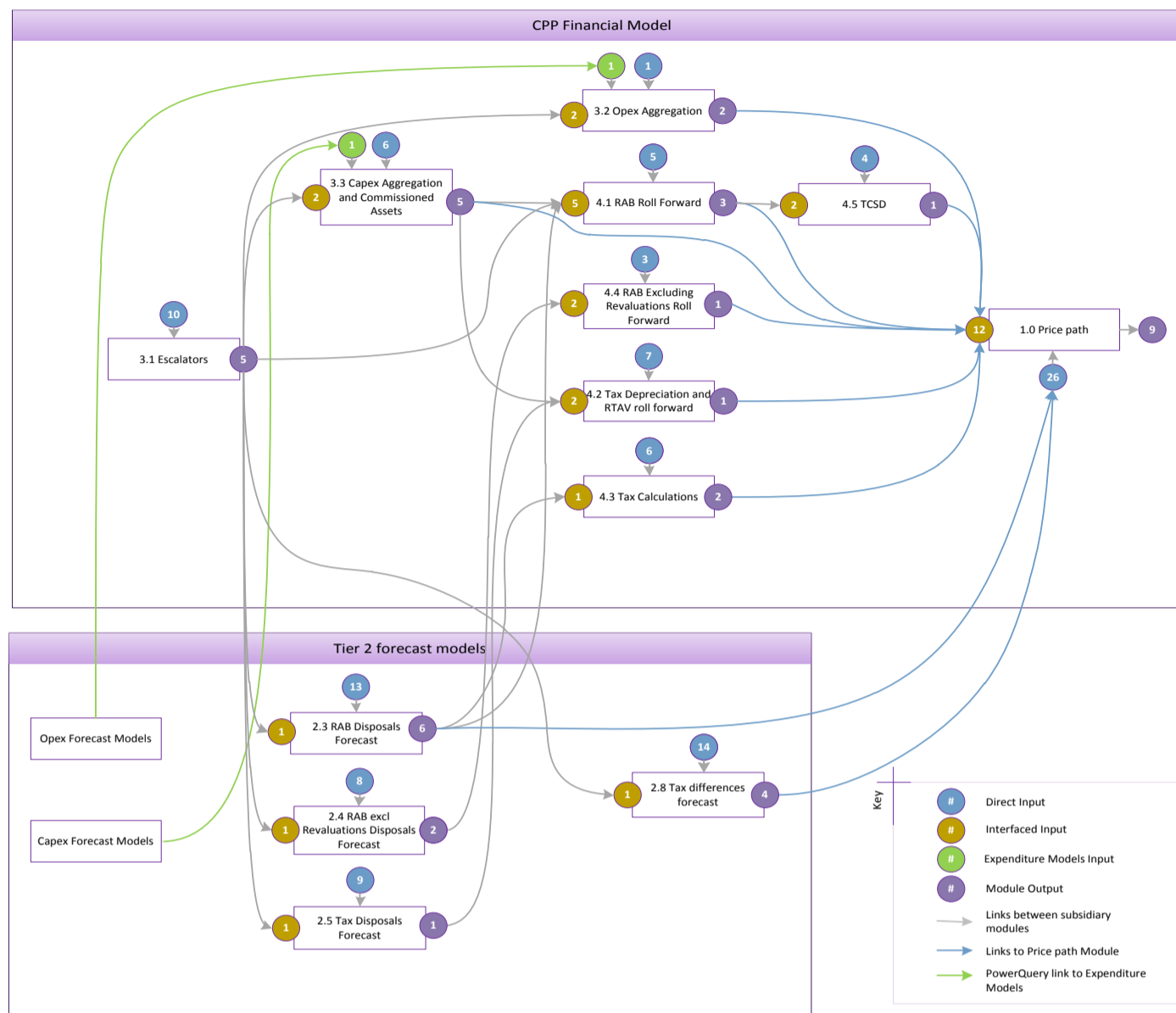
This model has been designed on a modular basis to improve navigation and transparency.

The key module is '1.0 Price path' which is largely based on the structure of the CPP financial model used in the Commerce Commission's final Orion CPP decision. The other eight modules provide intermediate calculations that generate the necessary inputs for module 1.0.

The modules and how they interface are illustrated in the following overview diagram. The purpose of each worksheet is detailed in the table of contents.

Powerco CPP Financial Model Overview

Modules and interfaces



Model operation

This workbook contains an excel data table in worksheet '3.3 COF &VCA'. This table must be recalculated each time inputs into module 3.3 are changed to ensure outputs are valid. This can be achieved by ensuring calculation options are set to automatic for data tables or by manually recalculating data tables using the F9 key.

Model conventions

Workbook colour coding

Input worksheets are	
Calculation worksheets are	
Output and Report worksheets are	
Model information worksheets are	
Audit and admin worksheets are	

Worksheet structure

Direct input cells are:	
Inputs from other model outputs	

End

Error checks master

Direct inputs

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
3	1.0 RABx	Opening RAB inputs agree with ID disclosure	Error check: Existing RAB inputs equal disclosed RAB					TRUE									
									TRUE								

1.0 Price path

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
1	1.0 RABx	Closing RAB agrees with closing RAB in module 4.1	Error check: Closing RAB agrees with closing RAB in module 4.1						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
2	1.0 RABx	Closing RAB excel reveals agrees with closing RAB excel reveals in module 4.4	Error check: Closing RAB excel reveals agrees with closing RAB excel reveals in module 4.4						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	1.0 RABx	Total depreciation equals sum of depreciation for existing assets and depreciation for additional assets.	Error check: Total depreciation equals sum of depreciation for existing assets and depreciation for additional assets.						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
									TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

3.2 Opex aggregation

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
1	3.2 Opex aggregation	Real forecast totals equal real input forecasts total	Error check: Real forecast totals equal real input forecasts total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
2	3.2 Opex aggregation	Nominal forecast totals equal nominal input forecasts total	Error check: Nominal forecast totals equal nominal input forecasts total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	3.2 Opex aggregation	Real total equals real calculations total	Error check: Real total equals real calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	3.2 Opex aggregation	Nominal total equals nominal calculations total	Error check: Nominal total equals nominal calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
									TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

3.3 Capex aggregation and commissioned assets

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
1	3.3 COF & VCA	Nominal capex data used in worksheet is complete	Error check: Input data used in this worksheet = forecast model inputs						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
2	3.3 COF & VCA	Output datatable includes COF for user selected dataset	Error check: Selection Cost of financing = Data table Cost of financing						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	3.3 COF & VCA	Output datatable includes VCA for user selected dataset	Error check: Selection VCA = Data table VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	3.3 COF & VCA	Calculated nominal capex remains consistent with inputs	Error check: Nominal Capex total equals Nominal capex inputs						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
5	3.3 COF & VCA	Nominal Total VCA by capex category - aggregation is complete	Error check: Aggregated forecast VCA = total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
6	3.3 COF & VCA	Nominal Total VCA by asset category - aggregation is complete	Error check: Aggregated forecast VCA = total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
7	3.3 COF & VCA	Nominal System growth VCA by asset category - aggregation is complete	Error check: Aggregated forecast VCA = total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
8	3.3 COF & VCA	Nominal ARR VCA by asset category - aggregation is complete	Error check: Aggregated forecast VCA = total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
9	3.3 COF & VCA	Aggregated values equal total forecast VCA	Error check: Aggregated values equal total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
11	3.3 COF & VCA	Aggregated values equal total forecast VCA	Error check: Aggregated values equal total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
12	3.3 COF & VCA	Proportionate values of forecast commissioned tax assets	Error check: Aggregated values equal total forecast VCA						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
13	3.3 COF & VCA	Total WUC equals Simple commissioning WUC + Specific date commissioning WUC	Error check: Aggregated values equal total closing WUC						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
14	3.3 COF & VCA	Checks that simple commissioning method achieves the intended total outcome	Error check: WUC as a percentage of capex agrees with top down assumption						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
									TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

4.1 RAB roll-forward

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
1	4.1 RAB roll forward	Checks that all remaining life categories have been included in aggregation	Error check: Aggregated data sums to raw inputs disaggregated data						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	4.1 RAB roll forward	Existing Assets roll forward aggregation checks	Error check: Aggregated data sums correctly						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	4.1 RAB roll forward	Existing Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
5	4.1 RAB roll forward	Commissioned Assets roll forward aggregation checks	Error check: Aggregated data sums correctly						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
6	4.1 RAB roll forward	Commissioned Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
7	4.1 RAB roll forward	Acquired Assets roll forward aggregation checks	Error check: Aggregated data sums correctly						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
8	4.1 RAB roll forward	Acquired Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
9	4.1 RAB roll forward	Total Assets roll forward aggregation checks	Error check: Aggregated data sums correctly						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
10	4.1 RAB roll forward	Total Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
11	4.1 RAB roll forward	Ensures total aggregated commissioned assets are consistent with inputs	Error check: Aggregate Commissioned Assets equal commissioned assets inputs						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
									TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

4.2 Tax depreciation and RTAV roll-forward

Number	Worksheet	Description	Check	2012	2013	2014	2015	2016	Assessment		CPP period						
									2017	2018	2019	2020	2021	2022	2023		
1	4.2 Tax depreciation	Inputs completeness check	Error check: Total worksheet opening RTAV inputs equal total model RTAV inputs						TRUE								
2	4.2 Tax depreciation	Inputs completeness check	Error check: Total worksheet tax VCA inputs equal total model tax VCA inputs						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	4.2 Tax depreciation	Inputs completeness check	Error check: Total worksheet proportionate tax VCA inputs equal total model proportionate tax VCA inputs						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	4.2 Tax depreciation	Opening/closing balance check	Error check: Opening RTAVY1 = Closing RTAVY0						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
5	4.2 Tax depreciation	Aggregation check	Error check: Aggregate of individual Closing RTAV = Consolidated roll forward						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
6	4.2 Tax depreciation	Opening/closing balance check	Error check: Closing RTAVY0 = Opening RTAVY1						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
7	4.2 Tax depreciation	Aggregation check	Error check: Aggregate of individual Closing RTAV = Consolidated roll forward						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
8	4.2 Tax depreciation	2017 opening regulatory tax asset value agrees with 2016 ID Schedule 5a(vii)	Error check: 2017 opening regulatory tax asset value agrees with 2016 ID Schedule 5a(vii)						TRUE								
									TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

4.3 Initial difference

Number	Worksheet	Description	Check	Assessment		CPP period						
				2017	2018	2019	2020	2021	2022	2023		
1	4.3 Initial differences	Inputs completeness check	Error check: Opening unamortised initial difference equals closing unamortised initial difference from previous year	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

4.4 RAB excluding revaluations roll-forward

Number	Worksheet	Description	Check	Assessment		CPP period						
				2017	2018	2019	2020	2021	2022	2023		
1	4.4 RAB excl revals roll	Inputs into worksheet agree in total with model inputs	Error check: Aggregated data sums to raw inputs disaggregated data	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	4.4 RAB excl revals roll	Existing Assets roll forward aggregation checks	Error check: Aggregated data sums correctly	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	4.4 RAB excl revals roll	Existing Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
5	4.4 RAB excl revals roll	Commissioned Assets roll forward aggregation checks	Error check: Aggregated data sums correctly	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
6	4.4 RAB excl revals roll	Commissioned Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
7	4.4 RAB excl revals roll	Acquired Assets roll forward aggregation checks	Error check: Aggregated data sums correctly	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
8	4.4 RAB excl revals roll	Acquired Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
9	4.4 RAB excl revals roll	Total Assets roll forward aggregation checks	Error check: Aggregated data sums correctly	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
10	4.4 RAB excl revals roll	Total Assets roll forward aggregation checks	Error check: Closing balance is carried forward to opening balance	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
11	4.4 RAB excl revals roll	Total Assets roll forward aggregation checks	Error check: Aggregate Commissioned Assets equal commissioned assets inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Reporting worksheets

Number	Worksheet	Description	Check	Assessment		CPP period						
				2017	2018	2019	2020	2021	2022	2023		
1	Schedule E table 3	Real total equals calculations total	Error check: Real total equals calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
2	Schedule E table 3	Nominal total equals input total	Error check: Nominal total equals input total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
3	5.1 Opex by portfolio	Real total equals Calculations total	Error check: Real total equals Calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4	5.1 Opex by portfolio	Nominal total equals Calculations total	Error check: Nominal total equals Calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
5	Schedule E table 2	Real capex table 2a total equals total real capex inputs	Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
6	Schedule E table 2	Nominal capex table 2b total equals total nominal capex inputs	Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
7	Schedule E table 2	Nominal VCA table 2c total equals total nominal VCA outputs	Error check: Report total equals the sum of the Forecast VCA outputs table	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
8	Schedule E table 2	Total of table 2c reconciles with Table 2d per IM el. 5.4.30(2)(b)	Error check: Total of table 2c reconciles with Table 2d per IM el. 5.4.30(2)(b)	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
9	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
10	Schedule E table 4	Table 4 and table 2 agree, Real capex, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
11	Schedule E table 4	Table 4 and table 2 agree, VCA, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
12	Schedule E table 4	Table 4 and table 2 agree, Nom capex, System growth	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
13	Schedule E table 4	Table 4 and table 2 agree, Real capex, System growth	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
14	Schedule E table 4	Table 4 and table 2 agree, VCA, System growth	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
15	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Asset replacement and renewal	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
16	Schedule E table 4	Table 4 and table 2 agree, Real capex, Asset replacement and renewal	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
17	Schedule E table 4	Table 4 and table 2 agree, VCA, Asset replacement and renewal	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
18	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Quality of supply	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
19	Schedule E table 4	Table 4 and table 2 agree, Real capex, Quality of supply	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
20	Schedule E table 4	Table 4 and table 2 agree, VCA, Quality of supply	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
21	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Legislative and regulatory	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
22	Schedule E table 4	Table 4 and table 2 agree, Real capex, Legislative and regulatory	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
23	Schedule E table 4	Table 4 and table 2 agree, VCA, Legislative and regulatory	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
24	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Other reliability, safety and environment	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
25	Schedule E table 4	Table 4 and table 2 agree, Real capex, Other reliability, safety and environment	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
26	Schedule E table 4	Table 4 and table 2 agree, VCA, Other reliability, safety and environment	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
27	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Non-network	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
28	Schedule E table 4	Table 4 and table 2 agree, Real capex, Non-network	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
29	Schedule E table 4	Table 4 and table 2 agree, VCA, Non-network	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
30	Schedule E table 4	Table 4 and table 2 agree, Nom capex, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
31	Schedule E table 4	Table 4 and table 2 agree, Real capex, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
32	Schedule E table 4	Table 4 and table 2 agree, VCA, Consumer connections	Error check: Capex category total equals schedule E: table 2 capex category total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
33	Schedule E table 4	Report total equals total nominal capex table	Error check: Report total equals the sum of the forecast expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
34	Schedule E table 4	Report total equals total real capex table	Error check: Report total equals the sum of the forecast expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
35	Schedule E table 4	Report total equals total VCA table	Error check: Report total equals the sum of the forecast expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
36	Schedule E table 4	Table 4 and table 2 agree in total, nominal capex	Error check: Table 4 report total equals Table 2 report total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
37	Schedule E table 4	Table 4 and table 2 agree in total, real capex	Error check: Table 4 report total equals Table 2 report total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
38	Schedule E table 4	Table 4 and table 2 agree in total, VCA	Error check: Table 4 report total equals Table 2 report total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
39	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
40	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
41	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
42	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
43	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
44	Schedule E table 5	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
45	5.2 Capex by portfolio	Report total equals the sum of the Forecast Expenditure inputs	Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
46	5.2 Capex by portfolio	Report total equals the sum of the Forecast Expenditure inputs	Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
47	5.2 Capex by portfolio	Report total equals COF & VCA worksheet summary	Error check: Report total equals COF & VCA worksheet summary	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
48	5.2 Capex by portfolio	Report total equals summary total from COF & VCA worksheet	Error check: Report total equals WUC roll-forward totals from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
49	5.2 Capex by portfolio	Report total equals the total calculated forecast value of commissioned assets	Error check: Report total equals the total calculated forecast value of commissioned assets	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
50	5.2 Capex by portfolio	Report total equals the total calculated forecast value of commissioned assets	Error check: Report total equals the total calculated forecast value of commissioned assets	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

All error checks are satisfied

End

IM compliance schedule

PART 2 INPUT METHODOLOGIES FOR INFORMATION DISCLOSURE

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
SUBPART 2	Asset valuation					
2.2.1	Asset adjustment process for setting initial RAB	No	n/a			n/a
2.2.2	Composition of initial RAB	No	n/a			n/a
2.2.3	Initial RAB values for assets	No	n/a			n/a
2.2.4	RAB roll forward	No	n/a			n/a
2.2.5	Depreciation	No	n/a			n/a
2.2.8	2.2.8 Physical asset life	No	n/a			n/a
2.2.8(1)	Physical asset life means, subject to subclauses (2) and (4), in the case of-	No	n/a			n/a
2.2.8(1)	(a) a fixed life easement, the fixed duration or fixed period (as the case may be) referred to in the definition of fixed life easement;	No	n/a			n/a
2.2.8(1)	(b) an extended life asset or a refurbished asset, its physical service life potential as determined by the EDB;	No	n/a			n/a
2.2.8(1)	(c) an asset determined by the EDB to have a service life potential shorter than its standard physical asset life, its physical service life potential determined by an engineer, subject to subclause (3);	No	n/a			n/a
2.2.8(1)	(d) an asset where the Commission has applied an adjustment factor in accordance with clause 4.2.2(3), the asset life determined in accordance with subclause (4);	No	n/a			n/a
2.2.8(1)	(e) found asset for which a similar asset exists as described in subclause 2.2.12(2)(b)(i), the asset life applying to the similar asset;	No	n/a		No found assets forecast in the CPP	n/a
2.2.8(1)	(f) a non-network asset, its asset life determined under GAAP;	Yes	Yes		Implicit in existing RAB depreciation	
2.2.8(1)	(g) an asset acquired or transferred from a regulated supplier, the asset life that the vendor would have assigned to the asset at the end of its disclosure year had the asset not been transferred;	Yes	n/a		The model is configured to apply the existing remaining asset lives to acquired assets but our CPP does not include any acquired assets.	
2.2.8(1)	(h) an asset acquired or transferred from an entity other than a regulated supplier:	Yes	n/a		No assets of this nature are in our CPP proposal	
2.2.8(1)	(i) where a similar asset to that acquired or transferred already exists in the EDB, the asset life assigned to the similar asset; or	Yes	n/a		No assets of this nature are in our CPP proposal	
2.2.8(1)	(ii) where a similar asset to that acquired or transferred does not already exist in the EDB, the physical service life potential determined by an engineer, subject to subclause (3).	Yes	n/a		No assets of this nature are in our CPP proposal	
2.2.8(1)	(i) an asset not referred to in paragraphs (a) – (h)-					
2.2.8(1)	(i) in the initial RAB and an included asset; or					
2.2.8(1)	(ii) not in the initial RAB,					
2.2.8(1)	and-					
2.2.8(1)	(iii) having a standard physical asset life, its standard physical asset life;	Yes	Yes		Implicit in existing RAB depreciation	
2.2.8(1)	(iv) not having a standard physical asset life, the asset life applying to an asset with an unallocated opening RAB value that is similar in terms of asset type; or					
2.2.8(1)	(v) in all other cases, its physical service life potential determined by an engineer, subject to subclause (3);					

PART 3 INPUT METHODOLOGIES FOR BOTH DEFAULT AND CUSTOMISED PRICE-QUALITY PATHS

SUBPART 1	Specification of price					
3.1.1	Specification and definition of prices	No	n/a			
3.1.1(1)	For the purpose of s 53M(1)(a) of the Act, the maximum revenues that may be recovered by an EDB will be specified in a DPP determination or CPP determination as a revenue cap, whereby forecast revenue from prices must not exceed forecast allowable revenue for each disclosure year of the regulatory period.	No	n/a		CPP determination will specify Forecast allowable revenue rather than ANR. This is not required to be produced by the Financial model but will be required in the analysis layer	
3.1.1(2)	For the purpose of setting the maximum revenues under subclause (1), the Commission may specify in a DPP determination or CPP determination an annual maximum percentage increase in forecast allowable revenue as a function of demand for a disclosure year.	No	n/a		The Commission may apply a CPRG	
3.1.1(3)	For the purpose of this subpart, 'forecast revenue from prices' for a disclosure year means the forecast revenue used by an EDB to set prices, where forecast revenue is the total of each price multiplied by each forecast quantity.	No	n/a			
3.1.1(4)	For the purpose of this subpart, 'forecast allowable revenue' as specified in a DPP determination or CPP determination includes-	No	n/a			
3.1.1(4)	(a) forecast net allowable revenue;	No	n/a			
3.1.1(4)	(b) forecast pass-through costs;	No	n/a			
3.1.1(4)	(c) forecast recoverable costs, excluding any revenue wash-up draw down amount under clause 3.1.3(1)(v) for the disclosure year referred to in subclause (1); and	No	n/a			
3.1.1(4)	(d) the balance of the wash-up account available for draw down.	No	n/a			
3.1.1(5)	For the purpose of this subpart, 'forecast allowable revenue as a function of demand' is the forecast allowable revenue for the disclosure year expressed as a function of one or more units of demand as specified by the Commission in a DPP determination or CPP determination.	No	n/a			
3.1.1(6)	For the purpose of this subpart, 'forecast net allowable revenue' for the first disclosure year of a DPP or CPP regulatory period will be specified by the Commission at the start of the regulatory period in a DPP determination or CPP determination.	No	n/a			

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
3.1.1(7)	For each disclosure year of the DPP or CPP regulatory period after the first disclosure year, 'forecast net allowable revenue' is calculated by applying-	No	n/a			
3.1.1(7)	(a) the forecast net allowable revenue for the preceding disclosure year;	No	n/a			
3.1.1(7)	(b) the forecast CPI, as specified in subclause (8); and	No	n/a			
3.1.1(7)	(c) any X factor applicable to the EDB.	No	n/a			
3.1.1(8)	'Forecast CPI' means-	No	n/a		This replaces the previously defined Inflation rate.	
	(a) for a quarter prior to the quarter for which the vanilla WACC applicable to the relevant DPP regulatory period or CPP regulatory period was determined, CPI as per paragraph (a) of the 'CPI' definition and excluding any adjustments made under paragraph (b) of the CPI definition arising as a result of an event that occurs after the issue of the Monetary Policy Statement referred to in paragraph (b) below;				This applies to Forecast net allowable revenue which is not required by the CPP but does apply in practice when the CPP has been approved	
3.1.1(8)	(b) for each later quarter for which a forecast of the change in headline CPI has been included in the Monetary Policy Statement last issued by the Reserve Bank of New Zealand prior to the date for which the vanilla WACC applicable to the relevant DPP regulatory period or CPP regulatory period was determined, the CPI last applying under paragraph (a) extended by the forecast change; and	No	n/a			
3.1.1(8)	(c) in respect of later quarters, the forecast last applying under paragraph (b) adjusted such that an equal increment or decrement made to that forecast for each of the following three years results in the forecast for the last of those years being equal to the target midpoint for the change in headline CPI set out in the Monetary Policy Statement referred to in paragraph (b).	No	n/a			
3.1.1(9)	'Prices' means-	No	n/a			
3.1.1(9)	(a) individual tariffs, fees or charges; or	No	n/a			
3.1.1(9)	(b) individual components thereof,	No	n/a			
3.1.1(9)	in nominal terms exclusive of GST for the supply of an electricity distribution service, and must include a discount taken up by consumers.	No	n/a			
3.1.1(10)	'Quantity' means the amounts supplied of electricity distribution services corresponding to the extent practicable to prices, expressed in units of kWh, kVA, kW, day or other unit applicable to such supply.	No	n/a			
3.1.1(11)	'discount' means a discount to charges payable for the supply of electricity distribution services-	No	n/a			
3.1.1(11)	(a) that is offered by an EDB in a published tariff schedule; and	No	n/a			
3.1.1(11)	(b) the take-up of which is determined by consumers; and	No	n/a			
3.1.1(11)	(c) that applied when the forecast net allowable revenue was determined.	No	n/a			
3.1.2	<u>Pass-through costs</u>	No			CPP disclosures are limited to proposed new pass-through costs. Refer to cl. 5.4.31	
3.1.3	<u>Recoverable costs</u>	No			CPP disclosures are limited to CPP related recoverable costs as defined in cl. 5.4.32	
SUBPART 2	Amalgamations		n/a			
3.2.1	<u>Treatment of amalgamations</u>	No	n/a			
SUBPART 3	Incremental rolling incentive scheme	No	n/a			
SECTION 1	Annual IRIS incentive adjustments	No	n/a			
3.3.1	<u>Calculation of annual IRIS incentive adjustment as recoverable cost</u>	No	n/a			
SECTION 2	Operating expenditure incentives	No	n/a			
3.3.2	<u>How to calculate opex incentive amounts</u>	No	n/a			
3.3.3	<u>How to calculate the amount carried forward to subsequent disclosure years</u>	No	n/a			
3.3.4	<u>How to calculate the adjustment to the opex incentive for the second year of a regulatory period</u>	No	n/a			
3.3.5	<u>How to calculate the base year adjustment term</u>	No	n/a			
3.3.6	<u>How to calculate the roll-over adjustment term</u>	No	n/a			
3.3.7	<u>How to calculate the baseline adjustment term applicable to CPP regulatory periods</u>	No	n/a			
3.3.8	<u>How to calculate adjustment terms applicable to regulatory periods preceded by a single starting price year</u>	No	n/a			
3.3.9	<u>How to calculate adjustment terms applicable to CPP regulatory periods preceded by two successive starting price years</u>	No	n/a			
SECTION 3	Capital expenditure incentives	No	n/a			
3.3.10	<u>How to calculate capex incentive amounts</u>	No	n/a			
3.3.11	<u>How to calculate the capex wash-up</u>	No	n/a			
3.3.12	<u>How to calculate the retention adjustment</u>	No	n/a			
SECTION 4	Price-quality path amendments and other events	No	n/a			
3.3.13	<u>Calculating alternative incentive adjustments following price-quality path transitions</u>	No	n/a			
3.3.14	<u>Calculating incentive adjustments for other events</u>	No	n/a			
SECTION 5	Transitional provisions	No	n/a			
3.3.15	<u>Calculation of annual incremental changes and adjustment term</u>	No	n/a			
3.3.16	<u>Determination of amount to be taken into account as a recoverable cost</u>	No	n/a			
3.3.17	<u>Calculating gains and losses after a catastrophic event</u>	No	n/a			
PART 4	INPUT METHODOLOGIES FOR DEFAULT PRICE-QUALITY PATHS	No	n/a		These IMs are not applicable to the CPP	

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
PART 5	INPUT METHODOLOGIES FOR CUSTOMISED PRICE-QUALITY PATHS	Yes	n/a			
SUBPART 1	Contents of a CPP application					
5.1.1	<u>Applying for a CPP</u>	No	n/a			
5.1.1(1)	An EDB seeking a CPP in accordance with s 53Q of the Act must provide the Commission with a CPP application.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.1(2)	CPP application means an application containing, in all material respects, the information specified in-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.1(2)	(a) this subpart; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.1(2)	(b) Subpart 4.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	<u>Evidence of consumer consultation</u>	No	n/a			
5.1.2	For the purpose of clause 5.1.1(2)(a), in respect of consumer consultation, the specified information is-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(a) a description as to how the requirements of clause 5.5.1 were met;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(b) a list of respondents to the consultation required by that clause;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(c) a description of all issues raised by consumers in response to the CPP applicant's intended CPP proposal;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(d) a summary of the arguments raised in respect of each issue described in accordance with paragraph (c); and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(e) in respect of the issues described in accordance with paragraph (c), an explanation as to whether its CPP proposal accommodates the arguments referred to in (d); and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(i) if so, how; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.2	(ii) if not, why not.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3	<u>Verification-related material</u>	No	n/a			
5.1.3	For the purpose of clause 5.1.1(2)(a), in respect of verification, the specified information is-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(1)	(a) a verification report; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(1)	(b) any information relating to the CPP proposal, other than information required to be included in a CPP proposal by Subpart 4, provided to the verifier by or on behalf of the CPP applicant, pursuant to clauses 5.5.2(3)(a)-(c) and 5.5.2(3)(e);	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(1)	Examples: instructions as to how to interpret information provided to the verifier; details as to the source of the information; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(1)	(c) any other information relied upon by the verifier relating to the CPP proposal pursuant to clause 5.5.2(3)(d); and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(1)	(d) subject to subclause (2), a certificate signed by the verifier stating that the relevant parts of the CPP proposal were verified and verification report was prepared in accordance with Schedule G.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.3(2)	For the purpose of subclause (1)(c), the CPP applicant must ensure that the certificate described in subclause (1)(c) relates to verification of the relevant parts of the CPP proposal as submitted to the Commission.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4	<u>Audit and assurance reports</u>	No	n/a			
5.1.4(1)	For the purpose of clause 5.1.1(2)(a), in respect of audit or assurance, the specified information is a report written by an auditor and signed by that auditor (either in an individual's name or that of a firm) in respect of an audit or assurance engagement undertaken of the matters specified in clause 5.5.3, stating-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(a) the work done by the auditor;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(b) the scope and limitations of the audit or assurance engagement;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(c) the existence of any relationships (other than that of auditor) which the auditor has with, or any interests which the auditor has in, the CPP applicant or any of its subsidiaries;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(d) whether the auditor obtained all information and explanations that he or she required to undertake the audit or assurance engagement, and, if not-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(i) details of the information and explanations not obtained; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(ii) any reasons provided by the CPP applicant for its or their non-provision;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(1)	(e) the auditor's opinion of the matters in respect of which the audit or assurance engagement was undertaken.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(2)	A report in respect of an audit or assurance engagement undertaken other than expressly to meet the requirements of clause 5.5.3 may be considered to comply with subclause (1) to the extent that the report in respect of that other audit or assurance engagement fully or partially meets the requirements of clause 5.5.3.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(3)	The CPP applicant must ensure that reports required by this clause relate to the CPP proposal as submitted to the Commission.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(4)	For the avoidance of doubt, the reports required by this clause need not be-	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(4)	(a) prepared in advance of the verifier undertaking verification of the CPP proposal; nor	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(4)	(b) provided to the verifier.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.4(5)	If, notwithstanding subclause (4), a report prepared in accordance with this clause is provided to the verifier, subclause (3) continues to apply.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.5	<u>Certification</u>	No	n/a			
5.1.5(1)	For the purpose of clause 5.1.1(2)(a), in respect of certification, the specified information is the certificates recording the certifications specified in clause 5.5.4.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.5(2)	For the avoidance of doubt, one physical document may contain more than one of the certifications specified in clause 5.5.4.	No	n/a		Broader compliance not addressed by the Financial model	n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.1.6	Modification or exemption of CPP application requirements	No	n/a			n/a
5.1.6(1)	The Commission may approve a modification to, or exemption from, any requirement set out in—	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(1)	(a) this subpart;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(1)	(b) Subpart 4;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(1)	(c) Subpart 5; or	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(1)	(d) schedules relating to subparts identified in paragraphs (a) to (c) above.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(2)	A modification or exemption may be approved where, in the Commission's opinion, the modification or exemption will not detract, to an extent that is more than minor, from—	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(2)	(a) the Commission's evaluation of the CPP proposal;	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(2)	(b) the Commission's determination of a CPP; and	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(2)	(c) the ability of interested persons to consider and provide their views on the CPP proposal.	No	n/a		Broader compliance not addressed by the Financial model	n/a
5.1.6(3)	When considering whether a modification or exemption is likely to detract, to an extent that is more than minor, from the processes listed in subclauses (2)(a)-(c), the Commission may have regard to the size of the supplier's business.	Yes			May have to demonstrate impact of mods/exemptions on the price path	
5.1.6(4)	A modification or exemption will only apply for the purposes of assessing compliance of a CPP application under s 53S(1) of the Act—	No	n/a			
5.1.6(4)	(a) if the Commission has previously approved a request by a CPP applicant for the modification or exemption in accordance with clause 5.1.7;	Yes	n/a		We have had several modifications/exemptions approved by the Commission. These are listed in the Financial and Modelling Information Report section 1.3.	
5.1.6(4)	(b) in respect of the CPP applicant and the CPP application identified in the Commission's approval; and	No	n/a			
5.1.6(4)	(c) if the CPP applicant elects to apply the modification or exemption by:	No	n/a			
5.1.6(4)	(i) meeting all conditions and requirements specified in the approval that relates to the modification or exemption; and	No	n/a			
5.1.6(4)	(ii) providing the relevant information specified in clause 5.1.8 as part of its CPP application.	No	n/a			
5.1.7	Process for obtaining a modification or exemption	No	n/a			
5.1.7(1)	At any time prior to providing the Commission with a CPP application, a CPP applicant may request modifications or exemptions to the requirements listed in clause 5.1.6(1) as alternatives to those requirements.	No	Yes			
5.1.7(2)	A request by a CPP applicant must—	No	Yes			
5.1.7(2)	(a) be in writing;	No	Yes			
5.1.7(2)	(b) include the following information:	No	Yes			
5.1.7(2)	(i) the CPP applicant's name and contact details;□	No	Yes			
5.1.7(2)	(ii) a brief description of the key features of its intended CPP proposal;	No	Yes			
5.1.7(2)	(iii) the date that the CPP applicant intends to submit the CPP application for which a modification or exemption is sought;	No	Yes			
5.1.7(2)	(iv) a list of the specific modifications or exemptions sought;	No	Yes			
5.1.7(2)	(v) an explanation of why the CPP applicant considers the requirements in clause 5.1.6(2) are met;	No	Yes			
5.1.7(2)	(vi) evidence in support of the explanation provided under subparagraph (v); and	No	Yes			
5.1.7(2)	(vii) identification of any information that is commercially sensitive	No	n/a			
5.1.7(3)	Subparagraph (2)(b)(vi) may be satisfied by submitting a certificate, signed by a senior manager of the CPP applicant, setting out the factual basis on which he or she believes the requirements in subclause 5.1.6(2) are met.	No	n/a			
5.1.7(4)	In considering whether to approve a request for modification or exemptions, the Commission may seek, and have regard to—	No	n/a			
5.1.7(4)	(a) views of interested persons within any time frames and processes set by the Commission; and	No	n/a			
5.1.7(4)	(b) views of any person the Commission considers has expertise on a relevant matter.	No	n/a			
5.1.7(5)	As soon as reasonably practicable after receipt of a request for modifications or exemptions the Commission will, by notice in writing, advise the CPP applicant as to whether:	No	n/a			
5.1.7(5)	(a) any of the modifications or exemptions are approved; and	No	n/a			
5.1.7(5)	(b) the approval of any modification or exemption is subject to conditions or requirements that must be met by the CPP applicant.	No	n/a			

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.1.8	Information on modification or exemption of information requirements	Yes	n/a			
5.1.8	Where a CPP applicant elects to apply a modification or exemption approved by the Commission in accordance with clause 5.1.7, it must include as part of its CPP application—	No	n/a			
5.1.8	(a) a copy of the Commission's approval;	Yes	n/a		A copy of the Commission's approval is provided in the appendices of our Application.	
5.1.8	(b) a list of the approved modifications or exemptions which the CPP applicant has elected to apply in its CPP application;	Yes	n/a		Commission approved modifications/exemptions are listed in the Financial and Modelling Information Report section 1.3.	
5.1.8	(c) evidence that any conditions or requirements of the approval have been met; and	Yes	n/a		Commission approved modifications/exemptions are listed in the Financial and Modelling Information report section 1.3. How the conditions or requirements of the approval have been met are described in other sections of the Financial and Modelling Information report as referenced in the table in section 1.3.	
5.1.8	(d) an indication, at the relevant locations within the document or documents comprising the CPP application, as to where the modifications or exemptions have been applied.	Yes	n/a		These are listed in the Financial and Modelling Information Report section 1.3.	
SUBPART 2	Commission assessment of a customised price-quality path proposal	No	n/a			
5.2.1	<u>Evaluations criteria</u>	No	n/a			
5.2.1	The Commission will use the following evaluation criteria to assess each CPP proposal:	No	n/a			
5.2.1	(a) whether the CPP proposal is consistent with the input methodologies specified in Part 5;	Yes	Yes		This table provides details of how many of the IM clauses specified in Part 5 have been complied with.	
5.2.1	(b) the extent to which a CPP in accordance with the CPP proposal would promote the purpose of Part 4 of the Act;	No	n/a			
5.2.1	(c) whether data, analysis, and assumptions underpinning the CPP proposal are fit for the purpose of the Commission determining a CPP under s 53V, including consideration as to the accuracy and reliability of data and the reasonableness of assumptions and other matters of judgement;	Yes	Yes			
5.2.1	(d) whether proposed capital expenditure and operating expenditure meet the expenditure objective;	No	n/a			
5.2.1	(e) the extent to which any proposed quality standard variation provided in a CPP proposal better reflects the realistically achievable performance of the EDB over the CPP regulatory period, taking into account either or both-	No	n/a			
5.2.1	(i) statistical analysis of past SAIDI and SAIFI performance; and	No	n/a			
5.2.1	(ii) the level of investment provided for in proposed maximum allowable revenue before tax,	No	n/a			
5.2.1	as the case may be; and	No	n/a			
5.2.1	(f) the extent to which-	No	n/a			
5.2.1	(i) the CPP applicant has consulted with consumers on its CPP proposal; and	No	n/a			
5.2.1	(ii) the CPP proposal is supported by consumers, where relevant.	No	n/a			
SUBPART 3	Determination of customised price-quality paths	Yes	n/a			
SECTION 1	Determination of annual allowable revenues	No	n/a			
5.3.1	<u>Annual allowable revenues</u>	No	n/a			
5.3.1	Amounts for-	No	n/a			
5.3.1	(a) building blocks allowable revenue before tax for the next period;	No	n/a			
5.3.1	(b) building blocks allowable revenue after tax for the next period;	No	n/a			
5.3.1	(c) maximum allowable revenue before tax for the CPP regulatory period; and	No	n/a			
5.3.1	(d) maximum allowable revenue after tax for the CPP regulatory period,	No	n/a			
5.3.1	will be determined.	No	n/a			
5.3.2	<u>Building blocks allowable revenue before tax</u>		n/a			
5.3.2(1)	'Building blocks allowable revenue before tax' for each disclosure year of the next period is determined in accordance with the formula- (regulatory investment value × cost of capital + total value of commissioned assets × (TFVCA - 1) + term credit spread differential allowance × TF - total revaluation) ÷ (TFrev - corporate tax rate × TF) + (total depreciation × (1 - corporate tax rate × TF) + forecast operating expenditure × TF × (1 - corporate tax rate) + (closing deferred tax - opening deferred tax) × (TF - 1) + (permanent differences + regulatory tax adjustments - utilised tax losses) × corporate tax rate × TF) ÷ (TFrev - corporate tax rate × TF).	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx'!\$A\$62
5.3.2(2)	'Regulatory investment value' means the amount obtained in accordance with the formula- total opening RAB value + opening deferred tax.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx'!\$A\$74
5.3.2(3)	For the purpose of subclause (1) 'total value of commissioned assets' means, in relation to a disclosure year, the sum of closing RAB values for all commissioned assets calculated in accordance with clause 5.3.6(3)(b).	Yes	Yes		The value of commissioned assets throughout the model is the sum of closing RAB values in the year that they are acquired (noting that revaluations and depreciation are only applied to opening RAB values and a commissioned asset does not have an opening RAB value in the year that it is commissioned).	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward'!\$L\$1470

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.2(4)	For the purpose of subclause (1) – (a) 'TF' is determined in accordance with the formula- (1 + cost of capital) ^{182/365} ;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$C\$33
5.3.2(4)	(b) 'TFrev' is determined in accordance with the formula- (1 + cost of capital) ^{148/365} ;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$C\$34
5.3.2(4)	'TF _{VCA} ' is determined in accordance with the formula- PV _{VCA} × (1 + cost of capital) ÷ total value of commissioned assets; and	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$49
5.3.2(4)	(d) 'PV _{VCA} ' means the sum of the present value of closing RAB values for commissioned assets calculated in accordance with clause 5.3.6(3)(b), where each present value is determined by discounting each closing RAB value by the cost of capital from the relevant commissioning date to the commencement of the relevant disclosure year.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$C\$1497
5.3.2(5)	For the purpose of this clause, 'cost of capital' has the meaning specified in clause 5.3.22	Yes	Yes	Yes	Our model includes a switch that allows the application of two different methods to calculate the price path. The first is compliant with the current IMs and applies the 2015-2020 DPP WACC to every year in the CPP next period. We propose a second method in our CPP which forecasts a WACC change reopener in FY2021 and applies a forecast of WACC in years FY2021 to FY2023.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 INPUTS!\$E\$16; [CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$F\$24
5.3.2(6)	'Forecast operating expenditure' means, in relation to a CPP proposal - (a) that has not been assessed by the Commission, the amount of operating expenditure for the relevant disclosure year included by the CPP applicant in its opex forecast; or	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 INPUTS!\$E\$32
5.3.2(6)	(b) undergoing assessment by the Commission, the amount of operating expenditure determined for the relevant disclosure year by the Commission after assessment of the amount in paragraph (a) against the expenditure objective.	Yes	n/a		Not relevant to our submitted financial model.	n/a
5.3.2(7)	For the purpose of this clause, all values and amounts are expressed in nominal terms unless otherwise specified.	Yes	Yes		All inputs to module 1.0 are in nominal dollar terms	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 INPUTS!\$A\$1
5.3.3	<u>Building blocks allowable revenue after tax</u>	Yes				
5.3.3(1)	'Building blocks allowable revenue after tax' is building blocks allowable revenue before tax less forecast regulatory tax allowance.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$C\$68
5.3.3(2)	For the purpose of this clause, all values and amounts are expressed in nominal terms.	Yes	Yes		All values and amounts used in the BBARx worksheet are in nominal terms.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$A\$1
5.3.4	<u>Price path</u>		n/a			
5.3.4(1)	The present value of the series of values of maximum allowable revenue after tax must equal the present value of the series of building blocks allowable revenue after tax, adjusted for the present value of any claw-back for the CPP regulatory period, where present values are determined in accordance with subclause (3).	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$D\$63
5.3.4(2)	In subclause (1)- (a) the reference to claw-back is a reference to claw-back, determined by the Commission pursuant to s 53V(2)(b), in the case of a CPP determination made-	Yes	Yes		The model can accommodate a claw-back input into the MAR calculations but no claw-back is forecast.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$B\$46
5.3.4(2)	(i) after deferral of the relevant CPP proposal in accordance with s 53Z(2) of the Act;	Yes	n/a			
5.3.4(2)	(ii) in response to a CPP proposal made in accordance with provisions in a DPP determination relating to the submission of CPP proposals in response to a catastrophic event; or	Yes	n/a			
5.3.4(2)	(iii) as a result of a reconsideration of the price-quality path in accordance with clause 5.6.7(1) and an amendment made to the price-quality path after reconsideration under clause 5.6.8(1); and	Yes	n/a			
5.3.4(2)	(b) each reference to a series of values is a reference to the value determined in respect of each disclosure year of the CPP regulatory period.	Yes	n/a			
5.3.4(3)	For the purpose of subclause (1), the present value of each series must be determined using the cost of capital as specified in clause 5.3.22.	Yes	Yes	Yes	Our model includes a switch that allows the application of two different methods to calculate the price path. The first is compliant with the current IMs and applies the 2015-2020 DPP WACC to every year in the CPP next period. We propose a second method in our CPP which forecasts a WACC change reopener in FY2021 and applies a forecast of WACC in years FY2021 to FY2023. Discounting is applied using the cost of capital applicable to each method.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$E\$8
5.3.4(4)	For the avoidance of doubt, where claw-back is determined where-	Yes	Yes		No claw back is anticipated but the model allows for a single input	
5.3.4(4)	(a) subclause (2)(a)(i) applies, it will only be determined in respect of the period between the date when the CPP would have taken effect had deferral not occurred and the date the CPP determination will come into effect; and	Yes	n/a			
5.3.4(4)	(b) subclause (2)(a)(ii) applies, it will only be determined in respect of the period between the date of the catastrophic event and the date the CPP determination will come into effect.	Yes	n/a			

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.4(5)	For the purpose of this subpart, the 'maximum allowable revenue before tax' for the first disclosure year of the CPP regulatory period is the amount of maximum allowable revenue before tax in the first disclosure year of the CPP regulatory period required for subclause (1) to be satisfied.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$E\$34
5.3.4(6)	For the purpose of this subpart, the 'maximum allowable revenue before tax' for each disclosure year of the CPP regulatory period except the first must equal- $MAR_{y-1} \times (1 + \Delta CPI) \times (1 - X)$, where- MAR _{y-1} is the maximum allowable revenue before tax in the preceding disclosure year; ΔCPI is the CPP inflation rate; and X is any X factor applying to the EDB.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$F\$34
5.3.4(7)	'Maximum allowable revenue after tax' is maximum allowable revenue before tax less forecast regulatory tax allowance.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$E\$40
5.3.4(8)	For the purpose of subclause (7), 'forecast regulatory tax allowance' means- (a) where opening tax losses are nil in every disclosure year of the next period, forecast regulatory tax allowance; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$39
5.3.4(8)	(b) in all other cases, the amount calculated in accordance with clause 5.3.13 with the modification that the reference in clause 5.3.13(4) to 'building blocks allowable revenue before tax' is substituted with 'maximum allowable revenue before tax'.	Yes	Yes		refer to 5.3.13 and 5.3.14 for specific model references	
5.3.4(9)	'CPP Inflation rate' means the amount determined in accordance with the formula- $[(CPI_1 + CPI_2 + CPI_3 + CPI_4) \div (CPI_1^{-4} + CPI_{2-4} + CPI_3^{-4} + CPI_4^{-4})] - 1$, where- CPI _n means forecast CPI for the nth quarter of the disclosure year in question; and CPI _n ⁻⁴ means forecast CPI for the equivalent quarter in the preceding disclosure year.	Yes	Yes		Note that the CPP inflation rate does not change as a result of the WACC change reopener so it is not included in our modified approach to calculating the price path.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$M\$100
SECTION 2	Cost allocation and asset valuation	No	n/a			
5.3.5	<u>Allocating forecast values of operating costs not directly attributable</u>	No	n/a			
5.3.5(1)	Operating costs forecast in each disclosure year of the next period must, in the case of an operating cost for which disclosure pursuant to an ID determination has- (a) been made for the last disclosure year of the current period, be consistent with the operating costs allocated to electricity distribution services in that disclosure; and	Yes	Yes		Inputs of opex are all allocated values with the allocation basis consistent with FY2016 ID. The allocation approach is built into our specific opex forecasts and has been audited for compliance with this clause.	
5.3.5(1)	(b) not been so made, be consistent with an allocation of operating costs to electricity distribution services carried out in respect of the most recent disclosure made for the current period in accordance with clause 2.1.1.	Yes	n/a		5.3.5(1)(a) applies	
5.3.5(2)	Where a sale of the assets used to supply electricity distribution services and either or both- (a) an other regulated service; and (b) an unregulated service, is (c) completed between the start of the assessment period and the time the CPP application is made; or (d) highly probable, operating costs attributable to electricity distribution services, in respect of each operating cost not directly attributable affected by the sale, is determined as the value allocated to electricity distribution services as a result of applying clause 2.1.1 in respect of the last disclosure year of the assessment period.	Yes	n/a		The CPP does not forecast the sale of any assets of this nature	
5.3.6	<u>RAB roll forward</u>	Yes	n/a			
5.3.6(1)	The opening RAB value of an asset in relation to- (a) the disclosure year 2010, is the initial RAB value; and (b) a disclosure year thereafter, is, where the disclosure year- (i) follows a disclosure year in respect of which disclosure pursuant to an ID determination relating to that asset has been made, that asset's disclosed closing RAB value; (ii) is the first disclosure year of the next period for which disclosure pursuant to an ID determination relating to that asset for the preceding disclosure year has not been made, determined in accordance with subclause (2); or (iii) is any other disclosure year, the closing RAB value for the preceding disclosure year.	Yes	Yes		The model includes an error check to ensure that the opening RAB inputs agree with the total opening RAB published in our FY2016 Electricity Information Disclosure	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$591
5.3.6(2)	For the purpose of subclause (1)(b)(ii), the opening RAB value of an asset to which this subclause applies is determined as the value allocated to electricity distribution services as a result of applying clause 2.1.1 to its unallocated closing RAB value for the preceding disclosure year.	Yes	Yes		All RAB inputs to the financial model are post allocations.	

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.6(3)	Closing RAB value means, subject to subclause (4), for an asset-	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$1455
5.3.6(3)	(a) with an opening RAB value, the value determined in accordance with the formula-opening RAB value - depreciation + revaluation;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$1352
5.3.6(3)	(b) having or forecast to have a commissioning date in that disclosure year, where the asset-					
5.3.6(3)	(i) has been commissioned by the date the CPP application is made, its value of commissioned asset; or	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$30
5.3.6(3)	(ii) has not been commissioned by the date the CPP application is made, its forecast value of commissioned asset, but only to the extent that the value would be included in the closing RAB value consistent with application of clause 2.1.1; or					
5.3.6(3)	(c) that is or is forecast to be a disposed asset, nil.	Yes	Yes			
5.3.6(4)	For the purpose of subclause (3), where a sale of the assets used to supply electricity distribution services and either or both-	Yes	n/a	No sale of assets of this nature is forecast for the CPP period.	n/a	
5.3.6(4)	(a) an other regulated service; and					
5.3.6(4)	(b) an unregulated service,					
5.3.6(4)	is					
5.3.6(4)	(c) completed between the start of the assessment period and the time the CPP application is made; or					
5.3.6(4)	(d) highly probable,					
5.3.6(4)	closing RAB value in respect of each asset not directly attributable affected by the sale is determined as the value allocated to electricity distribution services as a result					
5.3.6(4)	of applying clause 2.1.1 in respect of its unallocated closing RAB value of the last disclosure year of the assessment period.					
5.3.6(5)	The unallocated opening RAB value of any asset in relation to-	No	n/a	No unallocated RAB values are used in the Financial model.	n/a	
5.3.6(5)	(a) the disclosure year 2010, is the unallocated initial RAB value;					
5.3.6(5)	(b) a disclosure year thereafter, is, where the disclosure year-					
5.3.6(5)	(i) follows a disclosure year in respect of which disclosure pursuant to an ID determination relating to that asset has been made, that asset's disclosed unallocated closing RAB value; and					
5.3.6(5)	(ii) is any other disclosure year, its unallocated closing RAB value in the preceding disclosure year.					
5.3.6(6)	Unallocated closing RAB value means, in relation to-	No	n/a	No unallocated RAB values are used in the Financial model.	n/a	
5.3.6(6)	(a) an asset that is or is forecast to be a disposed asset, nil;					
5.3.6(6)	(b) any other asset with an unallocated opening RAB value, the value determined in accordance with the formula-unallocated opening RAB value - unallocated depreciation + unallocated revaluation; and					
5.3.6(6)	(c) any other asset-					
5.3.6(6)	(i) that has a commissioning date between the commencement of the disclosure year in which the CPP application is made and the application's submission, its value of commissioned asset; or					
5.3.6(6)	(ii) forecast to have a commissioning date thereafter, its forecast value of commissioned asset.					
5.3.6(7)	The total opening RAB value in relation to-	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$33
5.3.6(7)	(a) the disclosure year 2010, is the sum of all initial RAB values; and					
5.3.6(7)	(b) any disclosure year thereafter, is the total closing RAB value in the preceding disclosure year.					
5.3.6(8)	For the purpose of subclause (7), 'total closing RAB value' means, in relation to a disclosure year, the sum of closing RAB values for all assets.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$33
5.3.7	Depreciation	Yes	n/a			n/a
5.3.7(1)	Total depreciation means the sum of depreciation calculated for existing CPP assets under subclause (2)(a) and for additional CPP assets under subclause (2)(b).	Yes	Yes	The model includes an error check that tests depreciation calculated in 1.0 RABx is the same as the sum of depreciation calculated for existing assets and additional assets in module 4.1 RAB roll forward		'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$A\$104, [CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$1453
5.3.7(2)	For the purpose of subclause (1)-	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$95
5.3.7(2)	(a) 'depreciation', in the case of existing CPP assets with an opening RAB value, is determined, subject to subclause (3) and clauses 5.3.6 and 5.3.8, in accordance with the formula-					
5.3.7(2)	[1 ÷ remaining asset life for existing CPP assets] x opening RAB value.					
5.3.7(2)	(b) 'Depreciation', in the case of additional CPP assets with an opening RAB value, is determined, subject to subclause (3) and clauses 5.3.6 and 5.3.8, in accordance with the formula-	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$195
5.3.7(2)	[1 ÷ remaining asset life for additional assets] x opening RAB value for additional CPP assets.					

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.7(3)	For the purposes of subclauses (1) and (2)- (a) depreciation is nil in the case of- (i) land; and	Yes				
5.3.7(3)	(a) depreciation is nil in the case of- (i) land; and	Yes	Yes		The asset life mapping in module 3.3 COF & VCA allocates a nil physical life for all land assets. Existing land assets are contained in the non-depreciating assets remaining life grouping.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$P\$47
5.3.7(3)	(ii) an easement other than a fixed life easement; and	Yes	n/a		The asset life mapping in module 3.3 COF & VCA allocates a nil physical life for all easements other than fixed life easements. Existing land assets are contained in the non-depreciating assets remaining life grouping.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$P\$48
5.3.7(3)	(iii) network spare in respect of the period before which depreciation for the network spare in question commences under GAAP; and	Yes			The renewals forecast has been developed on the basis that the network spares pool of assets will remain at current levels although assets will be cycled in and out during the CPP period. Depreciation from spares is therefore nil.	n/a
5.3.7(3)	(b) in all other cases, where the asset's physical asset life at the end of the disclosure year is nil- (i) unallocated depreciation is the asset's unallocated opening RAB value; and (ii) depreciation is the asset's opening RAB value.	Yes	Yes		The depreciation formula used in module 4.1 calculates depreciation as opening RAB multiplied by the minimum of 1/remaining useful life or 1. Therefore, when the remaining useful life is less than 1 year, depreciation will be opening RAB multiplied by 1. Note that unallocated depreciation is not used in the financial model.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$95
5.3.7(4)	For the purpose of subclause (2)- (a) 'remaining asset life for existing CPP assets' means, for each asset, the value determined in accordance with the formula- opening RAB value ÷ depreciation for the last year of the current period, less the number of disclosure years from the last year of the current period to the disclosure year in question; and	Yes	Yes		The remaining useful life of existing assets at 1-Apr-2016 is a direct input into the RAB roll forward of existing assets (4.1-i6). This input is developed in a separate work paper primarily using 2017 forecast depreciation and opening 2017 RAB from the Asset Regulatory Ledger (ARL). Remaining useful life is calculated for each asset as opening 2017 RAB divided by 2017 forecast depreciation.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$594
5.3.7(4)	(b) 'remaining asset life for additional assets' means the asset life for CPP commissioned assets for an asset category less the number of disclosure years from the disclosure year in which the additional assets are forecast to be commissioned.	Yes	Yes		Our proposal applies the remaining useful lives defined in Schedule A Table A.2. to additional assets. The table A.2. lives are in the direct inputs in 3.3-i8 and applied in worksheet 4.1 RAB roll forward.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$H\$1503, [CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$A\$185
5.3.8	Depreciation - alternative depreciation method	Yes	n/a		Our CPP does not include alternative depreciation	n/a
5.3.8(1)	Depreciation and, subject to clause 5.3.9, unallocated depreciation may be determined in respect of a CPP regulatory period using an alternative depreciation method to the standard depreciation method, provided the Commission is satisfied that the result of applying the alternative depreciation method would better promote the purpose of Part 4 than the result of applying the standard depreciation method.	Yes	n/a		Our CPP does not include an alternative depreciation method.	n/a
5.3.8(2)	For the avoidance of doubt, subclause (1) does not apply to the determination of depreciation or unallocated depreciation in the assessment period.	Yes	n/a		Our CPP does not include an alternative depreciation method.	n/a
5.3.9	<u>Unallocated depreciation constraint</u> For the purposes of clauses 5.3.7 and 5.3.8, the sum of unallocated depreciation of an asset calculated over its asset life may not exceed the sum of- (a) all unallocated revaluations applying to that asset in all disclosure years; and (b) in the case of an asset- (i) in the initial RAB, its unallocated initial RAB value; and (ii) not in the initial RAB, its value of commissioned asset or forecast value of commissioned asset, as the case may be.	No	No		This constraint is not demonstrated in the model but the formulas do not breach this constraint.	
5.3.10	<u>Revaluation</u>	Yes	Yes			n/a
5.3.10(1)	Unallocated revaluation, subject to subclause (3), is determined in accordance with the formula- unallocated opening RAB value × revaluation rate.	No	No		Unallocated revaluation is not required in the model for the calculation of a CPP price path.	n/a
5.3.10(2)	Revaluation, subject to subclause (3), is determined in accordance with the formula- opening RAB value × revaluation rate.	Yes	Yes		Calculated in module 4.1 and 1.0 RABx	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$96

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.10(3)	For the purposes of subclauses (1) and (2), where- (a) the asset's physical asset life at the end of the disclosure year is nil; or (b) the asset is a- (i) disposed asset; or (ii) lost asset, unallocated revaluation and revaluation are nil.	Yes	Yes		The calculation of revaluations in module 4.1 complies with this clause by calculating revaluations as nil when an asset group has a remaining useful life less than one year. It also deducts the value of disposals from opening RAB before applying the revaluation rate. This compliance is also achieved in module 1.0RABx by deducting disposals and the RAB value of assets with a remaining useful life less than one year from opening RAB before applying the revaluation rate. The RAB value of assets with a remaining useful life less than one year is calculated from detailed formulas in module 4.1.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$99
5.3.10(4)	Revaluation rate means, in respect of a disclosure year, the amount determined in accordance with the formula- $(CPI_t \div CPI_{t-1}) - 1$, where- CPI_t means forecast CPI for CPP revaluation for the quarter that coincides with the end of the disclosure year; and CPI_{t-1} means forecast CPI for CPP revaluation for the quarter that coincides with the end of the preceding disclosure year.	Yes	Yes	Yes	Our model includes a switch that allows the application of two different methods to calculate the price path. The first is compliant with the current IMs and applies the 2015-2020 DPP revaluation rate to every year in the CPP next period. We propose a second method in our CPP which forecasts a WACC change reopener in FY2021 and applies an updated revaluation rate forecast in years FY2021 to FY2023. The updated rate retains the same IM compliant methodology but uses current inputs.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$K\$101
5.3.10(5)	Forecast CPI for CPP revaluation means, for the purpose of subclause (4), when calculating the revaluation rate- (a) in the CPP regulatory period and up to the end of the DPP regulatory period, as for forecast CPI for DPP revaluation in accordance with clause 4.2.3(4)(a); and	Yes	Yes	Yes	Direct input 3.1-i10 is the DPP revaluation rate forecast sourced from the FY2016-2020 DPP reset financial model. This series is used when the CPP Financial model is set to full IM compliance. When the model is set to our proposed approach of forecasting the FY2021 WACC change reopener, the revaluation rate in FY2021-FY2023 is replaced with an updated forecast. This forecast uses an IM compliant calculation but updates the inputs of CPI and forecast CPI to the most current values available at the time we developed our CPP proposal.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$K\$18
5.3.10(5)	(b) for each later quarter for which a forecast of the change in headline CPI has been included in the Monetary Policy Statement last issued by the Reserve Bank of New Zealand prior to the date for which the vanilla WACC applicable to the relevant DPP regulatory period was determined, the CPI last applying under paragraph (a) extended by the forecast change; and	Yes	Yes	Yes	refer to comment 5.3.10(5)(a) above.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$K\$19
5.3.10(5)	(c) in respect of later quarters, the forecast last applying under paragraph (b), adjusted such that an equal increment or decrement made to that forecast for each of the following three years results in the forecast for the last of those years being equal to the target midpoint for the change in headline CPI set out in the Monetary Policy Statement referred to in paragraph (b).	Yes	Yes	Yes	refer to comment 5.3.10(5)(a) above.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$O\$101
5.3.11	<u>Forecast value of commissioned assets</u>	Yes	n/a			n/a
5.3.11(1)	'Forecast value of commissioned asset', in relation to an asset for which capital expenditure is included in forecast capital expenditure (including an asset in respect of which capital contributions are or are forecast to be received, or a vested asset) means the forecast cost of the asset to an EDB determined by applying GAAP to the asset as on its forecast commissioning date, except that, subject to subclauses (2) and (3), the cost of-	Yes	Yes		Forecasts are consistent with GAAP.	Refer to statement in Financial and Modelling Information Report section 6.4.3
5.3.11(1)	(a) an intangible asset, unless it is- (i) a finance lease; or (ii) an identifiable non-monetary asset, is nil;	Yes	n/a		No intangible asset are forecast in the CPP proposal	n/a
5.3.11(1)	(b) an easement, is limited to its forecast market value as on its forecast commissioning date as determined by a valuer;	Yes	Yes		Easements are forecast at market value	Refer to statement in Financial and Modelling Information Report section 6.4.1
5.3.11(1)	(c) easement land is nil;	Yes	Yes		As per life assigned to easement land in the standard template	Refer to statement in Financial and Modelling Information Report section 6.4.1
5.3.11(1)	(d) a network spare- (i) which is not required, in light of the historical reliability and number of the assets it is held to replace; or (ii) whose cost is not treated as the cost of an asset under GAAP, whether wholly or in part, is nil;	Yes	n/a		No capex for network spares is forecast.	Refer to statement in Financial and Modelling Information Report section 6.4.2
5.3.11(1)	(e) an asset- (i) to be acquired from another regulated supplier; and (ii) used by that regulated supplier in the supply of regulated goods or services, is limited to its value determined in accordance with input methodologies applicable to the services supplied by that other regulated supplier as on the forecast commissioning date;	Yes	n/a		No assets are forecast to be acquired from another regulated supplier in the CPP next period.	n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.11(1)	(f) an asset that was previously used by an EDB in its supply of other regulated services is limited to its value determined in accordance with input methodologies applicable to those other regulated services as on the day before the forecast commissioning date;	Yes	n/a		No assets of this nature are included in our forecast expenditure.	
5.3.11(1)	(g) an asset or assets, or components of assets, forecast to be acquired from a related party, and forecast to be commissioned during any disclosure year of the CPP regulatory period other than assets to which paragraphs (e) or (f) apply, are the forecast values as determined by the EDB, supported by a written certification by no fewer than 2 directors of the EDB that they are reasonably satisfied that the asset values are consistent with values determined in accordance with subclause (7);	Yes	n/a		No assets of this nature are included in our forecast expenditure.	
5.3.11(1)	(h) an asset in respect of which capital contributions are or are forecast to be received where such contributions are not taken into account when applying GAAP, is the cost of the asset by applying GAAP reduced by the amount of the capital contributions;	Yes	Yes		All forecast values of commissioned assets are based on capex forecasts that are net of capital contributions. Capital contributions are reintroduced as a separate input (3.3-i6) to meet the disclosure requirements in schedule E. Capital contributions are discussed in the Financial and Modelling Information report section 6.4.3.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$J\$388
5.3.11(1)	(i) a vested asset in respect of which its fair value is or would be treated as its cost under GAAP, must exclude any amount of the fair value of the asset determined under GAAP that exceeds the amount of consideration provided or forecast to be provided by the EDB; and	Yes	n/a		No vested assets are forecast in the CPP next period.	n/a
5.3.11(1)	(j) for the purpose of subclause (a)(i), a finance lease excludes the value of any asset for which annual charges are a recoverable cost under clause 3.1.3(1)(c).	Yes	n/a		No finance leases are included in our expenditure forecasts.	
5.3.11(2)	Where an asset forecast to be commissioned is forecast to be used to supply either or both an other regulated service and an unregulated service, its regulated service asset value borne by regulated services, in aggregate- (a) may not exceed the total value of the asset that would be allocated to regulated services, in aggregate, using ACAM; and	Yes	n/a		Forecast value of assets is based on allocated forecasts of capex so this requirement is not demonstrated in the Financial model but rather in the individual capex forecast models.	n/a
5.3.11(2)	(b) must be based only on forecast changes in the EDB's business of supplying electricity distribution services	Yes	n/a		Forecast value of assets is based on allocated forecasts of capex so this requirement is not demonstrated in the Financial model but rather in the individual capex forecast models.	n/a
5.3.11(3)	When applying GAAP for the purposes of subclause (1), the cost of financing is- (a) applicable only in respect of the period commencing on the date the asset becomes or is forecast to become a works under construction and terminating on its commissioning date or forecast commissioning date, as the case may be; and	Yes	Yes		Cost of financing calculations are based on the monthly opening balance of works under construction for specific date commissioning projects only. The cost of finance is calculated for each major phase and ceases when that phase is commissioned.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$B\$514
5.3.11(3)	(b) calculated using a rate not greater than the EDB's forecast weighted average of borrowing costs for each applicable disclosure year.	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	For the purposes of subclause (3)(b), the 'forecast weighted average of borrowing costs' is calculated for a disclosure year using principles set out in GAAP, taking into account:	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(a) the cost of financing rate is the forecast weighted average of the costs applicable to borrowings in respect of capex that are forecast to be outstanding during the disclosure year;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(b) the total costs applicable to borrowings outstanding as used in calculating the weighted average must include costs of borrowings made or forecast to be made specifically for the purpose of any particular – (i) capex projects; or	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(ii) capex programmes; and	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(c) the amount of borrowing costs forecast to be capitalised during the disclosure year must not exceed the amount of borrowing costs forecast to be incurred during the disclosure year;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(d) where a capital contribution is received by an EDB, the relevant asset will become works under construction for the purposes of calculating the cost of financing;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(e) subject to subclause (i), a capital contribution will reduce the cost of works under construction for the purpose of the calculation of the finance cost, even if the resulting value of works under construction is negative;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(f) subject to subclause (g), where the value of works under construction will be negative in accordance with subclause (e), the cost of financing for the period ending on the forecast commissioning date will be negative;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.11(4)	(g) where the cost of financing an asset which works under construction is negative under subclause (f), it will reduce the forecast value of the relevant asset or assets by that negative amount where such a reduction is not otherwise made under GAAP;	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(h) for the purpose of subclause (d), works under construction includes assets that are forecast to be enhanced or acquired; and	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	(i) where the cost of financing is forecast to be derived as income in relation to works under construction and is- (i) negative; and (ii) included in regulatory income under an ID determination,	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(4)	it will not reduce the forecast value of the relevant asset or assets where such reduction would not otherwise be made under GAAP.	Yes	Yes		The weighted average cost of borrowing rate is a direct input into module 3.3. The basis of this input is discussed in the Financial and Modelling Information report section 6.4.6.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$380
5.3.11(5)	For the avoidance of doubt- (a) revenue derived or forecast to be derived in relation to works under construction that is not included in regulatory income under an ID determination reduces the cost of an asset by the amount of the revenue where such reduction is not otherwise made under GAAP; and	Yes	n/a		Nothing of this nature is forecast in the CPP next period	
5.3.11(5)	(b) where expenditure on an asset which forms or is forecast to form part of the cost of that asset under GAAP is incurred or forecast to be incurred by an EDB after that asset is commissioned or forecast to be commissioned, such expenditure is treated as relating to a separate asset.	Yes	Yes		Commissioning calculations in module 4.1 RAB roll forward are consistent with this requirement in that no additions are made to the cost of existing assets.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$C\$176
5.3.11(6)	In this clause, 'forecast capital expenditure' means, in relation to a CPP proposal- (a) that has not been assessed by the Commission, the amount of capital expenditure for the relevant disclosure year of the next period included by the CPP applicant in its capex forecast; and (b) undergoing assessment by the Commission, the amount of capital expenditure determined for the relevant disclosure year of the next period by the Commission after assessment of the amount in paragraph (a) against the expenditure objective.	Yes	Yes		Our submitted proposal complies with sub clause (7)(a).	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 Capex price escalation!\$C\$223
5.3.11(7)	For the purpose of paragraph 5.3.11(1)(g), the forecast value of any assets, or components of assets, must be consistent with values determined in accordance with one of the following – (a) the forecast price to be paid by the EDB for the asset, where the forecast cost of all assets to be acquired from the related party and first commissioned in any disclosure year of the CPP regulatory period will be less than – (i) one percent of the sum of opening RAB values for the EDB for that disclosure year, or (ii) 20% of the cost of all assets to be first commissioned by the EDB in that disclosure year;	Yes	n/a		Our forecast of value of commissioned assets does not include purchases from a related party.	Described in the Financial and Modelling Information report section 6.4.11
5.3.11(7)	(b) the forecast price to be paid by the EDB for the asset, where– (i) it is reasonably expected that at least 50% of the related party's sales of assets will be to third parties in the disclosure year in which the asset is first commissioned, and third parties may purchase the same or substantially similar assets from the related party on substantially the same terms and conditions, including price; or (ii) that forecast price is substantially the same as the price paid for substantially similar assets (including any adjustments for inflation using CPI or an appropriate input price index) in the preceding 3 disclosure years from a party other than a related party;	Yes	n/a			
5.3.11(7)	(c) the price to be paid by the EDB to the related party for an asset to be commissioned in a disclosure year in the CPP regulatory period has been determined following a completed competitive tender process, provided that– (i) the price is no more than 5% higher than the price of the lowest conforming tender received; (ii) all relevant information material to consideration of the proposal was provided to third parties, or made available upon request; (iii) at least one other qualifying proposal was received; and (iv) the EDB retains for a period of 7 years following the closing date of tender proposals a record of the tender and tender process, including request for information and/or proposal, the criteria used for the assessment of proposals, reasons for acceptance or rejection of proposals, and all proposals and requests for information on the tender for the purposes of making proposals;	Yes	n/a			
5.3.11(7)	(d) its forecast depreciated historic cost on the day before the forecast acquisition by the EDB determined in accordance with GAAP;	Yes	n/a			
5.3.11(7)	(e) its forecast inventory value on the day before the forecast acquisition by the EDB determined in accordance with GAAP;	Yes	n/a			
5.3.11(7)	(f) its forecast market value as at its commissioning date as determined by a valuer;	Yes	n/a			
5.3.11(7)	(g) its forecast directly attributable cost as would be incurred by the group to which the EDB and related party are a part, determined in accordance with GAAP, as if the consolidated group was the EDB;	Yes	n/a			
5.3.11(7)	(h) the forecast price to be paid by the EDB for the asset reflects the price or prices that would be paid in an arm's-length transaction, provided the price cannot otherwise be determined under paragraphs (a) – (g).	Yes	n/a			

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.12	<u>Works under construction</u>	n/a	n/a			n/a
5.3.12(1)	Opening works under construction means, in respect of- (a) the first disclosure year of the next period where that year is consecutive to a disclosure year in respect of which disclosure pursuant to an ID determination- (i) has not been made, initial works under construction; and (ii) has been made, the value of works under construction last disclosed in accordance with the ID determination to the extent that it is intended to be included in a closing RAB value; and (b) any year other than the first disclosure year of the next period, closing works under construction of the preceding disclosure year.	Yes	Yes		Opening WUC balance is sourced from capex templates and they agree with the ID balance of WUC at 31-Mar-2016 (Schedule 4(iv) row 72).	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$563
5.3.12(1)		Yes	Yes		Calculated in 3.3 COF & VCA and monitored through error checks.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$J\$545
5.3.12(2)	For the purpose of subclause (1)(a)(i), 'initial works under construction' means expenditure incurred on works under construction as of the first day of the disclosure year in question, calculated in accordance with clause 5.3.11, modified in that references in that clause to "forecast commissioning date" are substituted with "forecast date that expenditure is incurred".	Yes	Yes		Compliance is confirmed by 2016 audit of ID.	
5.3.12(3)	Closing works under construction is the amount determined in accordance with the formula- opening works under construction + sum of capital expenditure - (sum of value of commissioned assets + sum of forecast value of commissioned assets), where- (a) the sum of value of commissioned assets only includes values to the extent that they are included in closing RAB values disclosed pursuant to an ID determination; and (b) the sum of forecast value of commissioned assets only includes values to the extent that they are included in the sum of closing RAB values provided pursuant to clause 5.4.11(b)(ii).	Yes	Yes		We note that the value of commissioned assets includes the cost of financing and have adopted the interpretation of capex for the purposes of this clause to also include the cost of financing. In our WUC roll forward we have disclosed the cost of financing separately.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$I\$545
SECTION 3	Treatment of taxation	Yes	n/a			
5.3.13	<u>Forecast regulatory tax allowance</u>	Yes	n/a			
5.3.13(1)	Forecast regulatory tax allowance is, where forecast regulatory net taxable income is- (a) nil or a positive number, the tax effect of forecast regulatory net taxable income; and (b) a negative number, nil.	Yes	Yes		Module 1.0 TAXx treats forecast regulatory net taxable income as not less than nil.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$37
5.3.13(2)	Regulatory net taxable income means regulatory taxable income less utilised tax losses.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$46
5.3.13(3)	Regulatory taxable income is determined in accordance with the formula- regulatory profit / (loss) before tax + permanent differences + regulatory tax adjustments.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$46
5.3.13(4)	Regulatory profit / (loss) before tax means the value determined in accordance with the formula- building blocks allowable revenue before tax - operating expenditure - total depreciation.	Yes	Yes		The December 2016 IM amendments removed Other regulated income from this formula	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$53
5.3.14	<u>Tax losses</u>	Yes	n/a			n/a
5.3.14(1)	Utilised tax losses means opening tax losses, subject to subclause (2).	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$59
5.3.14(2)	For the purpose of subclause (1), utilised tax losses may not exceed regulatory taxable income.	Yes	Yes		The calculation for utilised tax losses limits this amount to the maximum of opening tax losses + current year tax losses or regulatory taxable income.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$59
5.3.14(3)	Opening tax losses in relation to- (a) the first disclosure year of the next period, is nil, subject to subclause (4); and (b) subsequent disclosure years of the next period, is closing tax losses for the preceding disclosure year.	Yes	Yes		Note that no tax losses arise in the next period.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$57
5.3.14(4)	For the purpose of subclause (3)(a), if the Commission is satisfied that an EDB will incur forecast tax losses, opening tax losses is the amount of losses in respect of which the Commission is satisfied.	Yes	n/a		Note that no tax losses arise in the next period.	n/a
5.3.14(5)	For the purpose of subclause (3)(b), 'closing tax losses' means the amount determined in accordance with the following formula, in which each term is an absolute value: opening tax losses + current period tax losses - utilised tax losses.	Yes	Yes		Note that no tax losses arise in the next period.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$60
5.3.14(6)	In this clause, 'current period tax losses' is, where regulatory taxable income is- (a) nil or a positive number, nil; and (b) a negative number, regulatory taxable income.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$58
5.3.15	<u>Permanent differences</u>	Yes	n/a			n/a
5.3.15(1)	Permanent differences is the amount determined in accordance with the formula- positive permanent differences - discretionary discounts and customer rebates - negative permanent differences.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$67

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.15(2)	For the purpose of subclause (1), 'positive permanent differences' means, subject to subclause (3), the sum of- (a) all amounts of income- (i) treated as taxable were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (ii) not included as amounts of income in determining regulatory profit / (loss) before tax; and (b) all amounts of expenditure or loss- (i) included as amounts of expenditure or loss in determining regulatory profit / (loss) before tax; and (ii) not treated as deductions were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services, if the difference in treatment of amounts of- (c) income under paragraph (a)(i) and paragraph (a)(ii); or (d) expenditure or loss under paragraph (b)(i) and paragraph (b)(ii), is a difference that is not - (e) a reversal or partial reversal of a difference for a prior disclosure year; and (f) forecast to reverse in a subsequent disclosure year.	Yes	Yes		A forecast of positive permanent differences is a direct input into this workbook.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$85
5.3.15(3)	For the purpose of subclause (2), positive permanent differences excludes any amounts that are- (a) amortisation of initial differences in asset values; or (b) amortisation of revaluations.	Yes	Yes		Initial differences in asset values are amortised in module 4.3 Initial differences. Revaluations are amortised in the calculation of regulatory tax adjustments	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$76 & [CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$94
5.3.15(4)	For the purpose of subclause (1), 'negative permanent differences' means, subject to subclause (5), the sum of- (a) all amounts of income- (i) included as amounts of income in determining regulatory profit / (loss) before tax; and (ii) not treated as taxable were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (b) all amounts of expenditure or loss- (i) treated as deductions were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (ii) not included as amounts of expenditure or loss in determining regulatory profit / (loss) before tax, if there are differences between the values in- (c) paragraph (a)(i) and paragraph (a)(ii); and (d) paragraph (b)(i) and paragraph (b)(ii), and such differences are not- (e) the reversal of a difference in a prior disclosure year; and (f) forecast to reverse in a subsequent disclosure year.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$103
5.3.15(5)	For the purpose of subclause (4), negative permanent differences excludes any amounts that are- (a) discretionary discounts and customer rebates; (b) expenditure or loss determined in accordance with the tax rules that is- (i) interest; or (ii) forecast to be incurred in borrowing money; and (c) any- (i) tax losses; and (ii) subvention payment made or received by an EDB.	Yes	Yes		Our forecast of negative permanent differences in nil for the net period.	
5.3.16	Regulatory tax adjustments	Yes	n/a			
5.3.16(1)	Regulatory tax adjustments are determined in accordance with the formula- amortisation of initial differences in asset values + amortisation of revaluations - notional deductible interest.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$89
5.3.16(2)	For the purpose of subclause (1), 'notional deductible interest' means the amount determined in accordance with the formula- $\frac{((\text{regulatory investment value} + \text{RAB proportionate investment}) \times \text{leverage} \times \text{cost of debt}) + \text{term credit spread differential allowance}}{\sqrt{1 + \text{cost of debt}}}$	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$87
5.3.16(3)	For the purpose of subclause (2), 'RAB proportionate investment' means the sum of the proportionate value of each asset forecast to be commissioned less the sum of the proportionate value of each disposed asset.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB proportionate invest!\$K\$20
5.3.16(4)	For the purpose of subclause (3), 'proportionate value' means for- (a) an asset forecast to be commissioned, its forecast value of commissioned asset multiplied by the proportion of that disclosure year in question from the forecast commissioning date to the end of that disclosure year out of the whole disclosure year; and (b) a disposed asset, its opening RAB value multiplied by the proportion of that disclosure year from the date of sale or transfer to the end of that disclosure year out of the whole disclosure year.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$B\$535
5.3.16(4)		Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$645
5.3.17	<u>Amortisation of initial differences in asset values</u>	Yes	n/a			n/a
5.3.17(1)	Amortisation of initial differences in asset values is, subject to subclause (4), determined in accordance with the formula- opening unamortised initial differences in asset values ÷ opening weighted average remaining useful life of relevant assets.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.3 Initial differences!\$K\$114

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.17(2)	For the purpose of this clause, 'opening unamortised initial differences in asset values' means, in respect of- (a) the disclosure year 2010, initial differences in asset values; and (b) each disclosure year thereafter, subject to subclause (4), closing unamortised initial difference in asset values for the preceding disclosure year.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.3 Initial differences!\$K\$110
5.3.17(3)	For the purpose of subclause (2)(a), 'initial differences in asset values' means, subject to subclause (4), the sum of initial RAB values less the sum of regulatory tax asset values on the first day of the disclosure year 2010.					[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$777
5.3.17(4)	For the purpose of subclause (1), 'opening weighted average remaining useful life of relevant assets' means $q = a - b$ where: a = the 2010 weighted average remaining asset life of assets included in the initial RAB calculated by using initial RAB values as weightings b = disclosure year less 2010.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$776
5.3.17(5)	For the purpose of subclauses (1) and (2)- (a) no account may be taken of unamortised initial differences in asset values of sold assets from the date of sale; and	Yes	Yes		We have interpreted this clause as referring to assets sold or disposed. The basis for our interpretation is the wording in ID schedule 5a(iii) where it is indicated that there is an adjustment for both sold and disposed assets.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.3 Initial differences!\$K\$41
5.3.17(5)	(b) account must be taken of unamortised initial differences in asset values of acquired assets from the date of acquisition.	Yes	Yes		Adjustments are made for the initial difference associated with acquired assets. Note that no assets are forecast to be acquired in the CPP.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.3 Initial differences!\$K\$39
5.3.17(6)	For the purpose of subclause (2)(b), 'closing unamortised initial difference in asset values' is determined in accordance with the formula- Opening unamortised initial differences in asset values - amortisation of initial difference in asset values	Yes	Yes		We have also included an adjustment for disposed assets in our calculation of closing unamortised initial difference in asset values which is consistent with ID schedule 5a(iii).	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$96
5.3.18	<u>Amortisation of revaluations</u>	Yes	n/a			n/a
5.3.18	Amortisation of revaluations in relation to an EDB for a disclosure year is calculated in accordance with the formula total depreciation - adjusted depreciation.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$76
5.3.19	<u>Deferred tax</u>	Yes	n/a			n/a
5.3.19(1)	Opening deferred tax means, in respect of- (a) the disclosure year 2010, nil; and (b) each disclosure year thereafter, closing deferred tax for the preceding disclosure year.	Yes	Yes		2017 opening deferred tax is sourced from 2016 ID	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$132
5.3.19(2)	For the purpose of subclause (1)(b), 'closing deferred tax' is determined in accordance with the formula opening deferred tax + tax effect of temporary differences - tax effect of amortisation of initial difference in asset values + deferred tax balance relating to assets acquired in the disclosure year in question – deferred tax balance relating to assets disposed of in the disclosure year in question + cost allocation adjustment.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$43
5.3.19(3)	For the purpose of subclause (2), 'deferred tax balance relating to assets acquired in the disclosure year in question' means the amount of deferred tax associated with the assets acquired by the EDB from another regulated supplier, excluding the reversal of temporary adjustments arising as a consequence of the sale, as determined in accordance with input methodologies applicable to the regulated services that the assets in question were used to supply.	Yes	Yes		There are no acquired assets forecast in the CPP.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$13
5.3.19(4)	For the avoidance of doubt, the amount referred to in subclause (3) must include proportionate adjustments for- (a) the tax effect of temporary differences; and (b) the amortisation of initial differences in asset values, up to the date the assets in question were acquired.	Yes	n/a		There are no acquired assets forecast in the CPP.	n/a
5.3.19(5)	For the purpose of subclause (2), 'cost allocation adjustment' means the tax effect of the dollar value difference between the change in the sum of regulatory tax asset values on the last day of the disclosure year and the change in the sum of closing RAB values as a result only of applying- (a) the result of asset allocation ratios to the tax asset value in accordance with clause 5.3.21(1); and (b) Clause 2.1.1 to the unallocated closing RAB value, where either or both clauses 5.3.6(1)(b)(ii) and 5.3.6(3) apply.	Yes	Yes		The CPP forecasts assume that the proportion between electricity and other regulated businesses will remain constant throughout the CPP.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$41
5.3.19(6)	For the purpose of subclause (2), 'deferred tax balance relating to assets disposed of in the disclosure year in question' means the amount of deferred tax associated with the assets disposed of by the EDB and, where that deferred tax balance is a deferred tax liability, it must have a negative value.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$30
5.3.20	<u>Temporary differences</u>		n/a			n/a
5.3.20(1)	Temporary differences is the amount determined in accordance with the formula- depreciation temporary differences + positive temporary differences - negative temporary differences.	Yes				[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$39
5.3.20(2)	For the purpose of this clause, 'depreciation temporary differences' is adjusted depreciation less tax depreciation.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$36

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.20(3)	For the purpose of subclause (2) 'tax depreciation' is the sum of the amounts determined for all assets by application of the tax depreciation rules to the regulatory tax asset value of each asset.	Yes	Yes		We note that the calculation in 1.0 TAXx uses the tax effect of tax depreciation rather than gross tax depreciation however compliance is demonstrated in module 4.2 Tax depreciation.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$600
5.3.20(4)	For the purpose of subclause (1), 'positive temporary differences' means the sum of- (a) all amounts of income- (i) treated as taxable if the tax rules were applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (ii) not included as amounts of income in determining regulatory profit / (loss) before tax; and (b) all amounts of expenditure or loss- (i) included as amounts of expenditure or loss in determining regulatory profit / (loss) before tax; and (ii) not treated as deductions were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services, less any amount that is depreciation temporary differences, if there are differences between the values in- (c) paragraph (a)(i) and paragraph (a)(ii); and (d) paragraph (b)(i) and paragraph (b)(ii), and such differences- (e) are the reversal of a difference in a prior disclosure year; or (f) are forecast to reverse in a subsequent disclosure year.	Yes	Yes			Positive temporary differences are discussed in the Financial and Modelling Information report section 8.6.1.
5.3.20(5)	For the purpose of subclause (1), 'negative temporary differences' means the sum of- (a) all amounts of income- (i) included as amounts of income in determining regulatory profit / (loss) before tax; and (ii) not treated as taxable were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (b) all amounts of expenditure or loss- (i) treated as deductions were the tax rules applied to determine income tax payable in respect of the EDB's supply of electricity distribution services; and (ii) not included as amounts of expenditure or loss in determining regulatory profit / (loss) before tax, less any amount that is depreciation temporary differences, if there are differences between the values in- (c) paragraph (a)(i) and paragraph (a)(ii); and (d) paragraph (b)(i) and paragraph (b)(ii), and such differences- (e) are the reversal of a difference in a prior disclosure year; or (f) are forecast to reverse in a subsequent disclosure year.	Yes	n/a		We forecast nil negative temporary differences in our CPP.	
5.3.21	<u>Regulatory tax asset value</u>		n/a			n/a
5.3.21(1)	Regulatory tax asset value, in relation to an asset, means the value determined in accordance with the formula- tax asset value × result of asset allocation ratio.	Yes	Yes		Inputs to the financial model (4.2-i3) are allocated values. The allocations are calculated in a work paper that generates this set of inputs. The work paper has been audited.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$652
5.3.21(2)	Tax asset value means, in respect of- (a) an asset- (i) in the initial RAB where, in the disclosure year 2010, the sum of unallocated initial RAB values is less than the sum of the adjusted tax values of all assets in the initial RAB; (ii) acquired from a regulated supplier who used it to supply regulated goods or services; or (iii) acquired or transferred from a related party, the value of the asset determined by applying the tax depreciation rules to its notional tax asset value; and (b) any other asset, its forecast adjusted tax value.	Yes	Yes		Our model uses opening tax asset values as per our audited 2016 Information Disclosure. The model does not provide a full history of this balance.	
5.3.21(3)	Notional tax asset value' means, for the purpose of- (a) subclause (2)(a)(i), adjusted tax value of the asset in the disclosure year 2010 adjusted to account proportionately for the difference between the- (i) sum of the unallocated initial RAB values; and (ii) sum of the adjusted tax values, of all assets in the initial RAB;		Yes		Our model uses opening tax asset values as per our audited 2016 Information Disclosure. The model does not provide a full history of this balance.	
5.3.21(3)	(b) subclause (2)(a)(ii), value after applying the tax depreciation rules to the tax asset value (as 'tax asset value' is defined in the input methodologies applying to the regulated goods or services in question) in respect of the disclosure year in which the asset was acquired; and		Yes		Our CPP does not forecast the acquisition of any assets from other regulated suppliers.	
5.3.21(3)	(c) subclause (2)(a)(iii), value in respect of the disclosure year in which the asset was acquired or transferred that is- (i) consistent with the tax rules; and (ii) limited to its value of commissioned asset or, if relevant capital contributions are treated for tax purposes in accordance with section CG 8 of the Income Tax Act 2007 (or subsequent equivalent provisions), limited to the value of commissioned asset plus any taxed capital contributions applicable to the asset.		Yes		Our CPP does not forecast the acquisition (as opposed to purchased) or transfer of any assets from related parties.	

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.21(4)	For the purpose of subclause (1), 'result of asset allocation ratio' means, where an asset or group of assets maintained under the tax rules- (a) has a matching asset or group of assets maintained for the purpose of Part 2 Subpart 2, the value obtained in accordance with the formula- opening RAB value or sum of opening RAB values, as the case may be ÷ unallocated opening RAB value or sum of unallocated opening RAB values, as the case may be, applying the formula in respect of the asset or smallest group of assets maintained for the purpose of Part 2 Subpar 2 that has a matching asset or group of assets maintained under the tax rules; and (b) does not have a matching asset or group of assets maintained for the purpose of Part 2 Subpar 2, the value of the asset allocated to the supply of electricity distribution services were clause 2.1.1 to apply to the asset or group of assets.		Yes			
SECTION 4	Cost of capital	Yes	n/a			n/a
5.3.22	<u>Methodology for estimating the weighted average cost of capital</u>		n/a			n/a
5.3.22(1)	Where the Commission takes into account the cost of capital in making a CPP determination, the Commission will use the 67th percentile estimate of WACC that was used for the DPP applying at the start of the CPP regulatory period in accordance with clause 4.4.7(1).	Yes	Yes	Yes	Our model includes a switch that allows the application of two different methods to calculate the price path. The first is compliant with the current IMs and applies the 2015-2020 DPP WACC to every year in the CPP next period. We propose a second method in our CPP which forecasts a WACC change reopener in FY2021 and applies a forecast of WACC in years FY2021 to FY2023. The WACC we use in our IM compliant model is sourced from the 2015-2020 DPP reset Financial model.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$57
5.3.22(2)	Where there has been a WACC change, the cost of capital for the CPP is the DPP WACC referenced in clause 5.6.7(4)(a), which has effect in the remaining years of the CPP regulatory period.	Yes	No	Yes	Our model includes a switch that allows the application of two different methods to calculate the price path. The first is compliant with the current IMs and applies the 2015-2020 DPP WACC to every year in the CPP next period. We propose a second method in our CPP which forecasts a WACC change reopener in FY2021 and applies a forecast of WACC in years FY2021 to FY2023. The method we have used to forecast WACC is described in the Financial and Modelling Information report section 5.1.1.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$63 Financial and Modelling Information report section 5.1.1
5.3.23	<u>Methodology for estimating term credit spread differential</u>		n/a			n/a
5.3.23(1)	'Term credit spread differential' is the amount determined for a qualifying supplier in accordance with the formula- (A ÷ B) × C × D, where- (a) 'A' is the sum of the term credit spread difference and debt issuance cost re-adjustment; (b) 'B' is the book value of the qualifying supplier's total interest-bearing debt as at the balance date of the supplier's financial statements audited and published in the disclosure year in question relate; (c) 'C' is leverage; and (d) 'D' is, in relation to the qualifying supplier, the average of- (i) the sum of opening RAB values; and (ii) the sum of closing RAB values.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.5 TCSD!\$K\$66
5.3.23(2)	For the purpose of subclause (1)(a), 'debt issuance cost re-adjustment' is the amount determined in accordance with the formula- (0.01 ÷ original tenor of the qualifying debt - 0.002) × book value in New Zealand dollars of the qualifying debt at its date of issue, which amount, for the avoidance of doubt, will be a negative number.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.5 TCSD!\$J\$38
5.3.24	<u>Term credit spread difference</u>		n/a			n/a
5.3.24(1)	'Term credit spread difference' is determined in accordance with the formula- T × U, where- (a) 'T' is the amount determined in accordance with the formula- 0.00075 × (original tenor of the qualifying debt - 5); (b) 'U' is the book value in New Zealand dollars of the qualifying debt at its date of issue.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.5 TCSD!\$H\$38
5.3.24(2)	For the purpose of this clause, where the qualifying debt is issued to a related party, 'original tenor of the qualifying debt' means the- (a) tenor of the qualifying debt; or (b) period from the qualifying debt's date of issue to the earliest date on which its repayment is or may be required, whichever is the shorter.	Yes	Yes			Financial and Modelling Information report section 9.1
5.3.25	<u>Interpretation of terms relating to term credit spread differential</u>		n/a			n/a
5.3.25(1)	'Qualifying debt' means a line of debt- (a) with an original tenor greater than 5 years; and (b) issued by a qualifying supplier.	Yes	Yes			Financial and Modelling Information report section 9.1

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.3.25(2)	'Qualifying supplier' means a regulated supplier whose debt portfolio, as at the date of that supplier's most recently published audited financial statements, has a weighted average original tenor greater than 5 years.	Yes	Yes			Financial and Modelling Information report section 9.1
SECTION 5	Alternative methodologies with equivalent effect	No	n/a			n/a
5.3.26	Alternative methodologies with equivalent effect	No	n/a			n/a
5.3.26(1)	A CPP applicant, in making a CPP application, may apply an alternative methodology to that specified for— (a) cost allocation and asset valuation in Section 2; (b) treatment of taxation in Section 3; or (c) the estimation of term credit spread differentials in Section 4.	No	n/a		We do not propose any AMWEE's in our CPP.	n/a
5.3.26(2)	The Commission, in evaluating a CPP proposal and in determining a CPP for an EDB, may apply the alternative methodology elected by the CPP applicant.	No	n/a			n/a
5.3.26(3)	An alternative methodology applied by either an EDB or the Commission in accordance with this clause must: (a) produce an equivalent effect within the CPP regulatory period to the methodology that would otherwise apply; and (b) not detract from the promotion of the purpose of Part 4 of the Act.	No	n/a			n/a
SUBPART 4	Information required in a CPP proposal	No	n/a			n/a
SECTION 1	General matters	No	n/a			n/a
5.4.1	Application of this subpart	No	n/a			n/a
5.4.1(1)	Subject to subclause (2), a CPP proposal must contain, in all material respects, the information specified in this subpart.	No	n/a			
5.4.1(2)	where a CPP proposal is made in accordance with provisions in a DPP determination relating to the submission of CPP proposals in response to a catastrophic event, the information specified in clause 5.4.3 is not required.	No	n/a			n/a
5.4.2	<u>Reasons for the proposal</u>	No	n/a		Not addressed by the Financial model	n/a
5.4.2	A CPP proposal must contain a- (a) detailed description of the CPP applicant's rationale for seeking a CPP; and (b) summary of the key evidence in the proposal supporting that rationale.	No	n/a		Not addressed by the Financial model	n/a
5.4.3	<u>Information regarding priority of proposal</u>	No	n/a			n/a
5.4.3(1)	A CPP proposal must contain an explanation as to why the proposal deserves to be prioritised for assessment before other CPP proposals, were the Commission to exercise its prioritisation powers under s 53Z of the Act.	No	n/a		Not addressed by the Financial model	n/a
5.4.3(2)	For the purpose of subclause (1), a CPP applicant must address the prioritisation criteria specified in paragraphs (b) and (c) of s 53Z(3) of the Act, viz.- (a) urgency of any proposed additional investment (compared to historic rates of investment) required to meet consumer requirements on quality, in accordance with subclause (3); and (b) materiality of the proposal relative to the size and revenues of the applicant in accordance with subclause (4).	No	n/a		Not addressed by the Financial model	n/a
5.4.3(3)	For the purpose of subclause (2)(a), the CPP applicant must explain- (a) how any proposed investment- (i) compares with historic rates of investment; and (ii) relates to meeting consumer requirements on quality; and (b) the optimal timing of any proposed investment, including any timeframes that would apply to the process of undertaking that proposed investment.	No	n/a		Not addressed by the Financial model	n/a
5.4.3(4)	For the purpose of subclause (2)(b), the CPP applicant must- (a) explain the current size of its business and how the proposed CPP would affect the size of its business; and (b) describe its revenue under the DPP and explain how its revenue under the proposed CPP would differ, if at all, from that revenue.	No	n/a		Not addressed by the Financial model	n/a
5.4.4	<u>Duration of regulatory period</u>	No	n/a		Not addressed by the Financial model	n/a
5.4.4	Where a CPP applicant seeks a CPP of 3 years' or 4 years' duration- (a) the duration of the CPP sought must be stated in the CPP proposal; and (b) the CPP proposal must contain an explanation as to why that duration better meets the purpose of Part 4 of the Act than 5 years.	No	n/a		The CPP duration is 5 years as per input 1.0-i1	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$31
SECTION 2	Information regarding quality	No	n/a		Not addressed by the Financial model	n/a
5.4.5	<u>Information on proposed quality standard variation</u>	No	n/a		Not addressed by the Financial model	n/a
5.4.5	Where a CPP applicant seeks a quality standard variation as part of a CPP proposal, the CPP proposal must contain the following information: (a) different values of either or both of- (i) the mean of SAIDI and SAIFI: μ SAIDI and μ SAIFI; and (ii) the standard deviation of SAIDI and SAIFI: σ SAIDI and σ SAIFI; (iii) the SAIDI and SAIFI limits; (iv) the SAIDI and SAIFI targets; (v) the SAIDI and SAIFI unplanned boundary values; (vi) the SAIDI and SAIFI caps; and (ii)(vii) the SAIDI and SAIFI collars, to those which would be determined in accordance with the methodology for calculating reliability limits specified in the DPP determination;	No	n/a		Not addressed by the Financial model	n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.5	(b) an explanation of the reasons for the proposed quality standard variation;	No	n/a		Not addressed by the Financial model	n/a
5.4.5	(c) demonstration of the extent to which the quality standard variation better reflects the realistically achievable performance of the EDB over the CPP regulatory period based on either or both of-	No	n/a		Not addressed by the Financial model	n/a
	(i) statistical analysis of past SAIDI and SAIFI performance; and					
	(ii) the level of investment provided for in proposed maximum allowable revenue before tax; and					
5.4.5	(d) demonstration of the estimated effect of the proposed quality standard variation by use of historic data, by contrast with the quality standards specified in the DPP determination.	No	n/a		Not addressed by the Financial model	n/a
SECTION 3	Price path information		n/a			n/a
5.4.6	Interpretation		n/a			n/a
5.4.6(1)	In this section, the meanings of defined terms that are values or amounts to be determined by the Commission when making a CPP determination are modified to mean the values or amounts proposed by the CPP applicant, subject to any other provision to the contrary.		Yes			n/a
5.4.6(2)	Any values and amounts used by a CPP applicant to determine the quantum of allowances, amounts, sums or values required by this section must be consistent with other information provided in accordance with this part.		Yes			n/a
5.4.7	<u>Proposed building blocks allowable revenue</u>		n/a			n/a
5.4.7(1)	A CPP proposal must contain amounts for-	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 OUTPUTS!\$D\$10
5.4.7(1)	(a) building blocks allowable revenue before tax for each disclosure year of the next period; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 OUTPUTS!\$D\$12
5.4.7(1)	(b) building blocks allowable revenue after tax for each disclosure year of the next period.	Yes	Yes			
5.4.7(2)	Subject to subclause (4), a CPP proposal must contain all data, information, calculations and assumptions used to determine the amounts required by subclause (1), including but not limited to-	Yes	Yes			
5.4.7(2)	(a) forecasts of-	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$C\$74
5.4.7(2)	(i) regulatory investment value;	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1496
5.4.7(2)	(ii) total value of commissioned assets determined in accordance with clause 5.3.2(3);	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$1471
5.4.7(2)	(iii) total depreciation; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$L\$1472
5.4.7(2)	(v) total revaluation	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$49
5.4.7(2)	(b) all data, information, calculations and assumptions used to derive amounts or forecasts of TF_{VCA} , PV_{VCA} , TF , and TF_{rev} determined in accordance with clause 5.3.2(4);	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1497
5.4.7(2)	(c) forecast operating expenditure; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.2 Opex aggregation!\$100
5.4.7(2)	(d) any proposed term credit spread differential allowance.	Yes	Yes			to be added
5.4.7(3)	All calculations, values and amounts required by this clause must be presented in a spreadsheet format which -	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 BBARx!\$C\$66
5.4.7(3)	(a) clearly demonstrates how building blocks allowable revenue before tax and building blocks allowable revenue after tax for each disclosure year of the next period have been derived using the formulae specified in clauses 5.3.2 and 5.3.3; and	Yes	Yes		This model has been submitted with all formulas visible.	
5.4.7(3)	(b) where data has been computed or derived from other values on the spreadsheet through the use of formulae, makes the underlying formulae accessible.	Yes	Yes			
5.4.7(4)	Where the information specified in subclause (2) is included in a CPP proposal in a spreadsheet format-	Yes	n/a			n/a
5.4.7(4)	(a) the information must be cross-referenced in the text of the CPP proposal document; and	Yes				Refer to the Financial and Modelling Information report where this workbook is cross referenced.
5.4.7(4)	(b) the spreadsheet(s) must-	Yes	Yes		This requirement is met using this table	
5.4.7(4)	(i) provide cross-references to any CPP information requirement input methodology that the spreadsheet satisfies;	Yes	Yes			
5.4.7(4)	(ii) use terms and labels, consistent with the terminology in the input methodologies;	Yes	Yes			
5.4.7(4)	(iii) identify and explain the source inputs, and outputs, of each spreadsheet;	Yes	Yes		Standard model structure is adopted in this workbook	
5.4.7(4)	(iv) produce all of the intermediate outputs, as set out in Part 5, Subpart 3 and Part 5, Subpart 4; and	Yes	Yes			
5.4.7(4)	(v) demonstrate links and interdependencies between source inputs, intermediate calculations and outputs.	Yes	Yes			
5.4.8	<u>Maximum Allowable Revenues</u>		n/a			n/a
5.4.8(1)	A CPP proposal must contain amounts for-	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 OUTPUTS!\$F\$14
5.4.8(1)	(a) maximum allowable revenue before tax for each disclosure year of the CPP regulatory period; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 OUTPUTS!\$F\$16
5.4.8(1)	(b) maximum allowable revenue after tax for each disclosure year of the CPP regulatory period.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$38
5.4.8(2)	For the purpose of subclauses (1)(a) and (1)(b), the CPP applicant must -	Yes	Yes			
	(a) apply an X factor; and					
	(b) state the value of the X factor.					

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.8(3)	For the purpose of subclause (2) the X factor is that defined in the CPP applicant's DPP determination, subject to subclause (4).	Yes	Yes		We have applied a nil X factor which is consistent with the X factor that the Commission applied to our DPP reset.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$N\$38
5.4.8(4)	For the purpose of subclause (3), a different X factor or factors may be used, provided that the CPP proposal contains an explanation and supporting evidence as to why that would better meet the purpose of Part 4 of the Act.	No	Yes		We have applied a nil X factor which is consistent with the X factor that the Commission applied to our DPP reset.	
5.4.8(5)	All calculations and values required by this clause must be presented in a spreadsheet format which clearly demonstrates how maximum allowable revenue before tax and maximum allowable revenue after tax for each disclosure year of the CPP regulatory period have been derived from building blocks allowable revenue after tax and the variables in clause 5.4.7.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$E\$38
5.4.8(6)	For the purpose of subclause (5), the spreadsheet must be provided in a format that- (a) shows clearly how the values required by subclause (1) were derived in accordance with the formulae specified in clauses 5.3.2 to 5.3.4; and (b) where data has been computed or derived from other values on the spreadsheet through the use of formulae, makes the underlying formulae accessible.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 MARx!\$E\$38
SECTION 4	Cost allocation information		n/a			n/a
5.4.9	Cost allocation information		n/a			n/a
5.4.9(1)	Where a CPP applicant- (a) makes allocations of operating costs not directly attributable pursuant to clause 5.3.5(1); or (b) determines opening RAB values pursuant to clause 5.3.6(1)(b)(ii), the CPP proposal must contain the information specified in subclause (2).	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(2)	For the purpose of subclause (1), the information is that specified in the applicable tables in Schedule B, subject to subclause (4), which tables comprise-	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(2)	(i) Table 1: Allocation of asset values; (ii) Table 2: Report supporting allocations of asset values (non-public);	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(2)	(iii) Table 3, relating to allocation of operating costs not directly applicable: Allocation of operating costs;	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(2)	(iv) Table 4: Report supporting allocation of operating costs (non-public); and	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(2)	(v) Table 5: Rationale for selecting proxy allocator	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	Subject to subclause (7), in respect of- (a) operating costs not directly attributable allocated to electricity distribution services in accordance with clause 5.3.5(2); or (b) closing RAB values determined in accordance with clause 5.3.6(4), the CPP proposal must contain the information specified in Schedule C, subject to subclause (4), which tables comprise-	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	(c) Table 1: Revised allocation of regulated asset values;	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	(d) Table 2: Report supporting revised allocations of asset values (non-public);	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	(e) Table 3: Revised allocation of operating costs; and	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	(f) Table 4: Report supporting revised allocation of operating costs (non-public); and	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(3)	(g) Table 5: Rationale for selecting proxy allocator.	No	n/a		The Financial model does not include any allocation information as all inputs are post-allocation. Schedule B is not in the scope of this workbook.	
5.4.9(4)	For the purpose of this clause-	No	n/a			
5.4.9(4)	(a) the information specified in the tables of the schedules referred to must be provided on spreadsheets;	No	n/a			
5.4.9(4)	(b) where data has been computed or derived from other values on the spreadsheet through the use of formulae, all underlying formulae must be accessible;	No	n/a			
5.4.9(4)	(c) the information specified in Table 2 and Table 4 of Schedule B and Table 2 and Table 4 of Schedule C may be provided by way of non-public disclosure to the Commission; and	No	n/a			

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.9(4)	(d) the information in Schedule B must be provided- (i) for the disclosure year prior to submitting the CPP proposal if it has not been disclosed in accordance with an ID determination; and	No	No	Yes	We have been granted a partial exemption from this requirement. Our proposal includes Schedule B populated with FY2016 data. We will submit schedule B populated with FY2017 data after the initial proposal when the information is available.	
5.4.9(4)	(ii) for the next period where a value in units in an allocator metric has been changed by at least 5% from the value used in the disclosure year referred to in (i).	No	n/a			
5.4.9(5)	Where the CPP applicant has used a proxy cost allocator to provide the information specified in subclauses (2) or (3), the CPP applicant must explain in the CPP proposal, for each proxy cost allocator used- (a) why a causal relationship cannot be established; and (b) the rationale for the quantifiable measure used for that proxy cost allocator.	No	n/a			
5.4.9(6)	Where the CPP applicant has used a proxy asset allocator to provide the information specified in subclauses (2) or (3), the CPP applicant must explain in the CPP proposal, for each proxy asset allocator used- (a) why a causal relationship cannot be established; and (b) the rationale for the quantifiable measure used for that proxy asset allocator.	No	n/a			
5.4.9(7)	The information in Schedule C is not required where the value of the assets to be sold as specified in clause 5.3.6(4) is less than 5% of the unallocated closing RAB value for the last disclosure year of the assessment period.	No	Yes		Forecast disposals are less than 5% of forecast unallocated closing RAB for FY2018.	
5.4.10	<u>Certification requirements</u>	No	n/a			
5.4.10(1)	Where any arm's-length deduction was applied for the purpose of this Section, the CPP proposal must contain certification by no fewer than 2 of the EDB's directors in the following terms, where words in bold bear the meanings specified in this determination: "I, [insert name], director of [insert name of Supplier of services regulated under Part 4 of the Commerce Act] certify that, having made all reasonable enquiry, my belief is that having had regard to the attached information [information required by clause 5.4.9(2)] for the purpose of the supplier's CPP proposal, it was appropriate to make the arm's-length deductions the amount and nature of which are detailed in the tables below, namely: Table 4 of Schedule B / Table 5 of Schedule B / Table 3 of Schedule C / Table 4 of Schedule C [delete as appropriate]."	No	n/a			
5.4.10(2)	Where, in relation to regulated service asset values, OVABAA was applied for the purpose of this clause in accordance with Subpart 3 Section 2, the CPP proposal must contain certification by no fewer than 2 of the EDB's directors in respect of its application in the following terms, where words in bold bear the meanings specified in this determination: "I, [insert name], director of [insert name of Supplier of services regulated under Part 4 of the Commerce Act] certify that, having made all reasonable enquiry, my belief is that having had regard to the attached information (being information required by clause 5.4.9(2)) for the purpose of the supplier's CPP proposal- (a) the attached information is accurate; (b) the OVABAA was applicable in accordance with clause 2.1.2; and (c) the following unregulated services would be unduly deterred had adjustments to allocations of regulated service asset values (in accordance with clause 2.1.4) not been made: [list relevant unregulated services]."	No	n/a			
5.4.10(3)	Where, in relation to operating costs provided in a CPP proposal in accordance with subclause 5.4.8(1) and Schedule C, the OVABAA was applied, the CPP proposal must contain certification by no fewer than 2 of the EDB's directors in respect of application of the OVABAA in the following terms: "I, [insert name], director of [insert name of Supplier of services regulated under Part 4 of the Commerce Act] certify that, having made all reasonable enquiry, my belief is that having had regard to the attached information (being information required by clause 5.4.9(2)) for the purpose of the supplier's CPP proposal- (a) the attached information is accurate; (b) the OVABAA was applicable in accordance with clause 2.1.2; and (c) the following unregulated services would be unduly deterred had adjustments to allocations of operating costs (in accordance with clause 2.1.4) not been made: [list relevant unregulated services]."	No	n/a			
SECTION 5	Asset valuation information		n/a			
5.4.11	<u>RAB roll forward information</u>		n/a			
5.4.11	For each disclosure year, after the last disclosure so made under an ID determination, until the last disclosure year of the next period, provide values, in accordance with Subpart 3 Section 2, for the- (a) total opening RAB value; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$28
5.4.11	(b) sum of each of the following things: (i) forecast value of commissioned assets; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$32
5.4.11	(ii) closing RAB values.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$33
5.4.12	<u>Depreciation information</u>	Yes	n/a			n/a
5.4.12(1)	In respect of each disclosure year of the CPP regulatory period, the CPP applicant must provide the information specified in this clause.	Yes	Yes			n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.12(2)	The sum of depreciation for each type of asset- (a) by either asset category or each type of asset for which the proposed method of determining depreciation is the standard depreciation method; and	Yes	No	Yes	We have been granted an exemption from having to disaggregate depreciation by type of asset or asset category. Refer to Financial and Modelling Information report section 1.3.	n/a
5.4.12(2)	(b) for each type of asset where the proposed method of determining depreciation is an alternative depreciation method.	Yes	n/a		Our CPP does not propose an alternative depreciation method.	n/a
5.4.12(3)	For each type of asset to which subclause (2)b) applies- (a) a description of the type of asset; (b) a description of the proposed depreciation method; (c) where the proposed asset life is different to the physical asset life, the proposed asset life for the type of asset; (d) where the proposed asset life for the type of asset is different to the physical asset life, the proposed remaining asset life; (e) forecast depreciation over the asset life for the type of asset, including details of all assumptions made; (f) forecast depreciation over the asset life for the type of asset determined in accordance with the standard depreciation method; (g) evidence to demonstrate that the proposed depreciation method including, where applicable, any proposed asset life different to the physical asset life, better meets the purpose of Part 4 of the Act than the standard depreciation method; and (h) a description of any consultation undertaken with consumers on the proposed depreciation method, including- (i) the extent of any consumer disagreement; and (ii) the EDB's view in response.	Yes	n/a		Our CPP does not propose an alternative depreciation method.	n/a
5.4.12(4)	For each asset or type of asset for which a different physical asset life to the standard physical asset life is proposed- (a) a description of the assets or types of asset; (b) to which clauses 2.2.8(1)(c) and 2.2.8(1)(i)(v) apply, an engineer's report addressing the suitability of the proposed physical asset life; and (c) any other evidence to demonstrate that the requirements of clause 2.2.8 in respect of the particular type of asset are met.	Yes	n/a		Our CPP does not propose a different physical asset life to the standard physical asset life for any assets.	n/a
5.4.13	<u>Revaluation information</u>	Yes	n/a			n/a
5.4.13(1)	For each disclosure year after the last disclosure made under an ID determination, until the last disclosure year of the next period, provide the following:	Yes	Yes			n/a
5.4.13(1)	(a) sum of opening RAB values;	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$59
5.4.13(1)	(b) forecast CPI for CPP revaluation for the last quarter of the disclosure year;	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$J\$32
5.4.13(1)	(c) forecast CPI for CPP revaluation for the last quarter of the preceding disclosure year; and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$J\$28
5.4.13(1)	(d) revaluation rate.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.1 CPI index!\$K\$101
5.4.14	<u>Commissioned assets information</u>	Yes	n/a			n/a
5.4.14(1)	For each disclosure year after the last disclosure made under an ID determination, until the last disclosure year of the next period, provide the- (a) sum of value of commissioned assets; and (b) sum of forecast value of commissioned assets, in respect of each of the following groups of assets: (c) assets- (i) acquired or intended to be acquired from a related party; or (ii) transferred from a part of the EDB that supplies unregulated services;	Yes	Yes			Financial and Modelling Information report section 6.4.11
5.4.14(1)	(d) assets- (i) acquired or intended to be acquired from another regulated supplier and used by that regulated supplier in the supply of regulated services; or (ii) transferred or intended to be transferred from a part of the EDB that supplies other regulated services;	Yes	Yes		No assets are forecast to be acquired in the CPP next period	Financial and Modelling Information report section 6.4.11
5.4.14(1)	(e) network spares; and	Yes	n/a			Financial and Modelling Information report section 6.4.11
5.4.14(1)	(f) all other assets having a commissioning date or forecast to have a commissioning date in that period.	Yes	Yes			Financial and Modelling Information report section 6.4.11
5.4.14(2)	In respect of each value provided in accordance with subclause (1) provide- (a) all data, information, calculations and assumptions used to derive it from relevant data provided in the capex forecast; and (b) where capital contributions are taken into account in any value disclosed pursuant to subclause (1)- (i) the amount of such capital contributions, with respect to asset types and quantities; and (ii) policies relevant to such capital contributions.	No	n/a		Provided in capital expenditure forecast models that feed inputs into module 3.3.	n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.14(3)	In respect of each asset to which subclause (1)(e) applies, provide— (a) the name of the relevant person or other part of the EDB, as the case may be; and (b) where the acquisition was or is intended to be from a related party, a description of the relationship between the EDB and that person.	No	Yes		We note that the intention of the IM is to apply this clause to the assets in sub clause (1)(c) (related parties) rather than (1)(e) (other regulated suppliers). Our CPP does not propose to acquire any assets from other regulated suppliers.	Financial and Modelling Information report section 6.4.11
5.4.14(4)	In respect of the likely vendor of each asset to which subclause (1)(f) applies, provide— (a) the name of the vendor; (b) a description of each asset likely to be acquired from that vendor; and (c) the forecast closing RAB value of each asset in the vendor's regulatory asset base for the disclosure year in which the acquisition is intended.	Yes	n/a		We note that the intention of the IM is to apply this clause to the assets in sub clause (1)(d) (other regulated suppliers) rather than (1)(f) (all other assets). Our CPP does not propose to acquire any assets from other regulated suppliers.	n/a
5.4.15	<u>Asset disposals information</u>	Yes	n/a			n/a
5.4.15(1)	For each disclosure year after the last disclosure made under an ID determination, until the last disclosure year of the next period, in respect of each of the following groups of assets: (a) assets likely to be- (i) sold to a related party; or (ii) transferred to another part of the EDB; and (b) all other disposed assets, provide the- (c) sum of unallocated opening RAB values; and (d) sum of opening RAB values.	Yes	n/a		No assets are forecast to be sold to a related party or transferred to another part of Powerco.	n/a
5.4.15(1)		Yes	Yes		Our disposals forecast consists entirely of directly attributed assets so the RAB value is also the unallocated RAB value	Financial and Modelling Information report section 6.5.5
5.4.15(1)		Yes	Yes		Disposals are valued at opening RAB in the year that they are disposed.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 RABx!\$C\$30
5.4.15(2)	In respect of each asset to which the values provided pursuant to subclause (1) relate, provide— (a) the name of the relevant person or other part of the EDB, as the case may be; and (b) where the disposal is proposed to be to a related party, a description of the relationship between the EDB and that person.	Yes	n/a		No assets are forecast to be sold to a related party or transferred to another part of Powerco.	
5.4.16	<u>Works under construction information</u>		n/a			n/a
5.4.16	For each disclosure year after the last disclosure made under an ID determination, until the last disclosure year of the next period, provide - (a) opening works under construction; (b) sum of capital expenditure;	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1698
5.4.16		Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1700
5.4.16	(c) sum of value of commissioned assets but only to the extent that values are included in closing RAB values disclosed pursuant to an ID determination;	Yes	n/a		All VCA in the next period is forecast VCA not VCA	n/a
5.4.16	(d) sum of forecast value of commissioned assets but only to the extent that values are included in the sum of closing RAB values provided pursuant to clause 5.4.11(bd)(ii); and	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1701
5.4.16	(e) sum of closing works under construction.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]3.3 COF & VCA!\$1702
SECTION 6	Tax information	Yes	n/a			n/a
5.4.17	<u>Interpretation</u> In this section, a term that is not emboldened but is defined for the purpose of a specific clause in Subpart 3 Section 3 bears the same meaning as it does in the clause of Subpart 3 Section 3 in which it is defined.	Yes	n/a			n/a
5.4.18	<u>Period in respect of which tax information to be provided</u> A CPP proposal must contain the information specified in this section for each disclosure year, after the last disclosure made under an ID determination, until the last disclosure year of the next period, in accordance with Subpart 3 Section 3.		Yes			
5.4.19	<u>Regulatory tax allowance information</u>	Yes	n/a			n/a
5.4.19(1)	forecast regulatory tax allowance and particulars of how it was calculated	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$39
5.4.19(2)	other regulated income	Yes	No	Yes	The Commission has granted us an exemption from providing this information. Refer to Financial and Modelling Information report section 1.3.	Financial and modelling information reports section 1.3
5.4.19(3)	sum of discretionary discounts and customer rebates;	Yes	Yes		We are not forecasting any discretionary discounts or customer rebates in our CPP application.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$A\$96
5.4.19(4)	notional deductible interest and the cost of debt assumptions relied upon in its calculation	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$A\$78
5.4.20	<u>Tax losses information</u>	Yes	n/a			n/a
5.4.20(1)	amount of opening tax losses (if any) and particulars of how it was calculated	Yes	Yes		We are forecasting no tax losses in the CPP next period	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$80
5.4.20(2)	information describing the nature and amounts of significant items giving rise to any opening tax losses	Yes	n/a		We are forecasting no tax losses in the CPP next period	n/a
5.4.20(3)	information demonstrating that any opening tax losses arose from the supply of electricity distribution services	Yes	n/a		We are forecasting no tax losses in the CPP next period	n/a
5.4.21	<u>Permanent differences information</u>	Yes				n/a

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.21(1)	sum of positive permanent differences	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$85
5.4.21(2)	sum of negative permanent differences	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$103
5.4.21(3)	amounts and nature of items used to determine- (a) positive permanent differences; and (b) negative permanent differences	Yes	Yes			Financial and modelling information reports section 8.2
5.4.21(3)		Yes	Yes			Financial and modelling information reports section 8.2
5.4.22	<u>Amortisation of initial differences in asset values information</u>	Yes				n/a
5.4.22(1)	opening unamortised balance of the initial differences in asset values by asset category	Yes	No	Yes	We have been granted an exemption from having to provide the opening balance by asset category. Refer to Financial and Modelling Information report section 1.3.	Financial and modelling information reports section 1.3
5.4.22(2)	amortisation in respect of the disclosure year	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 TAXx!\$C\$94
5.4.22(3)	average weighted remaining useful life of the assets relevant to calculation of the initial regulatory tax asset value	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.3 Initial differences!\$K\$123
5.4.23	<u>Amortisation of revaluations information</u>	Yes	n/a			n/a
5.4.23(1)	unamortised balance of revaluations to date	Yes	Yes		Calculated as the difference between closing RAB and closing RAB excluding revaluations.	Financial and modelling information reports section 8.3.2
5.4.23(2)	adjusted depreciation	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.4 RAB excl revals roll!\$L\$1435
5.4.23(3)	average weighted remaining useful life of the assets used to determine the amortisation of revaluations	Yes	Yes		Revaluations are amortised over an asset's remaining life. We have determined this by using the RAB remaining useful life weighted by RAB depreciation.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.1 RAB roll forward!\$C\$1456
5.4.23(4)	particulars of how the average weighted remaining useful life was calculated	Yes	Yes		Revaluations are amortised over an asset's remaining life. We have determined this by using the RAB remaining useful life weighted by RAB depreciation.	Financial and modelling information reports section 8.3.2
5.4.24	<u>Deferred tax information</u>	Yes	n/a			n/a
5.4.24(1)	opening deferred tax	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$26
5.4.24(2)	analysis of temporary differences and other adjustments by nature that give rise to opening deferred tax value	Yes	Yes			Financial and modelling information reports section 8.6.1
5.4.24(3)	closing deferred tax	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$43
5.4.24(4)	reconciliation of opening deferred tax to closing deferred tax by nature of temporary differences and other adjustments	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$43
5.4.25	<u>Temporary differences information</u>	Yes	n/a			n/a
5.4.25(1)	description of the methodology and depreciation rates by asset category used to determine the forecast tax depreciation	Yes	Yes		Tax depreciation rates are detailed in module 4.2 Tax depreciation. We do not distinguish asset categories in forecasting tax depreciation.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$46
5.4.25(2)	amounts and nature of other forecast temporary differences	Yes	Yes			Financial and modelling information reports section 8.6.1
5.4.25(3)	particulars of the calculation of the tax effect of temporary differences showing tax rates used	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]1.0 DTAXx!\$C\$39
5.4.26	<u>Regulatory tax asset value information</u>	Yes	n/a			n/a
5.4.26(1)	sum of tax asset values at the start of the disclosure year	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$597
5.4.26(2)	sum of regulatory tax asset values at the start of the disclosure year	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$614
5.4.26(3)	weighted average remaining tax life of assets employed	Yes	Yes		The remaining useful life is derived by dividing opening RTAV by tax depreciation for each year.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$602
5.4.26(4)	tax depreciation methodology employed	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$8
5.4.26(5)	particulars of the calculation used to derive the regulatory tax asset values at the start of the disclosure year from the tax asset values at the start of the disclosure year	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$627
5.4.26(6)	sum of regulatory tax asset values at the end of the disclosure year	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$601

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.26(7)	reconciliation between the sum of regulatory tax asset values at the start of the disclosure year and the sum of regulatory tax asset values at the end of the disclosure year, showing the values of capital additions, disposals, tax depreciation and other asset adjustments including cost allocation adjustments.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.2 Tax depreciation!\$K\$601
SECTION 7	Cost of capital information		n/a			n/a
5.4.27	<u>Information regarding WACC and TCSD allowance</u>		n/a			n/a
5.4.27(1)	A CPP proposal must, subject to subclause (2), identify the 67th percentile estimate of WACC used for the purpose of clause 5.4.7(1).	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$57
5.4.27(2)	For the purpose of subclause (1), the identified 67th percentile estimate of WACC is the applicable cost of capital specified in clause 5.3.22.	Yes	Yes		Our model applies the IM compliant cost of capital and also proposes an alternative forecast cost of capital.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Direct inputs!\$O\$57
5.4.27(3)	Where a term credit spread differential allowance is proposed, a CPP proposal must contain all data, information, calculations, and assumptions used to determine any proposed term credit spread differential.	Yes	n/a			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]4.5 TCSD!\$A\$1
SECTION 8	Expenditure information		n/a			n/a
5.4.28	<u>Capex, opex, demand and network qualitative information</u> The information specified in Schedule D must be- (a) contained in a CPP proposal; and (b) provided in accordance with the requirements of that schedule.	No	n/a			n/a
5.4.29	<u>Capex, opex, demand and network quantitative information</u>	Yes	n/a			n/a
5.4.29(1)	A CPP proposal must contain the information specified in the regulatory templates and that information must be- (a) in spreadsheet format whereby each item of data is linked between all cells to which it is relevant, irrespective of whether such cells are on the same or different tabs; and (b) provided in accordance with the instructions specified in clause 5.4.30.	Yes	Yes			n/a
5.4.29(2)	'Regulatory templates' means the tables included in Schedule E named- (a) Table 1: Projects and programmes;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 1!\$A\$1
5.4.29(2)	(b) Table 2: Capex summary;	Yes	No	Yes	The Commission has approved an exemption to report value of commissioned assets in the current period in aggregate rather than disaggregated by capex category. Refer to Financial and Modelling Information report section 1.3.	'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 2!\$A\$3
5.4.29(2)	(c) Table 3: Opex summary;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 3!\$H\$8
5.4.29(2)	(d) Table 4: Capex projects and programmes;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 4!\$H\$18
5.4.29(2)	(e) Table 5: Capex by asset categories;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 5!\$H\$11
5.4.29(2)	(f) Table 6: Opex projects and programmes;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 6!\$A\$2
5.4.29(2)	(g) Table 7: Non-network opex;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 7!\$A\$3
5.4.29(2)	(h) Table 8: Aggregate forecast commissioned assets by asset categories;	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 8!\$H\$9
5.4.29(2)	(i) Table 9: Cost escalation factors; and	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 9!\$A\$1
5.4.29(2)	(j) Table 10: Network demand forecasts.	No			To be supplied by the network growth work stream	
5.4.29(3)	Where data provided in accordance with subclause (1) has been computed or derived from other amounts or values on the spreadsheet through the use of formulae, the underlying formulae for the cells containing the data must be accessible.	Yes	Yes			
5.4.29(4)	For the purpose of subclause (1), terms used in the regulatory templates must be interpreted in the same way as those terms are defined for the purpose of Schedule D.	Yes	Yes			
5.4.30	<u>Instructions for completion of the regulatory templates</u>	Yes	n/a			n/a
5.4.30(1)	Provide the information specified in Table 1: Projects and programmes of the regulatory templates for all projects or programmes that form part of the CPP proposal.	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 1!\$A\$1
5.4.30(2)	Provide the information specified in Table 2: Capex summary of the regulatory templates using the information provided in Table 4: Capex projects and programmes of the regulatory templates, where-	Yes	Yes			'[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 2!\$A\$1

Clause	Requirement	Model Implications	Compliance	Exemption or modification	Comments	Specific reference
5.4.30(2)	(a) the values in Table 2: Capex summary must reconcile with the total values in Table 4: Capex projects and programmes and Table 8: Aggregate forecast commissioned assets by asset categories of the regulatory templates; and		Yes		An error check ensures that this condition is satisfied.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 4!\$B\$108
5.4.30(2)	(b) the total forecast value of capex resulting in commissioned assets in Table 2c of Schedule E must reconcile with the total value of commissioned assets in Table 2d of Schedule E.	Yes	Yes		An error check ensures that this condition is satisfied.	[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 2!\$M\$76
5.4.30(3)	Provide the information in Table 3: Opex summary of the regulatory templates using the information provided in Table 6: Opex projects and programmes of the regulatory templates.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 3!\$H\$8
5.4.30(4)	Provide the information specified in Table 4: Capex projects and programmes and Table 6: Opex projects and programmes of the regulatory templates for each project and for each programme.	Yes	No			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 4!\$H\$18, [CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 6!\$A\$2
5.4.30(5)	Provide the information specified in Table 5: Capex by asset categories of the regulatory templates.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 5!\$H\$11
5.4.30(6)	Provide the information specified in Table 7: Non-network opex of the regulatory templates in respect of system operation and network support opex and business support opex.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 7!\$A\$3
5.4.30(7)	Provide the information specified in Table 8: Aggregate forecast commissioned assets by asset categories of the regulatory templates.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 8!\$H\$9
5.4.30(8)	Provide the information specified in Table 9: Cost escalation factors of the regulatory templates for each of the cost escalators used to convert real prices to nominal prices.	Yes	Yes			[CPP Financial Model - Final submission - 12-Jun-2017.xlsx]Schedule E table 9!\$A\$1
5.4.30(9)	Provide the information specified in Table 10: Network demand forecasts of the regulatory templates.	No				
5.4.30(10)	For the purpose of specifying the relevant capex category or opex category in accordance with subclause (4), where expenditure within each project or programme is relevant to more than one capex category or opex category- (a) select the capex category or opex category that is most relevant based on the nature of the expenditure; or (b) redefine the project or programme into two or more new projects or programmes and reallocate the expenditure so as to resolve the overlap.	No				
SECTION 9	Information relevant to prices	No				n/a
5.4.31	Information on proposed new pass-through costs	No				n/a
5.4.31	A CPP proposal must contain details of any cost not specified in clause 3.1.2(2) that is sought to be specified as a new pass-through cost in accordance with clause 3.1.2(1)(b), including information on- (a) how the cost is likely to arise;	No				n/a
5.4.31	(b) who the cost would be payable to;	No				n/a
5.4.31	(c) how the cost would be calculated;	No				n/a
5.4.31	(d) any good or service the EDB would receive in exchange; and	No				n/a
5.4.31	(e) how the cost meets the criteria specified in clause 3.1.2(3).	No				n/a
5.4.32	Information on proposed recoverable costs relating to costs of making CPP application	No	n/a			n/a
5.4.32	Where a CPP applicant seeks specification in the CPP determination of a recoverable cost to which clause 3.1.3(1)(j), 3.1.3(1)(k), or 3.1.3(1)(l) applies, it must provide, in relation to each auditor, verifier or engineer who was engaged to provide an opinion on some aspect of the CPP proposal in accordance with a requirement of this Part- (a) any document making a public or limited circulation request for proposals to carry out the work; (b) the terms of reference for the work; (c) invoices for services undertaken in respect of the work; and (d) receipts for payment by the CPP applicant.	No				n/a
SECTION 10	Information relevant to alternative methodologies	No				n/a
5.4.33	Demonstration that alternative methodologies have equivalent effect	No				n/a
5.4.33(1)	Where a CPP applicant applies alternative methodologies in accordance with clause 5.3.26, it must provide: (a) a list and description of each alternative methodology applied; (b) an indication, at the relevant locations within the CPP application, as to where the alternative methodologies have been applied; (c) reasons why each of the alternative methodologies have been applied; and (d) evidence demonstrating that each alternative methodology complies with clause 5.3.26(3).	No				n/a
5.4.33(2)	Paragraph (1)(d) may be satisfied by submitting a certificate signed by an senior manager of the CPP applicant setting out the factual basis on which he or she believes each alternative methodology complies with clause 5.3.26(3).	No				n/a

End

Direct inputs

Referencing convention

Direct inputs are assigned a reference number which links them to the modules where they are required. For example, input 1.0-i3 is the X factor which is the 3rd input in the 1.0 Price path module. The inputs are listed by module. Note that module 1.0 Price path has a worksheet named 1.0 INPUTS. This is not a direct input sheet but it does list the inputs required for that particular module. This is a departure from the modelling conventions we have used elsewhere in this workbook but is necessary to retain the linkage between module 1.0 and the model developed by the Commerce Commission to support their Orion CPP final decision.

Source type

The data source is described for each direct input in this worksheet. Each direct input is categorised into one of the following source types:

Project	Sourced from high level parameters specific to our CPP eg 1.0-i1 which specifies the start and length of the CPP regulatory period.
Forecast	Sourced from various forecast models
IM	Specified in the Input Methodologies for a CPP eg 1.0-i20 Leverage which is defined in IM clause 5.3.23 as 42%.
ID	Sourced from our 2016 Electricity information disclosure. This is published on our website.
Workpaper	Sourced from a workpaper that provides additional detail to ID balances e.g. 4.1-i5 RAB by remaining useful life grouping which disaggregates the disclosed 2016 closing RAB into remaining useful life groups.
Published	Sourced from published information that has not been specifically prepared for our CPP e.g. 3.1-i8 which is quarterly CPI data published by Statistics New Zealand.
3rd Party	Sourced from an independent 3rd party that has prepared the information specifically for our CPP proposal e.g. 3.1-i2 Capex escalators which are forecasts of price growth for common capex inputs prepared by NZIER for our CPP.
n/a	Not required due to IM amendments but retained to maintain consistency with the price path model used by ComCom to support their final Orion CPP decision.

Capex and opex inputs

This model requires inputs of capex and opex denominated in real 2016 dollars for the period from FY2012 to FY2023. These inputs are sourced from numerous forecasting models and assembled into an opex table in the worksheet named 3.2 Opex aggregation and a capex table in the worksheet named 3.3 Capex aggregation. The tables are populated through a PowerQuery so we have separated them from direct inputs in this worksheet that are entered manually.

Switch to alternative price path methodology

Compliant with current IMs

1

1.0 Price path inputs

Ref.	Source type	Input name	Description	Comments on input sources	Discrete input	Next period						
						Assessment period		CPP period				
						2017	2018	2019	2020	2021	2022	2023
1.0-i1	Project	CPP regulatory period	The period of continuous disclosure years in respect of which the customised price-quality path applies, and which follows the assessment period. Input the number of years in the regulatory period and the first year in the regulatory period.	Powerco direct input in line with high level CPP strategy	5			2019				
1.0-i3	Project	'X' factor	A single value (percentage 3 d.p.) representing the rate of change allowed for the maximum allowable revenue path where the path is expressed in 'CPI-X' terms.	Final CPP will use this figure for top down fine tuning. The default value is nil as per the 2015-2020 DPP determination.								
1.0-i4	Forecast	Pass-through costs	Future uncontrollable costs of the supplier which are to be treated as pass-through costs in each year of the CPP regulatory period in addition to those rates or levies already specified in cl. 3.1.2 of the EDB input methodologies.					-	-	-	-	-
1.0-i5	Forecast	Recoverable costs	A series of values (\$000) which are the nominal amounts of verifier fees, auditor's costs or engineer fees associated with the CPP process that are treated as recoverable costs for each of the disclosure years of the CPP regulatory period.	Recoverable costs module includes calculation of expenditure incentives from pre-CPP regulatory periods.				-	-	-	-	-
1.0-i6	Forecast	Cost of capital	Discount rate (calculated as the 67th percentile estimate of WACC published most recently by the Commission prior to the submission of the CPP proposal in respect of the CPP regulatory period).	Powerco will seek a CPP modification to use a universal WACC rather than simply the DPP WACC.		7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

1.0-i6a	Forecast	Forecast WACC change	Discount rate for the current DPP period and forecast discount rate for the next DPP regulatory period (calculated as the 67th percentile estimate of WACC).	Sourced from an independent forecast		7.19%	7.19%	7.19%	7.19%	6.78%	6.78%	6.78%
1.0-i9	Project	Claw-back	A value (\$000) representing the amount of shortfall (negative amount) or over-recovery (positive amount) of revenues relating to prices previously charged by the supplier to be recovered or returned from consumers during the CPP regulatory period. It is	None forecast	-							
1.0-i15	Project	Corporate tax rate	A series of values (3 d.p.) for the next period where a single value for a disclosure year represents the rate of taxation applying to companies in that year.			28%	28%	28%	28%	28%	28%	28%
1.0-i16	ID	Opening tax losses in the first year of the next period	A value (\$000) for the first year of the next period which represents the carry forward tax losses from prior years that the Commission is satisfied that an EDB has incurred.			-						
1.0-i17	Forecast	Positive permanent differences	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are permanently taxable but not included as regulatory profit / (loss) before tax, or amounts of expenditure which are permanently taxable but not included as regulatory profit / (loss) before tax, or amounts of expenditure which are permanently not tax deductible, in nominal terms for that year.	Forecast of tax differences		133	135	138	140	143	146	149
1.0-i18	Project	Discretionary discounts and customer rebates	A series of values (\$000) for the next period where a single value for a disclosure year represents the sum of expenditure allowed as a tax deduction in respect of payments or credits given to persons by an EDB because of those person's direct or indirect	No discounts or rebates anticipated in the future.		-	-	-	-	-	-	-
1.0-i19	Forecast	Negative permanent differences	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are permanently not taxable, or amounts of expenditure which are permanently tax deductible but not included as regulatory profit / (loss) before tax, in nominal terms for that year.	Forecast of tax differences		-	-	-	-	-	-	-
1.0-i20	IM	Leverage	A value (percentage 0 d.p.) representing the assumed ratio of debt capital to total capital of the supplier, specified in the input methodologies for all EDBs as 44%.	Specified by input methodologies as 42% in 5.3.23(1)		42%	42%	42%	42%	42%	42%	42%
1.0-i21	IM	Cost of debt	A value (percentage 3 d.p.) representing the assumed cost of debt to the supplier for the next period, comprised of the risk free rate plus the debt premium.	Powerco will seek a CPP modification to use a cost of debt consistent with a universal WACC rather than simply the DPP WACC.		6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%
1.0-i21a	Forecast	Forecast cost of debt change	A value (percentage 3 d.p.) representing the cost of debt applying in the supplier in the next DPP regulatory period. forecast cost of debt that will apply to the supplier in the next DPP regulatory period.	Sourced from an independent forecast		6.09%	6.09%	6.09%	6.09%	5.70%	5.70%	5.70%

1.0-i22	ID	Opening unamortised initial differences in asset values for most recent ID year	A value (\$000) which represents the amount of the opening unamortised initial differences in asset values for a supplier for the first disclosure year in the next period.	Sourced from 2016 ID Schedule 5a(iii): Closing unamortised initial differences in asset values, row 40.		271,615							
1.0-i25	ID	Opening deferred tax for most recent ID year	A value (\$000) which represents the amount of the opening deferred tax balance for a supplier for the first disclosure year of the next period.	Sourced from 2016 ID Schedule 5a(vi): Calculation of deferred tax balance, row 76		-49,319							
1.0-i27	Forecast	Positive temporary differences	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are temporarily taxable but not included as regulatory profit / (loss) before tax, or amounts of expenditure which are temporarily not tax deductible, in nominal terms for that year.	Forecast of tax differences		1,029	1,041	1,160	1,314	1,394	1,438	1,465	
1.0-i28	Forecast	Negative temporary differences	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are temporarily not taxable, or amounts of expenditure which are temporarily tax deductible but not included as regulatory profit / (loss) before tax, in nominal terms for that year.	Forecast of tax differences		-	-	-	-	-	-	-	
1.0-i29	n/a	Deferred tax balance relating to assets acquired in disclosure year	A series of values (\$000) for the next period where a single value for a disclosure year represents the sum of the adjustment required to the opening deferred tax balance to account for assets that have been acquired by an EDB from another regulated supplier	The CPP does not propose to acquire any assets.		-	-	-	-	-	-	-	
1.0-i30	Project	Cost allocation adjustment	A series of values (\$000) for the next period where a single value for a disclosure year represents the tax effect of the change in the opening deferred tax balance to account for the effect of changes in cost allocation on tax asset values, in nominal te			-	-	-	-	-	-	-	
1.0-i31	ID	Opening or closing RAB values for ID years	A series of values (\$000) for the first year of the next period where a value for that disclosure year represents the opening regulatory asset value in nominal terms of all regulated assets held by a supplier for that disclosure year.	Sourced from 2016 ID Schedule 4(i): Disclosure by asset category, row 24.	Total Assets	1,528,013							
1.0-i32	Forecast	Disposals	A series of values (\$000) for the next period, where a single value represents the opening RAB value of the relevant asset category that are forecast to be disposed of in that year.	Sourced from module 2.3 RAB disposals forecast.		9,381	9,477	10,963	12,854	13,806	14,295	14,566	
1.0-i37	Workpaper	Opening or closing RAB values for ID years without revaluations	As for Opening or closing RAB values for ID years (1.0-i31) but is a series of values (\$000) for the next period where a single value for a disclosure year represents the total depreciation amount for all assets for that year as if no indexed revaluation	Sourced from year-end workpapers		1,429,343							
1.0-i39	Forecast	Disposals without revaluations	A series of values (\$000) for the next period, where a single value for an asset or aggregated asset group for a disclosure year represents the opening RAB value of those assets that are disposed of in that year. The value is calculated such that it does not include any revaluation amount which has been added to the RAB since the initial RAB date (31 March 2009).	Sourced from module 2.4 RAB excluding revaluations disposals forecast.		8,797	8,886	10,279	12,053	12,945	13,404	13,658	

1.0-i42	Forecast	Tax value of disposals	A series of values (\$000) for the next period, where a single value for a disclosure year represents the tax value of assets disposed.	Sourced from a forecast of tax disposals		8,682	8,770	10,146	11,896	12,777	13,229	13,480
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3.1 Escalators inputs

NZIER inputs

Capex input escalators

Ref	Source type	Cost category	Cost item for escalation	Currency	Assessment period		CPP period				
					2017	2018	2019	2020	2021	2022	2023
3.1-i1	3rd Party	Capital equipment and materials	Aluminium*	USD	1.45%	3.84%	3.93%	1.43%	3.12%	3.73%	4.39%
3.1-i1	3rd Party		Copper*	USD	14.85%	1.82%	6.90%	2.77%	3.86%	2.43%	1.42%
3.1-i1	3rd Party		Steel*	USD	6.62%	11.84%	11.93%	5.18%	0.15%	4.17%	3.09%
3.1-i1	3rd Party		Other capital goods	NZD	3.35%	1.82%	1.84%	1.88%	1.89%	2.40%	2.40%
3.1-i1	3rd Party	Internal labour	Engineers	NZD	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%
3.1-i1	3rd Party		Professional	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
3.1-i1	3rd Party		Project managers	NZD	0.68%	0.55%	0.80%	1.38%	1.52%	1.62%	1.97%
3.1-i1	3rd Party		IT labour costs	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
3.1-i1	3rd Party	Third-party labour	Capex labour	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
3.1-i1	3rd Party		Professional advice	NZD	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%
3.1-i1	3rd Party		Maintenance labour	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
3.1-i1	3rd Party	Other costs	Vegetation control	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
3.1-i1	3rd Party		Other costs	NZD	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%

Sourced from summary report commissioned from New Zealand Institute of Economic Research (NZIER) for the purposes of this CPP proposal.

Exchange rate forecast

Ref	Source type	2016	Assessment period		CPP period						
			2017	2018	2019	2020	2021	2022	2023		
3.1-i2	3rd Party	US/NZ dollar exchange rates	USD/NZD	0.73	0.69	0.71	0.69	0.67	0.67	0.67	0.67

Sourced from summary report commissioned from New Zealand Institute of Economic Research (NZIER) for the purposes of this CPP proposal.

Opex input indices

Ref	Source type	Opex labour	Opex other	Index	Currency	Assessment period		CPP period				
						2017	2018	2019	2020	2021	2022	2023
3.1-i3	3rd Party	Opex labour	Opex other	LCI - All sectors	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
3.1-i3	3rd Party			LCI - Electricity, gas, and water	NZD	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%
3.1-i3	3rd Party			LCI - Professional and technical	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
3.1-i3	3rd Party	Opex other	Opex other	PPI - Inputs	NZD	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%
3.1-i3	3rd Party			PPI-O Heavy and civil engineering	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
3.1-i3	3rd Party			PPI-O Professional services	NZD	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%

Sourced from summary report commissioned from New Zealand Institute of Economic Research (NZIER) for the purposes of this CPP proposal.

Capex index weightings

Ref	Source type	Capex input	Index	Weighting
Labour				
3.1-i4	Project	Capex labour		85.00%
3.1-i4	Project	Project managers		3.75%
3.1-i4	Project	Professional		3.75%
3.1-i4	Project	IT labour costs		3.75%
3.1-i4	Project	Engineers		3.75%
Total Index				100.00%

Judgement of typical project labour composition

Cables			
3.1-i4	Project	Aluminium*	95.00%
3.1-i4	Project	Copper*	5.00%
3.1-i4	Project		-
3.1-i4	Project		-
Total Index			100.00%
Conductor			
3.1-i4	Project	Aluminium*	100.00%
3.1-i4	Project		-
3.1-i4	Project		-
3.1-i4	Project		-
Total Index			100.00%
Transformers			
3.1-i4	Project	Steel*	45.00%
3.1-i4	Project	Copper*	50.00%
3.1-i4	Project	Other capital goods	5.00%
3.1-i4	Project		-
Total Index			100.00%
Switchgear			
3.1-i4	Project	Copper*	75.00%
3.1-i4	Project	Steel*	25.00%
3.1-i4	Project		
3.1-i4	Project		
Total Index			100.00%
Other capex			
3.1-i4	Project	Other capital goods	100.00%
3.1-i4	Project		
3.1-i4	Project		
3.1-i4	Project		
Total Index			100.00%

Allocations based on management judgement having regard to engineering views and weightings used in the final Orion CPP determination.

Ref	Source type		2017	2018	2019	2020	2021	2022	2023
3.1-i5	Project	Apply annual average CPI change or weighted average costs index	CPI	CPI	WA index	WA index	WA index	WA index	WA index

CPI inputs

General CPI parameters

Ref	Source type	General CPI parameters	Input
3.1-i6	Published	Mid-point of government inflation target range (%)	2.00
3.1-i6	Published	Final date for RBNZ forecast CPI series	1-Mar-20
3.1-i7	Published	GST adjustment factor	1.02
3.1-i7	Published	GST adjustment factor end date	1-Dec-10
3.1-i7	Published	Final date for historic CPI series	1-Dec-16
3.1-i7	IM	Number of years until mid-point of inflation range is targeted	3

CPI data inputs

Ref	Source type	Quarter	Historic CPI	Forecast CPI
3.1-i8	Published	1-Mar-10	1,097	
3.1-i8	Published	1-Jun-10	1,099	
3.1-i8	Published	1-Sep-10	1,111	
3.1-i8	Published	1-Dec-10	1,137	
3.1-i8	Published	1-Mar-11	1,146	
3.1-i8	Published	1-Jun-11	1,157	
3.1-i8	Published	1-Sep-11	1,162	
3.1-i8	Published	1-Dec-11	1,158	
3.1-i8	Published	1-Mar-12	1,164	
3.1-i8	Published	1-Jun-12	1,168	
3.1-i8	Published	1-Sep-12	1,171	
3.1-i8	Published	1-Dec-12	1,169	
3.1-i8	Published	1-Mar-13	1,174	
3.1-i8	Published	1-Jun-13	1,176	
3.1-i8	Published	1-Sep-13	1,187	
3.1-i8	Published	1-Dec-13	1,188	
3.1-i8	Published	1-Mar-14	1,192	
3.1-i8	Published	1-Jun-14	1,195	
3.1-i8	Published	1-Sep-14	1,199	
3.1-i8	Published	1-Dec-14	1,197	
3.1-i8	Published	1-Mar-15	1,195	
3.1-i8	Published	1-Jun-15	1,200	
3.1-i8	Published	1-Sep-15	1,204	
3.1-i8	Published	1-Dec-15	1,198	
3.1-i8	Published	1-Mar-16	1,200	
3.1-i8	Published	1-Jun-16	1,205	
3.1-i8	Published	1-Sep-16	1,209	
3.1-i8	Published	1-Dec-16	1,214	
3.1-i9	Published	1-Mar-17		1.50
3.1-i9	Published	1-Jun-17		1.49
3.1-i9	Published	1-Sep-17		1.65
3.1-i9	Published	1-Dec-17		1.32
3.1-i9	Published	1-Mar-18		1.31
3.1-i9	Published	1-Jun-18		1.39
3.1-i9	Published	1-Sep-18		1.55
3.1-i9	Published	1-Dec-18		1.71
3.1-i9	Published	1-Mar-19		1.86
3.1-i9	Published	1-Jun-19		2.02
3.1-i9	Published	1-Sep-19		2.00
3.1-i9	Published	1-Dec-19		2.08
3.1-i9	Published	1-Mar-20		2.07

Historic data sourced from NZ Statistics website: <http://www.stats.govt.nz/infoshare/ViewTable.aspx?pxID=9b01526d-de52-4b57-8240-308ac27495ef>

Forecast data sourced from Reserve Bank quarterly Monetary Policy Statement: <http://www.rbnz.govt.nz/-/media/ReserveBank/Files/Publications/Monetary%20policy%20statements/2017/mpsfeb17-data.xlsx>

The worksheet is '5_14: CPI Inflation'. The data series is 'CPI% '

2015-2020 DPP inputs

Ref	Source type		Assessment period			CPP period				
			2016	2017	2018	2019	2020	2021	2022	2023
3.1-i10	Published	Revaluation rate		2.11%	2.17%	2.11%	2.06%	2.00%	2.00%	2.00%
3.1-i11	Published	CPP Inflation rate				2.11%	2.15%	2.10%	2.03%	2.00%

Sourced from the Commerce Commission website: Final version of the financial and other models for the default price-quality path for electricity distribution 2015-2020 published 28/11/2014 (<http://comcom.govt.nz/dmsdocument/12740>)

3.2 Opex aggregation inputs

CPP Portfolios

Ref	Source type	Portfolio name	CPP opex category	Ref
3.2-i3	Project	Corrective maintenance	Asset replacement and renewal	ARR
3.2-i3	Project	Preventive maintenance and inspection	Routine and corrective maintenance and inspection	RCI
3.2-i3	Project	Reactive maintenance	Service interruptions and emergencies	SIE
3.2-i3	Project	System operations and network support	System operations and network support	SON
3.2-i3	Project	Vegetation management	Vegetation management	VEG
3.2-i3	Project	Corporate	Business support	COR
3.2-i3	Project	Facilities	Business support	FAC
3.2-i3	Project	Insurance and governance	Business support	I&G
3.2-i3	Project	ICT Opex	Business support	IST

3.3 Capex aggregation and commissioned assets inputs

Weighted average cost of capital and cost of financing rate

Ref	Source type		Base year	Assessment period		Next period				
			2016	2017	2018	CPP period				
			2016	2017	2018	2019	2020	2021	2022	2023
3.3-i3	Forecast	Forecast weighted average of borrowing costs used to calculate cost of financing	6.57%	5.23%	6.11%	6.12%	5.69%	5.51%	5.61%	5.83%
3.3-i4	Forecast	Cost of capital (used in the calculation of PV_{VCA} as per IM 5.3.2(4)(d))	-	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

Source: Forecast weighted average of borrowing is taken from forecast used in Powerco corporate model

Consumer contributions

Ref	Source type		\$000											
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
3.3-i5	Forecast	System growth - consumer contributions (real 2016)												
3.3-i5	Forecast	Consumer connection - consumer contributions (real 2016)	11,666	12,776	11,576	16,584	18,589	22,485	23,085	21,029	20,319	19,931	17,282	18,436
3.3-i5	Forecast	Asset replacement and renewal - consumer contributions (real 2016)												
3.3-i5	Forecast	Asset relocation - consumer contributions (real 2016)	2,096	2,049	845	1,291	1,350	1,627	1,486	1,486	1,486	1,486	1,468	1,449
3.3-i5	Forecast	Quality of supply - consumer contributions (real 2016)												
3.3-i5	Forecast	Legislative and regulatory - consumer contributions (real 2016)												
3.3-i5	Forecast	Other reliability, safety and environment - consumer contributions (real 2016)												
		Total consumer contributions (real 2016)	13,762	14,825	12,421	17,875	19,939	24,112	24,571	22,515	21,806	21,417	18,750	19,885

Sourced from tier 2 forecast models

Portfolio definition

Ref	Source type	Ref	Portfolio name
3.3-i6	Project	1.0	Overhead structures
3.3-i6	Project	2.0	Overhead conductors
3.3-i6	Project	3.0	Cables
3.3-i6	Project	4.0	Zone substations
3.3-i6	Project	5.0	Distribution transformers
3.3-i6	Project	6.0	Distribution switchgear
3.3-i6	Project	7.0	Secondary systems
3.3-i6	Project	10.0	Papamoa
3.3-i6	Project	11.0	Palmerston North
3.3-i6	Project	12.0	Putaruru
3.3-i6	Project	13.0	Whangamata
3.3-i6	Project	14.0	Omokoroa
3.3-i6	Project	15.0	Kopu-Tairua
3.3-i6	Project	16.0	Kopu-Kauaeranga
3.3-i6	Project	17.0	Moturoa - NPL GXP
3.3-i6	Project	18.0	Kerepehi-Paeroa
3.3-i6	Project	19.0	Whenuakite
3.3-i6	Project	20.0	Matarangi
3.3-i6	Project	21.0	Putaruru-Tirau
3.3-i6	Project	22.0	Kaimarama-Whitianga
3.3-i6	Project	23.0	Kereone-Walton
3.3-i6	Project	24.0	Feilding-Sanson-Bulls
3.3-i6	Project	25.0	Minor growth & security works
3.3-i6	Project	26.0	Pyes Pa
3.3-i6	Project	27.0	Inglewood
3.3-i6	Project	28.0	Pre CPP major projects
3.3-i6	Project	29.0	Post CPP major projects
3.3-i6	Project	51.0	Reliability
3.3-i6	Project	52.0	Network evolution
3.3-i6	Project	60.0	Consumer connection
3.3-i6	Project	61.0	Asset relocations
3.3-i6	Project	70.0	ICT capex
3.3-i6	Project	72.0	Facilities capex

Fleet definition and commissioning assumptions

Commissioning Assumptions

Ref	Source type	Ref	Fleet Name	Portfolio name	Type	Comm. Type	Comm. Date	Qualifying Percent
3.3-i7	Project	1.1	Poles	Overhead structures	Capex	Simple	15-Dec-17	-
3.3-i7	Project	1.2	Crossarms	Overhead structures	Capex	Simple	15-Dec-17	-
3.3-i7	Project	2.1	Subtransmission conductors	Overhead conductors	Capex	Simple	27-Sep-18	-
3.3-i7	Project	2.2	Distribution conductors	Overhead conductors	Capex	Simple	27-Sep-18	-
3.3-i7	Project	2.3	Low voltage conductors	Overhead conductors	Capex	Simple	27-Sep-18	-
3.3-i7	Project	3.1	Subtransmission cables	Cables	Capex	Simple	27-Sep-18	-
3.3-i7	Project	3.2	Distribution cables	Cables	Capex	Simple	27-Sep-18	-
3.3-i7	Project	3.3	Low voltage cables	Cables	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.1	Power transformers	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.2	Indoor switchgear	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.3	Outdoor switchgear	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.4	Buildings	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.5	Load control injection	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	4.6	Other zone substation assets	Zone substations	Capex	Simple	27-Sep-18	-
3.3-i7	Project	5.1	Pole mounted distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-
3.3-i7	Project	5.2	Ground mounted distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-
3.3-i7	Project	5.3	Other distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-
3.3-i7	Project	6.1	Pole mounted fuses	Distribution switchgear	Capex	Simple	27-Sep-18	-
3.3-i7	Project	6.2	Pole mounted switches	Distribution switchgear	Capex	Simple	27-Sep-18	-
3.3-i7	Project	6.3	Circuit breakers, reclosers and sectionalisers	Distribution switchgear	Capex	Simple	27-Sep-18	-
3.3-i7	Project	6.4	Ground mounted switchgear	Distribution switchgear	Capex	Simple	27-Sep-18	-
3.3-i7	Project	7.1	SCADA and communications	Secondary systems	Capex	Simple	27-Sep-18	-
3.3-i7	Project	7.2	Protection	Secondary systems	Capex	Simple	27-Sep-18	-
3.3-i7	Project	7.3	DC supplies	Secondary systems	Capex	Simple	27-Sep-18	-
3.3-i7	Project	7.4	Metering	Secondary systems	Capex	Simple	27-Sep-18	-
3.3-i7	Project	10.0	Papamoa	Papamoa	Capex	Specific date	30-May-18	100%
3.3-i7	Project	11.1	Palmerston North phase 1	Palmerston North	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	11.2	Palmerston North phase 2	Palmerston North	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	12.0	Putaruru	Putaruru	Capex	Specific date	31-Mar-22	100%
3.3-i7	Project	13.1	Whangamata - phase 1	Whangamata	Capex	Specific date	30-Jun-19	100%
3.3-i7	Project	13.2	Whangamata - phase 2	Whangamata	Capex	Specific date	31-Mar-25	100%
3.3-i7	Project	14.0	Omokoroa	Omokoroa	Capex	Specific date	30-Apr-21	100%
3.3-i7	Project	15.1	Kopu-Tairua phase 1	Kopu-Tairua	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	15.2	Kopu-Tairua phase 2	Kopu-Tairua	Capex	Specific date	31-Mar-20	100%
3.3-i7	Project	15.3	Kopu-Tairua phase 3	Kopu-Tairua	Capex	Specific date	31-Mar-21	100%
3.3-i7	Project	16.1	Kopu-Kauaeranga phase 1	Kopu-Kauaeranga	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	16.2	Kopu-Kauaeranga phase 2	Kopu-Kauaeranga	Capex	Specific date	31-Mar-24	100%
3.3-i7	Project	17.0	Moturoa - NPL GXP	Moturoa - NPL GXP	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	18.0	Kerepehi-Paeroa	Kerepehi-Paeroa	Capex	Specific date	31-Mar-22	100%
3.3-i7	Project	19.0	Whenuakite	Whenuakite	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	20.0	Matarangi	Matarangi	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	21.0	Putaruru-Tirau	Putaruru-Tirau	Capex	Specific date	31-Mar-21	100%
3.3-i7	Project	22.0	Kaimarama-Whitianga	Kaimarama-Whitianga	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	23.0	Kereone-Walton	Kereone-Walton	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	24.0	Feilding-Sanson-Bulls	Feilding-Sanson-Bulls	Capex	Specific date	31-Mar-23	100%
3.3-i7	Project	25.1	Minor projects	Minor growth & security works	Capex	Simple	30-Sep-20	-
3.3-i7	Project	25.2	Routine projects	Minor growth & security works	Capex	Simple	30-Sep-20	-
3.3-i7	Project	25.3	Comms	Minor growth & security works	Capex	Simple	30-Sep-20	-
3.3-i7	Project	26.0	Pyes Pa	Pyes Pa	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	27.0	Inglewood	Placeholder	Capex	Simple	27-Sep-18	-
3.3-i7	Project	28.0	Pre CPP major projects	Pre CPP major projects	Capex	Specific date	31-Mar-18	100%
3.3-i7	Project	29.0	Post CPP major projects	Post CPP major projects	Capex	Simple	31-Dec-26	100%
3.3-i7	Project	51.0	Reliability	Reliability	Capex	Simple	27-Sep-18	-
3.3-i7	Project	52.0	Network evolution	Network evolution	Capex	Simple	27-Sep-18	-
3.3-i7	Project	60.0	Consumer connection	Consumer connection	Capex	Simple	27-Sep-18	-
3.3-i7	Project	61.0	Asset relocations	Asset relocations	Capex	Simple		-
3.3-i7	Project	70.1	ICT capex	ICT capex	Capex	Simple	27-Sep-18	-
3.3-i7	Project	70.2	ICT capex - New foundations phase 1	ICT capex	Capex	Specific date	31-Mar-19	100%
3.3-i7	Project	70.3	ICT capex - New foundations phase 2	ICT capex	Capex	Specific date	31-Mar-20	100%
3.3-i7	Project	70.4	ICT capex - New foundations phase 3	ICT capex	Capex	Specific date	31-Mar-21	100%

3.3-i7	Project	72.1	Facilities capex	Facilities capex	Capex	Simple	27-Sep-18	-
3.3-i7	Project	72.2	NOC	Facilities capex	Capex	Specific date	31-Aug-18	100%

Mapping of assets to asset expenditure categories, asset lives and tax depreciation rates

Ref	Source type	Asset	Asset category	Tax SL depreciation rate	Table A.2 asset life
3.3-i8	Project	Poles - subtransmission	Subtransmission lines	6.0%	55
3.3-i8	Project	Crossarms - subtransmission	Subtransmission lines	7.0%	55
3.3-i8	Project	Poles - distribution	Distribution and LV lines	6.0%	60
3.3-i8	Project	Crossarms - distribution	Distribution and LV lines	7.0%	60
3.3-i8	Project	Poles - LV	Distribution and LV lines	6.0%	60
3.3-i8	Project	Crossarms - LV	Distribution and LV lines	7.0%	60
3.3-i8	Project	110kV Subtransmission foundation	Subtransmission lines	6.0%	55
3.3-i8	Project	110kV Subtransmission insulators	Subtransmission lines	6.0%	55
3.3-i8	Project	110kV Subtransmission tower paint	Subtransmission lines	6.0%	55
3.3-i8	Project	110kV Subtransmission tower	Subtransmission lines	7.0%	55
3.3-i8	Project	Power transformers	Zone substations	6.0%	45
3.3-i8	Project	Indoor switchgear	Zone substations	6.0%	45
3.3-i8	Project	Buildings & site development	Zone substations	6.0%	45
3.3-i8	Project	Outdoor switchgear	Zone substations	6.0%	45
3.3-i8	Project	Load control injection	Other network assets	7.0%	25
3.3-i8	Project	Zone substations - other	Zone substations	7.0%	45
3.3-i8	Project	Zone substations land	Zone substations	0.0%	0
3.3-i8	Project	Zone substations easements other than fixed	Zone substations	0.0%	0
3.3-i8	Project	Zone substations fixed life easements	Zone substations	0.0%	45
3.3-i8	Project	Pole mounted fuses	Distribution switchgear	7.0%	40
3.3-i8	Project	Pole mounted switches	Distribution switchgear	7.0%	40
3.3-i8	Project	Circuit breakers/reclosers/sectionalisers	Distribution switchgear	6.0%	40
3.3-i8	Project	Ground mounted switchgear	Distribution switchgear	6.0%	40
3.3-i8	Project	Pole mounted distribution transformers	Distribution substations and transformers	6.0%	45
3.3-i8	Project	Ground mounted distribution transformers	Distribution substations and transformers	6.0%	45
3.3-i8	Project	Conversion Transformers and SWER Transformers	Distribution substations and transformers	6.0%	45
3.3-i8	Project	Capacitors/Voltage regulators	Distribution switchgear	6.0%	40
3.3-i8	Project	Protection (digital)	Zone substations	7.0%	45
3.3-i8	Project	Metering systems (GXP and HV)	Other network assets	6.0%	25
3.3-i8	Project	Ripple relays	Other network assets	7.0%	25
3.3-i8	Project	SCADA, communications and monitoring	Other network assets	6.0%	25
3.3-i8	Project	DC supplies	Zone substations	30.0%	45
3.3-i8	Project	Subtransmission cables	Subtransmission cables	6.0%	55
3.3-i8	Project	Cables Easement	Subtransmission cables	0.0%	0
3.3-i8	Project	Distribution cables	Distribution and LV cables	6.0%	55
3.3-i8	Project	Low voltage cables	Distribution and LV cables	6.0%	55
3.3-i8	Project	Low voltage service connections	Distribution and LV cables	6.0%	55
3.3-i8	Project	Pillar Box	Distribution and LV cables	7.0%	55
3.3-i8	Project	Subtransmission overhead conductor	Subtransmission lines	6.0%	55
3.3-i8	Project	OH line easement	Subtransmission lines	0.0%	0
3.3-i8	Project	Distribution overhead conductor	Distribution and LV lines	6.0%	60
3.3-i8	Project	Low voltage overhead conductor	Distribution and LV lines	6.0%	60
3.3-i8	Project	LV service connections	Distribution and LV lines	6.0%	60
3.3-i8	Project	Buildings	Non-network assets	0.0%	15
3.3-i8	Project	Computer hardware	Non-network assets	40.0%	15
3.3-i8	Project	Software	Non-network assets	40.0%	15
3.3-i8	Project	Equipment	Non-network assets	30.0%	15
3.3-i8	Project	Furniture and fittings	Non-network assets	10.5%	15
3.3-i8	Project	Land	Non-network assets	0.0%	0
3.3-i8	Project	Motor vehicles	Non-network assets	21.0%	15
3.3-i8	Project	Plant and machinery	Non-network assets	7.0%	15

Simple commissioning method inputs

			2017	2018	2019	2020	2021	2022	2023
3.3-i10	ID	2017 total opening works under construction	47,387						
3.3-i11	Project	Simple commissioning change in WUC as a percentage of capex due to WUC management efficiencies			-1%	-1%	-1%	-1%	-1%

2017 opening WUC sourced from Information Disclosure schedule 4(iv): Roll forward of works under construction, row 72.

4.1 RAB roll forward inputs

Closing RAB from information disclosure

(Nominal \$000, years)

Ref	Source type	RAB by asset category	2016
4.1-i2	ID	2016 Closing RAB	1,528,013

Sourced from Information Disclosure schedule 4(vii): Disclosure by Asset category, rows 107 for the last year of the current period

RAB by remaining useful life grouping

(Nominal \$000, years)

Ref	Source type	Closing RAB by remaining useful life grouping	2016
4.1-i3	Workpaper	Depreciating assets with remaining life greater than 7 years	1,480,616
4.1-i3	Workpaper	Depreciating assets with remaining life less than 7 years and greater than 6 years	21,837
4.1-i3	Workpaper	Depreciating assets with remaining life less than 6 years and greater than 5 years	3,602
4.1-i3	Workpaper	Depreciating assets with remaining life less than 5 years and greater than 4 years	3,243
4.1-i3	Workpaper	Depreciating assets with remaining life less than 4 years and greater than 3 years	3,978
4.1-i3	Workpaper	Depreciating assets with remaining life less than 3 years and greater than 2 years	7,189
4.1-i3	Workpaper	Depreciating assets with remaining life less than 2 years and greater than 1 year	1,223
4.1-i3	Workpaper	Depreciating assets with remaining life less than 1 year	2,313
4.1-i3	Workpaper	Non-depreciating assets	4,012
		Total RAB	1,528,013
		Error check: Existing RAB inputs equal disclosed RAB	TRUE

Ref	Source type	Weighted average remaining asset life at year end	2016
4.1-i4	Workpaper	Depreciating assets with remaining life greater than 7 years	29.9
4.1-i4	Workpaper	Depreciating assets with remaining life less than 7 years and greater than 6 years	6.7
4.1-i4	Workpaper	Depreciating assets with remaining life less than 6 years and greater than 5 years	5.5
4.1-i4	Workpaper	Depreciating assets with remaining life less than 5 years and greater than 4 years	4.6
4.1-i4	Workpaper	Depreciating assets with remaining life less than 4 years and greater than 3 years	3.2
4.1-i4	Workpaper	Depreciating assets with remaining life less than 3 years and greater than 2 years	2.6
4.1-i4	Workpaper	Depreciating assets with remaining life less than 2 years and greater than 1 year	1.7
4.1-i4	Workpaper	Depreciating assets with remaining life less than 1 year	1.0
4.1-i4	Workpaper	Non-depreciating assets	-

Disposals

(Nominal \$000, years)

Ref	Source type	Closing RAB by remaining useful life grouping	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life greater than 7 years	9,122	9,310	10,819	12,763	13,751	14,277	14,566
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 7 years and greater than 6 years	94	43	66	39	37	18	
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 6 years and greater than 5 years	42	57	33	35	18		
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 5 years and greater than 4 years	57	29	29	17			
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 4 years and greater than 3 years	29	25	14				
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 3 years and greater than 2 years	25	12					
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 2 years and greater than 1 year	12						
4.1-i5	Forecast	Disposals for Depreciating assets with remaining life less than 1 year	-						
4.1-i5	Forecast	Disposals for Non-depreciating assets	-	-	-	-	-	-	-
4.1-i6	Forecast	Proportionate value of disposed assets	4,691	4,738	5,481	6,427	6,903	7,148	7,283

Acquired assets inputs

(Nominal \$000)

Ref	Source type		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.1-i9	Project	RAB value of acquired assets	-	-	-	-	-	-	-
4.1-i9	Project	Weighted average remaining useful life of assets acquired	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Disposals of assets acquired in the CPP next period									
4.1-i9	Project	Disposal of assets acquired in 2017	-	-	-	-	-	-	-
4.1-i9	Project	Disposal of assets acquired in 2018		-	-	-	-	-	-
4.1-i9	Project	Disposal of assets acquired in 2019			-	-	-	-	-
4.1-i9	Project	Disposal of assets acquired in 2020				-	-	-	-
4.1-i9	Project	Disposal of assets acquired in 2021					-	-	-
4.1-i9	Project	Disposal of assets acquired in 2022						-	-
4.1-i9	Project	Disposal of assets acquired in 2023							-
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year 5.3.10(3)(a)									
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2017		-	-	-	-	-	-
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2018			-	-	-	-	-
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2019				-	-	-	-
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2020					-	-	-
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2021						-	-
4.1-i9	Project	Opening RAB adjustment for assets acquired in 2022							-
4.1-i9	Project	Proportionate value of disposed assets acquired in the CPP net period							

4.2 Tax depreciation and RTAV roll forward inputs

Opening tax NBV by straight line depreciation rate grouping

Ref	Source type	SL Rate	DV Rate	2016 Closing Tax NBV
4.2-i1	Workpaper	0.0%	0.0%	29,040
4.2-i1	Workpaper	2.5%	3.0%	1,032
4.2-i1	Workpaper	3.0%	4.0%	694
4.2-i1	Workpaper	5.5%	7.5%	203,246
4.2-i1	Workpaper	6.0%	8.0%	345,508
4.2-i1	Workpaper	6.5%	9.5%	9,137
4.2-i1	Workpaper	6.6%	9.0%	3,956
4.2-i1	Workpaper	7.0%	10.0%	34,041
4.2-i1	Workpaper	7.2%	9.6%	318,436
4.2-i1	Workpaper	7.8%	11.4%	644
4.2-i1	Workpaper	8.4%	12.0%	-14,584
4.2-i1	Workpaper	8.5%	13.0%	995
4.2-i1	Workpaper	9.6%	14.4%	1
4.2-i1	Workpaper	10.0%	15.0%	18
4.2-i1	Workpaper	10.2%	15.6%	29
4.2-i1	Workpaper	10.5%	16.0%	568
4.2-i1	Workpaper	12.0%	18.0%	1
4.2-i1	Workpaper	12.6%	19.2%	35
4.2-i1	Workpaper	13.5%	20.0%	784
4.2-i1	Workpaper	15.0%	21.6%	3
4.2-i1	Workpaper	16.2%	24.0%	48
4.2-i1	Workpaper	17.5%	25.0%	311
4.2-i1	Workpaper	18.0%	26.0%	1
4.2-i1	Workpaper	21.0%	30.0%	47
4.2-i1	Workpaper	21.6%	31.2%	0
4.2-i1	Workpaper	24.0%	33.0%	0
4.2-i1	Workpaper	25.2%	36.0%	0
4.2-i1	Workpaper	28.8%	39.6%	1
4.2-i1	Workpaper	30.0%	40.0%	152
4.2-i1	Workpaper	36.0%	48.0%	2
4.2-i1	Workpaper	40.0%	50.0%	8,165
4.2-i1	Workpaper	48.0%	60.0%	51
4.2-i1	Workpaper	67.0%	67.0%	15

Ref	Source type	SL rate	DV rate	2016 Closing tax base
4.2-i2	Workpaper	0.0%	0.0%	4,387
4.2-i2	Workpaper	2.5%	3.0%	1,171
4.2-i2	Workpaper	3.0%	4.0%	773
4.2-i2	Workpaper	5.5%	7.5%	277,371
4.2-i2	Workpaper	6.0%	8.0%	400,835
4.2-i2	Workpaper	6.5%	9.5%	13,857
4.2-i2	Workpaper	6.6%	9.0%	5,779
4.2-i2	Workpaper	7.0%	10.0%	41,711
4.2-i2	Workpaper	7.2%	9.6%	484,437
4.2-i2	Workpaper	7.8%	11.4%	1,023
4.2-i2	Workpaper	8.4%	12.0%	-24,281
4.2-i2	Workpaper	8.5%	13.0%	1,262
4.2-i2	Workpaper	9.6%	14.4%	1
4.2-i2	Workpaper	10.0%	15.0%	36
4.2-i2	Workpaper	10.2%	15.6%	56
4.2-i2	Workpaper	10.5%	16.0%	890
4.2-i2	Workpaper	12.0%	18.0%	3
4.2-i2	Workpaper	12.6%	19.2%	87
4.2-i2	Workpaper	13.5%	20.0%	1,271
4.2-i2	Workpaper	15.0%	21.6%	12
4.2-i2	Workpaper	16.2%	24.0%	207
4.2-i2	Workpaper	17.5%	25.0%	647
4.2-i2	Workpaper	18.0%	26.0%	6
4.2-i2	Workpaper	21.0%	30.0%	174
4.2-i2	Workpaper	21.6%	31.2%	5
4.2-i2	Workpaper	24.0%	33.0%	1
4.2-i2	Workpaper	25.2%	36.0%	2
4.2-i2	Workpaper	28.8%	39.6%	2
4.2-i2	Workpaper	30.0%	40.0%	542
4.2-i2	Workpaper	36.0%	48.0%	210
4.2-i2	Workpaper	40.0%	50.0%	23,347
4.2-i2	Workpaper	48.0%	60.0%	2,828
4.2-i2	Workpaper	67.0%	67.0%	22

Inputs sourced from opening tax NBV analysis workpaper

Ref	Source type	Asset Category	2016	Assessment period			CPP period				
				2017	2018	2019	2020	2021	2022	2023	
4.2-i3	Project	Tax depreciation method for each disclosure year	SL	DV	SL	SL	SL	SL	SL	SL	

Tax value of disposals by straight line depreciation rate grouping

Ref	Source type	SL Rate	DV Rate	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.2-i6	Forecast	0.0%	0.0%	13	13	15	17	19	19	20
4.2-i6	Forecast	2.5%	3.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	3.0%	4.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	5.5%	7.5%	4,794	4,843	5,603	6,569	7,056	7,306	7,444
4.2-i6	Forecast	6.0%	8.0%	222	224	260	304	327	338	345
4.2-i6	Forecast	6.5%	9.5%	840	848	981	1,150	1,236	1,279	1,304
4.2-i6	Forecast	6.6%	9.0%	12	12	13	16	17	18	18
4.2-i6	Forecast	7.0%	10.0%	310	313	362	424	456	472	481
4.2-i6	Forecast	7.2%	9.6%	1,773	1,791	2,072	2,430	2,610	2,702	2,753
4.2-i6	Forecast	7.8%	11.4%	3	3	3	4	4	4	4
4.2-i6	Forecast	8.4%	12.0%	681	688	796	933	1,002	1,038	1,058
4.2-i6	Forecast	8.5%	13.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	9.6%	14.4%	0	0	0	0	0	0	0
4.2-i6	Forecast	10.0%	15.0%	32	32	37	44	47	48	49
4.2-i6	Forecast	10.2%	15.6%	0	0	0	0	0	0	0
4.2-i6	Forecast	10.5%	16.0%	0	0	0	0	0	0	0
4.2-i6	Forecast	12.0%	18.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	12.6%	19.2%	-	-	-	-	-	-	-
4.2-i6	Forecast	13.5%	20.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	15.0%	21.6%	-	-	-	-	-	-	-
4.2-i6	Forecast	16.2%	24.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	17.5%	25.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	18.0%	26.0%	0	0	0	0	0	0	0
4.2-i6	Forecast	21.0%	30.0%	0	0	0	0	0	0	0
4.2-i6	Forecast	21.6%	31.2%	0	0	0	0	0	0	0
4.2-i6	Forecast	24.0%	33.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	25.2%	36.0%	-	-	-	-	-	-	-
4.2-i6	Forecast	28.8%	39.6%	0	0	0	0	0	0	0
4.2-i6	Forecast	30.0%	40.0%	0	0	0	0	0	0	0
4.2-i6	Forecast	36.0%	48.0%	0	0	0	0	0	0	0
4.2-i6	Forecast	40.0%	50.0%	-0	-0	-0	-0	-0	-0	-0
4.2-i6	Forecast	48.0%	60.0%	3	3	3	4	4	4	4
4.2-i6	Forecast	67.0%	67.0%	-	-	-	-	-	-	-

4.2-i7	ID	Opening regulatory tax asset value (sourced from 2016 information disclosure schedule 5a(viii) row 90)	952,402
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4.3 Tax calculations inputs

Amortisation of the initial difference in asset values

Existing assets inputs

Ref	Source type	2017	
4.3-i1	ID	Opening unamortised initial difference in asset values (1-Apr-2017) (sourced from 2016 information disclosure schedule 5a(iii) row 40)	271,615
4.3-i2	Workpaper	Opening weighted average remaining life of relevant assets (1-Apr-2017)	33
4.3-i3	Workpaper	Opening RAB commissioned on or before 1-Apr-2009	1,275,729
4.3-i4	Forecast	RAB disposals in 2017	9,493
4.3-i5	Forecast	Proportion of 2017 RAB disposals with an initial difference in asset values	90%

Acquired Assets Inputs

Ref	Source type		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.3-i6	Project	Opening unamortised initial difference in asset values acquired	-	-	-	-	-	-	-
4.3-i7	Project	Opening weighted average remaining life of relevant assets acquired	-	-	-	-	-	-	-

Sourced from spur assets acquisition due diligence reports

4.4 RAB excluding revaluations roll forward

Ref	Source type		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.4-i1	IM	Revaluation rate	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

RAB by remaining useful life grouping

(Nominal \$000, years)

Ref	Source type	Closing RAB excluding revaluations by remaining useful life grouping	2016
4.4-i2	Workpaper	Depreciating assets with remaining life greater than 7 years	1,384,743
4.4-i2	Workpaper	Depreciating assets with remaining life less than 7 years and greater than 6 years	20,143
4.4-i2	Workpaper	Depreciating assets with remaining life less than 6 years and greater than 5 years	3,270
4.4-i2	Workpaper	Depreciating assets with remaining life less than 5 years and greater than 4 years	2,938
4.4-i2	Workpaper	Depreciating assets with remaining life less than 4 years and greater than 3 years	3,840
4.4-i2	Workpaper	Depreciating assets with remaining life less than 3 years and greater than 2 years	7,048
4.4-i2	Workpaper	Depreciating assets with remaining life less than 2 years and greater than 1 year	1,154
4.4-i2	Workpaper	Depreciating assets with remaining life less than 1 year	2,313
4.4-i2	Workpaper	Non-depreciating assets	3,894
		Total RAB	1,429,343

Ref	Source type	Weighted average remaining asset life at year end	2016
4.4-i3	Workpaper	Depreciating assets with remaining life greater than 7 years	30.2
4.4-i3	Workpaper	Depreciating assets with remaining life less than 7 years and greater than 6 years	6.7
4.4-i3	Workpaper	Depreciating assets with remaining life less than 6 years and greater than 5 years	5.5
4.4-i3	Workpaper	Depreciating assets with remaining life less than 5 years and greater than 4 years	4.6
4.4-i3	Workpaper	Depreciating assets with remaining life less than 4 years and greater than 3 years	3.2
4.4-i3	Workpaper	Depreciating assets with remaining life less than 3 years and greater than 2 years	2.6
4.4-i3	Workpaper	Depreciating assets with remaining life less than 2 years and greater than 1 year	1.6
4.4-i3	Workpaper	Depreciating assets with remaining life less than 1 year	1.0
4.4-i3	Workpaper	Non-depreciating assets	-

Disposals

(Nominal \$000, years)

Ref	Source type	Closing RAB by remaining useful life grouping	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life greater than 7 years	8,556	8,732	10,147	11,969	12,895	13,387	13,658
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 7 years and greater than 6 years	87	40	62	36	34	17	
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 6 years and greater than 5 years	39	53	31	32	16		
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 5 years and greater than 4 years	53	27	27	15			
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 4 years and greater than 3 years	27	23	13				
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 3 years and greater than 2 years	23	11					
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 2 years and greater than 1 year	11						
4.4-i4	Forecast	Disposals excluding revaluations for depreciating assets with remaining life less than 1 year	-						
4.4-i4	Forecast	Disposals excluding revaluations for non-depreciating assets	-	-	-	-	-	-	-

Acquired assets inputs

(Nominal \$000)			Assessment period		CPP period				
Ref	Source type		2017	2018	2019	2020	2021	2022	2023
4.4-i6	Project	RAB value of acquired assets	-	-	-	-	-	-	-
4.4-i6	Project	Weighted average remaining useful life of assets acquired	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Disposals of assets acquired in the CPP next period									
4.4-i6	Project	Disposal of assets acquired in 2017	-	-	-	-	-	-	-
4.4-i6	Project	Disposal of assets acquired in 2018		-	-	-	-	-	-
4.4-i6	Project	Disposal of assets acquired in 2019			-	-	-	-	-
4.4-i6	Project	Disposal of assets acquired in 2020				-	-	-	-
4.4-i6	Project	Disposal of assets acquired in 2021					-	-	-
4.4-i6	Project	Disposal of assets acquired in 2022						-	-
4.4-i6	Project	Disposal of assets acquired in 2023							-

4.5 Term credit spread difference calculations

Ref	Source type		2016
4.5-i1	ID	Total book value of interest bearing debt	1,267,763
4.5-i2	ID	Average opening and closing RAB values	1,502,365

Sourced from 2016 Electricity information disclosure schedule 5c, rows 22, 21, 24 and 23

Qualifying debt

Ref	Source type	Issuing party	Original tenor (years)	BV at issue date (NZ\$000)
4.5-i3	ID	2005 Guaranteed Bonds - 2	12.0	50,000
4.5-i3	ID	USPP (2003) US\$65m/NZ\$109.3m	13.0	109,299
4.5-i3	ID	USPP (2011) US\$72m/NZ\$91.4m	9.0	91,371
4.5-i3	ID	USPP (2011) US\$90m/NZ\$114.2m	12.0	114,213
4.5-i3	ID	USPP (2011) US\$83m/NZ\$105.3m	15.0	105,330
4.5-i3	ID	2011 Wholesale Bond - Fixed rate	7.0	65,000
4.5-i3	ID	2011 Wholesale Bond - Floating rate	7.0	35,000
4.5-i3	ID	USPP(2013) US\$25m/NZ\$30.4m	12.0	30,440
4.5-i3	ID	USPP(2013) US\$80m/NZ\$97.4m	15.0	97,407
4.5-i3	ID	NZD USPP(2014) NZ\$135m	12.5	135,000
4.5-i3	ID	2015 Wholesale Bond - Fixed rate	7.0	150,000

End

Price path module inputs

Ref.	Source	Input name	Discrete input	Next period		CPP period					Description	Comments on input sources	IM Ref	
				Assessment period	2017	2018	2019	2020	2021	2022				2023
1.0-i1	Direct	CPP regulatory period	5			2019						The period of continuous disclosure years in respect of which the customised price-quality path applies, and which follows the assessment period. Input the number of years in the regulatory period and the first year in the regulatory period.		
1.0-i2	n/a	Allowed controllable opex										A series of values (\$000) for the CPP regulatory period where a single value for a disclosure year represents the allowance for operating expenditure for that year in categories specified by the Commission as controllable by the supplier.	No longer required following 20-Dec-2016 IM amendments	n/a
1.0-i3	Direct	'X' factor	-									A single value (percentage 3 d.p.) representing the rate of change allowed for the maximum allowable revenue path where the path is expressed in 'CPI-X' terms.		5.4.8(2), 5.4.8(4)
1.0-i4	Direct	Pass-through costs				-	-	-	-	-		Future uncontrollable costs of the supplier which are to be treated as pass-through costs in each year of the CPP regulatory period in addition to those rates or levies already specified in cl. 3.1.2 of the EDB input methodologies.		3.1.2, 5.4.31
1.0-i5	Direct	Recoverable costs				-	-	-	-	-		A series of values (\$000) which are the nominal amounts of verifier fees, auditor's costs or engineer fees associated with the CPP process that are treated as recoverable costs for each of the disclosure years of the CPP regulatory period.		5.4.32
1.0-i6	Direct	Cost of capital		7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%		Discount rate (calculated as the 67 th percentile estimate of WACC published most recently by the Commission prior to the submission of the CPP proposal in respect of the CPP regulatory period).		5.3.2(5)
1.0-i7	3.1-o4	CPP inflation rate				2.11%	2.15%	2.10%	2.03%	2.00%		Series of values (percentage 3 d.p.) defined in cl. 3.3.1 of the EDB input methodologies.		3.3.12(5)
1.0-i8	n/a	ΔQ				-	-	-	-	-		A series of values (percentage 3 d.p.) for the CPP regulatory period where a single value for a disclosure year represents the forecast weighted average growth in quantities from the preceding disclosure year to the current disclosure year.	No longer required following 20-Dec-2016 IM amendments	n/a
1.0-i9	Direct	Claw-back	-									A value (\$000) representing the amount of shortfall (negative amount) or over-recovery (positive amount) of revenues relating to prices previously charged by the supplier to be recovered or returned from consumers during the CPP regulatory period. It is expressed in present value terms as at the commencement of the CPP regulatory period.	None forecast	5.3.4(2)(i)
1.0-i10	4.5-o1	Term credit spread differential allowance		1,860	1,949	2,107	2,298	2,460	2,644	2,848		A series of values (\$000) for the next period where a single value for a disclosure year relates to financing costs from long term debt.		5.3.23
1.0-i11	n/a	TF										A series of values (3 d.p.) for the next period where a single value for a disclosure year represents the timing factor for cash flows, calculated as: $(1 + \text{cost of capital})^{182/365}$	Calculation moved to BBARx worksheet to clarify that this is not a direct input	5.3.2(4)(a) 5.4.7(2)(b)
1.0-i12	n/a	TF _{rev}										A series of values (3 d.p.) for the next period where a single value for a disclosure year represents the timing factor for revenue cash flows, calculated as: $(1 + \text{cost of capital})^{148/365}$	Calculation moved to BBARx worksheet to clarify that this is not a direct input	5.3.2(4)(b) 5.4.7(2)(b)
1.0-i13	3.2-o1	Forecast operating expenditure		77,514	80,779	93,298	98,919	101,340	100,529	100,257		A series of values (\$000) for the next period where a single value for a disclosure year represents the EDB's operating expenditure for that disclosure year expressed in nominal terms.		5.3.2(6)
1.0-i14	n/a	Other regulated income		-	-	-	-	-	-	-		A series of values (\$000) for the next period where a single value for a disclosure year represents the EDB's other regulated income for that disclosure year expressed in nominal terms.	No longer required following 20-Dec-2016 IM amendments	n/a
1.0-i15	Direct	Corporate tax rate		28%	28%	28%	28%	28%	28%	28%		A series of values (3 d.p.) for the next period where a single value for a disclosure year represents the rate of taxation applying to companies in that year.		Defined
1.0-i16	Direct	Opening tax losses in the first year of the next period		-								A value (\$000) for the first year of the next period which represents the carry forward tax losses from prior years that the Commission is satisfied that an EDB has incurred.	No tax losses have occurred in the past or are anticipated in the future.	5.3.14(3)(a),

Ref.	Source	Input name	Discrete input	Next period		CPP period					Description	Comments on input sources	IM Ref
				Assessment period	2017	2018	2019	2020	2021	2022			
1.0-i17	Direct	Positive permanent differences		133	135	138	140	143	146	149	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are permanently taxable but not included as regulatory profit / (loss) before tax, or amounts of expenditure which are permanently not tax deductible, in nominal terms for that year.		5.3.15
1.0-i18	Direct	Discretionary discounts and customer rebates		-	-	-	-	-	-	-	A series of values (\$000) for the next period where a single value for a disclosure year represents the sum of expenditure allowed as a tax deduction in respect of payments or credits given to persons by an EDB because of those person's direct or indirect ownership in the EDB, in nominal terms for that year.	No discounts or rebates anticipated in the future.	5.4.19(3)
1.0-i19	Direct	Negative permanent differences		-	-	-	-	-	-	-	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are permanently not taxable, or amounts of expenditure which are permanently tax deductible but not included as regulatory profit / (loss) before tax, in nominal terms for that year.		5.3.15(4)
1.0-i20	Direct	Leverage	-	42%	42%	42%	42%	42%	42%	42%	A value (percentage 0 d.p.) representing the assumed ratio of debt capital to total capital of the supplier, specified in the input methodologies for all EDBs as 42%.		5.3.23(1)
1.0-i21	Direct	Cost of debt		6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	6.09%	A value (percentage 3 d.p.) representing the assumed cost of debt to the supplier for the next period, comprised of the risk free rate plus the debt premium.		5.3.22(3)
1.0-i22	Direct	Opening unamortised initial differences in asset values for most recent ID year		271,615							A value (\$000) which represents the amount of the opening unamortised initial differences in asset values for a supplier for the first disclosure year in the next period.	Sourced from 2016 ID Schedule 5a(iii): Closing unamortised initial differences in asset values, row 40.	5.3.17(2)(b)
1.0-i23	4.3-o1	Adjustment to opening unamortised initial differences in asset values for sold or acquired assets		-1,824	-1,741	-1,660	-1,580	-1,500	-1,422	-1,345	A series of values (\$000) for the next period where a single value for a disclosure year represents the adjustment required to the opening unamortised initial differences in asset values to account for assets sold or acquired in that year calculated with effect from their date of sale or acquisition.		5.3.17(4)
1.0-i24	4.3-o2	Weighted average remaining useful life of relevant assets		26.0	25.0	24.0	23.0	22.0	21.0	20.0	A series of values (2 d.p.) for the next period where a single value for a disclosure year represents the weighted average remaining useful life of all asset at the commencement of the year.		5.4.22(3)
1.0-i25	Direct	Opening deferred tax for most recent ID year		-49,319							A value (\$000) which represents the amount of the opening deferred tax balance for a supplier for the first disclosure year of the next period.		5.3.19(1)
1.0-i26	4.2-o2	Tax depreciation		86,116	65,403	75,529	95,656	109,660	126,055	140,613	A series of values (\$000) for the next period where a single value for a disclosure year represents the sum of the amounts determined for all assets of the EDB of the tax depreciation rules to the regulatory tax asset value for each asset in that disclosure year.		5.3.20(3)
1.0-i27	Direct	Positive temporary differences		1,029	1,041	1,160	1,314	1,394	1,438	1,465	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are temporarily taxable but not included as regulatory profit / (loss) before tax, or amounts of expenditure which are temporarily not tax deductible, in nominal terms for that year.		5.3.20(4)
1.0-i28	Direct	Negative temporary differences		-	-	-	-	-	-	-	A series of values (\$000) for the next period where a single value for a disclosure year represents amounts of income which are temporarily not taxable, or amounts of expenditure which are temporarily tax deductible but not included as regulatory profit / (loss) before tax, in nominal terms for that year.		5.3.20(5)
1.0-i29	Direct	Deferred tax balance relating to assets acquired in disclosure year		-	-	-	-	-	-	-	A series of values (\$000) for the next period where a single value for a disclosure year represents the sum of the adjustment required to the opening deferred tax balance to account for assets that have been acquired by an EDB from another regulated supplier, in nominal terms for that year.		5.3.19(3), 5.3.19(4)
1.0-i30	Direct	Cost allocation adjustment		-	-	-	-	-	-	-	A series of values (\$000) for the next period where a single value for a disclosure year represents the tax effect of the change in the opening deferred tax balance to account for the effect of changes in cost allocation on tax asset values, in nominal terms for that year.		5.3.19(5)

Ref.	Source	Input name	Discrete input	Next period		CPP period					Description	Comments on input sources	IM Ref				
				Assessment period		2017	2018	2019	2020	2021				2022	2023		
1.0-i31	Direct	Opening or closing RAB values for ID years	Number of Asset Classes 1 Total Assets													A series of values (\$000) for the first year of the next period where a value for that disclosure year represents the opening regulatory asset value in nominal terms of all regulated assets held by a supplier for that disclosure year. Up to nine separate classes of assets can be entered.	5.4.11(c)
1.0-i32	Direct	Disposals	Total Assets	9,381	9,477	10,963	12,854	13,806	14,295	14,566						A series of values (\$000) for the next period, where a single value represents the opening RAB value of the relevant asset category that are forecast to be disposed of in that year.	5.4.15(1)(f)
1.0-i33	3.3-o1	Total value of commissioned Assets	Total Assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430						A series of values (\$000) for the next period where a single value for a disclosure year represents the actual or forecast cost of all assets to be acquired for that year.	5.3.2(3), 5.3.6(3)(b), 5.4.14
1.0-i34	3.3-o2	PV _{VCA}		107,141	112,063	217,207	172,834	180,035	212,711	216,783						A series of values (\$000) for the next period where a single value for a disclosure represents the sum of the present value of each item making up the Total Value of Commissioned Assets, where each present value is determined by discounting each closing RAB value by the cost of capital from its relevant commissioning date to the commencement of the disclosure year.	5.3.2(4)(d)
1.0-i35	3.1-o5	Revaluation rate	Total Assets	2.11%	2.17%	2.11%	2.06%	2.00%	2.00%	2.00%						Defined in cl. 5.3.10(4) of the EDB input methodologies. Uses current Statistics New Zealand data and RBNZ forecasts.	5.3.10(4), 5.4.13(1)
1.0-i36	4.1-o2	Weighted average remaining asset lives based on RAB	Total Assets	24.97	25.72	26.03	27.02	27.02	27.03	27.49						A series of values (2 d.p.) for the next period where a single value for a disclosure year represents the term remaining of an asset's or group of asset's physical asset life at the commencement of the disclosure year as specified by cl. 2.2.8 of the EDB input methodologies.	Definitions
1.0-i37	Direct	Opening or closing RAB values for ID years without revaluations	Total Assets	1,429,343												As for Opening or closing RAB values for ID years (INPUT31) but is a series of values (\$000) for the next period where a single value for a disclosure year represents the total depreciation amount for all assets for that year as if no indexed revaluation had ever been applied in respect of any asset.	
1.0-i38	4.1-o3	RAB proportionate investment		50,772	53,273	83,297	80,118	78,597	89,749	76,784						A series of values (\$000) for the next period where a single value for a disclosure year represents the proportion of the value of assets commissioned or disposed.	5.3.16(3)&(4)
1.0-i39	Direct	Disposals without revaluations	Total Assets	8,797	8,886	10,279	12,053	12,945	13,404	13,658						A series of values (\$000) for the next period, where a single value for an asset or aggregated asset group for a disclosure year represents the opening RAB value of those assets that are disposed of in that year. The value is calculated such that it does not include any revaluation amount which has been added to the RAB since the initial RAB date (31 March 2009).	Definition of adjusted depreciation

Ref.	Source	Input name	Discrete input	Next period						Description	Comments on input sources	IM Ref	
				Assessment period		CPP period							
				2017	2018	2019	2020	2021	2022				2023
1.0-i40	4.1-o4	Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year	Total Assets	6,325	4,947	7,030	11,627	14,804	15,103	18,999	A series of values (\$000) for the next period where a single value for an asset or aggregated asset group for a disclosure year represents the opening RAB value of those assets that are fully depreciated in that year.		5.3.7(3)(b)
1.0-i41	4.4-o1	Weighted average remaining life of assets based on RAB excluding revaluations	Total Assets	25.03	25.95	26.39	27.49	27.57	27.66	28.24	A series of values (2 d.p.) for the next period where a single value for a disclosure year represents the term remaining of an asset's or group of asset's weighted average physical asset life at the commencement of the disclosure year with weightings based on opening RAB excluding revaluations.		
1.0-i42	Direct	Tax value of disposals	Total Assets	8,682	8,770	10,146	11,896	12,777	13,229	13,480	A series of values (\$000) for the next period, where a single value for a disclosure year represents the tax value of assets disposed.		5.3.19(6)

End

Regulatory asset base (RAB) sub-module

Inputs

	Assessment period		CPP period					Input ref
	2017	2018	2019	2020	2021	2022	2023	
Cost of capital	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	1.0-i6
Opening or closing RAB values for ID years	1,528,013							1.0-i31
Disposals	9,381	9,477	10,963	12,854	13,806	14,295	14,566	1.0-i32
Total value of commissioned Assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1.0-i33
PV _{VCA}	107,141	112,063	217,207	172,834	180,035	212,711	216,783	1.0-i34
Revaluation rate	2.1%	2.2%	2.1%	2.1%	2.0%	2.0%	2.0%	1.0-i35
Remaining asset lives	25.0	25.7	26.0	27.0	27.0	27.0	27.5	1.0-i36
Opening or closing RAB values for ID years without revaluations	1,429,343							1.0-i37
RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784	1.0-i38
Disposals without revaluations	8,797	8,886	10,279	12,053	12,945	13,404	13,658	1.0-i39
Fully depreciated assets	6,325	4,947	7,030	11,627	14,804	15,103	18,999	1.0-i40
Weighted average remaining life of assets based on RAB excluding revaluations	25.0	26.0	26.4	27.5	27.6	27.7	28.2	1.0-i41

Calculations

Total opening RAB value

	Assessment period		Next period					Input ref	IM reference
	2017	2018	2019	2020	2021	2022	2023		
Opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	1.0-i31	5.3.6(7), 5.4.11(c)
less: Depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995		5.4.7(2)(a)(iii)
less: Disposals	9,381	9,477	10,963	12,854	13,806	14,295	14,566	1.0-i32	5.3.6(3)(c)
add: Revaluation	31,967	34,366	35,069	37,838	39,433	42,188	45,503		5.4.7(2)(a)(iv)
add: Total value of commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1.0-i33	5.4.7(2)(a)(ii), 5.4.11(d)(i)
Closing RAB value	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	2,482,065		5.3.6(3), 5.3.6(8), 5.4.11(d)(ii)

Error check: Closing RAB agrees with closing RAB in module 4.1

RAB roll-forward without revaluations

Opening RAB value without revaluations	1,429,343	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	1.0-i37
less: Adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146	1.0-i36
less: Disposals without revaluations	8,797	8,886	10,279	12,053	12,945	13,404	13,658	1.0-i32
add: Total value of commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	
Closing RAB value without revaluations	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	2,177,905	

Error check: Closing RAB excl revals agrees with closing RAB excl revals in module 4.4

	Next period							Input ref	IM reference
	Assessment period		CPP period						
	2017	2018	2019	2020	2021	2022	2023		
TF_{VCA}									
PV _{VCA}	107,141	112,063	217,207	172,834	180,035	212,711	216,783	1.0-i34	
<i>multiply by: (1 + Cost of capital)</i>	1.0719	1.0719	1.0719	1.0719	1.0719	1.0719	1.0719	1.0-i6	
<i>divide by: Total value of commissioned assets</i>	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1.0-i33	
TF _{VCA}	1.0353	1.0353	1.0277	1.0342	1.0323	1.0310	1.0262		5.3.2(4)
RAB proportionate investment									
RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784	1.0-i38	5.3.16(3), 5.3.16(4)
Total revaluation									
Opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694		5.4.13(1)(c)
<i>less: Fully depreciated assets</i>	6,325	4,947	7,030	11,627	14,804	15,103	18,999	1.0-i40	5.3.10(3)(a)
<i>less: Disposals</i>	9,381	9,477	10,963	12,854	13,806	14,295	14,566	1.0-i32	5.3.10(3)(b)
Adjusted Opening RAB value	1,512,306	1,585,906	1,661,031	1,840,689	1,971,651	2,109,390	2,275,129		
<i>multiply by: Revaluation rate</i>	2.1%	2.2%	2.1%	2.1%	2.0%	2.0%	2.0%	1.0-i35	5.4.13(1)(f)
Total Revaluation	31,967	34,366	35,069	37,838	39,433	42,188	45,503		5.3.10(2)
Total depreciation									
Opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694		
<i>multiply by: (1 / Remaining asset life)</i>	0.0400	0.0389	0.0384	0.0370	0.0370	0.0370	0.0364	1.0-i36	
Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995		5.3.7(2)
Total opening RAB value without revaluations									
Opening RAB value without revaluations	1,429,343	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	1.0-i37	
<i>less: Adjusted depreciation</i>	57,097	56,807	57,781	61,226	64,882	68,618	72,146		
<i>less: Disposals without revaluations</i>	8,797	8,886	10,279	12,053	12,945	13,404	13,658	1.0-i39	
<i>add: Total value of commissioned assets</i>	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1.0-133	
Closing RAB value without revaluations	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	2,177,905		
Total adjusted depreciation									
Opening RAB value without revaluations	1,429,343	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	1.0-i37	
<i>multiply by: (1 / Remaining asset life)</i>	0.0399	0.0385	0.0379	0.0364	0.0363	0.0362	0.0354	1.0-i41	
Total adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146		Definitions

Assessment period		Next period					Input ref	IM reference
2017	2018	2019	2020	2021	2022	2023		

Outputs

	Assessment period		Next period					Output ref	IM reference
	2017	2018	2019	2020	2021	2022	2023		
Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995	RAB-o1	
Adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146	RAB-o2	
RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784	RAB-o3	
TF _{VCA}	1.0353	1.0353	1.0277	1.0342	1.0323	1.0310	1.0262	RAB-o4	
Total revaluation	31,967	34,366	35,069	37,838	39,433	42,188	45,503	RAB-o5	
Total opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	RAB-o6	

Error check: Total depreciation equals sum of depreciation for existing assets and depreciation for addition:

TRUE TRUE TRUE TRUE TRUE TRUE TRUE

End

Regulatory tax sub-module

Inputs

	Assessment period		CPP period					Input ref
	2017	2018	2019	2020	2021	2022	2023	
Term credit spread differential allowance	1,860	1,949	2,107	2,298	2,460	2,644	2,848	1.0-i10
Forecast operating expenditure	77,514	80,779	93,298	98,919	101,340	100,529	100,257	1.0-i13
Corporate tax rate	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	28.0%	1.0-i15
Opening tax losses in the first year of the next period	-	-	-	-	-	-	-	1.0-i16
Positive permanent differences	133	135	138	140	143	146	149	1.0-i17
Discretionary discounts and customer rebates	-	-	-	-	-	-	-	1.0-i18
Negative permanent differences	-	-	-	-	-	-	-	1.0-i19
Leverage	42%	42%	42%	42%	42%	42%	42%	1.0-i20
Cost of debt	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	1.0-i21
Opening unamortised initial differences in asset values for most recent ID year	271,615							1.0-i22
Adjustment to opening unamortised initial differences in asset values for sold or acquired ass	-1,824	-1,741	-1,660	-1,580	-1,500	-1,422	-1,345	1.0-i23
Weighted average remaining useful life of relevant assets	26	25	24	23	22	21	20	1.0-i24
Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995	RAB-o1
Adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146	RAB-o2
RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784	RAB-o3
Building blocks allowable revenue before tax	235,275	242,827	266,418	288,607	304,999	317,786	330,494	BBAR-o1
Regulatory Investment Value	1,478,694	1,540,947	1,615,329	1,794,762	1,918,675	2,043,240	2,195,708	BBAR-o3

Calculations

Forecast regulatory tax allowance

	Assessment period		Next period					Input ref	IM reference
	2017	2018	2019	2020	2021	2022	2023		
Regulatory taxable income	71,457	74,268	81,551	90,041	97,090	103,335	109,057		
less: Utilised tax losses	-	-	-	-	-	-	-		5.3.14(1)
Regulatory net taxable income (nil if <0)	71,457	74,268	81,551	90,041	97,090	103,335	109,057		5.3.13(1)
multiply by: Corporate tax rate	28%	28%	28%	28%	28%	28%	28%	1.0-i15	
Forecast regulatory tax allowance	20,008	20,795	22,834	25,211	27,185	28,934	30,536		5.3.13

Regulatory taxable income

Regulatory profit/(loss) before tax	96,565	99,833	108,621	120,653	129,620	138,124	146,242		
add: permanent differences	133	135	138	140	143	146	149		
add: regulatory tax adjustments	-25,241	-25,700	-27,208	-30,752	-32,673	-34,935	-37,334		
Regulatory taxable income	71,457	74,268	81,551	90,041	97,090	103,335	109,057		5.3.13(3)

Regulatory profit / (loss) before tax

Building blocks allowable revenue before tax
less: Forecast operating expenditure
less: Total depreciation
 Regulatory profit/(loss) before tax

Utilised tax losses

Opening tax losses
add: current period tax losses
less: Utilised tax losses
 Closing tax losses

Permanent differences

Positive permanent differences
less: Discretionary discounts and customer rebates
less: Negative permanent differences
 Permanent Differences

Regulatory tax adjustments

Amortisation of initial differences in asset values
add:

Amortisation of revaluations

Total depreciation
less: Adjusted depreciation
 Amortisation of revaluations

less:

Notional deductible interest

regulatory investment value
add: RAB proportionate investment
 Asset Base

multiply by: Company Debt leverage

Proportion of Asset base funded by Debt
multiply by: cost of debt

Notional interest

add: term credit spread differential

Notional deductible interest

Regulatory tax adjustments

Assessment period	Next period						Input ref	IM reference	
	Assessment period		CPP period						
	2017	2018	2019	2020	2021	2022			2023
Building blocks allowable revenue before tax	235,275	242,827	266,418	288,607	304,999	317,786	330,494	BBAR-o1	
<i>less:</i> Forecast operating expenditure	77,514	80,779	93,298	98,919	101,340	100,529	100,257	1.0-i13	
<i>less:</i> Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995	RAB-o1	
Regulatory profit/(loss) before tax	96,565	99,833	108,621	120,653	129,620	138,124	146,242		5.3.13(4)
Opening tax losses	-	-	-	-	-	-	-	1.0-i16	5.3.14(3), 5.4.20(1)
<i>add:</i> current period tax losses	-	-	-	-	-	-	-		5.3.14(6)
<i>less:</i> Utilised tax losses	-	-	-	-	-	-	-		5.3.14(1) 5.3.14(2)
Closing tax losses	-	-	-	-	-	-	-		5.3.14(5)
Positive permanent differences	133	135	138	140	143	146	149	1.0-i17	5.3.15(2), 5.3.15(3)
<i>less:</i> Discretionary discounts and customer rebates	-	-	-	-	-	-	-	1.0-i18	
<i>less:</i> Negative permanent differences	-	-	-	-	-	-	-	1.0-i19	5.3.15(4), 5.3.15(5)
Permanent Differences	133	135	138	140	143	146	149		5.3.15(1)
Amortisation of initial differences in asset values	10,447	10,374	10,301	10,229	10,157	10,086	10,015		
<i>add:</i>									
Amortisation of revaluations									
Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995	RAB-o1	
<i>less:</i> Adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146	RAB-o2	5.4.23(2)
Amortisation of revaluations	4,099	5,408	6,718	7,808	9,157	10,514	11,849		5.3.18
<i>less:</i>									
Notional deductible interest									
regulatory investment value	1,478,694	1,540,947	1,615,329	1,794,762	1,918,675	2,043,240	2,195,708	BBAR-o2	
<i>add:</i> RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784	RAB-o3	
Asset Base	1,529,466	1,594,219	1,698,625	1,874,880	1,997,272	2,132,989	2,272,492		
<i>multiply by:</i> Company Debt leverage	42%	42%	42%	42%	42%	42%	42%	1.0-i20	
Proportion of Asset base funded by Debt	642,376	669,572	713,423	787,450	838,854	895,855	954,447		
<i>multiply by:</i> cost of debt	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	6.1%	1.0-i21	
Notional interest	39,121	40,777	43,447	47,956	51,086	54,558	58,126		
<i>add:</i> term credit spread differential	1,860	1,949	2,107	2,298	2,460	2,644	2,848	1.0-i10	
Notional deductible interest	39,787	41,482	44,227	48,790	51,987	55,535	59,198		5.3.16(2), 5.4.19(4), 2.3.4(2)
Regulatory tax adjustments	-25,241	-25,700	-27,208	-30,752	-32,673	-34,935	-37,334		5.3.16(1)

Amortisation of initial differences in asset values

Opening unamortised initial difference in asset values
less: Amortisation of initial differences in asset values
add: Adjustment to opening unamortised initial differences in asset values for sold or acquired assets
 Closing unamortised initial difference in asset values

	Next period							Input ref	IM reference
	Assessment period		CPP period						
	2017	2018	2019	2020	2021	2022	2023		
Opening unamortised initial difference in asset values	271,615	259,344	247,229	235,268	223,459	211,801	200,293	1.0-i22	5.3.17(2)
<i>less:</i> Amortisation of initial differences in asset values	10,447	10,374	10,301	10,229	10,157	10,086	10,015	1.0-i24	5.3.17(1), 5.4.22(2)
<i>add:</i> Adjustment to opening unamortised initial differences in asset values for sold or acquired assets	-1,824	-1,741	-1,660	-1,580	-1,500	-1,422	-1,345	1.0-i23	
Closing unamortised initial difference in asset values	259,344	247,229	235,268	223,459	211,801	200,293	188,934		5.3.17(6)
Corporate tax rate	28%	28%	28%	28%	28%	28%	28%	1.0-i15	

Outputs

Amortisation based on weighted average remaining useful life of relevant assets
 Permanent differences
 Regulatory tax adjustments
 Opening tax losses
 Forecast regulatory tax allowance

	Next period							Output ref
	Assessment period		CPP period					
	2017	2018	2019	2020	2021	2022	2023	
Amortisation based on weighted average remaining useful life of relevant assets	10,447	10,374	10,301	10,229	10,157	10,086	10,015	TAX-o1
Permanent differences	133	135	138	140	143	146	149	TAX-o2
Regulatory tax adjustments	-25,241	-25,700	-27,208	-30,752	-32,673	-34,935	-37,334	TAX-o3
Opening tax losses	-	-	-	-	-	-	-	TAX-o4
Forecast regulatory tax allowance	20,008	20,795	22,834	25,211	27,185	28,934	30,536	TAX-o5

End

Deferred tax sub-module

Inputs

	Assessment period		CPP period					Input ref
	2017	2018	2019	2020	2021	2022	2023	
Corporate tax rate	28%	28%	28%	28%	28%	28%	28%	1.0-i15
Opening deferred tax for most recent ID year	-49,319							1.0-i25
Tax depreciation	86,116	65,403	75,529	95,656	109,660	126,055	140,613	1.0-i26
Positive temporary differences	1,029	1,041	1,160	1,314	1,394	1,438	1,465	1.0-i27
Negative temporary differences	-	-	-	-	-	-	-	1.0-i28
Deferred tax balance relating to assets acquired in disclosure year	-	-	-	-	-	-	-	1.0-i29
Cost allocation adjustment	-	-	-	-	-	-	-	1.0-i30
Adjusted depreciation	57,097	56,807	57,781	61,226	64,882	68,618	72,146	RAB-o2
Amortisation based on weighted average remaining useful life of relevant assets	10,447	10,374	10,301	10,229	10,157	10,086	10,015	TAX-o1
Disposals without revaluations	9,381	9,477	10,963	12,854	13,806	14,295	14,566	1.0-i39
Tax disposals	8,682	8,770	10,146	11,896	12,777	13,229	13,480	1.0-i42

Calculations

	Assessment period		Next period					Input ref	IM reference
	2017	2018	2019	2020	2021	2022	2023		
Opening deferred tax	-49,319	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	1.0-i25	5.3.19(1)
Less:									
Tax effect of amortisation of initial difference in asset values	2,925	2,905	2,884	2,864	2,844	2,824	2,804	TAX-o1, 1.0-i15	
Deferred tax balance relating to assets disposed of in the disclosure year in question	-699	-706	-817	-958	-1,029	-1,066	-1,086		5.3.19(6)
Add:									
Tax effect of temporary differences									
Adjusted depreciation	15,987	15,906	16,179	17,143	18,167	19,213	20,201	RAB-o2, 1.0-i15	
less: Tax depreciation	24,113	18,313	21,148	26,784	30,705	35,295	39,372	1.0-i26, 1.0-i15	5.3.20(3)
Tax effect of Depreciation temporary differences	-8,125	-2,407	-4,969	-9,640	-12,538	-16,082	-19,171		5.3.20(2)
Tax effect of positive temporary differences	288	291	325	368	390	403	410	1.0-i27, 1.0-i15	5.3.20(4)
less: Tax effect of negative temporary differences	-	-	-	-	-	-	-	1.0-i28, 1.0-i15	5.3.20(5)
Tax effect of temporary differences	-7,837	-2,115	-4,645	-9,273	-12,147	-15,680	-18,761		5.3.20
Deferred tax balance relating to assets acquired in the disclosure year in question	-	-	-	-	-	-	-	1.0-i29	5.3.19(3)
Cost allocation adjustment	-	-	-	-	-	-	-	1.0-i30	5.3.19(5)
Closing deferred tax	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	-133,465		5.3.19(2), 5.4.24(3)

Assessment period		Next period					Input ref	IM reference
2017	2018	2019	2020	2021	2022	2023		

Outputs

	Assessment period		CPP period					Output ref
	2017	2018	2019	2020	2021	2022	2023	
Opening deferred tax	-49,319	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	DTAX-o1
Closing deferred tax	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	-133,465	DTAX-o2

End

Building blocks allowable revenue (BBAR) sub-module

Inputs

	Assessment period		CPP period					Input ref
	2017	2018	2019	2020	2021	2022	2023	
Cost of capital	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	1.0-i6
Term Credit Spread Differential Allowance	1,860	1,949	2,107	2,298	2,460	2,644	2,848	1.0-i10
Forecast operating expenditure	77,514	80,779	93,298	98,919	101,340	100,529	100,257	1.0-i13
Corporate tax rate	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	28.00%	1.0-i15
Total value of commissioned Assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1.0-i33
Total depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995	RAB-o1
TF _{VCA}	1.035	1.035	1.028	1.034	1.032	1.031	1.026	RAB-o4
Total opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	RAB-o6
Revaluation	31,967	34,366	35,069	37,838	39,433	42,188	45,503	RAB-o7
Opening deferred tax	-49,319	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	DTAX-o1
Closing deferred tax	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	-133,465	DTAX-o2
Permanent differences	133	135	138	140	143	146	149	TAX-o2
Regulatory tax adjustments	-25,241	-25,700	-27,208	-30,752	-32,673	-34,935	-37,334	TAX-o3
Opening tax losses	-	-	-	-	-	-	-	TAX-o4
Forecast regulatory tax allowance	20,008	20,795	22,834	25,211	27,185	28,934	30,536	TAX-o5

Calculations

	Assessment period		Next period					Input ref	IM Reference
	2017	2018	CPP period						
	2017	2018	2019	2020	2021	2022	2023		
Intra period timing factors									
TF	1.035	1.035	1.035	1.035	1.035	1.035	1.035	1.0-i11	5.3.2(4)
TF _{rev}	1.029	1.029	1.029	1.029	1.029	1.029	1.029	1.0-i12	5.3.2(4)

Intra period timing factors

Building blocks allowable revenue before tax (BBAR before tax)

	Next period							Input ref	IM Reference
	Assessment period		CPP period						
	2017	2018	2019	2020	2021	2022	2023		
Calculation A									
Regulatory investment value x Cost of capital	106,318	110,794	116,142	129,043	137,953	146,909	157,871	1.0-i6	
<i>add:</i> (Total value of commissioned assets x (TF _{VCA} - 1))	3,919	4,099	6,286	6,119	6,041	6,860	5,940	RAB-o4	
<i>add:</i> (Term credit spread differential allowance x TF)	1,925	2,018	2,181	2,379	2,547	2,737	2,948	1.0-i10, 1.0-i11	
<i>less:</i> Total revaluation	31,967	34,366	35,069	37,838	39,433	42,188	45,503	RAB-o7	
	80,194	82,545	89,540	99,703	107,108	114,318	121,257		
<i>divide by:</i> TF _{rev} - Corporate tax rate x TF	0.739	0.739	0.739	0.739	0.739	0.739	0.739	1.0-i11, 1.0-i12, 1.0-i15	
Subtotal A	108,563	111,745	121,214	134,973	144,997	154,758	164,151		
Calculation B									
<i>add:</i> Total depreciation x (1 - Corporate tax rate x TF)	43,457	44,182	45,803	49,024	52,578	56,195	59,648	RAB-o1, 1.0-i15, 1.0-i11	
<i>add:</i> Forecast operating expenditure x TF x (1 - Corporate tax rate)	57,776	60,210	69,541	73,731	75,535	74,931	74,728	1.0-i13, 1.0-i15, 1.0-i11	
<i>add:</i> (Closing deferred tax - Opening deferred tax) x (TF - 1)	-354	-152	-236	-394	-492	-614	-721	DTAX-o1, DTAX-o2, 1.0-i11	
<i>Add:</i>									
Permanent differences	133	135	138	140	143	146	149	TAX-o2	
<i>add:</i> Regulatory tax adjustments	-25,241	-25,700	-27,208	-30,752	-32,673	-34,935	-37,334	TAX-o3	
<i>less:</i> Utilised tax losses	-	-	-	-	-	-	-	TAX-o4	
	-25,108	-25,565	-27,071	-30,612	-32,530	-34,789	-37,185		
<i>multiply by:</i> (Corporate tax rate x TF)	29%	29%	29%	29%	29%	29%	29%	1.0-i15, 1.0-i11	
	-7,278	-7,410	-7,847	-8,873	-9,429	-10,084	-10,779		
Subtotal	93,601	96,829	107,261	113,487	118,192	120,427	122,876		
<i>divide by:</i> (TF _{rev} - Corporate tax rate x TF)	0.739	0.739	0.739	0.739	0.739	0.739	0.739	1.0-i12, 1.0-o15, 1.0-i11	
Subtotal B	126,712	131,082	145,204	153,633	160,002	163,028	166,343		
BBAR before tax (in revenue date terms) (A+B)	235,275	242,827	266,418	288,607	304,999	317,786	330,494		5.3.2(1)
Building blocks allowable revenue after tax (BBAR after tax)									
BBAR before tax (in revenue date terms)	235,275	242,827	266,418	288,607	304,999	317,786	330,494		
<i>less:</i> Forecast regulatory tax allowance	20,008	20,795	22,834	25,211	27,185	28,934	30,536	TAX-o5	
BBAR after tax (in revenue date terms)	215,267	222,032	243,584	263,395	277,813	288,852	299,958		5.3.3(1)
Regulatory investment value									
Total opening RAB value	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	RAB-o6	
<i>add:</i> Opening deferred tax	-49,319	-59,382	-63,696	-70,408	-81,586	-95,548	-112,986	DTAX-o1	
Regulatory investment value	1,478,694	1,540,947	1,615,329	1,794,762	1,918,675	2,043,240	2,195,708		5.3.2(2), 5.4.7(2)(a)(i)

Intra period timing factors

Assessment period		Next period					Input ref	IM Reference
		CPP period						
2017	2018	2019	2020	2021	2022	2023		

Outputs

	Assessment period		CPP period					Output ref
	2017	2018	2019	2020	2021	2022	2023	
Building blocks allowable revenue before tax (in revenue date terms)	235,275	242,827	266,418	288,607	304,999	317,786	330,494	BBAR-o1
Building blocks allowable revenue after tax (in revenue date terms)	215,267	222,032	243,584	263,395	277,813	288,852	299,958	BBAR-o2
Regulatory investment value	1,478,694	1,540,947	1,615,329	1,794,762	1,918,675	2,043,240	2,195,708	BBAR-o3
TF _{rev}	1.029	1.029	1.029	1.029	1.029	1.029	1.029	BBAR-o4

End

Maximum allowable revenue (MAR) sub-module

Inputs

	Value	CPP period					Input ref
		2019	2020	2021	2022	2023	
'X' factor	-						1.0-i3
Cost of capital		7.19%	7.19%	7.19%	7.19%	7.19%	1.0-i6
CPP Inflation rate		2.11%	2.15%	2.10%	2.03%	2.00%	1.0-i7
Claw-back	-						1.0-i9
TF _{rev}		1.0286	1.0286	1.0286	1.0286	1.0286	BBAR-o4
Forecast regulatory tax allowance		22,834	25,211	27,185	28,934	30,536	TAX-o5
BBAR after tax (in revenue date terms)		243,584	263,395	277,813	288,852	299,958	BBAR-o2
BBAR before tax (in revenue date terms)		266,418	288,607	304,999	317,786	330,494	

Calculations

Maximum allowable revenue before tax (MAR before tax)

	At 1-Apr-18	CPP period					Input ref	IM Reference
		2019	2020	2021	2022	2023		
Prior year's MAR			287,997	294,197	300,367	306,458		
<i>multiply by: (1 + ΔCPI)</i>			1.0215	1.0210	1.0203	1.0200	1.0-i7	
<i>multiply by: (1 - X)</i>			1.0000	1.0000	1.0000	1.0000	1.0-i3	
Revenue path			1.0215	1.0210	1.0203	1.0200		
Revenue path indexed to start of CPP period		1.0000	1.0215	1.0430	1.0641	1.0854		
PV of indexed revenue path	4.3631	0.9596	0.9145	0.8710	0.8291	0.7889		
BBAR before tax in revenue date terms		266,418	288,607	304,999	317,786	330,494		
PV of BBAR before tax	1,256,546	255,645	258,360	254,719	247,596	240,226		
MAR before tax (in revenue date terms)		287,997	294,197	300,367	306,458	312,587		5.3.4(5), 5.3.4(6), 5.4.8(7)

Maximum allowable revenue after tax (MAR after tax)

MAR before tax (in revenue date terms)
 less: Forecast regulatory tax allowance
 MAR after tax (in revenue date terms)

TF_{rev}

MAR after tax (in year end terms)

Claw-back

Claw-back -

Validation

Check that NPV of BBAR after tax agrees to NPV of MAR after tax

MAR after tax (in year end terms)
 Number of years used to discount to present value
 Present Value of MAR after tax using WACC
 NPV of MAR after tax (A) [5 year regulatory period]

BBAR after tax (in year end terms)
 Number of years used to discount to present value
 Present Value of BBAR after tax using WACC
 NPV of BBAR after tax [5 year regulatory period]

less/(add): Claw-back

NPV of BBAR after tax including Clawback (B) [5 year regulatory period]

A-B (difference should be nil)

	CPP period					Input ref	IM Reference
	At 1-Apr-18	2019	2020	2021	2022		
MAR before tax (in revenue date terms)	287,997	294,197	300,367	306,458	312,587		
less: Forecast regulatory tax allowance	22,834	25,211	27,185	28,934	30,536	TAX-o5	
MAR after tax (in revenue date terms)	265,163	268,986	273,182	277,524	282,051		5.3.4(7)
TF _{rev}	1.0286	1.0286	1.0286	1.0286	1.0286	1.0-i12	
MAR after tax (in year end terms)	272,734	276,666	280,982	285,448	290,104		5.3.4(8), 5.4.8(7)
Claw-back						1.0-i9	5.3.4(2)
MAR after tax (in year end terms)	272,734	276,666	280,982	285,448	290,104		
Number of years used to discount to present value	1	2	3	4	5		
Present Value of MAR after tax using WACC	254,440	240,795	228,148	216,227	205,014	1.0-i6	5.3.4(3)
NPV of MAR after tax (A) [5 year regulatory period]	1,144,623						
BBAR after tax (in year end terms)	250,539	270,916	285,746	297,100	308,523		
Number of years used to discount to present value	1	2	3	4	5		
Present Value of BBAR after tax using WACC	233,734	235,790	232,016	225,053	218,030		5.3.4(3)
NPV of BBAR after tax [5 year regulatory period]	1,144,623						
less/(add): Claw-back	-						
NPV of BBAR after tax including Clawback (B) [5 year regulatory period]	1,144,623						
A-B (difference should be nil)	-						5.3.4(1)

Outputs

Maximum allowable revenue before tax (in revenue date terms)
 Maximum allowable revenue after tax (in revenue date terms)

	CPP period					Output ref	IM Reference
	2019	2020	2021	2022	2023		
Maximum allowable revenue before tax (in revenue date terms)	287,997	294,197	300,367	306,458	312,587	MAR-o1	
Maximum allowable revenue after tax (in revenue date terms)	265,163	268,986	273,182	277,524	282,051	MAR-o2	

End

Outputs

Ref.	Output Name	Discrete Output	Next period		CPP period					Description	Input ref	IM Reference
			Assessment period		2017	2018	2019	2020	2021			
1.0-o1	CPP regulatory period				2019	2020	2021	2022	2023	The period of continuous disclosure years in respect of which the customised price-quality path applies, and which follows the assessment period.	1.0-i1	
1.0-o2	Allowed controllable opex				-	-	-	-	-	A series of values (\$000) for the CPP regulatory period where a single value for a disclosure year represents the allowance for operating expenditure for that year in categories specified by the Commission as controllable by the supplier.	1.0-i2	
1.0-o3	Building blocks allowable revenue before tax (in revenue date terms)		235,275	242,827	266,418	288,607	304,999	317,786	330,494	A series of values (\$000) for the next period where a single value for a disclosure year represents the revenue required to be generated by a supplier in that year in compensate it for its economic costs for that year expressed in nominal terms and excluding claw-back or pass through or recoverable costs.	BBAR-o1	5.4.7(1)(a)
1.0-o4	Building blocks allowable revenue after tax (in revenue date terms)		215,267	222,032	243,584	263,395	277,813	288,852	299,958	A series of values (\$000) for the next period where a single value for a disclosure year represents the Building blocks allowable revenue before tax less the forecast regulatory tax allowance for that year.	BBAR-o2	5.4.7(1)(b)
1.0-o5	Maximum allowable revenue before tax (in revenue date terms)				287,997	294,197	300,367	306,458	312,587	A series of values (\$000) which determine the revenue path for a supplier for the CPP regulatory period whereby a single value for a disclosure year represents the maximum allowable revenue in nominal terms that the supplier may recover from customers through prices for that year allowing for claw-back amounts, and net of pass through costs and recoverable costs.	MAR-o1	5.4.8(1)(a)
1.0-o6	Maximum allowable revenue after tax (in revenue date terms)				265,163	268,986	273,182	277,524	282,051	A series of values (\$000) for the CPP regulatory period where a single value for a disclosure year represents the maximum allowable revenue that the supplier may recover through prices for that year, less a forecast amount of tax.	MAR-o2	5.4.8(1)(b)
1.0-o7	'X' factor	-								A single value (percentage 3 d.p.) representing the rate of change allowed for the maximum allowable revenue path where the path is expressed in 'CPI-X' terms.	1.0-i3	5.4.8(2)(b)
1.0-o8	Pass-through costs				-	-	-	-	-	Future uncontrollable costs of the supplier which are to be treated as pass-through costs in each year of the CPP regulatory period in addition to those rates or levies already specified in cl. 3.1.2 of the EDB input methodologies.	1.0-i4	
1.0-o9	Recoverable costs				-	-	-	-	-	A series of values (\$000) which are the nominal amounts of verifier fees, auditor's costs or engineer fees associated with the CPP process that are treated as recoverable costs for each of the disclosure years of the CPP regulatory period.	1.0-i5	

End

Calculation of escalators

Inputs

Ref	Source	Cost category	Cost item for escalation	Currency	Assessment period		CPP period					
					2017	2018	2019	2020	2021	2022	2023	
3.1-i1	Direct	Capital equipment and materials	Aluminium*	USD	1.45%	3.84%	3.93%	1.43%	3.12%	3.73%	4.39%	
3.1-i1	Direct		Copper*	USD	14.85%	1.82%	6.90%	2.77%	3.86%	2.43%	1.42%	
3.1-i1	Direct		Steel*	USD	6.62%	11.84%	11.93%	5.18%	0.15%	4.17%	3.09%	
3.1-i1	Direct		Other capital goods	NZD	3.35%	1.82%	1.84%	1.88%	1.89%	2.40%	2.40%	
3.1-i1	Direct	Internal labour	Engineers	NZD	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%	
3.1-i1	Direct		Professional	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%	
3.1-i1	Direct		Project managers	NZD	0.68%	0.55%	0.80%	1.38%	1.52%	1.62%	1.97%	
3.1-i1	Direct		IT labour costs	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%	
3.1-i1	Direct	Third-party labour	Capex labour	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%	
3.1-i1	Direct		Professional advice	NZD	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%	
3.1-i1	Direct		Maintenance labour	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%	
3.1-i1	Direct	Other costs	Vegetation control	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%	
3.1-i1	Direct		Other costs	NZD	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%	
3.1-i3	Direct	Opex labour	LCI - All sectors	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%	
3.1-i3	Direct		LCI - Electricity, gas, and water	NZD	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%	
3.1-i3	Direct		LCI - Professional and technical	NZD	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%	
3.1-i3	Direct	Opex other	PPI - Inputs	NZD	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%	
3.1-i3	Direct		PPI-O Heavy and civil engineering	NZD	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%	
3.1-i3	Direct		PPI-O Professional services	NZD	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%	
3.1-i2	Direct	US/NZ dollar exchange rates	USD/NZD	0.732	0.691	0.705	0.685	0.670	0.670	0.670	0.670	
3.1-i5	Direct	Apply annual average CPI change or weighted average costs index				CPI	CPI	WA index	WA index	WA index	WA index	WA index
3.1-i13	3.1-o2	Change in CPI, annual average				0.92%	1.44%	1.63%	2.04%	2.06%	2.04%	2.02%

Calculations

NZIER rate changes in New Zealand dollars

Annual growth rate of USD/NZD

Assessment period		CPP period				
2017	2018	2019	2020	2021	2022	2023
-5.64%	2.03%	-2.84%	-2.19%	0.00%	0.00%	0.00%

Cost category	Cost item for escalation	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Capital equipment and materials	Aluminium*	7.50%	1.77%	6.96%	3.70%	3.12%	3.73%	4.39%
	Copper*	21.71%	-0.21%	10.02%	5.07%	3.86%	2.43%	1.42%
	Steel*	12.99%	9.61%	15.20%	7.53%	0.15%	4.17%	3.09%
	Other capital goods	3.35%	1.82%	1.84%	1.88%	1.89%	2.40%	2.40%
Internal labour	Engineers	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%
	Professional	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
	Project managers	0.68%	0.55%	0.80%	1.38%	1.52%	1.62%	1.97%
	IT labour costs	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
Third-party labour	Capex labour	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
	Professional advice	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%
	Maintenance labour	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
Other costs	Vegetation control	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
	Other costs	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%

Rates of change for capex inputs

Capex input	Index	Ref	Weighting	Assessment period		CPP period					
				2017	2018	2019	2020	2021	2022	2023	
Labour											
	Capex labour	3.1-i4	85.00%		2.43%	1.35%	1.66%	2.19%	2.28%	2.20%	2.46%
	Project managers	3.1-i4	3.75%		0.03%	0.02%	0.03%	0.05%	0.06%	0.06%	0.07%
	Professional	3.1-i4	3.75%		0.06%	0.06%	0.07%	0.08%	0.07%	0.07%	0.08%
	IT labour costs	3.1-i4	3.75%		0.06%	0.06%	0.07%	0.08%	0.07%	0.07%	0.07%
	Engineers	3.1-i4	3.75%		0.03%	0.04%	0.05%	0.07%	0.08%	0.08%	0.08%
	Total Index				2.62%	1.54%	1.88%	2.46%	2.57%	2.48%	2.76%
Cables											
	Aluminium*	3.1-i4	95.00%		7.13%	1.69%	6.62%	3.52%	2.96%	3.54%	4.17%
	Copper*	3.1-i4	5.00%		1.09%	-0.01%	0.50%	0.25%	0.19%	0.12%	0.07%
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	Total Index				8.21%	1.68%	7.12%	3.77%	3.15%	3.66%	4.24%
Conductor											
	Aluminium*	3.1-i4	100.00%		7.50%	1.77%	6.96%	3.70%	3.12%	3.73%	4.39%
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	Total Index				7.50%	1.77%	6.96%	3.70%	3.12%	3.73%	4.39%
Transformers											
	Steel*	3.1-i4	45.00%		5.84%	4.32%	6.84%	3.39%	0.07%	1.87%	1.39%
	Copper*	3.1-i4	50.00%		10.86%	-0.11%	5.01%	2.54%	1.93%	1.22%	0.71%
	Other capital goods	3.1-i4	5.00%		0.17%	0.09%	0.09%	0.09%	0.09%	0.12%	0.12%
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	Total Index				16.87%	4.31%	11.94%	6.02%	2.09%	3.21%	2.22%
Switchgear											
	Copper*	3.1-i4	75.00%		16.28%	-0.16%	7.52%	3.80%	2.89%	1.82%	1.07%
	Steel*	3.1-i4	25.00%		3.25%	2.40%	3.80%	1.88%	0.04%	1.04%	0.77%
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	Total Index				19.53%	2.24%	11.32%	5.69%	2.93%	2.87%	1.84%
Other capex											
	Other capital goods	3.1-i4	100.00%		3.35%	1.82%	1.84%	1.88%	1.89%	2.40%	2.40%
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	-	3.1-i4	0.00%		-	-	-	-	-	-	-
	Total Index				3.35%	1.82%	1.84%	1.88%	1.89%	2.40%	2.40%

Indices for opex inputs

Index	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
LCI - All sectors	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
LCI - Electricity, gas, and water	0.92%	1.05%	1.38%	1.96%	2.14%	2.04%	2.14%
LCI - Professional and technical	1.64%	1.63%	1.75%	2.03%	2.00%	1.93%	2.00%
PPI - Inputs	4.01%	1.94%	2.20%	2.36%	2.35%	2.00%	2.00%
PPI-O Heavy and civil engineering	2.86%	1.59%	1.96%	2.57%	2.69%	2.58%	2.89%
PPI-O Professional services	2.21%	1.82%	1.97%	2.25%	2.22%	2.09%	2.15%

Outputs

Escalator indices for capex inputs

Ref	Destinati on	Inputs	Assessment period			CPP period				
			2016	2017	2018	2019	2020	2021	2022	2023
3.1-o6	3.3-i2	Labour	1.00	1.01	1.02	1.04	1.07	1.10	1.12	1.15
3.1-o6	3.3-i2	Cables	1.00	1.01	1.02	1.10	1.14	1.17	1.22	1.27
3.1-o6	3.3-i2	Conductor	1.00	1.01	1.02	1.10	1.14	1.17	1.21	1.27
3.1-o6	3.3-i2	Transformers	1.00	1.01	1.02	1.15	1.21	1.24	1.28	1.31
3.1-o6	3.3-i2	Switchgear	1.00	1.01	1.02	1.14	1.20	1.24	1.28	1.30
3.1-o6	3.3-i2	Other capex	1.00	1.01	1.02	1.04	1.06	1.08	1.11	1.13

Escalator indices for opex inputs

Ref	Destinati on	Inputs	Assessment period			CPP period				
			2016	2017	2018	2019	2020	2021	2022	2023
3.1-o7	3.2-i2	LCI - ALL index	1.00	1.01	1.02	1.04	1.06	1.08	1.11	1.13
3.1-o7	3.2-i2	LCI - EGW index	1.00	1.01	1.02	1.04	1.06	1.08	1.10	1.13
3.1-o7	3.2-i2	LCI - PROF index	1.00	1.01	1.02	1.04	1.06	1.08	1.10	1.13
3.1-o7	3.2-i2	PPI - ALL index	1.00	1.01	1.02	1.05	1.07	1.10	1.12	1.14
3.1-o7	3.2-i2	PPI - CIVIL index	1.00	1.01	1.02	1.04	1.07	1.10	1.13	1.16
3.1-o7	3.2-i2	PPI - PROF index	1.00	1.01	1.02	1.04	1.07	1.09	1.11	1.14

End

CPI index calculations

Inputs

Switch to alternative price path methodology:	Compliant with current IMs	1
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Ref	Source	Value
3.1-i7	Direct	GST adjustment factor
3.1-i7	Direct	GST adjustment factor end date
3.1-i7	Direct	Final date of historic CPI series
3.1-i6	Direct	Final date of RBNZ forecast
3.1-i6	Direct	Mid-point of government inflation target range (%)
3.1-i7	Direct	Number of years until mid-point of inflation range is targeted

2015-2020 DPP inputs

Ref	Source	Assessment period		CPP period					
		2017	2018	2019	2020	2021	2022	2023	
3.1-i10	Direct	Revaluation rate	2.11%	2.17%	2.11%	2.06%	2.00%	2.00%	2.00%
3.1-i11	Direct	CPP inflation Rate			2.11%	2.15%	2.10%	2.03%	2.00%

Calculations

CPI rates of change

Quarter	CPI forecast method	Historic CPI series	Annual change in CPI		Forecast change in CPI series (%)	CPI series, no GST adjustment	CPI series, with GST adjustment	Change in CPI, March quarter on quarter	Change in CPI, annual average
			RBNZ forecast change in CPI (%)	beyond RBNZ forecast (%)					
Mar-10	-	1097				1,097	1,119		
Jun-10	-	1099				1,099	1,121		
Sep-10	-	1111				1,111	1,133		
Dec-10	-	1137				1,137	1,137		
Mar-11	-	1146				1,146	1,146	2.42%	
Jun-11	-	1157				1,157	1,157	3.21%	
Sep-11	-	1162				1,162	1,162	2.54%	
Dec-11	-	1158				1,158	1,158	1.85%	
Mar-12	-	1164				1,164	1,164	1.57%	2.29%
Jun-12	-	1168				1,168	1,168	0.95%	1.72%
Sep-12	-	1171				1,171	1,171	0.77%	1.28%
Dec-12	-	1169				1,169	1,169	0.95%	1.06%
Mar-13	-	1174				1,174	1,174	0.86%	0.88%
Jun-13	-	1176				1,176	1,176	0.68%	0.82%
Sep-13	-	1187				1,187	1,187	1.37%	0.97%
Dec-13	-	1188				1,188	1,188	1.63%	1.13%
Mar-14	-	1192				1,192	1,192	1.53%	1.30%
Jun-14	-	1195				1,195	1,195	1.62%	1.54%
Sep-14	-	1199				1,199	1,199	1.01%	1.44%
Dec-14	-	1197				1,197	1,197	0.76%	1.23%
Mar-15	-	1195				1,195	1,195	0.25%	0.91%
Jun-15	-	1200				1,200	1,200	0.42%	0.61%
Sep-15	-	1204				1,204	1,204	0.42%	0.46%
Dec-15	-	1198				1,198	1,198	0.08%	0.29%
Mar-16	-	1200				1,200	1,200	0.42%	0.33%
Jun-16	-	1205				1,205	1,205	0.42%	0.33%
Sep-16	-	1209				1,209	1,209	0.42%	0.33%
Dec-16	-	1214				1,214	1,214	1.34%	0.65%
Mar-17	1		1.50		1.50	1,218	1,218	1.50%	0.92%
Jun-17	1		1.49		1.49	1,223	1,223	1.49%	1.19%
Sep-17	1		1.65		1.65	1,229	1,229	1.65%	1.50%
Dec-17	1		1.32		1.32	1,230	1,230	1.32%	1.49%
Mar-18	1		1.31		1.31	1,234	1,234	1.31%	1.44%
Jun-18	1		1.39		1.39	1,240	1,240	1.39%	1.42%
Sep-18	1		1.55		1.55	1,248	1,248	1.55%	1.39%
Dec-18	1		1.71		1.71	1,251	1,251	1.71%	1.49%
Mar-19	1		1.86		1.86	1,257	1,257	1.86%	1.63%
Jun-19	1		2.02		2.02	1,265	1,265	2.02%	1.78%
Sep-19	1		2.00		2.00	1,273	1,273	2.00%	1.90%
Dec-19	1		2.08		2.08	1,277	1,277	2.08%	1.99%
Mar-20	1		2.07		2.07	1,283	1,283	2.07%	2.04%
Jun-20	2			-	2.07	1,291	1,291	2.07%	2.05%
Sep-20	2			-	2.07	1,299	1,299	2.07%	2.07%
Dec-20	2			-	2.07	1,303	1,303	2.07%	2.07%
Mar-21	2			-0.02	2.05	1,309	1,309	2.05%	2.06%
Jun-21	2			-	2.05	1,318	1,318	2.05%	2.06%
Sep-21	2			-	2.05	1,326	1,326	2.05%	2.05%
Dec-21	2			-	2.05	1,330	1,330	2.05%	2.05%
Mar-22	2			-0.02	2.02	1,336	1,336	2.02%	2.04%
Jun-22	2			-	2.02	1,344	1,344	2.02%	2.03%
Sep-22	2			-	2.02	1,353	1,353	2.02%	2.03%
Dec-22	2			-	2.02	1,357	1,357	2.02%	2.02%
Mar-23	2			-0.02	2.00	1,362	1,362	2.00%	2.02%

Outputs

CPI rate of change

	Current period						Next period							
						Base year 2016	Assessment period		CPP period					
	2011	2012	2013	2014	2015		2017	2018	2019	2020	2021	2022	2023	
3.1-o1	Change in CPI, March quarter on quarter						0.42%	1.50%	1.31%	1.86%	2.07%	2.05%	2.02%	2.00%
3.1-o2	Change in CPI, annual average						0.33%	0.92%	1.44%	1.63%	2.04%	2.06%	2.04%	2.02%

CPI index

Ref	Destination	Current period					Next period							
							Base year 2016	Assessment period		CPP period				
		2011	2012	2013	2014	2015		2017	2018	2019	2020	2021	2022	2023
3.1-o3	Tier 2 models	CPI index, annual average					1.00	1.01	1.02	1.04	1.06	1.08	1.11	1.13

Ref	Destination	Input Description						Next period				
			Assessment period		CPP period							
			2017	2018	2019	2020	2021	2022	2023			
3.1-o4	1.0-i7	CPP Inflation rate					2.11%	2.15%	2.10%	2.03%	2.00%	
3.1-o5	1.0-i35	Revaluation rate					2.11%	2.17%	2.11%	2.06%	2.00%	2.00%

End

Opex escalation

Inputs

Escalators

Sourced from the CPP Financial model. Module 3.1 Escalators.

Ref	Source		2013	2013	2014	2015	Base year		Assessment period		Next period					
							2016	2017	2018	2019	2020	2021	2022	2023		
3.2-1	3.1-03	CPI index, annual average		0.9665	0.9750	0.9877	0.9967	1.0000								
3.2-2	3.1-07	LCI - ALL index						1.0000	1.0092	1.0237	1.0417	1.0628	1.0841	1.1050	1.1271	
3.2-2	3.1-07	PPI - ALL index						1.0000	1.0092	1.0237	1.0462	1.0709	1.0961	1.1180	1.1404	

CPP portfolios

Ref	Source	Portfolio name	CPP opex category	Ref
3.2-3	Direct	Corrective maintenance	Asset replacement and renewal	ARR
3.2-3	Direct	Preventive maintenance and inspection	Routine and corrective maintenance and inspect	RCI
3.2-3	Direct	Reactive maintenance	Service interruptions and emergencies	SIE
3.2-3	Direct	System operations and network support	System operations and network support	SON
3.2-3	Direct	Vegetation management	Vegetation management	VEG
3.2-3	Direct	Corporate	Business support	COR
3.2-3	Direct	Facilities	Business support	FAC
3.2-3	Direct	Insurance and governance	Business support	I&G
3.2-3	Direct	ICT Opex	Business support	IST

Calculations

Opex price escalation

Sourced from CPP controlled opex forecast models.

Ref	Source	Ref	Portfolio Name	CPP Opex Category	Real 2016 \$900					Current period					Assessment period				CPP period				Input weighting	
					2012 Real	2013 Real	2014 Real	2015 Real	2016 Real	2017 Real	2018 Real	2019 Real	2020 Real	2021 Real	2022 Real	2023 Real	2017 Real	2018 Real	2019 Real	2020 Real	2021 Real	2022 Real	2023 Real	Labour
3.2-14	Query	ARR	Corrective Maintenance	Asset Replacement and Renewal	9,770	7,952	11,528	10,349	9,091	12,096	11,979	12,585	13,818	13,829	12,894	12,457	0.60	0.40						
3.2-14	Query	COR	Corporate	Business support	880	426	653	935	894	765	765	765	765	765	750	734	0.21	0.79						
3.2-14	Query	COR	Corporate	Business support	1,992	1,617	975	1,101	1,201	1,454	1,454	1,690	1,690	1,690	1,656	1,623	0.27	0.73						
3.2-14	Query	COR	Corporate	Business support	372	1,034	1,013	1,008	1,076	1,388	1,388	1,459	1,459	1,459	1,430	1,401	0.67	0.33						
3.2-14	Query	COR	Corporate	Business support	962	1,032	917	963	1,071	1,046	1,046	1,234	1,234	1,234	1,218	1,193	0.55	0.45						
3.2-14	Query	COR	Corporate	Business support	3,164	2,868	1,704	1,550	1,859	2,091	2,091	2,091	2,091	2,091	2,049	2,007	0.15	0.85						
3.2-14	Query	COR	Corporate	Business support	-	-	-	1,603	2,547	4,162	800	-	-	-	-	-	0.07	0.93						
3.2-14	Query	COR	Corporate	Business support	605	717	824	965	741	1,102	1,157	1,157	1,157	1,134	1,110	0.68	0.32							
3.2-14	Query	COR	Corporate	Business support	3,446	3,243	3,958	3,775	3,835	4,099	4,232	4,430	4,685	4,685	4,677	4,423	0.88	0.12						
3.2-14	Query	COR	Corporate	Business support	980	1,216	1,627	1,498	1,424	1,629	1,629	1,629	1,629	1,629	1,596	1,564	0.76	0.24						
3.2-14	Query	COR	Corporate	Business support	3,765	3,683	3,928	3,832	4,117	4,201	4,252	4,494	4,494	4,494	4,404	4,314	0.84	0.16						
3.2-14	Query	COR	Corporate	Business support	1,320	1,495	1,759	1,331	1,797	1,744	1,997	1,997	2,096	2,096	2,054	2,012	0.87	0.13						
3.2-14	Query	COR	Corporate	Business support	1,064	830	882	1,232	1,455	1,674	2,760	2,626	2,572	2,103	2,087	2,052	0.97	0.03						
3.2-14	Query	FAC	Facilities	Business support	0	1	0	-	0	0	0	0	0	0	0	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	207	208	179	179	171	186	201	212	214	209	204	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	1	1	0	1	2	2	2	2	2	2	2	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	1,243	1,250	1,298	1,231	1,483	1,420	1,487	1,509	1,420	1,564	1,533	1,510	0.60	0.40						
3.2-14	Query	FAC	Facilities	Business support	0	0	8	0	0	0	0	0	0	0	0	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	325	363	304	276	227	260	260	260	260	255	250	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	0	0	1	0	1	1	1	1	1	1	1	-	1.00							
3.2-14	Query	FAC	Facilities	Business support	1	0	1	0	0	2	2	2	2	2	2	-	1.00							
3.2-14	Query	I&G	Insurance and Governance	Business support	804	1,015	1,081	1,059	1,032	986	1,065	1,148	1,190	1,230	1,241	1,249	0.60	0.40						
3.2-14	Query	I&G	Insurance and Governance	Business support	423	417	463	504	492	505	505	505	505	505	494	484	-	1.00						
3.2-14	Query	I&G	Insurance and Governance	Business support	619	611	467	535	524	493	493	493	493	493	483	473	-	1.00						
3.2-14	Query	IST	Information and Communications Technology	Business support	2,891	3,411	3,414	3,224	3,297	3,709	4,467	5,274	5,890	5,788	5,663	5,530	-	1.00						
3.2-14	Query	RCI	Preventive Maintenance and Inspection	Routine and corrective maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	0.60	0.40						
3.2-14	Query	SIE	Reactive Maintenance	Service Interruptions and Emergencies	6,330	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	0.70	0.30						
3.2-14	Query	SON	System Operations and Network Support	System Operations and Network Support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	0.90	0.10						
3.2-14	Query	VEG	Vegetation Management	Vegetation Management	6,613	5,686	4,808	5,025	6,026	5,760	5,500	9,939	9,237	8,967	9,231	8,677	0.70	0.30						

End

Opex escalation

Inputs

Escalators

Sourced from the CPP Financial model. Module 3.1 Escalators.

Ref	Source	
3.2-11	3.1-1-03	CPI index, annual average
3.2-12	3.1-1-07	LCI - ALL index
3.2-12	3.1-1-07	PPI - ALL index

CPP portfolios

Ref	Source	Portfolio name	CPP opex category
3.2-13	Direct	Corrective maintenance	Asset replacement and renewal
3.2-13	Direct	Preventive maintenance and inspection	Routine and corrective maintenance and inspect
3.2-13	Direct	Reactive maintenance	Service interruptions and emergencies
3.2-13	Direct	System operations and network support	System operations and network support
3.2-13	Direct	Vegetation management	Vegetation management
3.2-13	Direct	Corporate	Business support
3.2-13	Direct	Facilities	Business support
3.2-13	Direct	Insurance and governance	Business support
3.2-13	Direct	ICT Opex	Business support

Calculations

Opex price escalation

Sourced from CPP controlled opex forecast models.

Ref	Source	Real 2016 \$900	Ref	Portfolio Name	CPP Opex Category	>>>Calculations											
						Current period					Assessment period			CPP period			
						2012 Nom	2013 Nom	2014 Nom	2015 Nom	2016 Nom	2017 Nom	2018 Nom	2019 Nom	2020 Nom	2021 Nom	2022 Nom	2023 Nom
3.2-14	Query	ARR	Corrective Maintenance	Asset Replacement and Renewal		9,443	7,753	11,387	10,314	9,031	12,207	12,264	13,133	14,731	15,058	14,315	14,107
3.2-14	Query	COR	Corporate	Business support		851	415	645	932	894	772	783	800	818	837	836	836
3.2-14	Query	COR	Corporate	Business support		1,056	1,577	963	1,098	1,201	1,468	1,489	1,766	1,806	1,847	1,846	1,845
3.2-14	Query	COR	Corporate	Business support		359	999	1,001	1,004	1,076	1,401	1,421	1,522	1,555	1,588	1,587	1,585
3.2-14	Query	COR	Corporate	Business support		930	1,007	906	960	1,071	1,055	1,071	1,288	1,316	1,344	1,353	1,352
3.2-14	Query	COR	Corporate	Business support		3,058	2,796	1,683	1,545	1,859	2,110	2,140	2,186	2,237	2,288	2,287	2,285
3.2-14	Query	COR	Corporate	Business support		-	-	-	1,598	2,547	4,200	819	-	-	-	-	-
3.2-14	Query	COR	Corporate	Business support		585	699	814	962	741	1,112	1,184	1,207	1,333	1,258	1,257	1,256
3.2-14	Query	COR	Corporate	Business support		3,330	3,650	3,909	3,762	3,835	4,137	4,333	4,617	4,983	5,085	5,176	4,992
3.2-14	Query	COR	Corporate	Business support		947	1,185	1,607	1,493	1,424	1,644	1,667	1,698	1,734	1,770	1,769	1,767
3.2-14	Query	COR	Corporate	Business support		3,639	3,591	3,880	3,820	4,117	4,240	4,353	4,684	4,782	4,880	4,875	4,871
3.2-14	Query	COR	Corporate	Business support		1,276	1,457	1,737	1,327	1,797	1,760	2,044	2,081	2,230	2,275	2,273	2,271
3.2-14	Query	COR	Corporate	Business support		1,029	810	871	1,228	1,455	1,689	2,826	2,736	2,734	2,280	2,307	2,313
3.2-14	Query	FAC	Facilities	Business support		0	1	0	-	0	0	0	0	0	0	0	0
3.2-14	Query	FAC	Facilities	Business support		200	203	177	179	171	173	190	210	227	235	234	233
3.2-14	Query	FAC	Facilities	Business support		1	1	0	1	2	2	2	2	2	2	2	2
3.2-14	Query	FAC	Facilities	Business support		1,201	1,218	1,282	1,227	1,483	1,433	1,522	1,575	1,514	1,703	1,702	1,710
3.2-14	Query	FAC	Facilities	Business support		0	0	8	0	0	0	0	0	0	0	0	0
3.2-14	Query	FAC	Facilities	Business support		314	354	300	275	227	262	266	272	278	285	285	285
3.2-14	Query	FAC	Facilities	Business support		0	0	1	0	1	1	1	1	1	1	1	1
3.2-14	Query	FAC	Facilities	Business support		1	0	1	0	0	2	2	2	2	2	2	2
3.2-14	Query	I&G	Insurance and Governance	Business support		777	990	1,068	1,056	1,032	995	1,090	1,198	1,269	1,339	1,377	1,415
3.2-14	Query	I&G	Insurance and Governance	Business support		409	406	457	502	492	509	517	528	540	553	553	552
3.2-14	Query	I&G	Insurance and Governance	Business support		598	596	461	533	524	498	505	516	528	540	540	540
3.2-14	Query	IST	Information and Communications Technology	Business support		2,794	3,325	3,372	3,213	3,397	3,743	4,573	5,518	6,308	6,344	6,332	6,307
3.2-14	Query	RI	Preventive Maintenance and Inspection	Routine and corrective maintenance and inspection		8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828
3.2-14	Query	SIE	Reactive Maintenance	Service Interruptions and Emergencies		6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243
3.2-14	Query	SON	System Operations and Network Support	System Operations and Network Support		6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846
3.2-14	Query	VEG	Vegetation Management	Vegetation Management		6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814

End

Opex aggregation

Inputs

Escalators

	Current period					Next period							
	2012	2013	2014	2015	Base year 2016	Assessment period		CPP period					
						2017	2018	2019	2020	2021	2022	2023	
Change in CPI, annual average	0.9665	0.9750	0.9877	0.9967	1.0000								
LCI - ALL index						1.0092	1.0237	1.0417	1.0628	1.0841	1.1050	1.1271	
PPI - ALL index						1.0092	1.0237	1.0462	1.0709	1.0961	1.1180	1.1404	

Calculations

Real opex forecasts

Ref	Portfolio name	Current period					Next period							CPP opex category
		2012	2013	2014	2015	Base year 2016	Assessment period		CPP period					
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
ARR	Corrective maintenance	9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457	Asset replacement and renewal
RCI	Preventive maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	Routine and corrective maintenanc
SIE	Reactive maintenance	6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	Service interruptions and emergenc
VEG	Vegetation management	6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677	Vegetation management
SON	System operations and network support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	System operations and network su
COR	Corporate	17,651	18,652	18,240	19,794	22,017	25,355	23,571	23,572	23,871	23,402	23,056	22,433	Business support
FAC	Facilities	1,778	1,824	1,791	1,688	1,885	1,856	1,938	1,975	1,897	2,042	2,001	1,968	Business support
I&G	Insurance and governance	1,846	2,043	2,012	2,097	2,048	1,984	2,062	2,146	2,188	2,227	2,218	2,207	Business support
IST	ICT Opex	2,891	3,411	3,414	3,224	3,397	3,709	4,467	5,274	5,890	5,788	5,663	5,530	Business support
		62,567	63,116	65,349	65,473	69,365	76,810	78,906	89,428	92,825	93,121	90,605	88,589	
	Error check: Real forecast totals equal real input forecasts total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

Nominal opex forecasts

Ref	Portfolio name	Current period					Next period							Opex Category
		2012	2013	2014	2015	Base year 2016	Assessment period		CPP period					
		2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
ARR	Corrective maintenance	9,443	7,753	11,387	10,314	9,031	12,207	12,264	13,133	14,731	15,058	14,315	14,107	Asset replacement and renewal
RCI	Preventive maintenance and inspection	8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828	Routine and corrective maintenanc
SIE	Reactive maintenance	6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243	Service interruptions and emergenc
VEG	Vegetation management	6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814	Vegetation management
SON	System operations and network support	6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846	System operations and network su
COR	Corporate	17,059	18,186	18,016	19,728	22,017	25,587	24,130	24,586	25,427	25,453	25,566	25,374	Business support
FAC	Facilities	1,719	1,778	1,769	1,682	1,885	1,873	1,984	2,062	2,024	2,227	2,225	2,232	Business support
I&G	Insurance and governance	1,784	1,992	1,987	2,090	2,048	2,002	2,111	2,242	2,337	2,432	2,470	2,507	Business support
IST	ICT Opex	2,794	3,325	3,372	3,213	3,397	3,743	4,573	5,518	6,308	6,344	6,332	6,307	Business support
		60,469	61,539	64,546	65,255	69,365	77,514	80,779	93,298	98,919	101,340	100,529	100,257	
	Error check: Nominal forecast totals equal nominal input forecasts total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

Outputs

Opex summary by portfolio

	Current period					Next period							CPP Total
	2012	2013	2014	2015	Base Year	Assessment period		CPP period					
					2016	2017	2018	2019	2020	2021	2022	2023	
Real \$000													
Network opex													
Corrective maintenance	9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457	65,584
Preventive maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	58,539
Reactive maintenance	6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	36,570
System operations and network support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	82,486
Vegetation management	6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677	46,041
Total network opex	38,401	37,187	39,893	38,670	40,019	43,907	46,869	56,462	58,979	59,661	57,667	56,451	289,220
Non-network opex													
Corporate	17,651	18,652	18,240	19,794	22,017	25,355	23,571	23,572	23,871	23,402	23,056	22,433	116,333
Facilities	1,778	1,824	1,791	1,688	1,885	1,856	1,938	1,975	1,897	2,042	2,001	1,968	9,883
Insurance and governance	1,846	2,043	2,012	2,097	2,048	1,984	2,062	2,146	2,188	2,227	2,218	2,207	10,986
ICT Opex	2,891	3,411	3,414	3,224	3,397	3,709	4,467	5,274	5,890	5,788	5,663	5,530	28,146
Total Non-network opex	24,166	25,930	25,456	26,803	29,346	32,903	32,037	32,966	33,845	33,460	32,939	32,139	165,349
Total opex	62,567	63,116	65,349	65,473	69,365	76,810	78,906	89,428	92,825	93,121	90,605	88,589	454,569
Error check: Real total equals real calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

	Current period					Next period							CPP Total
	2012	2013	2014	2015	Base Year	Assessment period		CPP period					
					2016	2017	2018	2019	2020	2021	2022	2023	
Nominal \$000													
Network opex													
Corrective maintenance	9,443	7,753	11,387	10,314	9,031	12,207	12,264	13,133	14,731	15,058	14,315	14,107	71,344
Preventive maintenance and inspection	8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828	63,691
Reactive maintenance	6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243	39,762
System operations and network support	6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846	89,570
Vegetation management	6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814	50,000
Total network opex	37,114	36,257	39,403	38,541	40,019	44,309	47,981	58,890	62,822	64,882	63,935	63,838	314,367
Non-network opex													
Corporate	17,059	18,186	18,016	19,728	22,017	25,587	24,130	24,586	25,427	25,453	25,566	25,374	126,408
Facilities	1,719	1,778	1,769	1,682	1,885	1,873	1,984	2,062	2,024	2,227	2,225	2,232	10,771
Insurance and governance	1,784	1,992	1,987	2,090	2,048	2,002	2,111	2,242	2,337	2,432	2,470	2,507	11,989
ICT Opex	2,794	3,325	3,372	3,213	3,397	3,743	4,573	5,518	6,308	6,344	6,332	6,307	30,809
Total Non-network opex	23,355	25,282	25,143	26,714	29,346	33,204	32,797	34,408	36,097	36,458	36,594	36,420	179,977
Total opex	60,469	61,539	64,546	65,255	69,365	77,514	80,779	93,298	98,919	101,340	100,529	100,257	494,344
Error check: Nominal total equals nominal calculations total	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

Outputs for price path model

Ref	Destination	Input Description	Current period					Base year	Next period					
			2012	2013	2014	2015	2016		Assessment period		CPP period			
			2017	2018	2019	2020	2021	2022	2023					
3.2-o1	1.0-i13	Forecast operating expenditure						77,514	80,779	93,298	98,919	101,340	100,529	100,257

End

Capex price escalation

Inputs

Ref	Source	2012	2013	2014	2015	Next period								
						Base year 2016	Assessment period 2017 2018 2019			CPP period 2020 2021 2022 2023				
CPI escalators														
3.3-11	3.1-03	CPI index, annual average	0.9665	0.9750	0.9877	0.9967	1.0000	1.0092	1.0237	1.0404	1.0616	1.0835	1.1056	1.1279
Capex input escalators														
3.3-12	3.1-06	Labour	1.0000	1.0092	1.0237	1.0430	1.0686	1.0961	1.1233	1.1543				
3.3-12	3.1-06	Materials Cables	1.0000	1.0092	1.0237	1.0986	1.1379	1.1738	1.2168	1.2654				
3.3-12	3.1-06	Conductor	1.0000	1.0092	1.0237	1.0950	1.1355	1.1709	1.2146	1.2670				
3.3-12	3.1-06	Transformers	1.0000	1.0092	1.0237	1.1460	1.2150	1.2404	1.2802	1.3086				
3.3-12	3.1-06	Switchgear	1.0000	1.0092	1.0237	1.1396	1.2044	1.2397	1.2752	1.2986				
3.3-12	3.1-06	Equipment other	1.0000	1.0092	1.0237	1.0426	1.0622	1.0823	1.1083	1.1340				

Sourced from model 3.1 Escalators. These inputs are used to translate real capex forecasts into nominal capex forecasts.

Weighted average cost of capital and cost of financing rate

Ref	Source		2016	2017	2018	2019	2020	2021	2022	2023
3.3-13	Direct	Weighted average cost of debt used to finance works under construction	6.57%	5.23%	6.11%	6.12%	5.69%	5.51%	5.61%	5.83%
3.3-14	Direct	Cost of capital (used in the calculation of PV _{VCCA} as per IM 5.3.2(4)(d))	-	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

Consumer contributions

Ref	Source	Capex category	2012	2013	2014	2015	\$'000							
							Base year 2016	Assessment period 2017 2018 2019			CPP period 2020 2021 2022 2023			
3.3-15	Direct	System growth - consumer contributions (real 2016)	-	-	-	-	-	-	-	-	-	-	-	-
3.3-15	Direct	Consumer connection - consumer contributions (real 2016)	11,666	12,776	11,576	16,584	18,589	22,485	23,085	21,029	20,319	19,931	17,282	18,436
3.3-15	Direct	Asset replacement and renewal - consumer contributions (real 2016)	-	-	-	-	-	-	-	-	-	-	-	-
3.3-15	Direct	Asset relocation - consumer contributions (real 2016)	2,096	2,049	845	1,291	1,350	1,627	1,488	1,488	1,488	1,468	1,468	1,449
3.3-15	Direct	Quality of supply - consumer contributions (real 2016)	-	-	-	-	-	-	-	-	-	-	-	-
3.3-15	Direct	Legislative and regulatory - consumer contributions (real 2016)	-	-	-	-	-	-	-	-	-	-	-	-
3.3-15	Direct	Other reliability, safety and environment - consumer contributions (real 2016)	-	-	-	-	-	-	-	-	-	-	-	-
		Total consumer contributions (real 2016)	13,762	14,825	12,421	17,875	19,939	24,112	24,571	22,515	21,806	21,417	18,750	19,885
		System growth - consumer contributions (nominal)	-	-	-	-	-	-	-	-	-	-	-	-
		Consumer connection - consumer contributions (nominal)	11,275	12,456	11,434	16,529	18,589	22,691	23,633	21,879	21,572	21,596	19,108	20,795
		Asset replacement and renewal - consumer contributions (nominal)	-	-	-	-	-	-	-	-	-	-	-	-
		Asset relocation - consumer contributions (nominal)	2,026	1,998	834	1,287	1,350	1,642	1,521	1,546	1,578	1,610	1,623	1,634
		Quality of supply - consumer contributions (nominal)	-	-	-	-	-	-	-	-	-	-	-	-
		Legislative and regulatory - consumer contributions (nominal)	-	-	-	-	-	-	-	-	-	-	-	-
		Other reliability, safety and environment - consumer contributions (nominal)	-	-	-	-	-	-	-	-	-	-	-	-
		Total consumer Contributions (nominal)	13,300	14,454	12,288	17,815	19,939	24,333	25,154	23,425	23,150	23,206	20,731	22,429

Sourced from forecasts of capital contributions for asset relocations and customer connections.

Portfolio definition for CPP templates

Ref	Source	Portfolio no no.	Portfolio name
3.3-16	Direct	1.0	Overhead structures
3.3-16	Direct	2.0	Overhead conductors
3.3-16	Direct	3.0	Cables
3.3-16	Direct	4.0	Zone substations
3.3-16	Direct	5.0	Distribution transformers
3.3-16	Direct	6.0	Distribution switchgear
3.3-16	Direct	7.0	Secondary systems
3.3-16	Direct	10.0	Papamoa
3.3-16	Direct	11.0	Palmerston North
3.3-16	Direct	12.0	Putaruru
3.3-16	Direct	13.0	Whangamata
3.3-16	Direct	14.0	Omokoroa
3.3-16	Direct	15.0	Kopu-Tairua
3.3-16	Direct	16.0	Kopu-Kauaranga
3.3-16	Direct	17.0	Moturoa - NPL GXP
3.3-16	Direct	18.0	Kerepehi-Paeoa
3.3-16	Direct	19.0	Wharuaikite
3.3-16	Direct	20.0	Maerangoi
3.3-16	Direct	21.0	Putaruru-Tirau
3.3-16	Direct	22.0	Kaimarama-Whitanga
3.3-16	Direct	23.0	Kereone-Waihou
3.3-16	Direct	24.0	Fellding-Sanson-Bulls
3.3-16	Direct	25.0	Minor growth & security works
3.3-16	Direct	26.0	Paea Pa
3.3-16	Direct	27.0	Inglwood
3.3-16	Direct	28.0	Pre CPP major projects
3.3-16	Direct	29.0	Post CPP major projects
3.3-16	Direct	51.0	Reliability
3.3-16	Direct	52.0	Network evolution
3.3-16	Direct	60.0	Consumer connection
3.3-16	Direct	61.0	Asset relocations
3.3-16	Direct	70.0	ICT capex
3.3-16	Direct	72.0	Facilities capex

Capital expenditure forecast assumptions by fleet

Ref	Source	Fleet ref	Fleet name	Portfolio name	Type	Commissioning assumptions			Comm. type	Portfolio ref	Comm. Type	Asset split	AMP Category
						Comm. type	Comm. date	Qualifying percentage					
3.3-17	Direct	1.1	Poles	Overhead structures	Capex	Simple	15-Dec-17	-	1	1.0	Simple	Consumer connection projects	11(a): Consum
3.3-17	Direct	1.2	Crossarms	Overhead structures	Capex	Simple	15-Dec-17	-	1	1.0	Specific data	Asset relocations - all other projects	11(a): System
3.3-17	Direct	2.1	Subtransmission conductors	Overhead conductors	Capex	Simple	27-Sep-18	-	1	2.0		Quality of Supply - all other projects	11(a): Asset re
3.3-17	Direct	2.2	Distribution conductors	Overhead conductors	Capex	Simple	27-Sep-18	-	1	2.0		Non-network assets - routine expenditure	11(a): Asset re
3.3-17	Direct	2.3	Low voltage conductors	Overhead conductors	Capex	Simple	27-Sep-18	-	1	2.0		Non-network assets - atypical expenditure	11(a): Quality
3.3-17	Direct	3.1	Subtransmission cables	Cables	Capex	Simple	27-Sep-18	-	1	3.0		Other network assets	11(a): Legali
3.3-17	Direct	3.2	Distribution cables	Cables	Capex	Simple	27-Sep-18	-	1	3.0			11(a): Other
3.3-17	Direct	3.3	Low voltage cables	Cables	Capex	Simple	27-Sep-18	-	1	3.0			Split Categories
3.3-17	Direct	4.1	Power transformers	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			11(a): Non-ne
3.3-17	Direct	4.2	Indoor switchgear	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			
3.3-17	Direct	4.3	Outdoor switchgear	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			
3.3-17	Direct	4.4	Buildings	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			
3.3-17	Direct	4.5	Load control injection	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			
3.3-17	Direct	4.6	Other zone substation assets	Zone substations	Capex	Simple	27-Sep-18	-	1	4.0			
3.3-17	Direct	5.1	Pole mounted distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-	1	5.0			
3.3-17	Direct	5.2	Ground mounted distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-	1	5.0			
3.3-17	Direct	5.3	Other distribution transformers	Distribution transformers	Capex	Simple	27-Sep-18	-	1	5.0			

3.3-7	Direct	6.1	Pole mounted fuses	Distribution switchgear	Capex	Simple	27-Sep-18	-	1	6.0
3.3-7	Direct	6.2	Pole mounted switches	Distribution switchgear	Capex	Simple	27-Sep-18	-	1	6.0
3.3-7	Direct	6.3	Circuit breakers, reclosers and sectionalisers	Distribution switchgear	Capex	Simple	27-Sep-18	-	1	6.0
3.3-7	Direct	6.4	Ground mounted switchgear	Distribution switchgear	Capex	Simple	27-Sep-18	-	1	6.0
3.3-7	Direct	7.1	SCADA and communications	Secondary systems	Capex	Simple	27-Sep-18	-	1	7.0
3.3-7	Direct	7.2	Protection	Secondary systems	Capex	Simple	27-Sep-18	-	1	7.0
3.3-7	Direct	7.3	DC supplies	Secondary systems	Capex	Simple	27-Sep-18	-	1	7.0
3.3-7	Direct	7.4	Metering	Secondary systems	Capex	Simple	27-Sep-18	-	1	7.0
3.3-7	Direct	10.0	Papamoa	Papamoa	Capex	Specific date	30-May-19	100%	2	10.0
3.3-7	Direct	11.1	Palmerston North phase 1	Palmerston North	Capex	Specific date	31-Mar-19	100%	2	11.0
3.3-7	Direct	11.2	Palmerston North phase 2	Palmerston North	Capex	Specific date	31-Mar-23	100%	2	11.0
3.3-7	Direct	12.0	Putaruru	Putaruru	Capex	Specific date	31-Mar-22	100%	2	12.0
3.3-7	Direct	13.1	Whangamata - phase 1	Whangamata	Capex	Specific date	30-Jun-19	100%	2	13.0
3.3-7	Direct	13.2	Whangamata - phase 2	Whangamata	Capex	Specific date	31-Mar-25	100%	2	13.0
3.3-7	Direct	14.0	Omokoroa	Omokoroa	Capex	Specific date	30-Apr-21	100%	2	14.0
3.3-7	Direct	15.1	Kopu-Tairua phase 1	Kopu-Tairua	Capex	Specific date	31-Mar-19	100%	2	15.0
3.3-7	Direct	15.2	Kopu-Tairua phase 2	Kopu-Tairua	Capex	Specific date	31-Mar-20	100%	2	15.0
3.3-7	Direct	15.3	Kopu-Tairua phase 3	Kopu-Tairua	Capex	Specific date	31-Mar-21	100%	2	15.0
3.3-7	Direct	16.1	Kopu-Kauaeranga phase 1	Kopu-Kauaeranga	Capex	Specific date	31-Mar-19	100%	2	16.0
3.3-7	Direct	16.2	Kopu-Kauaeranga phase 2	Kopu-Kauaeranga	Capex	Specific date	31-Mar-24	100%	2	16.0
3.3-7	Direct	17.0	Moturoa - NPL GXP	Moturoa - NPL GXP	Capex	Specific date	31-Mar-19	100%	2	17.0
3.3-7	Direct	18.0	Kerepehi-Paeroa	Kerepehi-Paeroa	Capex	Specific date	31-Mar-22	100%	2	18.0
3.3-7	Direct	19.0	Whenuakite	Whenuakite	Capex	Specific date	31-Mar-24	100%	2	19.0
3.3-7	Direct	20.0	Mearangi	Mearangi	Capex	Specific date	31-Mar-23	100%	2	20.0
3.3-7	Direct	21.0	Putaruru-Tirau	Putaruru-Tirau	Capex	Specific date	31-Mar-21	100%	2	21.0
3.3-7	Direct	22.0	Kaimarama-Whitanga	Kaimarama-Whitanga	Capex	Specific date	31-Mar-23	100%	2	22.0
3.3-7	Direct	23.0	Karene-Waiwai	Karene-Waiwai	Capex	Specific date	31-Mar-23	100%	2	23.0
3.3-7	Direct	24.0	Felding-Sanson-Bulls	Felding-Sanson-Bulls	Capex	Specific date	31-Mar-23	100%	2	24.0
3.3-7	Direct	25.1	Minor projects	Minor growth & security works	Capex	Simple	30-Sep-20	-	1	25.0
3.3-7	Direct	25.2	Routine projects	Minor growth & security works	Capex	Simple	30-Sep-20	-	1	25.0
3.3-7	Direct	25.3	Comms	Minor growth & security works	Capex	Simple	30-Sep-20	-	1	25.0
3.3-7	Direct	26.0	Pves Pa	Pves Pa	Capex	Specific date	31-Mar-19	100%	2	26.0
3.3-7	Direct	27.0	Inshwood	Placeholder	Capex	Simple	27-Sep-18	-	1	27.0
3.3-7	Direct	28.0	Pre CPP major projects	Pre CPP major projects	Capex	Specific date	31-Mar-18	100%	2	28.0
3.3-7	Direct	29.0	Post CPP major projects	Post CPP major projects	Capex	Simple	31-Dec-26	100%	1	29.0
3.3-7	Direct	51.0	Reliability	Reliability	Capex	Simple	27-Sep-18	-	1	51.0
3.3-7	Direct	52.0	Network evolution	Network evolution	Capex	Simple	27-Sep-18	-	1	52.0
3.3-7	Direct	60.0	Consumer connection	Consumer connection	Capex	Simple	27-Sep-18	-	1	60.0
3.3-7	Direct	61.0	Asset relocations	Asset relocations	Capex	Simple	0-Jan-00	-	1	61.0
3.3-7	Direct	70.1	ICT capex	ICT capex	Capex	Simple	27-Sep-18	-	1	70.0
3.3-7	Direct	70.2	ICT capex - New foundations phase 1	ICT capex	Capex	Specific date	31-Mar-19	100%	2	70.0
3.3-7	Direct	70.3	ICT capex - New foundations phase 2	ICT capex	Capex	Specific date	31-Mar-20	100%	2	70.0
3.3-7	Direct	70.4	ICT capex - New foundations phase 3	ICT capex	Capex	Specific date	31-Mar-21	100%	2	70.0
3.3-7	Direct	72.1	Facilities capex	Facilities capex	Capex	Simple	27-Sep-18	-	1	72.0
3.3-7	Direct	72.2	NOC	Facilities capex	Capex	Specific date	31-Aug-18	100%	2	72.0

Mapping of assets to asset expenditure categories

Ref	Source	Asset	Asset category
3.3-8	Direct	Poles - subtransmission	Subtransmission lines
3.3-8	Direct	Crossarms - subtransmission	Subtransmission lines
3.3-8	Direct	Poles - distribution	Distribution and LV lines
3.3-8	Direct	Crossarms - distribution	Distribution and LV lines
3.3-8	Direct	Poles - LV	Distribution and LV lines
3.3-8	Direct	Crossarms - LV	Distribution and LV lines
3.3-8	Direct	110kV Subtransmission foundation	Subtransmission lines
3.3-8	Direct	110kV Subtransmission insulators	Subtransmission lines
3.3-8	Direct	110kV Subtransmission tower paint	Subtransmission lines
3.3-8	Direct	110kV Subtransmission tower	Subtransmission lines
3.3-8	Direct	Power transformers	Zone substations
3.3-8	Direct	Indoor switchgear	Zone substations
3.3-8	Direct	Buildings & site development	Zone substations
3.3-8	Direct	Outdoor switchgear	Zone substations
3.3-8	Direct	Load control injection	Other network assets
3.3-8	Direct	Zone substations - other	Zone substations
3.3-8	Direct	Zone substations land	Zone substations
3.3-8	Direct	Zone substations easements other than fixed life easements	Zone substations
3.3-8	Direct	Zone substations fixed life easements	Zone substations
3.3-8	Direct	Pole mounted fuses	Distribution switchgear
3.3-8	Direct	Pole mounted switches	Distribution switchgear
3.3-8	Direct	Circuit breakers/reclosers/sectionalizers	Distribution switchgear
3.3-8	Direct	Ground mounted switchgear	Distribution switchgear
3.3-8	Direct	Pole mounted distribution transformers	Distribution substations and transformers
3.3-8	Direct	Ground mounted distribution transformers	Distribution substations and transformers
3.3-8	Direct	Conversion Transformers and SWER Transformers	Distribution substations and transformers
3.3-8	Direct	Capacitors/Voltage regulators	Distribution switchgear
3.3-8	Direct	Protection (digital)	Zone substations
3.3-8	Direct	Metering systems (GXP and HV)	Other network assets
3.3-8	Direct	Ripple relays	Other network assets
3.3-8	Direct	SCADA, communications and monitoring	Other network assets
3.3-8	Direct	DC supplies	Zone substations
3.3-8	Direct	Subtransmission cables	Subtransmission cables
3.3-8	Direct	Cables Easement	Subtransmission cables
3.3-8	Direct	Distribution cables	Distribution and LV cables
3.3-8	Direct	Low voltage cables	Distribution and LV cables
3.3-8	Direct	Low voltage service connections	Distribution and LV cables
3.3-8	Direct	Pillar Box	Distribution and LV cables
3.3-8	Direct	Subtransmission overhead conductor	Subtransmission lines
3.3-8	Direct	OH line easement	Subtransmission lines
3.3-8	Direct	Distribution overhead conductor	Distribution and LV lines
3.3-8	Direct	Low voltage overhead conductor	Distribution and LV lines
3.3-8	Direct	LV service connections	Distribution and LV lines
3.3-8	Direct	Buildings	Non-network assets
3.3-8	Direct	Computer hardware	Non-network assets
3.3-8	Direct	Software	Non-network assets
3.3-8	Direct	Equipment	Non-network assets
3.3-8	Direct	Furniture and fittings	Non-network assets
3.3-8	Direct	Land	Non-network assets
3.3-8	Direct	Motor vehicles	Non-network assets
3.3-8	Direct	Plant and machinery	Non-network assets

Capex price escalation

Note that this querytable includes both direct inputs (columns C:A) and also calculations (columns A:J:AP). This is a departure from standard modelling conventions that separate calculations in dedicated worksheets. In the context of the large number of inputs and calculations required for this model it is considered efficient.

Data inputs >>

(sourced from portfolio forecast templates)

Real 2016 \$000		Assessment period											CPP period								
Base year		CY	CY+1	CY+2	CY+3	CY+4	CY+5	CY+6	CY+7												
Ref	Source	2012 Real	2013 Real	2014 Real	2015 Real	2016 Real	2017 Real	2018 Real	2019 Real	2020 Real	2021 Real	2022 Real	2023 Real	2024 Real	2025 Real	2026 Real	2027 Real	2028 Real	2029 Real	2030 Real	
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - Distribution	45	2,230	1,901	3,508	2,413	2,685	3,979	4,091	4,996	6,122	6,395	6,696	6,841			
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - LV	60	1,260	1,614	2,687	2,209	4,198	1,616	1,878	2,293	2,629	2,515	2,295				
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - LV	45	533	683	1,095	960	1,772	684	679	785	953	1,113	1,064	971			
3.3-9	Query	1.1	Overhead Structures	Poles	Poles - Subtransmission	60	359	790	1,518	1,055	947	759	589	695	814	846	797	740			
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - Subtransmission	45	238	524	1,007	700	629	594	461	560	562	529	491				
3.3-9	Query	1.1	Overhead Structures	Poles	Poles - Distribution	60	4,594	3,915	7,225	4,970	5,529	8,196	8,426	10,291	12,610	13,173	13,792	13,679			
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - LV	45	1,286	1,331	1,791	1,974	2,171	2,367	2,350	3,255	3,437	4,513	4,584	4,740			
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - Distribution	45	2,087	2,517	2,812	2,894	2,800	3,239	3,282	4,522	4,886	5,697	5,989	6,555			
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - Subtransmission	45	1,197	1,185	915	1,637	2,150	1,932	1,934	2,774	3,962	2,774	1,933	744			
3.3-9	Query	2.1	Conductors	Subtransmission Conductors	Subtransmission Overhead Conductor	60	18	12	10	70	74	1,042	810	606	576	627	733	648			
3.3-9	Query	2.2	Conductors	Distribution Conductors	Distribution Overhead Conductor	60	1,144	1,940	3,715	1,979	2,728	2,660	3,094	4,303	5,563	8,010	10,150	11,056			
3.3-9	Query	2.3	Conductors	Low Voltage Conductors	LV Service Connections	45	-	-	-	-	-	-	-	1,100	1,105	1,104	1,061	1,019			
3.3-9	Query	2.3	Conductors	Low Voltage Conductors	Low Voltage overhead conductor	60	132	222	290	555	428	389	424	800	1,187	1,569	1,877	2,155			
3.3-9	Query	3.1	Cables	Subtransmission Cables	Subtransmission Cables	55	696	1,451	182	1,451	472	5,422	491	-	595	-	-	-			
3.3-9	Query	3.2	Cables	Distribution Cables	Distribution Cables	55	2,574	4,926	2,166	3,568	2,389	2,960	2,994	3,277	3,275	3,179	2,767	2,184			
3.3-9	Query	3.3	Cables	Low Voltage Cables	Pillar Box	45	1,367	1,179	870	1,581	1,762	2,123	2,222	2,309	2,435	2,452	2,338	2,244			
3.3-9	Query	3.3	Cables	Low Voltage Cables	Low Voltage Cables	55	268	718	900	1,062	748	931	992	1,053	1,137	1,221	1,262	1,302			
3.3-9	Query	4.1	Zone Substations	Power Transformers	Outdoor Switchgear	40	-	-	-	-	-	-	-	-	-	-	-	232			
3.3-9	Query	4.1	Zone Substations	Power Transformers	Power Transformers	45	-	-	-	-	-	-	538	541	452	623	797				
3.3-9	Query	4.1	Zone Substations	Power Transformers	Power Transformers	45	28	423	1,095	1,429	2,260	1,106	1,358	3,019	4,778	4,296	3,702	3,917			
3.3-9	Query	4.1	Zone Substations	Power Transformers	Buildings & Site development	70	-	-	-	99	-	97	216	216	307	51					
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations easements other than fixed life easer	40	-	-	-	-	-	-	161	-	-	-	-	-			
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations land	40	-	-	-	-	-	-	61	202	-	-	-	-			
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Buildings & Site development	70	-	-	-	-	11	-	-	-	11	11	10	20			
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Indoor Switchgear	45	-	-	-	-	480	467	304	572	588	507	623				
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Buildings & Site development	70	-	-	-	-	-	812	1,800	1,466	1,259	789	759				
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Indoor Switchgear	45	2,682	906	169	1,254	3,080	2,94	4,711	6,105	4,190	4,552	4,244	3,878			
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations - Other	40	-	-	-	-	-	-	985	-	-	-	-	-			
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Outdoor Switchgear	40	-	-	-	-	-	-	1,076	-	-	-	-	-			
3.3-9	Query	4.3	Zone Substations	Other Zone Substation Assets	Outdoor Switchgear	40	-	-	-	-	-	-	28	28	28	27	26				
3.3-9	Query	4.3	Zone Substations	Outdoor Switchgear	Outdoor Switchgear	40	-	-	269	1,062	816	1,632	1,369	103	2,212	1,883	1,207	1,183			
3.3-9	Query	4.4	Zone Substations	Buildings	Buildings & Site development	70	-	-	-	-	-	144	66	320	232	430	514				
3.3-9	Query	4.4	Zone Substations	Buildings	Buildings & Site development	70	422	155	-	-	203	-	-	-	-	-	-	-			
3.3-9	Query	4.5	Zone Substations	Load Control Injection	Load Control Injection	20	11	919	3,976	679	-	-	1,636	-	-	1,620	1,558	747			
3.3-9	Query	4.6	Zone Substations	Other Zone Substation Assets	Zone substations - Other	40	-	-	-	-	-	-	-	4	4	-	-	-			
3.3-9	Query	4.6	Zone Substations	Other Zone Substation Assets	Zone substations - Other	40	91	812	166	586	-	-	-	635	638	637	613	588			
3.3-9	Query	5.1	Distribution Transformers	Pole Mounted Distribution Transformers	Pole Mounted Distribution Transformers	45	-	-	-	-	707	701	692	695	694	668	641				
3.3-9	Query	5.1	Distribution Transformers	Pole Mounted Distribution Transformers	Pole Mounted Distribution Transformers	45	3,936	3,593	4,571	5,270	5,626	3,59	3,516	3,601	3,637	3,557	3,453				
3.3-9	Query	5.2	Distribution Transformers	Ground Mounted Distribution Transformers	Ground Mounted Distribution Transformers	45	-	-	-	-	-	-	-	378	379	379	364	350			
3.3-9	Query	5.2	Distribution Transformers	Ground Mounted Distribution Transformers	Ground Mounted Distribution Transformers	45	3,016	2,096	2,671	2,410	3,726	2,008	2,053	3,471	3,490	3,547	3,469	3,385			
3.3-9	Query	5.3	Distribution Transformers	Other Distribution Transformers	Capacitors/Voltage regulators	55	151	-	14	369	391	165	164	161	162	-	-	184			
3.3-9	Query	5.3	Distribution Transformers	Other Distribution Transformers	Conversion Transformers and SWER Transformers	60	-	-	-	-	-	-	-	-	27	11	-	-			
3.3-9	Query	6.1	Distribution Switchgear	Pole mounted fuses	Pole mounted fuses	35	2,385	2,155	2,612	3,200	4,317	2,658	2,526	2,530	2,603	2,614	2,577	2,540			
3.3-9	Query	6.2	Distribution Switchgear	Pole mounted switches	Pole mounted switches	35	-	-	-	-	-	-	-	122	123	123	118	113			
3.3-9	Query	6.2	Distribution Switchgear	Pole mounted switches	Pole mounted switches	35	2,962	2,335	2,384	1,618	2,433	1,843	1,820	2,007	1,983	1,386	1,283	955			
3.3-9	Query	6.3	Distribution Switchgear	Circuit Breakers, Reclosers and Sectionalising	Circuit breakers/reclosers/sectionalisers	40	364	501	712	471	713	916	1,690	1,712	1,731	1,599	1,538	710			
3.3-9	Query	6.4	Distribution Switchgear	Ground mounted switchgear	Ground mounted switchgear	40	-	-	-	-	-	-	441	443	443	426	409				
3.3-9	Query	6.4	Distribution Switchgear	Ground mounted switchgear	Ground mounted switchgear	40	1,249	2,007	1,796	2,504	2,384	2,178	2,159	2,405	2,614	2,872	3,038	2,621			
3.3-9	Query	7.1	Secondary systems	SCADA, Communications and monitoring	SCADA, Communications and monitoring	20	1,811	432	317	1,136	151	727	589	612	658	653	472	562			
3.3-9	Query	7.2	Secondary systems	Protection	Protection (digital)	20	-	-	-	-	-	-	-	1,551	1,558	1,556	-	-			
3.3-9	Query	7.2	Secondary systems	Protection	Protection (digital)	20	4	325	1,266	575	1,386	1,905	2,090	2,152	2,047	1,663	1,690	1,349			
3.3-9	Query	7.3	Secondary systems	DC Supplies	DC Supplies	20	-	23	-	55	-	89	98	174	136	175	190	261			
3.3-9	Query	7.4	Secondary systems	Metering	Metering	20	-	-	-	-	-	80	77	140	148	2,090	63	19			
3.3-9	Query	7.4	Secondary systems	Metering	Metering systems (GXP and HV)	30	-	-	65	-	-	184	125	68	68	68	67	65			
3.3-9	Query	10.0	Papamoa	Papamoa	Zone substations land	0	-	-	-	-	64	-	-	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Zone substations - Other	40	-	-	-	-	-	-	161	15	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Buildings & Site development	70	-	-	-	-	1,377	371	34	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	SCADA, Communications and monitoring	15	-	-	-	-	42	12	1	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	DC Supplies	20	-	-	-	-	42	12	1	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Protection (digital)	20	-	-	-	-	154	62	6	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Poles - Subtransmission	60	-	-	-	-	30	49	1	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Subtransmission Cables	55	931	82	237	285	-	2,884	4,671	94	-	-	-	-	2,862		
3.3-9	Query	10.0	Papamoa	Papamoa	Cables Easement	0	-	-	-	-	124	97	18	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Indoor Switchgear	45	-	-	-	-	1,711	309	29	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Power Transformers	45	-	-	-	-	584	309	29	-	-	-	-	-			
3.3-9	Query	10.0	Papamoa	Papamoa	Crossarms - Subtransmission	45	-	-	-	-	30	49	1	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Protection (digital)	20	-	-	-	-	36	118	24	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Subtransmission Cables	55	-	-	168	1,790	456	1,499	1,180	-	-	-	-	-	2,613		
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	DC Supplies	20	-	-	-	-	7	98	24	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Cables Easement	0	-	-	-	-	1,045	65	-	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Zone substations land	0	-	-	-	-	49	736	178	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Distribution Cables	55	-	-	-	-	110	981	215	-	-	-	-	-			
3.3-9	Query	11.1	Palmerston North	Palmerston North phase 1	Zone substations - Other	40	-	-	-	-	46	687	166	-	-	-	-	-			
3.3-9	Query	1																			

3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Pole mounted fuses	35	603	631	872	957	959	997	971	933	947	955	931	906	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Indoor Switchgear	45	29	30	42	46	46	47	46	44	45	44	44	44	45
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Outdoor Switchgear	40	117	123	169	186	186	194	189	181	184	185	181	176	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Power Transformers	45	24	25	35	39	39	40	39	38	38	38	38	37	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Poles - LV	60	53	55	94	94	94	97	95	93	93	93	93	89	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Crossarms - LV	45	217	227	314	344	345	359	350	336	341	344	335	326	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Protection (digital)	20	142	149	205	225	226	235	229	220	223	225	219	213	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Capacitors/Voltage regulators	55	610	638	882	968	970	1,008	982	944	957	966	941	916	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	SCADA, Communications and monitoring	15	8	8	11	12	12	13	13	12	12	12	12	12	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Distribution Cables	55	2,310	2,418	3,339	3,665	3,674	3,818	3,719	3,574	3,626	3,657	3,564	3,470	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Poles - Subtransmission	60	213	223	307	337	338	351	342	329	334	337	328	319	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Ground mounted switchgear	40	896	897	1,238	1,399	1,362	1,416	1,379	1,325	1,344	1,356	1,322	1,287	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Circuit breakers/reclosers/sectionalisers	40	251	263	363	399	400	415	405	389	395	398	388	378	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Pole Mounted Distribution Transformers	45	238	249	343	377	378	393	382	368	373	376	367	357	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Ground Mounted Distribution Transformers	45	224	234	323	355	356	370	360	346	351	354	345	336	
3.3-9	Query	25.3 Minor Growth & Security Works	Comms	SCADA, Communications and monitoring	15	516	503	790	2,451	2,764	4,960	7,983	5,670	5,200	1,798	1,781	1,699	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Power Transformers	45	8	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	SCADA, Communications and monitoring	15	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Subtransmission Cables	55	-	-	-	-	-	-	252	373	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Distribution Cables	55	-	-	-	-	-	-	378	560	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Protection (digital)	20	-	-	-	-	-	-	19	362	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Indoor Switchgear	45	-	-	-	-	-	-	25	475	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Buildings & Site development	70	-	-	-	-	-	-	54	663	-	-	-	-	
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Zone substations land	0	-	-	-	-	-	-	330	-	-	-	-	-	
3.3-9	Query	27.0 Inglewood	Inglewood	Conversion Transformers and SWER Transformers	60	-	-	-	-	-	-	-	-	229	289	75	-	
3.3-9	Query	27.0 Inglewood	Inglewood	Pole Mounted Distribution Transformers	45	-	-	-	-	-	-	-	-	2,059	2,600	676	-	
3.3-9	Query	28.0 Pre CPP Major Projects	Pre CPP Major Projects	Zone substations - Other	40	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Subtransmission Cables	55	9,460	3,349	1,928	6,758	462	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Zone substations - Other	40	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Subtransmission Overhead Conductor	60	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Cables Easement	0	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Zone substations land	0	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	SCADA, Communications and monitoring	15	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	DC Supplies	20	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Protection (digital)	20	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Metering systems (GXP and HV)	30	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Crossarms - Subtransmission	45	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Power Transformers	45	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Outdoor Switchgear	60	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Poles - Subtransmission	60	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Indoor Switchgear	45	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	Buildings & Site development	70	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	28.0 Post CPP Major Projects	Post CPP Major Projects	OH Line Easement	0	-	-	-	-	-	-	-	-	-	-	-	-	
3.3-9	Query	51.0 Reliability	Reliability	Circuit breakers/reclosers/sectionalisers	40	2,056	1,979	2,284	3,683	5,034	2,860	-	2,662	3,184	4,591	4,720	4,529	4,322
3.3-9	Query	52.0 Network Evolution	Network Evolution	SCADA, Communications and monitoring	15	227	150	801	334	80	-	-	2,672	2,852	2,867	3,568	4,428	4,412
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pole Mounted Distribution Transformers	45	750	816	742	1,411	2,023	2,083	1,826	1,602	1,568	1,533	1,335	1,431	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Ground mounted switchgear	40	363	395	359	683	979	1,008	883	775	759	742	646	692	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Protection (digital)	20	31	34	30	58	83	86	75	66	64	63	55	59	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Ground Mounted Distribution Transformers	45	1,153	1,255	1,140	2,169	3,110	3,203	2,806	2,462	2,410	2,356	2,023	2,199	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Outdoor Switchgear	40	61	66	60	115	164	169	148	130	127	125	109	116	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Indoor Switchgear	45	38	42	38	72	104	107	94	82	80	79	68	73	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pole mounted switches	35	107	117	106	202	289	298	261	229	224	219	191	205	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pole mounted fuses	35	288	311	283	538	772	794	696	611	598	566	509	548	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Metering systems (GXP and HV)	30	3	4	3	7	10	8	7	7	7	6	7	6	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Subtransmission Overhead Conductor	60	0	0	0	0	0	0	0	0	0	0	0	0	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pillar Box	45	246	268	243	463	664	664	599	526	515	503	438	470	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Low Voltage overhead conductor	60	49	54	49	93	133	137	120	105	103	101	88	94	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Distribution Overhead Conductor	60	53	57	52	99	142	147	129	113	110	108	94	101	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Subtransmission Cables	55	30	33	30	57	82	84	74	65	63	62	54	58	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	SCADA, Communications and monitoring	15	0	0	0	0	0	0	0	0	0	0	0	0	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Low Voltage Cables	55	1,166	1,269	1,153	2,193	3,144	3,236	2,837	2,489	2,437	2,382	2,075	2,223	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Distribution Cables	55	546	594	540	1,027	1,472	1,515	1,328	1,165	1,141	1,115	971	1,041	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - LV	45	54	59	54	102	146	150	132	116	113	111	96	103	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - Subtransmission	45	1	1	1	2	2	2	2	2	1	1	1	1	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - Subtransmission	60	2	3	2	4	6	7	6	5	5	5	4	5	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - Distribution	60	103	112	102	194	278	286	251	220	215	211	183	196	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - LV	60	40	44	40	76	109	112	98	86	84	82	72	77	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - Distribution	45	62	67	61	116	167	171	150	132	129	126	110	118	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Pole mounted fuses	35	18	46	30	56	54	56	44	42	43	42	42	42	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Crossarms - LV	45	8	21	14	26	25	26	20	19	20	19	19	19	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Ground mounted switchgear	40	6	16	11	20	19	20	16	15	15	15	15	15	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Pole mounted switches	35	18	45	30	56	54	56	43	42	42	42	42	41	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Poles - LV	60	2	6	4	7	7	7	5	5	5	5	5	5	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Crossarms - Subtransmission	45	3	8	6	10	10	10	8	8	8	8	8	8	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Poles - Subtransmission	60	12	29	19	36	35	36	28	27	27	27	27	27	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Crossarms - Distribution	45	20	52	34	63	61	63	49	47	48	48	47	47	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Poles - Distribution	60	45	115	75	141	135	140	109	105	106	106	105	104	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Subtransmission Overhead Conductor	60	16	16	11	20	19	20	16	15	15	15	15	15	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Pillar Box	45	12	29	19	36	35	36	28	27	27	27	27	27	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Low Voltage overhead conductor	60	0	1	0	1	1	1	1	1	1	1	1	1	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Distribution Overhead Conductor	60	10	26	17	32	31	32	25	24	24	24	24	24	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Low Voltage Cables	55	57	145	94	177	171	177	138	133	134	134	133	132	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Ground Mounted Distribution Transformers	45	8	20	13	25	24	25	19	18	19	19	18	18	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Pole Mounted Distribution Transformers	45	9	22	15	28	27	27	21	21	21	21	21	20	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Distribution Cables	55	90	227	148	278	268	277	216	208	211	210	209	207	
3.3-9	Query	61.0 Asset Relocations	Asset Relocations	Subtransmission Cables	55	9	22	14	26	25	26	21	20	20	20	20	20	
3.3-9	Query	70.1 ICT Capex	ICT Capex	Software	3	-	-	-	-	-	-	5,511	1,926	1,437	8,965	4,941	5,085	
3.3-9	Query	70.1 ICT Capex	ICT Capex	Computer Hardware	3	4,789	4,928	5,663	3,992	5,071	4,684	1,022	2,718	980	1,694	1,919	1	

Capex price escalation

Inputs

Ref	Source
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CPI escalators

3.3-11	3.1-03	CPI index, annual average
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Capex input escalators

3.3-12	3.1-06	Labour
3.3-12	3.1-06	Materials Cables
3.3-12	3.1-06	Conductor
3.3-12	3.1-06	Transformers
3.3-12	3.1-06	Switchgear
3.3-12	3.1-06	Equipment other

Sourced from model 3.1 Escalators. These inputs are used to translate real capex forecasts into nominal capex forecasts.

Weighted average cost of capital and cost of financing rate

Ref	Source	
3.3-13	Direct	Weighted average cost of debt used to finance works under construction
3.3-14	Direct	Cost of capital (used in the calculation of PV _{VCCA} as per IM 5.3.2(4)(d))

Consumer contributions

Ref	Source	Capex category
3.3-15	Direct	System growth - consumer contributions (real 2016)
3.3-15	Direct	Consumer connection - consumer contributions (real 2016)
3.3-15	Direct	Asset replacement and renewal - consumer contributions (real 2016)
3.3-15	Direct	Asset relocation - consumer contributions (real 2016)
3.3-15	Direct	Quality of supply - consumer contributions (real 2016)
3.3-15	Direct	Legislative and regulatory - consumer contributions (real 2016)
3.3-15	Direct	Other reliability, safety and environment - consumer contributions (real 2016)
		Total consumer contributions (real 2016)
		System growth - consumer contributions (nominal)
		Consumer connection - consumer contributions (nominal)
		Asset replacement and renewal - consumer contributions (nominal)
		Asset relocation - consumer contributions (nominal)
		Quality of supply - consumer contributions (nominal)
		Legislative and regulatory - consumer contributions (nominal)
		Other reliability, safety and environment - consumer contributions (nominal)
		Total consumer Contributions (nominal)

Sourced from forecasts of capital contributions for asset relocations and customer connections.

Portfolio definition for CPP templates

Ref	Source	Portfolio
		o no. Portfolio name
3.3-16	Direct	1.0 Overhead structures
3.3-16	Direct	2.0 Overhead conductors
3.3-16	Direct	3.0 Cables
3.3-16	Direct	4.0 Zone substations
3.3-16	Direct	5.0 Distribution transformers
3.3-16	Direct	6.0 Distribution switchgear
3.3-16	Direct	7.0 Secondary systems
3.3-16	Direct	10.0 Papamoa
3.3-16	Direct	11.0 Palmerston North
3.3-16	Direct	12.0 Putaruru
3.3-16	Direct	13.0 Whangamata
3.3-16	Direct	14.0 Omokoroa
3.3-16	Direct	15.0 Kōpū-Tairua
3.3-16	Direct	16.0 Kōpū-Kauaranga
3.3-16	Direct	17.0 Moturoa - NPL GXP
3.3-16	Direct	18.0 Kerepehi-Paeora
3.3-16	Direct	19.0 Wharuaika
3.3-16	Direct	20.0 Matarangi
3.3-16	Direct	21.0 Putaruru-Tirau
3.3-16	Direct	22.0 Kaimarama-Whitanga
3.3-16	Direct	23.0 Kerese-Waiho
3.3-16	Direct	24.0 Feilding-Sanson-Bulls
3.3-16	Direct	25.0 Minor growth & security works
3.3-16	Direct	26.0 Patea Pa
3.3-16	Direct	27.0 Inglewood
3.3-16	Direct	28.0 Pre CPP major projects
3.3-16	Direct	29.0 Post CPP major projects
3.3-16	Direct	51.0 Reliability
3.3-16	Direct	52.0 Network evolution
3.3-16	Direct	60.0 Consumer connection
3.3-16	Direct	61.0 Asset relocations
3.3-16	Direct	70.0 ICT capex
3.3-16	Direct	72.0 Facilities capex

Capital expenditure forecast assumptions by fleet

Ref	Source	ref	Fleet name	Portfolio name
3.3-17	Direct	1.1	Poles	Overhead structures
3.3-17	Direct	1.2	Crossarms	Overhead structures
3.3-17	Direct	2.1	Subtransmission conductors	Overhead conductors
3.3-17	Direct	2.2	Distribution conductors	Overhead conductors
3.3-17	Direct	2.3	Low voltage conductors	Overhead conductors
3.3-17	Direct	3.1	Subtransmission cables	Cables
3.3-17	Direct	3.2	Distribution cables	Cables
3.3-17	Direct	3.3	Low voltage cables	Cables
3.3-17	Direct	4.1	Power transformers	Zone substations
3.3-17	Direct	4.2	Indoor switchgear	Zone substations
3.3-17	Direct	4.3	Outdoor switchgear	Zone substations
3.3-17	Direct	4.4	Buildings	Zone substations
3.3-17	Direct	4.5	Load control injection	Zone substations
3.3-17	Direct	4.6	Other zone substation assets	Zone substations
3.3-17	Direct	5.1	Pole mounted distribution transformers	Distribution transformers
3.3-17	Direct	5.2	Ground mounted distribution transformers	Distribution transformers
3.3-17	Direct	5.3	Other distribution transformers	Distribution transformers

Consumer connection
growth
replacement and renewal
relocations
of Supply
Legislative and Regulatory
Reliability, safety and environment
Zone substations
Work Assets - Routine
Work Assets - Atypical

3.3-17	Direct	6.1	Pole mounted fuses	Distribution switchgear
3.3-17	Direct	6.2	Pole mounted switches	Distribution switchgear
3.3-17	Direct	6.3	Circuit breakers, reclosers and sectionalisers	Distribution switchgear
3.3-17	Direct	6.4	Ground mounted switchgear	Distribution switchgear
3.3-17	Direct	7.1	SCADA and communications	Secondary systems
3.3-17	Direct	7.2	Protection	Secondary systems
3.3-17	Direct	7.3	DC supplies	Secondary systems
3.3-17	Direct	7.4	Metering	Secondary systems
3.3-17	Direct	10.0	Papamoa	Papamoa
3.3-17	Direct	11.1	Palmerston North phase 1	Palmerston North
3.3-17	Direct	11.2	Palmerston North phase 2	Palmerston North
3.3-17	Direct	12.0	Putaruru	Putaruru
3.3-17	Direct	13.1	Whangamata - phase 1	Whangamata
3.3-17	Direct	13.2	Whangamata - phase 2	Whangamata
3.3-17	Direct	14.0	Omokoroa	Omokoroa
3.3-17	Direct	15.1	Kopu-Tairua phase 1	Kopu-Tairua
3.3-17	Direct	15.2	Kopu-Tairua phase 2	Kopu-Tairua
3.3-17	Direct	15.3	Kopu-Tairua phase 3	Kopu-Tairua
3.3-17	Direct	16.1	Kopu-Kauaeranga phase 1	Kopu-Kauaeranga
3.3-17	Direct	16.2	Kopu-Kauaeranga phase 2	Kopu-Kauaeranga
3.3-17	Direct	17.0	Moturoa - NPL GXP	Moturoa - NPL GXP
3.3-17	Direct	18.0	Karepehi-Paeroa	Karepehi-Paeroa
3.3-17	Direct	19.0	Whenuakite	Whenuakite
3.3-17	Direct	20.0	Mearangi	Wairangi
3.3-17	Direct	21.0	Putaruru-Tirau	Putaruru-Tirau
3.3-17	Direct	22.0	Kaimarama-Whitanga	Kaimarama-Whitanga
3.3-17	Direct	23.0	Karene-Waiaton	Karene-Waiaton
3.3-17	Direct	24.0	Felding-Sanson-Bulls	Felding-Sanson-Bulls
3.3-17	Direct	25.1	Minor projects	Minor growth & security works
3.3-17	Direct	25.2	Routine projects	Minor growth & security works
3.3-17	Direct	25.3	Comms	Minor growth & security works
3.3-17	Direct	26.0	Pyes Pa	Pyes Pa
3.3-17	Direct	27.0	Inghelwood	Placeholder
3.3-17	Direct	28.0	Pre CPP major projects	Pre CPP major projects
3.3-17	Direct	29.0	Post CPP major projects	Post CPP major projects
3.3-17	Direct	51.0	Reliability	Reliability
3.3-17	Direct	52.0	Network evolution	Network evolution
3.3-17	Direct	60.0	Consumer connection	Consumer connection
3.3-17	Direct	61.0	Asset relocations	Asset relocations
3.3-17	Direct	70.1	ICT capex	ICT capex
3.3-17	Direct	70.2	ICT capex - New foundations phase 1	ICT capex
3.3-17	Direct	70.3	ICT capex - New foundations phase 2	ICT capex
3.3-17	Direct	70.4	ICT capex - New foundations phase 3	ICT capex
3.3-17	Direct	72.1	Facilities capex	Facilities capex
3.3-17	Direct	72.2	NOC	Facilities capex

Mapping of assets to asset expenditure categories

Ref	Source	Asset	Asset category
3.3-8	Direct	Poles - subtransmission	Subtransmission lines
3.3-8	Direct	Crossarms - subtransmission	Subtransmission lines
3.3-8	Direct	Poles - distribution	Distribution and LV lines
3.3-8	Direct	Crossarms - distribution	Distribution and LV lines
3.3-8	Direct	Poles - LV	Distribution and LV lines
3.3-8	Direct	Crossarms - LV	Distribution and LV lines
3.3-8	Direct	110kV Subtransmission foundation	Subtransmission lines
3.3-8	Direct	110kV Subtransmission insulators	Subtransmission lines
3.3-8	Direct	110kV Subtransmission tower paint	Subtransmission lines
3.3-8	Direct	110kV Subtransmission tower	Subtransmission lines
3.3-8	Direct	Power transformers	Zone substations
3.3-8	Direct	Indoor switchgear	Zone substations
3.3-8	Direct	Buildings & site development	Zone substations
3.3-8	Direct	Outdoor switchgear	Zone substations
3.3-8	Direct	Load control injection	Other network assets
3.3-8	Direct	Zone substations - other	Zone substations
3.3-8	Direct	Zone substations land	Zone substations
3.3-8	Direct	Zone substations easements other than fixed life easements	Zone substations
3.3-8	Direct	Zone substations fixed life easements	Zone substations
3.3-8	Direct	Pole mounted fuses	Distribution switchgear
3.3-8	Direct	Pole mounted switches	Distribution switchgear
3.3-8	Direct	Circuit breakers/reclosers/sectionalisers	Distribution switchgear
3.3-8	Direct	Ground mounted switchgear	Distribution switchgear
3.3-8	Direct	Pole mounted distribution transformers	Distribution substations and transformers
3.3-8	Direct	Ground mounted distribution transformers	Distribution substations and transformers
3.3-8	Direct	Conversion Transformers and SWER Transformers	Distribution substations and transformers
3.3-8	Direct	Capacitors/Voltage regulators	Distribution switchgear
3.3-8	Direct	Protection (digital)	Zone substations
3.3-8	Direct	Metering systems (GXP and HV)	Other network assets
3.3-8	Direct	Ripple relays	Other network assets
3.3-8	Direct	SCADA, communications and monitoring	Other network assets
3.3-8	Direct	DC supplies	Zone substations
3.3-8	Direct	Subtransmission cables	Subtransmission cables
3.3-8	Direct	Cables Easement	Subtransmission cables
3.3-8	Direct	Distribution cables	Distribution and LV cables
3.3-8	Direct	Low voltage cables	Distribution and LV cables
3.3-8	Direct	Low voltage service connections	Distribution and LV cables
3.3-8	Direct	Pillar Box	Distribution and LV cables
3.3-8	Direct	Subtransmission overhead conductor	Subtransmission lines
3.3-8	Direct	O&H line easement	Subtransmission lines
3.3-8	Direct	Distribution overhead conductor	Distribution and LV lines
3.3-8	Direct	Low voltage overhead conductor	Distribution and LV lines
3.3-8	Direct	LV service connections	Distribution and LV lines
3.3-8	Direct	Buildings	Non-network assets
3.3-8	Direct	Computer hardware	Non-network assets
3.3-8	Direct	Software	Non-network assets
3.3-8	Direct	Equipment	Non-network assets
3.3-8	Direct	Furniture and fittings	Non-network assets
3.3-8	Direct	Land	Non-network assets
3.3-8	Direct	Motor vehicles	Non-network assets
3.3-8	Direct	Plant and machinery	Non-network assets

Capex price escalation

Note that this querytable includes both direct inputs (columns C:A) and also calculations (columns A:JAP). This is a departure from standard modelling conventions the

Data inputs >>

(sourced from portfolio forecast templates)

>>Calculations

Nominal \$000

Ref	Source	Ref	Portfolio Name	Element Name	Asset Description	Input composition					Base year							Assessment							CPP period							Asset categ	Portfolio Ref		
						Labour	Cables	Conduci	Transf	Switch	Other	Total %	CY							Assessment							CPP period								
													2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030			2031	2032
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - Distribution	0.50	1.00	4.3:	Asset replacement	2,156	1,853	3,465	2,405	2,685	4,016	4,188	5,210	6,523	6,966	7,472	7,601	Distribution a	1												
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - LV	0.50	1.00	4.3:	Asset replacement	218	1,574	2,555	2,292	4,198	1,630	1,643	2,806	2,807	2,804	2,807	2,807	Distribution a	1												
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - LV	0.50	1.00	4.3:	Asset replacement	516	666	1,081	957	1,772	690	695	829	1,016	1,212	1,188	1,112	Distribution a	1												
3.3-9	Query	1.1	Overhead Structures	Poles	Poles - Subtransmission	0.50	1.00	4.3:	Asset replacement	347	770	1,499	1,052	947	766	603	725	867	922	889	847	Subtransmiss	1												
3.3-9	Query	1.1	Overhead Structures	Poles	Crossarms - Subtransmission	0.50	1.00	4.3:	Asset replacement	230	511	905	698	620	491	481	575	612	590	562	541	Subtransmiss	1												
3.3-9	Query	1.1	Overhead Structures	Poles	Poles - Distribution	0.50	1.00	4.3:	Asset replacement	4,440	3,818	7,136	4,953	5,529	8,271	8,626	10,731	13,435	14,348	15,389	15,657	Distribution a	1												
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - LV	0.50	1.00	4.3:	Asset replacement	1,243	1,298	1,769	1,967	2,171	2,388	2,406	3,394	3,662	4,915	5,115	5,425	Distribution a	1												
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - Distribution	0.50	1.00	4.3:	Asset replacement	2,017	2,454	2,778	2,885	2,900	3,269	3,359	4,715	5,206	6,205	6,683	7,503	Distribution a	1												
3.3-9	Query	1.2	Overhead Structures	Crossarms	Crossarms - Subtransmission	0.50	1.00	4.3:	Asset replacement	1,157	1,156	804	1,532	2,150	1,950	1,980	2,953	4,221	3,023	2,046	852	Subtransmiss	1												
3.3-9	Query	2.1	Conductors	Subtransmission Conductors	Subtransmission Overhead Conductor	0.80	0.20	1.00	4.3:	Asset replacement	17	11	10	70	74	1051	829	624	696	637	762	Subtransmiss	2												
3.3-9	Query	2.2	Conductors	Distribution Conductors	Distribution Overhead Conductor	0.80	0.20	1.00	4.3:	Asset replacement	1,106	1,892	3,669	1,972	2,728	2,684	3,167	4,532	6,019	8,900	11,586	13,014	Distribution a	2											
3.3-9	Query	2.3	Conductors	Low Voltage Conductors	LV Service Connections	0.80	0.20	1.00	4.3:	Asset replacement	-	-	-	-	-	-	1,159	1,196	1,227	1,212	1,198	Distribution a	2												
3.3-9	Query	2.3	Conductors	Low Voltage Conductors	Low Voltage overhead conductor	0.80	0.20	1.00	4.3:	Asset replacement	128	216	286	553	428	392	434	943	1,284	2,142	2,338	Distribution a	2												
3.3-9	Query	3.1	Cables	Subtransmission Cables	Subtransmission Cables	0.70	0.30	1.00	4.3:	Asset replacement	673	1,414	1,739	1,446	472	5,471	502	648	-	-	-	Subtransmiss	3												
3.3-9	Query	3.2	Cables	Distribution Cables	Distribution Cables	0.70	0.30	1.00	4.3:	Asset replacement	2,488	4,903	2,139	3,576	2,389	3,007	3,065	3,471	3,588	3,185	2,596	Distribution a	3												
3.3-9	Query	3.3	Cables	Low Voltage Cables	Pillar Box	0.50	0.50	1.00	4.3:	Asset replacement	1,321	1,150	859	1,556	1,762	2,142	2,275	2,407	2,594	2,849	2,839	2,589	Distribution a	3											
3.3-9	Query	3.3	Cables	Low Voltage Cables	Low Voltage Cables	0.60	0.40	1.00	4.3:	Asset replacement	259	700	889	1,059	748	940	1,016	1,121	1,247	1,376	1,465	1,562	Distribution a	3											
3.3-9	Query	4.1	Zone Substations	Power Transformers	Outdoor Switchgear	0.80	0.80	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	-	-	-	295	Zone substati	4												
3.3-9	Query	4.1	Zone Substations	Power Transformers	Power Transformers	0.40	0.60	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	1,110	595	625	511	758	994	Zone substati	4											
3.3-9	Query	4.1	Zone Substations	Power Transformers	Buildings & Site development	0.50	0.50	1.00	4.3:	Asset replacement	27	412	1,081	1,424	2,260	1,177	1,390	3,335	5,525	4,975	4,507	4,760	Zone substati	4											
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations easement other than fixed life easer	1.00	1.00	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	168	-	-	-	Zone substati	4												
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations land	1.00	1.00	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	62	210	-	-	Zone substati	4												
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Buildings & Site development	0.50	0.50	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	11	12	12	12	12	23	Zone substati	4											
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Indoor Switchgear	0.40	0.60	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	484	478	335	658	695	615	773	Zone substati	4										
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Buildings & Site development	0.50	0.50	1.00	4.3:	Asset replacement	2,992	894	166	1,249	3,080	674	2,969	4,674	6,722	4,819	5,381	5,153	4,813	Zone substati	4										
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Indoor Switchgear	0.60	0.60	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	4											
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Zone substations - Other	0.50	0.50	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	1,009	-	-	-	-	Zone substati	4											
3.3-9	Query	4.2	Zone Substations	Indoor Switchgear	Outdoor Switchgear	0.80	0.80	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	-	1,206	-	-	-	Zone substati	4											
3.3-9	Query	4.3	Zone Substations	Other Zone Substation Assets	Outdoor Switchgear	0.80	0.80	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	-	-	31	33	34	34	33	Zone substati	4								
3.3-9	Query	4.4	Zone Substations	Buildings	Buildings & Site development	0.50	0.50	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	145	67	334	364	253	479	589	Zone substati	4								
3.3-9	Query	4.4	Zone Substations	Buildings	Buildings & Site development	0.50	0.50	1.00	4.3:	Asset replacement	408	151	-	-	-	-	203	-	-	-	-	-	-	-	Zone substati	4									
3.3-9	Query	4.5	Zone Substations	Load Control Injection	Load Control Injection	0.40	0.40	1.00	4.3:	Asset replacement	10	896	3,927	677	-	-	-	1,674	-	-	-	1,762	1,736	854	Other network	4									
3.3-9	Query	4.6	Zone Substations	Other Zone Substation Assets	Other Zone Substation Assets	0.50	0.4	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	4									
3.3-9	Query	4.6	Zone Substations	Other Zone Substation Assets	Zone substations - Other	0.50	0.50	1.00	4.3:	Asset replacement	88	792	164	584	-	-	-	662	680	694	684	673	Zone substati	4											
3.3-9	Query	5.1	Distribution Transformers	Pole Mounted Distribution Transformers	Pole Mounted Distribution Transformers	0.20	0.80	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	713	718	779	824	841	834	819	Distribution a	5										
3.3-9	Query	5.1	Distribution Transformers	Pole Mounted Distribution Transformers	Pole Mounted Distribution Transformers	0.20	0.80	1.00	4.3:	Asset replacement	3,804	3,504	4,515	5,252	5,626	3,630	3,600	3,969	4,270	4,406	4,441	4,412	4,412	4,412	4,412	4,412	4,412	4,412							
3.3-9	Query	5.2	Distribution Transformers	Ground Mounted Distribution Transformers	Ground Mounted Distribution Transformers	0.20	0.80	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	426	450	459	455	447	Distribution a	5										
3.3-9	Query	5.2	Distribution Transformers	Ground Mounted Distribution Transformers	Ground Mounted Distribution Transformers	0.20	0.80	1.00	4.3:	Asset replacement	2,915	2,044	2,638	2,402	3,726	2,026	2,102	3,906	4,138	4,297	4,332	4,325	4,325	4,325	4,325	4,325	4,325								
3.3-9	Query	5.3	Distribution Transformers	Other Distribution Transformers	Capacitors/voltage regulators	0.20	0.80	1.00	4.3:	Asset replacement	145	-	-	-	-	-	-	167	182	192	192	236	Distribution a	5											
3.3-9	Query	5.3	Distribution Transformers	Other Distribution Transformers	Conversion Transformers and SWER Transformers	0.20	0.80	1.00	4.3:	Asset replacement	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-									
3.3-9	Query	6.1	Distribution Switchgear	Pole Mounted Fuses	Pole mounted fuses	0.50	0.50	1.00	4.3:	Asset replacement	2,305	2,101	2,580	3,189	4,317	2,682	2,586	2,638	2,773	2,848	2,876	2,907	Distribution a	6											
3.3-9	Query	6.2	Distribution Switchgear	Pole Mounted Switches	Pole mounted switches	0.20	0.80	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	128	131	133	131	129	Distribution a	6										
3.3-9	Query	6.2	Distribution Switchgear	Pole Mounted Switches	Pole mounted switches	0.20	0.80	1.00	4.3:	Asset replacement	2,863	2,276	2,354	1,612	2,433	1,861	1,864	2,093	1,884	1,472	1,393	1,088	Distribution a	6											
3.3-9	Query	6.3	Distribution Switchgear	Circuit Breakers, Reclosers and Sectionalisers	Circuit breakers/reclosers/sectionalisers	0.40	0.60	1.00	4.3:	Asset replacement	382	498	703	1,324	1,785	1,720	1,715	1,843	1,740	1,713	1,713	1,713	1,713	1,713	1,713	1,713									
3.3-9	Query	6.4	Distribution Switchgear	Ground Mounted Switchgear	Ground mounted switchgear	0.20	0.80	1.00	4.7:	Other Reliability, Sa	-	-	-	-	-	-	-	-	494	522	536	530	519	Distribution a	6										
3.3-9	Query	6.4	Distribution Switchgear	Ground Mounted Switchgear	Ground mounted switchgear	0.20	0.80	1.00	4.3:	Asset replacement	1,207	1,957	1,774	2,496	2,384	2,198	2,211	2,694	3,077	3,478	3,782	3,328	Distribution a	6											
3.3-9	Query	7.1	Secondary systems	SCADA, Communications	SCADA, Communications and monitoring	0.20	0.20	1.00	4.3:	Asset replacement	1,750	421	313	1,132	151	754	606	630	625	629	629	646	Other network	7											
3.3-9	Query	7.2	Secondary systems	Protection	Protection (digital)	0.80	0.20	1.00	4.6:	Legislative and req.	-	-	-	-	-	-	-	-	1,617	1,662	1,701	-	-	Zone substati	7										
3.3-9	Query	7.2	Secondary systems	Protection	Protection (digital)	0.80	0.20	1.00	4.3:	Asset replacement	4	317	1,250	573	1,386	1,922	2,139	2,244	1,818	1,818	1,893	1,552	Zone substati	7											
3.3-9	Query	7.3	Secondary systems	DC Supplies	DC Supplies	0.80	0.20	1.00	4.3:	Asset replacement	-	22																							

3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Pole mounted fuses	0.50	0.50	1.00	4.1: System growth	583	615	861	954	959	1,006	994	973	1,009	1,040	1,038	1,037	Distribution s	25		
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Indoor Switchgear	0.60	0.60	1.00	4.1: System growth	28	29	41	45	46	48	49	54	54	54	54	54	54	Zone substati	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Outdoor Switchgear	0.20	0.80	1.00	4.1: System growth	113	120	167	185	186	195	193	203	216	225	225	223	223	Zone substati	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Power Transformers	0.40	0.60	1.00	4.1: System growth	23	25	35	38	39	41	40	42	44	46	46	46	46	46	Zone substati	25
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Poles - LV	0.50	0.50	1.00	4.1: System growth	51	75	97	94	97	95	98	91	91	91	91	91	91	91	Zone substati	25
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Crossarms - LV	0.50	0.50	1.00	4.1: System growth	210	222	310	343	345	362	368	350	363	374	374	374	373	Distribution s	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Protection (digital)	0.80	0.20	1.00	4.1: System growth	137	145	203	225	226	237	234	229	238	246	245	245	245	Zone substati	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Capacitors/Voltage regulators	0.20	0.80	1.00	4.1: System growth	589	622	871	965	970	1,017	1,005	1,062	1,136	1,170	1,175	1,175	1,171	Distribution s	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	SCADA, Communications and monitoring	0.20	0.20	1.00	4.1: System growth	9	9	11	12	12	13	13	14	14	14	14	14	14	Other network	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Distribution Cables	0.70	0.30	1.00	4.1: System growth	2,232	2,357	3,298	3,653	3,674	3,853	3,807	3,785	3,950	4,094	4,103	4,103	4,113	Distribution s	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Poles - Subtransmission	0.50	0.50	1.00	4.1: System growth	205	217	304	336	338	355	350	343	356	367	366	366	366	Subtransmissi	25	
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Ground mounted switchgear	0.20	0.80	1.00	4.1: System growth	828	874	1,223	1,354	1,362	1,429	1,412	1,485	1,583	1,642	1,645	1,634	Distribution s	25		
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Circuit breakers/reclosers/sectionalisers	0.60	0.60	1.00	4.1: System growth	243	257	359	407	410	414	414	406	420	433	432	431	Distribution s	25		
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Pole Mounted Distribution Transformers	0.20	0.80	1.00	4.1: System growth	230	242	339	376	378	396	392	414	442	456	458	456	Distribution s	25		
3.3-9	Query	25.2 Minor Growth & Security Works	Routine	Ground Mounted Distribution Transformers	0.20	0.80	1.00	4.1: System growth	216	228	319	354	356	373	369	390	416	429	431	429	Distribution s	25		
3.3-9	Query	25.3 Minor Growth & Security Works	Comms	SCADA, Communications and monitoring	0.80	0.20	1.00	4.1: System growth	499	491	780	2,443	2,764	5,005	8,192	5,809	5,550	1,966	1,995	1,955	Other network	25		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Power Transformers	0.40	0.60	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	SCADA, Communications and monitoring	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Other network	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Subtransmission Cables	0.70	0.30	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Distribution Cables	0.70	0.30	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Protection (digital)	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Indoor Switchgear	0.40	0.60	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Buildings & Site development	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	26.0 Pyes Pa	Pyes Pa	Zone substations land	0.20	1.00	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	26		
3.3-9	Query	27.0 Inglewood	Inglewood	Conversion Transformers and SWER Transformers	0.20	0.80	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Distribution s	27		
3.3-9	Query	27.0 Inglewood	Inglewood	Pole Mounted Distribution Transformers	0.20	0.80	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Distribution s	27		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Zone substations - Other	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Subtransmission Cables	0.70	0.30	1.00	4.1: System growth	9,143	3,255	1,904	6,735	462	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Zone substations - Other	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Subtransmission Overhead Conductor	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Cables Essases	1.00	1.00	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Zone substations land	1.00	1.00	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	SCADA, Communications and monitoring	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Other network	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	DC Supplies	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Protection (digital)	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Metering systems (GXP and HV)	0.80	0.20	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Other network	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Crossarms - Subtransmission	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Power Transformers	0.40	0.60	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Outdoor Switchgear	0.20	0.80	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Poles - Subtransmission	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Indoor Switchgear	0.40	0.60	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	Buildings & Site development	0.50	0.50	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Zone substati	29		
3.3-9	Query	29.0 Post CPP Major Projects	Post CPP Major Projects	OH Line Easement	1.00	1.00	1.00	4.1: System growth	-	-	-	-	-	-	-	-	-	-	-	-	Subtransmissi	29		
3.3-9	Query	51.0 Reliability	Reliability	Circuit breakers/reclosers/sectionalisers	0.40	0.60	1.00	4.5: Quality of supply	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	Distribution s	51		
3.3-9	Query	52.0 Network Evolution	Network Evolution	SCADA, Communications and monitoring	0.80	0.20	1.00	4.1: System growth	219	146	791	303	80	2,735	2,974	3,060	3,801	4,960	5,076	Other network	52			
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pole Mounted Distribution Transformers	0.20	0.80	1.00	4.2: Consumer Connect	728	786	733	1,407	2,023	2,102	1,869	1,903	1,859	1,867	1,868	1,828	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Ground mounted switchgear	0.20	0.80	1.00	4.2: Consumer Connect	351	385	354	680	979	1,017	904	868	893	898	804	879	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Protection (digital)	0.80	0.20	1.00	4.2: Consumer Connect	30	33	30	88	83	86	77	69	69	69	61	68	Zone substati	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Ground Mounted Distribution Transformers	0.20	0.80	1.00	4.2: Consumer Connect	1,115	1,224	1,126	2,162	3,110	2,672	2,870	2,771	2,858	2,653	2,630	Distribution s	60			
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Outdoor Switchgear	0.20	0.80	1.00	4.2: Consumer Connect	59	65	60	114	164	171	152	146	150	151	135	148	Zone substati	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Indoor Switchgear	0.40	0.60	1.00	4.2: Consumer Connect	37	41	38	72	104	108	96	90	92	93	83	91	Zone substati	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pole mounted switches	0.20	0.80	1.00	4.2: Consumer Connect	104	114	105	201	289	300	267	239	238	238	212	233	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Metering systems (GXP and HV)	0.80	0.20	1.00	4.2: Consumer Connect	3	4	3	7	9	10	9	8	8	8	8	7	8	Other network	60	
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Subtransmission Overhead Conductor	0.80	0.20	1.00	4.2: Consumer Connect	0	0	0	0	0	0	0	0	0	0	0	0	Subtransmissi	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Pillar Box	0.50	0.50	1.00	4.2: Consumer Connect	238	261	240	462	664	690	613	548	548	548	498	537	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Low Voltage overhead conductor	0.80	0.20	1.00	4.2: Consumer Connect	48	52	48	92	133	138	123	111	111	112	110	111	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Distribution Overhead Conductor	0.80	0.20	1.00	4.2: Consumer Connect	59	56	52	99	142	148	132	119	119	120	107	119	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Subtransmission Cables	0.70	0.30	1.00	4.2: Consumer Connect	21	32	30	57	82	85	76	69	69	69	62	69	Subtransmissi	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	SCADA, Communications and monitoring	0.80	0.20	1.00	4.2: Consumer Connect	0	0	0	1	1	1	1	1	1	1	1	1	Other network	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Low Voltage Cables	0.60	0.40	1.00	4.2: Consumer Connect	1,127	1,237	1,139	2,186	3,144	3,266	2,904	2,650	2,671	2,685	2,409	2,688	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Distribution Cables	0.70	0.30	1.00	4.2: Consumer Connect	528	579	533	1,023	1,472	1,529	1,380	1,234	1,243	1,248	1,118	1,237	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - LV	0.50	0.50	1.00	4.2: Consumer Connect	52	57	53	101	146	152	135	121	121	120	108	118	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - Subtransmission	0.50	0.50	1.00	4.2: Consumer Connect	1	1	1	1	2	2	1	1	1	1	1	1	Subtransmissi	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - Subtransmission	0.50	0.50	1.00	4.2: Consumer Connect	2	3	2	4	6	7	6	5	5	5	5	5	Subtransmissi	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - Distribution	0.50	0.50	1.00	4.2: Consumer Connect	100	109	101	193	278	289	257	229	229	229	205	225	Distribution s	60		
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Poles - LV	0.50	0.50	1.00	4.2: Consumer Connect	39	43	39	76	109	90	80	90	90	80	88	Distribution s	60			
3.3-9	Query	60.0 Consumer Connection	Consumer Connection	Crossarms - Distribution	0.50	0.50	1.00	4.2																

Cost of financing and forecast value of commissioned assets calculations

About this calculation worksheet

This calculation worksheet uses a data table to generate the forecast value of commissioned assets (VCA), cost of financing (CoF), PV_{VCA} and Proportionate value of commissioned assets for all lines of capex input. The data table is in the named range 'Data_Table_Range' and generates the outputs used elsewhere in this workbook. To improve performance, Excel calculation options have been set to 'Automatic - except data tables'. In this mode, the data table can be updated by pressing the F9 key or using the 'calculate now' button on the 'Formulas' ribbon.

Simple commissioning and Specific date commissioning calculations are specified at a fleet level and apply consistently to all capex forecast within that fleet.

Other inputs for each fleet are:

Commissioning Date	This applies only to fleets that use specific date commissioning
Qualifying Percentage	This specifies the percentage of capex that attracts cost of financing and is the application of internal policy that does not apply cost of financing to projects less than \$0.5m or projects that last < 6months.

The calculations in the section headed 'Calculations (demonstrating user defined inputs)' fully demonstrate the approach taken to generating cost of financing, VCA, PV_{VCA} and proportionate value of commissioned assets throughout the model period.

A user can validate the outputs for a specific fleet/asset capex forecast by changing the user defined inputs to select a fleet/asset forecast of their choice.

The full range of disaggregated cost of financing, VCA, PV_{VCA} and proportionate value of commissioned assets calculations are key outputs that populate the majority of capex reports in schedule E. The full table is in a named range called 'Output_Table'. This table takes the data table outputs for cost of financing and VCA and adds calculations that enable aggregations of the outputs for various reports. The final section of columns illustrates the logic for various reports. These reports can be checked by filtering the report logic columns to identify the underlying data used.

Inputs

User defined inputs

Selected fleet	11.1
Asset	Zone substations land
Forecast cost of debt	6.57%

Commissioning assumptions by fleet

Ref	Fleet Name	Comm. Type	Comm. Date	Qualifying Percent
1.1	Poles	1	15-Dec-17	0%
1.2	Crossarms	1	15-Dec-17	0%
2.1	Subtransmission conductors	1	27-Sep-18	0%
2.2	Distribution conductors	1	27-Sep-18	0%
2.3	Low voltage conductors	1	27-Sep-18	0%
3.1	Subtransmission cables	1	27-Sep-18	0%
3.2	Distribution cables	1	27-Sep-18	0%
3.3	Low voltage cables	1	27-Sep-18	0%
4.1	Power transformers	1	27-Sep-18	0%
4.2	Indoor switchgear	1	27-Sep-18	0%
4.3	Outdoor switchgear	1	27-Sep-18	0%
4.4	Buildings	1	27-Sep-18	0%
4.5	Load control injection	1	27-Sep-18	0%
4.6	Other zone substation assets	1	27-Sep-18	0%
5.1	Pole mounted distribution transformers	1	27-Sep-18	0%
5.2	Ground mounted distribution transformers	1	27-Sep-18	0%
5.3	Other distribution transformers	1	27-Sep-18	0%
6.1	Pole mounted fuses	1	27-Sep-18	0%
6.2	Pole mounted switches	1	27-Sep-18	0%
6.3	Circuit breakers, reclosers and sectionalisers	1	27-Sep-18	0%
6.4	Ground mounted switchgear	1	27-Sep-18	0%
7.1	SCADA and communications	1	27-Sep-18	0%
7.2	Protection	1	27-Sep-18	0%
7.3	DC supplies	1	27-Sep-18	0%
7.4	Metering	1	27-Sep-18	0%
10.0	Papamoa	2	30-May-18	100%
11.1	Palmerston North phase 1	2	31-Mar-19	100%
11.2	Palmerston North phase 2	2	31-Mar-23	100%
12.0	Putaruru	2	31-Mar-22	100%
13.1	Whangamata - phase 1	2	30-Jun-19	100%
13.2	Whangamata - phase 2	2	31-Mar-25	100%
14.0	Omokoroa	2	30-Apr-21	100%
15.1	Kopu-Tairua phase 1	2	31-Mar-19	100%
15.2	Kopu-Tairua phase 2	2	31-Mar-20	100%
15.3	Kopu-Tairua phase 3	2	31-Mar-21	100%
16.1	Kopu-Kauaeranga phase 1	2	31-Mar-19	100%
16.2	Kopu-Kauaeranga phase 2	2	31-Mar-24	100%
17.0	Moturoa - NPL GXP	2	31-Mar-19	100%
18.0	Kerepehi-Paeroa	2	31-Mar-22	100%
19.0	Whenuakite	2	31-Mar-23	100%
20.0	Matarangi	2	31-Mar-23	100%
21.0	Putaruru-Tirau	2	31-Mar-21	100%
22.0	Kaimarama-Whitianga	2	31-Mar-23	100%
23.0	Kereone-Walton	2	31-Mar-23	100%

Asset lives for CPP commissioned assets

Asset	Standard asset life	Life for CPP comm. assets
Poles - subtransmission	0	55
Crossarms - subtransmission	0	55
Poles - distribution	0	60
Crossarms - distribution	0	60
Poles - LV	0	60
Crossarms - LV	0	60
110kV Subtransmission foundation	0	55
110kV Subtransmission insulators	0	55
110kV Subtransmission tower paint	0	55
110kV Subtransmission tower	0	55
Power transformers	0	45
Indoor switchgear	0	45
Buildings & site development	0	45
Outdoor switchgear	0	45
Load control injection	0	25
Zone substations - other	0	45
Zone substations land	-	-
Zone substations easements other than fixed life easements	-	-
Zone substations fixed life easements	-	45
Pole mounted fuses	0	40
Pole mounted switches	0	40
Circuit breakers/reclosers/sectionalisers	0	40
Ground mounted switchgear	0	40
Pole mounted distribution transformers	0	45
Ground mounted distribution transformers	0	45
Conversion Transformers and SWER Transformers	0	45
Capacitors/Voltage regulators	0	40
Protection (digital)	0	45
Metering systems (GXP and HV)	0	25
Ripple relays	0	25
SCADA, communications and monitoring	0	25
DC supplies	0	45
Subtransmission cables	0	55
Cables Easement	-	-
Distribution cables	0	55
Low voltage cables	0	55
Low voltage service connections	0	55
Pillar Box	0	55
Subtransmission overhead conductor	0	55
OH line easement	-	-
Distribution overhead conductor	0	60
Low voltage overhead conductor	0	60
LV service connections	0	60
Buildings	-	15

24.0	Feilding-Sanson-Bulls	2	31-Mar-23	100%
25.1	Minor projects	1	30-Sep-20	0%
25.2	Routine projects	1	30-Sep-20	0%
25.3	Comms	1	30-Sep-20	0%
26.0	Pyes Pa	2	31-Mar-19	100%
27.0	Inglewood	1	27-Sep-18	0%
28.0	Pre CPP major projects	2	31-Mar-18	100%
29.0	Post CPP major projects	1	31-Dec-26	100%
51.0	Reliability	1	27-Sep-18	0%
52.0	Network evolution	1	27-Sep-18	0%
60.0	Consumer connection	1	27-Sep-18	0%
61.0	Asset relocations	1	0-Jan-00	0%
70.1	ICT capex	1	27-Sep-18	0%
70.2	ICT capex - New foundations phase 1	2	31-Mar-19	100%
70.3	ICT capex - New foundations phase 2	2	31-Mar-20	100%
70.4	ICT capex - New foundations phase 3	2	31-Mar-21	100%
72.1	Facilities capex	1	27-Sep-18	0%
72.2	NOC	2	31-Aug-18	100%

Computer hardware	0	15
Software	0	15
Equipment	0	15
Furniture and fittings	0	15
Land	-	-
Motor vehicles	0	15
Plant and machinery	0	15

TRUE Error check: verifies that this input table is consistent with the underlying table in the 'Inputs' worksheet.

Rates

Source		Next period						
		Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
3.3-i3	Rate used to calculate cost of financing	6.57%	5.23%	6.11%	6.12%	5.69%	5.51%	5.61%
1.0-i6	Cost of capital (used to calculate PV _{VCA})	-	7.19%	7.19%	7.19%	7.19%	7.19%	7.19%

Capex inputs (by fleet by asset)

Number of rows of input data		Nominal \$000													Comm type	Apportioned opening WUC
		Next period														
		Assessment period		CPP period												
Fleet ref	Portfolio	Fleet	Capex category	Asset	Asset category	Opening WUC	2016 Nom	2017 Nom	2018 Nom	2019 Nom	2020 Nom	2021 Nom	2022 Nom	2023 Nom		
Error check: Input data used in this worksheet = forecast model inputs						24,834	110,013	124,333	152,030	190,065	187,297	203,511	199,538	198,262		47,387
Simple commissioning subtotals used to apportion opening WUC						35,481	107,938									
						11,906										

Simple commissioning method inputs

		2017	2018	2019	2020	2021	2022	2023
3.3-i10	Total opening WUC	47,387						
3.3-i11	Simple commissioning change in WUC as a percentage of capex due to WUC management efficiencies		-	-1%	-1%	-1%	-1%	-1%

Calculations (demonstrating user defined inputs)

User selected inputs

Palmerston North phase 1

Selected Fleet	11.1	Input set for Data Table automation
Asset	Zone substations land	
Commissioning Type	2	
Cost of financing multiplier	1	
Unique multiplier (eliminates duplicates in data table)	1	
Qualifying percentage	100%	

	Next period							
	Assessment period		CPP period					
	2016	2017	2018	2019	2020	2021	2022	2023
Nominal Capex	-	50	753	185	-	-	-	-
Opening WUC								
Commissioning date			31-Mar-19					

Intermediate calculations

	2017	2018	2019	2020	2021	2022	2023	
Monthly Interest Rate	0.53%	0.43%	0.50%	0.50%	0.46%	0.45%	0.46%	
Specific date commissioning								
	Assessment period		CPP period					
	2017	2018	2019	2020	2021	2022	2023	
Months	12	12	12	-	-	-	-	
Monthly Capex	-	4	63	15	-	-	-	
Financial year commissioned	2019							
Simple commissioning								
	2016	2017	2018	2019	2020	2021	2022	2023
Base year capex excluding specific date commissioning capex	107,938							
Opening WUC not attributable to specific date commissioning assets	35,481							
Baseline percentage of capex retained in WUC	33%							
WUC management efficiency		-	-	-1%	-1%	-1%	-1%	-1%
WUC percentage including efficiency	33%	33%	33%	32%	31%	30%	29%	28%
Closing WUC	-	16	249	59	-	-	-	-
Incremental change in WUC		16	232	-189	-59	-	-	-

Simple commissioning calculations

	2017	2018	2019	2020	2021	2022	2023
Opening WUC	-	16	249	59	-	-	-
add: Cost of finance							
add: Capex	50	753	185	-	-	-	-
less: Value of commissioned assets	33	521	375	59	-	-	-
Closing WUC	16	249	59	-	-	-	-
PV _{VCA}	32	504	362	57	-	-	-
Proportionate value of commissioned assets	17	261	187	30	-	-	-

Specific date commissioning calculations

	2017	2018	2019	2020	2021	2022	2023
Opening WUC	-	51	826	-	-	-	-
add: Cost of finance	1	21	56	-	-	-	-
add: Capex	50	753	185	-	-	-	-
less: Value of commissioned assets	-	-	1,066	-	-	-	-
Closing WUC	51	826	-	-	-	-	-
PV _{VCA}	-	-	995	-	-	-	-
Proportionate value of commissioned assets	-	-	-	-	-	-	-

WUC roll forward for user defined selections

	2017	2018	2019	2020	2021	2022	2023
Works under construction roll forward							
Opening WUC	-	51	826	-	-	-	-
Add: Cost of financing	1	21	56	-	-	-	-
Add: Capex	50	753	185	-	-	-	-
Less: Assets commissioned	-	-	1,066	-	-	-	-
Closing WUC	51	826	-	-	-	-	-
Error check: Selection Cost of financing = Data table Cost of financing	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Selection VCA = Data table VCA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
PV _{VCA}	-	-	995	-	-	-	-
Proportionate value of commissioned assets	-	-	-	-	-	-	-

Outputs

Aggregated WUC roll forward

Nominal \$000	Next period						
	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
Works Under Construction Roll Forward							
Opening WUC	47,387	61,932	100,059	67,369	77,069	95,988	77,039
Add: Cost of financing	1,138	2,119	3,784	1,545	2,347	2,659	2,457
Add: Capex	124,333	152,030	190,065	187,297	203,511	199,538	198,262
Less: Assets commissioned	110,926	116,022	226,538	179,142	186,939	221,145	226,430
Closing WUC	61,932	100,059	67,369	77,069	95,988	77,039	51,327
Error check: Nominal Capex total equals Nominal capex inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Intra period timing calculations

Nominal \$000	Next period						
	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
PV _{VCA}	107,141	112,063	217,207	172,834	180,035	212,711	216,783
Proportionate value of commissioned assets	55,463	58,011	88,778	86,545	85,500	96,896	84,067

Forecast value of commissioned assets by category

Nominal \$000	Next period						
	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
VCA by capex category							
Consumer connection	14,239	13,347	12,354	12,207	12,288	11,398	11,805
System growth	24,504	28,019	95,743	50,911	46,286	86,065	93,045
Asset replacement and renewal	41,764	43,593	52,807	63,320	70,084	72,991	73,391
Asset relocations	1,029	897	831	853	876	894	912
Quality of supply	3,595	2,778	3,157	4,435	5,109	5,123	5,019
Legislative and regulatory	1,745	2,068	3,332	3,890	3,656	2,400	1,667
Other reliability, safety and environment	18,882	19,053	25,824	31,185	31,697	31,009	30,523
Routine Non-network Assets	4,955	6,255	25,233	11,154	15,825	9,178	8,056
Atypical Non-network Assets	211	11	7,257	1,187	1,117	2,087	2,011
	110,926	116,022	226,538	179,142	186,939	221,145	226,430
Error check: Aggregated forecast VCA = total forecast VCA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

- 4.2: Consumer connection
- 4.1: System growth
- 4.3: Asset replacement and renewal
- 4.4: Asset relocations
- 4.5: Quality of Supply
- 4.6: Legislative and Regulatory
- 4.7: Other Reliability, safety and environment
- 4.8.1: Non-Network Assets - Routine
- 4.8.2: Non-Network Assets - Atypical

Nominal \$000	Next period						
	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
VCA by asset expenditure category							
Subtransmission lines	5,524	5,311	17,564	13,359	9,380	9,011	19,848
Subtransmission cables	5,239	3,452	31,921	4,012	10,450	36,119	26,827
Zone substations	13,496	14,862	40,841	34,958	29,831	41,649	45,012
Distribution and LV lines	28,567	29,634	36,154	44,224	52,091	58,147	61,962
Distribution and LV cables	15,584	15,753	18,357	16,355	16,745	16,433	16,524
Distribution substations and transformers	13,429	12,167	15,575	18,391	17,420	15,800	15,635
Distribution switchgear	18,845	17,556	19,135	21,205	22,131	22,241	21,356
Other network assets	5,076	11,022	14,501	14,297	11,946	10,480	9,199
Non-network assets	5,167	6,266	32,490	12,341	16,943	11,265	10,067
	110,926	116,022	226,538	179,142	186,939	221,145	226,430
Error check: Aggregated forecast VCA = total forecast VCA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Nominal \$000	Next period						
	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
VCA by capex category and asset expenditure category							
System growth							
Subtransmission lines	1,331	1,280	13,024	7,444	3,693	4,276	16,342
Subtransmission cables	1,307	1,209	31,663	3,474	10,156	36,031	26,736
Zone substations	4,110	3,061	23,028	13,765	9,364	23,399	27,346
Distribution and LV lines	4,302	4,335	4,311	4,401	4,556	4,600	4,603
Distribution and LV cables	3,983	3,982	6,483	4,101	4,202	4,381	4,776
Distribution substations and transformers	758	763	2,548	4,037	2,584	1,169	895
Distribution switchgear	4,334	4,358	4,435	4,626	4,809	4,885	4,997
Other network assets	4,378	9,031	10,252	9,063	6,920	7,324	7,349
	24,504	28,019	95,743	50,911	46,286	86,065	93,045
Error check: Aggregated forecast VCA = total forecast VCA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Asset replacement and renewal							
Subtransmission lines	4,118	3,965	4,480	5,854	5,625	4,672	3,441
Subtransmission cables	3,821	2,142	166	447	201	-	-
Zone substations	127	847	1,656	857	415	523	632
Distribution and LV lines	22,998	24,130	30,784	38,790	46,496	52,565	56,346
Distribution and LV cables	5,696	6,268	6,857	7,352	7,605	7,429	6,949
Distribution substations and transformers	-	19	17	4	23	19	4
Distribution switchgear	4,316	4,242	4,608	4,791	4,702	4,634	4,178
Other network assets	686	1,980	4,239	5,225	5,018	3,149	1,842
	41,764	43,593	52,807	63,320	70,084	72,991	73,391
Error check: Aggregated forecast VCA = total forecast VCA	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

4.1: System growth
4.1: System growth
4.1: System growth
4.1: System growth
4.1: System growth
4.1: System growth
4.1: System growth

4.3: Asset replacement and renewal
4.3: Asset replacement and renewal
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4.3: Asset replacement and renewal
4.3: Asset replacement and renewal
4.3: Asset replacement and renewal
4.3: Asset replacement and renewal

Table of calculated outputs for all portfolios

This Table is an Excel data table that automatically generates outputs for all capital expenditure portfolios. The calculations for each output can be reviewed in detail by choosing the appropriate user defined selections in cells above.

Financial model interface outputs

Outputs for module 1.0 Price path

Output Ref	Destination	Nominal \$000	Assessment period		CPP regulatory period				
			2017	2018	2019	2020	2021	2022	2023
3.3-o1	1.0-i33	Total Forecast value of commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430
3.3-o2	1.0-i34	PV _{VCA}	107,141	112,063	217,207	172,834	180,035	212,711	216,783
3.3-o3	4.1-i8	Proportionate value of commissioned assets	55,463	58,011	88,778	86,545	85,500	96,896	84,067

Outputs for modules 4.1 RAB roll forward and 4.4 RAB excluding revaluations roll forward

Nominal \$000					Assessment period		CPP regulatory period				
Ref	Destination	Forecast value of commissioned assets by asset exc	Tax SL depreciation rate	Table A.2 asset life	2017	2018	2019	2020	2021	2022	2023
Overhead structures											
3.3-o4	4.1-i9	Poles - subtransmission	0	55	1,377	1,140	4,580	3,419	2,564	2,630	4,436
3.3-o4	4.1-i9	Crossarms - subtransmission	0	55	2,831	2,646	4,728	5,466	4,765	3,712	3,280
3.3-o4	4.1-i9	Poles - distribution	0	60	9,043	10,159	11,747	14,322	15,871	16,889	17,401
3.3-o4	4.1-i9	Crossarms - distribution	0	60	7,682	8,439	10,191	12,229	13,843	14,985	15,968
3.3-o4	4.1-i9	Poles - LV	0	60	2,679	1,836	2,060	2,467	2,936	3,033	2,889
3.3-o4	4.1-i9	Crossarms - LV	0	60	3,896	3,616	4,398	5,084	6,257	6,825	7,050
3.3-o4	4.1-i9	110kV Subtransmission Foundation	0	55	-	-	-	-	-	-	-
3.3-o4	4.1-i9	110kV Subtransmission Insulators	0	55	-	-	-	-	-	-	-
3.3-o4	4.1-i9	110kV Subtransmission Tower Paint	0	55	-	-	-	-	-	-	-
3.3-o4	4.1-i9	110kV Subtransmission Tower	0	55	-	-	-	-	-	-	-
Zone substations											
3.3-o4	4.1-i9	Power transformers	0	45	3,926	2,745	9,432	6,486	10,378	11,842	13,537
3.3-o4	4.1-i9	Indoor switchgear	0	45	4,052	5,328	12,199	7,627	7,158	10,335	11,003
3.3-o4	4.1-i9	Buildings & site development	0	45	935	1,240	7,298	3,425	3,047	10,024	7,057
3.3-o4	4.1-i9	Outdoor switchgear	0	45	2,041	2,023	2,067	3,549	3,496	4,515	6,700
3.3-o4	4.1-i9	Load control injection	0	25	-	1,122	553	-	1,234	2,056	1,118
3.3-o4	4.1-i9	Zone substations - other	0	45	5	682	2,335	8,395	701	698	2,041
3.3-o4	4.1-i9	Zone substations land	0	0	12	49	1,701	313	-	135	1,396
3.3-o4	4.1-i9	Zone substations easements other than fixed	0	0	-	-	114	54	-	-	-
3.3-o4	4.1-i9	Zone substations fixed life easements	0	45	-	-	-	-	-	-	-
Distribution switchgear											
3.3-o4	4.1-i9	Pole mounted fuses	0	40	5,059	4,406	4,350	4,454	4,583	4,587	4,637
3.3-o4	4.1-i9	Pole mounted switches	0	40	2,969	2,727	2,920	2,757	2,496	2,360	2,121
3.3-o4	4.1-i9	Circuit breakers/reclosers/sectionalisers	0	40	4,862	4,652	5,351	6,698	7,332	7,298	6,536
3.3-o4	4.1-i9	Ground mounted switchgear	0	40	4,712	4,595	5,281	5,983	6,490	6,810	6,707
Distribution transformers											
3.3-o4	4.1-i9	Pole mounted distribution transformers	0	45	7,260	6,689	8,504	10,224	9,139	7,794	7,583
3.3-o4	4.1-i9	Ground mounted distribution transformers	0	45	6,170	5,459	6,878	7,844	8,088	7,960	8,048
3.3-o4	4.1-i9	Conversion Transformers and SWER Transf	0	45	-	19	192	323	193	46	4
3.3-o4	4.1-i9	Capacitors/Voltage regulators	0	40	1,242	1,176	1,233	1,314	1,230	1,185	1,353

Ref	Destination	Category	SL degn rate	2017	2018	2019	2020	2021	2022	2023	
Secondary systems											
3.3-o4	4.1-i9	Protection (digital)	0	45	2,464	2,698	5,336	4,950	4,874	3,773	2,810
3.3-o4	4.1-i9	Metering systems (GXP and HV)	0	25	134	156	99	81	82	142	83
3.3-o4	4.1-i9	Ripple relays	0	25	21	63	2,962	4,437	2,972	719	29
3.3-o4	4.1-i9	SCADA, Communications and monitoring	0	25	4,921	9,681	10,887	9,779	7,658	7,563	7,968
3.3-o4	4.1-i9	DC supplies	0	45	60	97	360	159	179	327	468
Cables											
3.3-o4	4.1-i9	Subtransmission cables	0	55	5,074	3,066	29,809	3,579	10,237	35,299	25,800
3.3-o4	4.1-i9	Cables Easement	0	0	165	387	2,112	433	212	820	1,028
3.3-o4	4.1-i9	Distribution cables	0	55	8,488	8,599	11,280	9,067	9,203	9,027	8,937
3.3-o4	4.1-i9	Low voltage cables	0	55	4,351	4,242	4,075	4,133	4,289	4,204	4,409
3.3-o4	4.1-i9	Low voltage service connections	0	55	-	-	-	-	-	-	-
3.3-o4	4.1-i9	Pillar Box	0	55	2,745	2,912	3,003	3,155	3,254	3,201	3,178
Conductors											
3.3-o4	4.1-i9	Subtransmission overhead conductor	0	55	1,053	1,143	6,070	2,323	1,852	2,063	6,043
3.3-o4	4.1-i9	OH line easement	0	0	262	382	2,186	2,152	199	606	6,088
3.3-o4	4.1-i9	Distribution overhead conductor	0	60	4,686	4,995	6,097	7,616	10,180	12,995	14,840
3.3-o4	4.1-i9	Low voltage overhead conductor	0	60	581	589	873	1,310	1,775	2,193	2,600
3.3-o4	4.1-i9	LV service connections	0	60	-	-	788	1,196	1,229	1,228	1,215
Non-network assets											
3.3-o4	4.1-i9	Buildings	0	15	211	11	7,257	1,187	1,117	2,087	2,011
3.3-o4	4.1-i9	Computer hardware	0	15	4,840	2,261	3,895	1,625	1,607	2,060	1,877
3.3-o4	4.1-i9	Software	0	15	-	3,780	21,011	1,695	13,612	6,799	5,743
3.3-o4	4.1-i9	Equipment	0	15	-	-	-	7,545	-	-	-
3.3-o4	4.1-i9	Furniture and fittings	0	15	115	214	327	288	606	319	436
3.3-o4	4.1-i9	Land	0	0	-	-	-	-	-	-	-
3.3-o4	4.1-i9	Motor vehicles	0	15	-	-	-	-	-	-	-
3.3-o4	4.1-i9	Plant and machinery	0	15	-	-	-	-	-	-	-

Error check: Aggregated values equal total forecast VCA

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Outputs for module 4.2 Tax depreciation and RTAV roll forward

Ref	Destination	Nominal \$000		Assessment period		CPP regulatory period				
		Tax Forecast value of commissioned assets (includi	SL degn rate	2017	2018	2019	2020	2021	2022	2023
Overhead structures										
3.3-o5	4.2-i4	Poles - subtransmission	6.0%	1,377	1,140	4,485	3,372	2,542	2,591	4,308
3.3-o5	4.2-i4	Crossarms - subtransmission	7.0%	2,831	2,646	4,688	5,447	4,756	3,696	3,227
3.3-o5	4.2-i4	Poles - distribution	6.0%	9,043	10,159	11,747	14,322	15,871	16,889	17,401
3.3-o5	4.2-i4	Crossarms - distribution	7.0%	7,682	8,439	10,191	12,229	13,843	14,985	15,968
3.3-o5	4.2-i4	Poles - LV	6.0%	2,679	1,836	2,060	2,467	2,936	3,033	2,889
3.3-o5	4.2-i4	Crossarms - LV	7.0%	3,896	3,616	4,398	5,084	6,257	6,825	7,050
3.3-o5	4.2-i4	110kV Subtransmission Foundation	6.0%	-	-	-	-	-	-	-
3.3-o5	4.2-i4	110kV Subtransmission Insulators	6.0%	-	-	-	-	-	-	-
3.3-o5	4.2-i4	110kV Subtransmission Tower Paint	6.0%	-	-	-	-	-	-	-
3.3-o5	4.2-i4	110kV Subtransmission Tower	7.0%	-	-	-	-	-	-	-
Zone substations										
3.3-o5	4.2-i4	Power transformers	6.0%	3,926	2,745	9,142	6,486	10,378	11,683	13,412
3.3-o5	4.2-i4	Indoor switchgear	6.0%	4,052	5,328	11,904	7,627	7,158	10,132	10,799
3.3-o5	4.2-i4	Buildings & site development	6.0%	935	1,240	6,983	3,425	3,047	8,714	6,736
3.3-o5	4.2-i4	Outdoor switchgear	6.0%	2,041	2,023	2,067	3,520	3,496	4,408	6,416
3.3-o5	4.2-i4	Load control injection	7.0%	-	1,122	553	-	1,234	2,041	1,118
3.3-o5	4.2-i4	Zone substations - other	7.0%	5	682	2,228	8,108	701	698	1,981
3.3-o5	4.2-i4	Zone substations land	0.0%	12	49	1,567	291	-	126	1,186
3.3-o5	4.2-i4	Zone substations easements other than fixed	0.0%	-	-	114	54	-	-	-
3.3-o5	4.2-i4	Zone substations fixed life easements	0.0%	-	-	-	-	-	-	-
Distribution switchgear										
3.3-o5	4.2-i4	Pole mounted fuses	7.0%	5,059	4,406	4,350	4,454	4,583	4,587	4,637
3.3-o5	4.2-i4	Pole mounted switches	7.0%	2,969	2,727	2,920	2,757	2,496	2,360	2,121
3.3-o5	4.2-i4	Circuit breakers/reclosers/sectionalisers	6.0%	4,862	4,652	5,351	6,698	7,332	7,298	6,536
3.3-o5	4.2-i4	Ground mounted switchgear	6.0%	4,712	4,595	5,281	5,983	6,490	6,810	6,707
Distribution transformers										
3.3-o5	4.2-i4	Pole mounted distribution transformers	6.0%	7,260	6,689	8,504	10,224	9,139	7,794	7,583
3.3-o5	4.2-i4	Ground mounted distribution transformers	6.0%	6,170	5,459	6,878	7,844	8,088	7,960	8,048
3.3-o5	4.2-i4	Conversion Transformers and SWER Transf	6.0%	-	19	192	323	193	46	4
3.3-o5	4.2-i4	Capacitors/Voltage regulators	6.0%	1,242	1,176	1,233	1,314	1,230	1,185	1,353
Secondary systems										
3.3-o5	4.2-i4	Protection (digital)	7.0%	2,464	2,698	5,286	4,950	4,874	3,729	2,802
3.3-o5	4.2-i4	Metering systems (GXP and HV)	6.0%	134	156	99	81	82	139	83
3.3-o5	4.2-i4	Ripple relays	7.0%	21	63	2,962	4,437	2,972	719	29
3.3-o5	4.2-i4	SCADA, Communications and monitoring	6.0%	4,921	9,681	10,864	9,768	7,658	7,557	7,960
3.3-o5	4.2-i4	DC supplies	30.0%	60	97	345	159	179	321	460
Cables										
3.3-o5	4.2-i4	Subtransmission cables	6.0%	5,074	3,066	27,671	3,579	9,894	32,814	24,637
3.3-o5	4.2-i4	Cables Easement	0.0%	165	387	1,933	433	212	675	907
3.3-o5	4.2-i4	Distribution cables	6.0%	8,488	8,599	11,120	9,067	9,203	9,027	8,937
3.3-o5	4.2-i4	Low voltage cables	6.0%	4,351	4,242	4,075	4,133	4,289	4,204	4,409
3.3-o5	4.2-i4	Low voltage service connections	6.0%	-	-	-	-	-	-	-
3.3-o5	4.2-i4	Pillar Box	7.0%	2,745	2,912	3,003	3,155	3,254	3,201	3,178

3.3-05	4.2-i4	Conductors		-	-	-	-	-	-	-
3.3-05	4.2-i4	Subtransmission overhead conductor	6.0%	1,053	1,143	5,521	2,294	1,838	2,039	5,845
3.3-05	4.2-i4	OH line easement	0.0%	262	382	2,113	1,922	199	499	5,515
3.3-05	4.2-i4	Distribution overhead conductor	6.0%	4,686	4,995	6,097	7,616	10,180	12,995	14,840
3.3-05	4.2-i4	Low voltage overhead conductor	6.0%	581	589	873	1,310	1,775	2,193	2,600
3.3-05	4.2-i4	LV service connections	6.0%	-	-	788	1,196	1,229	1,228	1,215
3.3-05	4.2-i4	Non-network assets		-	-	-	-	-	-	-
3.3-05	4.2-i4	Buildings	0.0%	211	11	7,008	1,187	1,117	2,087	2,011
3.3-05	4.2-i4	Computer hardware	40.0%	4,840	2,261	3,766	1,625	1,607	2,060	1,877
3.3-05	4.2-i4	Software	40.0%	-	3,780	20,103	1,695	13,263	6,799	5,743
3.3-05	4.2-i4	Equipment	30.0%	-	-	-	7,103	-	-	-
3.3-05	4.2-i4	Furniture and fittings	10.5%	115	214	327	288	606	319	436
3.3-05	4.2-i4	Land	0.0%	-	-	-	-	-	-	-
3.3-05	4.2-i4	Motor vehicles	21.0%	-	-	-	-	-	-	-
3.3-05	4.2-i4	Plant and machinery	7.0%	-	-	-	-	-	-	-

Error check: Aggregated values equal total forecast VCA

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Ref	Destination	Nominal \$000 Proportionate value of tax commissioned assets (inc SL depr rate)	Assessment period 2017	Assessment period 2018	CPP regulatory period					
					2019	2020	2021	2022	2023	
Overhead structures										
3.3-06	4.2-i5	Poles - subtransmission	6.0%	689	570	719	837	837	800	733
3.3-06	4.2-i5	Crossarms - subtransmission	7.0%	1,416	1,323	1,751	2,384	2,205	1,650	1,034
3.3-06	4.2-i5	Poles - distribution	6.0%	4,521	5,079	5,873	7,161	7,936	8,444	8,701
3.3-06	4.2-i5	Crossarms - distribution	7.0%	3,841	4,219	5,096	6,115	6,921	7,492	7,984
3.3-06	4.2-i5	Poles - LV	6.0%	1,340	918	1,030	1,234	1,468	1,517	1,445
3.3-06	4.2-i5	Crossarms - LV	7.0%	1,948	1,808	2,199	2,542	3,128	3,413	3,525
3.3-06	4.2-i5	110kV Subtransmission Foundation	6.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	110kV Subtransmission Insulators	6.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	110kV Subtransmission Tower Paint	6.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	110kV Subtransmission Tower	7.0%	-	-	-	-	-	-	-
Zone substations										
3.3-06	4.2-i5	Power transformers	6.0%	1,963	1,372	3,221	3,243	5,189	4,208	5,345
3.3-06	4.2-i5	Indoor switchgear	6.0%	2,026	2,664	5,704	3,813	3,579	4,940	3,394
3.3-06	4.2-i5	Buildings & site development	6.0%	467	620	3,068	1,713	1,524	2,390	1,486
3.3-06	4.2-i5	Outdoor switchgear	6.0%	1,020	1,012	1,033	1,864	1,748	1,189	1,384
3.3-06	4.2-i5	Load control injection	7.0%	-	561	276	-	617	880	559
3.3-06	4.2-i5	Zone substations - other	7.0%	3	341	815	5,906	350	349	343
3.3-06	4.2-i5	Zone substations land	0.0%	6	24	150	201	-	116	40
3.3-06	4.2-i5	Zone substations easements other than fixed	0.0%	-	-	57	27	-	-	-
3.3-06	4.2-i5	Zone substations fixed life easements	0.0%	-	-	-	-	-	-	-
Distribution switchgear										
3.3-06	4.2-i5	Pole mounted fuses	7.0%	2,530	2,203	2,175	2,227	2,292	2,293	2,319
3.3-06	4.2-i5	Pole mounted switches	7.0%	1,485	1,363	1,460	1,378	1,248	1,180	1,061
3.3-06	4.2-i5	Circuit breakers/reclosers/sectionalisers	6.0%	2,431	2,326	2,676	3,349	3,666	3,649	3,268
3.3-06	4.2-i5	Ground mounted switchgear	6.0%	2,356	2,298	2,641	2,991	3,245	3,405	3,354
Distribution transformers										
3.3-06	4.2-i5	Pole mounted distribution transformers	6.0%	3,630	3,344	4,252	5,112	4,570	3,897	3,792
3.3-06	4.2-i5	Ground mounted distribution transformers	6.0%	3,085	2,730	3,439	3,922	4,044	3,980	4,024
3.3-06	4.2-i5	Conversion Transformers and SWER Transf	6.0%	-	9	96	161	96	23	2
3.3-06	4.2-i5	Capacitors/Voltage regulators	6.0%	621	588	616	657	615	593	677
Secondary systems										
3.3-06	4.2-i5	Protection (digital)	7.0%	1,232	1,349	2,383	2,475	2,437	1,963	1,310
3.3-06	4.2-i5	Metering systems (GXP and HV)	6.0%	67	78	49	40	41	41	42
3.3-06	4.2-i5	Ripple relays	7.0%	10	31	1,481	2,218	1,486	360	15
3.3-06	4.2-i5	SCADA, Communications and monitoring	6.0%	2,461	4,840	5,253	4,912	3,829	3,722	3,889
3.3-06	4.2-i5	DC supplies	30.0%	30	48	125	79	89	104	139
Cables										
3.3-06	4.2-i5	Subtransmission cables	6.0%	2,537	1,533	9,859	1,789	1,217	10,258	763
3.3-06	4.2-i5	Cables Easement	0.0%	83	193	487	217	106	278	-
3.3-06	4.2-i5	Distribution cables	6.0%	4,244	4,300	4,398	4,534	4,601	4,514	4,469
3.3-06	4.2-i5	Low voltage cables	6.0%	2,176	2,121	2,037	2,067	2,144	2,102	2,204
3.3-06	4.2-i5	Low voltage service connections	6.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	Pillar Box	7.0%	1,373	1,456	1,501	1,577	1,627	1,601	1,589
Conductors										
3.3-06	4.2-i5	Subtransmission overhead conductor	6.0%	526	571	520	630	654	715	586
3.3-06	4.2-i5	OH line easement	0.0%	131	191	307	1,276	100	86	233
3.3-06	4.2-i5	Distribution overhead conductor	6.0%	2,343	2,498	3,049	3,808	5,090	6,497	7,420
3.3-06	4.2-i5	Low voltage overhead conductor	6.0%	291	294	437	655	887	1,096	1,300
3.3-06	4.2-i5	LV service connections	6.0%	-	-	394	598	615	614	607
Non-network assets										
3.3-06	4.2-i5	Buildings	0.0%	106	6	4,016	594	559	1,044	1,006
3.3-06	4.2-i5	Computer hardware	40.0%	2,420	1,130	1,136	812	803	1,030	939
3.3-06	4.2-i5	Software	40.0%	-	1,890	1,614	848	3,633	3,400	2,871
3.3-06	4.2-i5	Equipment	30.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	Furniture and fittings	10.5%	57	107	163	144	303	159	218
3.3-06	4.2-i5	Land	0.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	Motor vehicles	21.0%	-	-	-	-	-	-	-
3.3-06	4.2-i5	Plant and machinery	7.0%	-	-	-	-	-	-	-

Error check: Aggregated values equal total forecast VCA

TRUE TRUE TRUE TRUE TRUE TRUE TRUE

WUC roll forward

Ref	Destination	Nominal \$000 Works under construction roll forward	Next period						
			Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
3.3-o7	Section 7	Opening WUC	47,387	61,932	100,059	67,369	77,069	95,988	77,039
3.3-o7	Section 7	add: Cost of financing	1,138	2,119	3,784	1,545	2,347	2,659	2,457
3.3-o7	Section 7	add: Capex	124,333	152,030	190,065	187,297	203,511	199,538	198,262
3.3-o7	Section 7	less: Assets commissioned	110,926	116,022	226,538	179,142	186,939	221,145	226,430
3.3-o7	Section 7	Closing WUC	61,932	100,059	67,369	77,069	95,988	77,039	51,327

WUC roll forward by commissioning type

Ref	Destination	Nominal \$000 Works under construction roll forward - Simple commissioning		Next period						
				Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
3.3-o7	Section 7	Opening WUC	1	35,481	36,952	38,738	47,436	49,512	51,868	46,888
3.3-o7	Section 7	add: Cost of financing	1	-	-	-	-	-	-	-
3.3-o7	Section 7	add: Capex	1	112,397	117,808	148,672	160,163	173,356	162,162	168,205
3.3-o7	Section 7	less: Assets commissioned	1	110,926	116,022	139,973	158,087	171,000	167,142	168,134
3.3-o7	Section 7	Closing WUC		36,952	38,738	47,436	49,512	51,868	46,888	46,959

Ref	Destination	Nominal \$000 Works under construction roll forward - Specific date commissioning		Next period						
				Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
3.3-o7	Section 7	Opening WUC	2	11,906	24,979	61,321	19,933	27,557	44,119	30,150
3.3-o7	Section 7	add: Cost of financing	2	1,138	2,119	3,784	1,545	2,347	2,659	2,457
3.3-o7	Section 7	add: Capex	2	11,936	34,222	41,393	27,134	30,155	37,375	30,057
3.3-o7	Section 7	less: Assets commissioned	2	-	-	86,565	21,054	15,939	54,003	58,295
3.3-o7	Section 7	Closing WUC		24,979	61,321	19,933	27,557	44,119	30,150	4,369

Error check: Aggregated values equal total closing WUC

TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE

Error check: WUC as a percentage of capex agrees with top down assumption

TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE

End

Calculation of RAB roll-forward

Inputs

Ref	Source		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.1-i1	3.1-o5	Revaluation rate	2.1%	2.2%	2.1%	2.1%	2.0%	2.0%	2.0%

Existing assets inputs

Ref	Source	(Nominal \$000, years) Remaining life groupings	Closing RAB	Weighted average remaining asset life
			2016	2016
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life greater than 7 years	1,480,616	29.9
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 7 years and greater than 6 years	21,837	6.7
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 6 years and greater than 5 years	3,602	5.5
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 5 years and greater than 4 years	3,243	4.6
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 4 years and greater than 3 years	3,978	3.2
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 3 years and greater than 2 years	7,189	2.6
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 2 years and greater than 1 year	1,223	1.7
4.1-i3, 4.1-i4	Direct	Depreciating assets with remaining life less than 1 year	2,313	1.0
4.1-i3, 4.1-i4	Direct	Non-depreciating assets	4,012	-
			1,528,013	

Disposals inputs

Ref	Source	(Nominal \$000, years) Remaining life groupings	Disposals						
			2017	2018	2019	2020	2021	2022	2023
4.1-i7	Direct	Disposals for Depreciating assets with remaining life greater than 7 years	9,122	9,310	10,819	12,763	13,751	14,277	14,566
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 7 years and greater than 6 years	94	43	66	39	37	18	
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 6 years and greater than 5 years	42	57	33	35	18		
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 5 years and greater than 4 years	57	29	29	17			
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 4 years and greater than 3 years	29	25	14				
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 3 years and greater than 2 years	25	12					
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 2 years and greater than 1 year	12						
4.1-i7	Direct	Disposals for Depreciating assets with remaining life less than 1 year	-						
4.1-i7	Direct	Disposals for Non-depreciating assets	-	-	-	-	-	-	-
			9,381	9,477	10,963	12,854	13,806	14,295	14,566

Commissioned asset inputs

Value of commissioned assets (excluding acquired assets) (Nominal \$000)					Assessment period		CPP period				
Ref	Source	Asset type	Life		2017	2018	2019	2020	2021	2022	2023
4.1-i9	3.3-o4	Commissioned assets with 70 year remaining life	70		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 60 year remaining life	60		28,567	29,634	36,154	44,224	52,091	58,147	61,962
4.1-i9	3.3-o4	Commissioned assets with 55 year remaining life	55		25,919	23,747	63,544	31,141	36,164	60,137	56,083
4.1-i9	3.3-o4	Commissioned assets with 50 year remaining life	50		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 45 year remaining life	45		26,913	26,980	54,600	52,982	47,252	57,314	59,250
4.1-i9	3.3-o4	Commissioned assets with 40 year remaining life	40		18,845	17,556	19,135	21,205	22,131	22,241	21,356
4.1-i9	3.3-o4	Commissioned assets with 35 year remaining life	35		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 30 year remaining life	30		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 25 year remaining life	25		5,076	11,022	14,501	14,297	11,946	10,480	9,199
4.1-i9	3.3-o4	Commissioned assets with 20 year remaining life	20		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 15 year remaining life	15		5,167	6,266	32,490	12,341	16,943	11,265	10,067
4.1-i9	3.3-o4	Commissioned assets with 10 year remaining life	10		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 5 year remaining life	5		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 3 year remaining life	3		-	-	-	-	-	-	-
4.1-i9	3.3-o4	Commissioned assets with 0 year remaining life	-		439	817	6,114	2,952	412	1,561	8,512
Total commissioned assets					110,926	116,022	226,538	179,142	186,939	221,145	226,430
Error check: Aggregated data sums to raw inputs disaggregated data					TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Acquired assets inputs

(Nominal \$000)					Assessment period		CPP period				
Ref	Source				2017	2018	2019	2020	2021	2022	2023
4.1-i9	Direct	RAB Value of acquired assets			-	-	-	-	-	-	-
4.1-i9	Direct	Weighted average remaining useful life of assets acquired			-	-	-	-	-	-	-
Disposals of assets acquired in the CPP next period											
4.1-i9	Direct	Disposal of assets acquired in 2017			-	-	-	-	-	-	-
4.1-i9	Direct	Disposal of assets acquired in 2018				-	-	-	-	-	-
4.1-i9	Direct	Disposal of assets acquired in 2019					-	-	-	-	-
4.1-i9	Direct	Disposal of assets acquired in 2020						-	-	-	-
4.1-i9	Direct	Disposal of assets acquired in 2021							-	-	-
4.1-i9	Direct	Disposal of assets acquired in 2022								-	-
4.1-i9	Direct	Disposal of assets acquired in 2023									-
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year											
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2017	5.3.10(3)(a)			-	-	-	-	-	-
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2018					-	-	-	-	-
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2019						-	-	-	-
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2020							-	-	-
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2021								-	-
4.1-i9	Direct	Opening RAB adjustment for assets acquired in 2022									-

Existing assets roll forward

(Nominal \$'000)		Assessment period		CPP period				
	IM ref	2017	2018	2019	2020	2021	2022	2023
Existing assets - RAB roll-forward								
Opening RAB		1,528,013	1,489,403	1,452,322	1,412,780	1,371,761	1,327,976	1,282,981
less: Disposals		9,381	9,477	10,963	12,854	13,806	14,295	14,566
add: Commissioned assets		-	-	-	-	-	-	-
less: Depreciation		61,196	59,576	58,889	56,855	57,048	56,887	56,072
add: Revaluations		31,967	31,971	30,309	28,690	27,069	26,186	25,234
Closing RAB		1,489,403	1,452,322	1,412,780	1,371,761	1,327,976	1,282,981	1,237,576
Weighted average remaining life		25.0	25.0	24.7	24.8	24.0	23.3	22.9
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year		6,325	4,507	5,774	4,256	4,482	4,369	6,704
Error check: Aggregated data sums correctly		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Closing balance is carried forward to opening balance		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Additional assets roll-forward

(Nominal \$'000)		Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Commissioned assets - Total								
Total Commissioned assets - RAB roll-forward								
Opening RAB		-	110,926	226,702	452,390	628,500	810,812	1,025,713
less: Disposals		-	-	-	-	-	-	-
add: Commissioned assets		110,926	116,022	226,538	179,142	186,939	221,145	226,430
less: Depreciation		-	2,640	5,611	12,179	16,991	22,246	27,922
add: Revaluations		-	2,394	4,760	9,148	12,364	16,002	20,268
Closing RAB		110,926	226,702	452,390	628,500	810,812	1,025,713	1,244,489
Weighted average remaining useful life		-	42.0	40.4	37.1	37.0	36.4	36.7
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year		-	439	1,257	7,371	10,323	10,734	12,295
Error check: Aggregated data sums correctly		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Closing balance is carried forward to opening balance		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Acquired assets roll-forward

(Nominal \$'000)		Assessment period		CPP period				
	IM Ref	2017	2018	2019	2020	2021	2022	2023
Opening RAB of acquired assets	5.3.6(1)	-	-	-	-	-	-	-
less: Disposals		-	-	-	-	-	-	-
add: Acquired assets at RAB value		-	-	-	-	-	-	-
less: Depreciation	5.3.7	-	-	-	-	-	-	-
add: Revaluations	5.3.10	-	-	-	-	-	-	-
Closing RAB	5.3.6(3)	-	-	-	-	-	-	-
Weighted average remaining useful life		-	-	-	-	-	-	-
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year	5.3.10(3)(a)	-	-	-	-	-	-	-
Error check: Aggregated data sums correctly		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Closing balance is carried forward to opening balance		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Total assets roll-forward

(Nominal \$000)

	IM Ref	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Opening RAB	5.3.6(1)	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694
Disposals		9,381	9,477	10,963	12,854	13,806	14,295	14,566
Commissioned assets		110,926	116,022	226,538	179,142	186,939	221,145	226,430
Total depreciation	5.3.7(1)	61,196	62,216	64,499	69,034	74,039	79,133	83,995
Revaluations	5.3.10	31,967	34,366	35,069	37,838	39,433	42,188	45,503
Closing RAB	5.3.6(3)	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	2,482,065
Weighted average remaining useful life		25.0	25.7	26.0	27.0	27.0	27.0	27.5
Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year	5.3.10(3)(a)	6,325	4,947	7,030	11,627	14,804	15,103	18,999
Error check: Aggregated data sums correctly		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Closing balance is carried forward to opening balance		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Aggregate Commissioned Assets equal commissioned assets inputs		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Outputs

Outputs for all asset categories

Ref	Destination	IM Ref	Assessment period		CPP period					
			2017	2018	2019	2020	2021	2022	2023	
4.1-o1	4.5-i5		Opening RAB							
		5.3.6(1)		1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694
4.1-o1			Disposals	9,381	9,477	10,963	12,854	13,806	14,295	14,566
4.1-o1			Commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430
4.1-o1		5.3.7	Depreciation	61,196	62,216	64,499	69,034	74,039	79,133	83,995
4.1-o1		5.3.10	Revaluations	31,967	34,366	35,069	37,838	39,433	42,188	45,503
4.1-o1		5.3.6(3)	Closing RAB	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	2,482,065
4.1-o2	1.0-i36		Weighted average remaining useful life	25.0	25.7	26.0	27.0	27.0	27.0	27.5
4.1-o4	4.5-i6		Opening RAB adjustment for assets with nil physical asset life at the end of the disclosure year	6,325	4,947	7,030	11,627	14,804	15,103	18,999
4.1-o5			Forecast depreciation for assets commissioned in FY2017	-	2,640	2,699	2,757	2,816	2,874	2,934
4.1-o5			Forecast depreciation for assets commissioned in FY2018	-	-	2,912	2,976	3,039	3,102	3,167
4.1-o5			Forecast depreciation for assets commissioned in FY2019	-	-	-	6,446	6,584	6,722	6,863
4.1-o5			Forecast depreciation for assets commissioned in FY2020	-	-	-	-	4,551	4,646	4,742
4.1-o5			Forecast depreciation for assets commissioned in FY2021	-	-	-	-	-	4,902	5,004
4.1-o5			Forecast depreciation for assets commissioned in FY2022	-	-	-	-	-	-	5,213

End

RAB proportionate investment

Inputs

Ref	Source		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.1-i8	3.3-o3	Proportionate value of commissioned assets (including acquired assets)	55,463	58,011	88,778	86,545	85,500	96,896	84,067
4.1-i6	Forecast	Proportionate value of disposed assets	4,691	4,738	5,481	6,427	6,903	7,148	7,283
4.1-i9	Direct	Proportionate value of disposed assets acquired in the CPP next period	-	-	-	-	-	-	-

Calculations

(Nominal \$000)			Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
		Proportionate value of commissioned assets	55,463	58,011	88,778	86,545	85,500	96,896	84,067
		Proportionate value of disposed assets	4,691	4,738	5,481	6,427	6,903	7,148	7,283
		Proportionate value of acquired assets disposals	-	-	-	-	-	-	-
		RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784

Outputs

RAB proportionate investment

(Nominal \$000)			Assessment period		CPP period				
Ref	Destination		2017	2018	2019	2020	2021	2022	2023
4.1-o3	1.0-i38	RAB proportionate investment	50,772	53,273	83,297	80,118	78,597	89,749	76,784

End

Calculation of regulatory tax asset value roll-forward

Inputs

Tax depreciation method applicable to each disclosure year

Ref	Source	Asset category	Assessment period			CPP period				
			2016	2017	2018	2019	2020	2021	2022	2023
4.2-3	Direct	Tax depreciation method for each disclosure year	SL	DV	SL	SL	SL	SL	SL	SL

Opening tax asset value inputs

Sl. rate	DV rate	Ref	2016 Closing tax base	Ref	2016 Closing Tax NBV
0.0%	0.0%	4.2-2	4,387	4.2-1	29,040
2.5%	3.0%	4.2-2	1,171	4.2-1	1,032
3.0%	4.0%	4.2-2	773	4.2-1	694
5.5%	7.5%	4.2-2	277,371	4.2-1	203,246
6.0%	8.0%	4.2-2	400,835	4.2-1	345,508
6.5%	9.5%	4.2-2	13,857	4.2-1	9,137
6.6%	9.0%	4.2-2	5,779	4.2-1	3,956
7.0%	10.0%	4.2-2	41,711	4.2-1	34,041
7.2%	9.6%	4.2-2	484,437	4.2-1	318,436
7.8%	11.4%	4.2-2	1,023	4.2-1	644
8.4%	12.0%	4.2-2	-24,281	4.2-1	-14,584
8.5%	13.0%	4.2-2	1,262	4.2-1	995
9.6%	14.4%	4.2-2	1	4.2-1	1
10.0%	15.0%	4.2-2	36	4.2-1	18
10.2%	15.6%	4.2-2	56	4.2-1	29
10.5%	16.0%	4.2-2	890	4.2-1	568
12.0%	18.0%	4.2-2	3	4.2-1	1
12.6%	19.2%	4.2-2	87	4.2-1	35
13.5%	20.0%	4.2-2	1,271	4.2-1	784
15.0%	21.6%	4.2-2	12	4.2-1	3
16.2%	24.0%	4.2-2	207	4.2-1	48
17.5%	25.0%	4.2-2	647	4.2-1	311
18.0%	26.0%	4.2-2	6	4.2-1	1
21.0%	30.0%	4.2-2	174	4.2-1	47
21.6%	31.2%	4.2-2	5	4.2-1	0
24.0%	33.0%	4.2-2	1	4.2-1	0
25.2%	36.0%	4.2-2	2	4.2-1	0
28.8%	39.6%	4.2-2	2	4.2-1	1
30.0%	40.0%	4.2-2	542	4.2-1	152
36.0%	48.0%	4.2-2	210	4.2-1	2
40.0%	50.0%	4.2-2	23,347	4.2-1	8,165
48.0%	60.0%	4.2-2	2,828	4.2-1	51
67.0%	67.0%	4.2-2	22	4.2-1	15

Error check: Total worksheet opening RTAV inputs equal total model RTAV inputs

TRUE

TRUE

Tax value of forecast commissioned assets inputs (including acquired assets)

(Nominal \$000)

Ref	Source	SL Rate	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.2-4	3.3-05	0.0%	651	828	12,736	3,886	1,529	3,388	9,620
4.2-4	3.3-05	2.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	3.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	5.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	6.0%	77,587	79,532	142,937	112,648	124,049	160,741	162,719
4.2-4	3.3-05	6.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	6.6%	-	-	-	-	-	-	-
4.2-4	3.3-05	7.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	7.2%	27,673	29,310	40,578	50,620	44,969	42,840	42,111
4.2-4	3.3-05	7.8%	-	-	-	-	-	-	-
4.2-4	3.3-05	8.4%	-	-	-	-	-	-	-
4.2-4	3.3-05	8.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	9.6%	-	-	-	-	-	-	-
4.2-4	3.3-05	10.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	10.2%	-	-	-	-	-	-	-
4.2-4	3.3-05	10.5%	115	214	327	288	606	319	436
4.2-4	3.3-05	12.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	12.6%	-	-	-	-	-	-	-
4.2-4	3.3-05	13.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	15.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	16.2%	-	-	-	-	-	-	-
4.2-4	3.3-05	17.5%	-	-	-	-	-	-	-
4.2-4	3.3-05	18.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	21.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	21.6%	-	-	-	-	-	-	-
4.2-4	3.3-05	24.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	25.2%	-	-	-	-	-	-	-
4.2-4	3.3-05	28.8%	-	-	-	-	-	-	-
4.2-4	3.3-05	30.0%	60	97	345	7,261	179	321	460
4.2-4	3.3-05	30.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	40.0%	4,840	6,041	23,869	3,320	14,869	8,860	7,620
4.2-4	3.3-05	48.0%	-	-	-	-	-	-	-
4.2-4	3.3-05	67.0%	-	-	-	-	-	-	-
			110,926	116,022	220,792	178,023	186,201	216,469	222,966

Error check: Total worksheet tax VCA inputs equal total model tax VCA inputs

TRUE

TRUE

Proportionate value of forecast commissioned assets inputs (including acquired assets)

(Nominal \$000)

Ref	Source	SL Rate	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.2-5	3.3-06	0.0%	325	414	5,017	2,314	764	1,523	1,280
4.2-5	3.3-06	2.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	3.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	5.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	6.0%	38,793	39,766	60,365	55,090	57,596	68,596	58,883
4.2-5	3.3-06	6.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	6.6%	-	-	-	-	-	-	-
4.2-5	3.3-06	7.0%	13,836	14,655	19,137	26,822	22,311	21,181	19,738
4.2-5	3.3-06	7.2%	-	-	-	-	-	-	-
4.2-5	3.3-06	7.8%	-	-	-	-	-	-	-
4.2-5	3.3-06	8.4%	-	-	-	-	-	-	-
4.2-5	3.3-06	8.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	9.6%	-	-	-	-	-	-	-
4.2-5	3.3-06	10.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	10.2%	-	-	-	-	-	-	-
4.2-5	3.3-06	10.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	12.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	12.6%	-	-	-	-	-	-	-
4.2-5	3.3-06	13.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	15.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	16.2%	-	-	-	-	-	-	-
4.2-5	3.3-06	17.5%	-	-	-	-	-	-	-
4.2-5	3.3-06	18.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	21.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	21.6%	-	-	-	-	-	-	-
4.2-5	3.3-06	24.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	25.2%	-	-	-	-	-	-	-
4.2-5	3.3-06	28.8%	-	-	-	-	-	-	-
4.2-5	3.3-06	30.0%	30	48	125	79	89	104	139
4.2-5	3.3-06	36.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	40.0%	2,420	3,020	2,750	1,660	4,436	4,430	3,810
4.2-5	3.3-06	48.0%	-	-	-	-	-	-	-
4.2-5	3.3-06	67.0%	-	-	-	-	-	-	-

	55,463	58,011	87,556	86,109	85,500	95,993	84,067
	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Error check: Total worksheet proportionate tax VCA inputs equal total model proportionate tax VCA inputs

Tax value of forecast disposed assets by straight line depreciation rate grouping

(Nominal \$000)

Ref	Source	SL Rate	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.2-06	Forecast	0.0%	13	13	15	17	19	19	20
4.2-06	Forecast	2.5%	-	-	-	-	-	-	-
4.2-06	Forecast	3.0%	-	-	-	-	-	-	-
4.2-06	Forecast	5.5%	4,794	4,843	5,603	6,569	7,056	7,306	7,444
4.2-06	Forecast	6.0%	222	224	260	304	327	338	345
4.2-06	Forecast	6.5%	840	848	981	1,150	1,236	1,279	1,304
4.2-06	Forecast	6.6%	12	12	13	16	17	18	18
4.2-06	Forecast	7.0%	310	313	362	424	456	472	481
4.2-06	Forecast	7.2%	1,773	1,791	2,072	2,430	2,610	2,702	2,753
4.2-06	Forecast	7.8%	3	3	3	4	4	4	4
4.2-06	Forecast	8.4%	681	688	796	933	1,002	1,038	1,058
4.2-06	Forecast	9.6%	0	0	0	0	0	0	0
4.2-06	Forecast	10.0%	32	32	37	44	47	48	49
4.2-06	Forecast	10.2%	0	0	0	0	0	0	0
4.2-06	Forecast	10.5%	0	0	0	0	0	0	0
4.2-06	Forecast	12.0%	0	0	0	0	0	0	0
4.2-06	Forecast	12.6%	-	-	-	-	-	-	-
4.2-06	Forecast	13.5%	-	-	-	-	-	-	-
4.2-06	Forecast	15.0%	-	-	-	-	-	-	-
4.2-06	Forecast	16.2%	-	-	-	-	-	-	-
4.2-06	Forecast	17.5%	-	-	-	-	-	-	-
4.2-06	Forecast	18.0%	0	0	0	0	0	0	0
4.2-06	Forecast	21.0%	0	0	0	0	0	0	0
4.2-06	Forecast	21.6%	0	0	0	0	0	0	0
4.2-06	Forecast	24.0%	-	-	-	-	-	-	-
4.2-06	Forecast	25.2%	-	-	-	-	-	-	-
4.2-06	Forecast	28.8%	0	0	0	0	0	0	0
4.2-06	Forecast	30.0%	0	0	0	0	0	0	0
4.2-06	Forecast	36.0%	0	0	0	0	0	0	0
4.2-06	Forecast	40.0%	-0	-0	-0	-0	-0	-0	-0
4.2-06	Forecast	48.0%	3	3	3	4	4	4	4
4.2-06	Forecast	67.0%	-	-	-	-	-	-	-
			8,682	8,770	10,146	11,896	12,777	13,229	13,480

Ref	Source	SL Rate	2017	
ct	ID	Opening regulatory tax asset value	952,402	

Calculations

Tax asset value roll forward for existing and commissioned assets

(Nominal \$000)

Tax asset value roll forward by SL depreciation rate grouping	DV Rate	2016	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
Tax depreciation method	5.4.26(4)	SL	DV	SL	SL	SL	SL	SL	SL
Tax asset value roll-forward									
Opening tax asset value			942,378	958,505	1,000,355	1,135,472	1,205,943	1,269,708	1,346,892
less: Tax value of disposals			8,682	8,770	10,146	11,896	12,777	13,229	13,480
add: Tax value of commissioned assets			110,926	116,022	220,792	178,023	186,201	216,469	222,966
less: Tax depreciation			86,116	65,403	75,529	95,656	109,660	126,055	140,613
Closing tax asset value			958,505	1,000,355	1,135,472	1,205,943	1,269,708	1,346,892	1,415,765

Error check: Opening RTAV = Closing RTAV
 Error check: Aggregate of individual Closing RTAV = Consolidated roll forward

Outputs

Tax asset value roll forward

(Nominal \$000)

Ref	Destination	Input description	IM ref	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.2-01		Opening tax asset value	5.4.	942,378	958,505	1,000,355	1,135,472	1,205,943	1,269,708	1,346,892
4.2-01		less: Tax value of disposals		8,682	8,770	10,146	11,896	12,777	13,229	13,480
4.2-01		add: Tax value of commissioned assets		110,926	116,022	220,792	178,023	186,201	216,469	222,966
4.2-01		less: Tax depreciation		86,116	65,403	75,529	95,656	109,660	126,055	140,613
4.2-01		Closing tax asset value		958,505	1,000,355	1,135,472	1,205,943	1,269,708	1,346,892	1,415,765
4.2-01		Weighted average remaining tax life of assets employed	5.4.	10.9	14.7	13.2	11.9	11.0	10.1	9.6

Error check: Closing RTAV = Opening RTAV
 Error check: Aggregate of individual Closing RTAV = Consolidated roll forward

Outputs for price path model

(Nominal \$000)

Ref	Destination	Input description	IM ref	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.2-02	1.0-26	Tax depreciation		86,116	65,403	75,529	95,656	109,660	126,055	140,613

Regulatory tax asset value roll forward

Ref	Destination	Input description	IM ref	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.2-03		Opening regulatory tax asset value	5.4.	952,402	968,530	1,010,379	1,145,496	1,215,967	1,279,732	1,356,917
4.2-03		less: Regulatory tax value of disposals		8,682	8,770	10,146	11,896	12,777	13,229	13,480
4.2-03		add: Regulatory tax value of commissioned assets		110,926	116,022	220,792	178,023	186,201	216,469	222,966
4.2-03		less: Tax depreciation		86,116	65,403	75,529	95,656	109,660	126,055	140,613
4.2-03		add: Change in cost allocation		-	-	-	-	-	-	-
4.2-03		Closing regulatory tax asset value	5.4.	968,530	1,010,379	1,145,496	1,215,967	1,279,732	1,356,917	1,425,789

Reconciliation of tax asset values to regulatory tax asset values

Ref	Destination	Input description	IM ref	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.2-04		Opening tax asset value		942,378	958,505	1,000,355	1,135,472	1,205,943	1,269,708	1,346,892
4.2-04		add: FY2012 law change to no tax depreciation on buildings		10,149	10,149	10,149	10,149	10,149	10,149	10,149
4.2-04		add: 2016 other adjustments		-125	-	-	-	-	-	-
4.2-04		Opening regulatory tax asset value	5.4.	952,402	968,654	1,010,504	1,145,621	1,216,092	1,279,857	1,357,041

Error check: 2017 opening regulatory tax asset value agrees with 2016 ID Schedule 54(w)

End

Calculation of amortisation of initial differences in asset values

Inputs

Existing assets inputs

Ref	Source	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
4.3-i1	Direct	Opening Unamortised initial difference in asset values	271,615					
4.3-i2	Direct	Opening weighted average remaining life of relevant assets	33					
4.3-i3	Direct	Opening RAB commissioned on or before 1-Apr-2009	1,275,729					
4.3-i4	Direct	RAB disposals	9,493					
4.3-i5	Direct	Proportion of RAB disposals with an initial difference in asset values	90%					

Acquired assets inputs

Ref	Source	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
4.3-i6	Direct	Unamortised initial difference in asset values of acquired assets	-	-	-	-	-	-
4.3-i7	Direct	Opening weighted average remaining life of relevant assets	-	-	-	-	-	-

Calculations

Adjustment for unamortised initial difference in disposed assets

	Assessment period		CPP period				
	2017	2018	2019	2020	2021	2022	2023
RAB disposals	9,493						
Proportion of RAB disposals with an initial difference in asset values	90%						
RAB disposals with an unamortised initial difference	8,566						
Proportion of RAB disposals to Opening RAB with initial differences in asset values	1%						

Amortisation of initial difference in asset values

(Nominal \$000)

IM ref	Assessment period		CPP period					
	2017	2018	2019	2020	2021	2022	2023	
Existing Assets with Initial differences								
Opening Unamortised initial difference in asset values	5.3.17(2)	271,615	259,344	247,229	235,268	223,459	211,801	200,293
Adjustment for unamortised initial difference in assets acquired								
Amortisation of initial differences in asset values	5.3.17(10,447	10,374	10,301	10,229	10,157	10,086	10,015
Adjustment for unamortised initial difference in disposed assets	5.3.17(4)(a)	1,824	1,741	1,660	1,580	1,500	1,422	1,345
Closing Unamortised initial difference in asset values		259,344	247,229	235,268	223,459	211,801	200,293	188,934
Weighted average remaining life of relevant assets		26.0	25.0	24.0	23.0	22.0	21.0	20.0
Total Assets with Initial differences								
Opening unamortised initial difference in asset values		-	-	-	-	-	-	-
Adjustment for unamortised initial difference in assets acquired		-	-	-	-	-	-	-
Amortisation of initial differences in asset values		-	-	-	-	-	-	-
Adjustment for unamortised initial difference in disposed assets		-	-	-	-	-	-	-
Closing unamortised initial difference in asset values		-	-	-	-	-	-	-
Weighted average remaining life of relevant assets		-	-	-	-	-	-	-

Total Relevant Assets with Initial differences								
Opening unamortised initial difference in asset values	271,615	259,344	247,229	235,268	223,459	211,801	200,293	
Adjustment for unamortised initial difference in assets acquired	-	-	-	-	-	-	-	-
Amortisation of initial differences in asset values	10,447	10,374	10,301	10,229	10,157	10,086	10,015	
Adjustment for unamortised initial difference in disposed assets	1,824	1,741	1,660	1,580	1,500	1,422	1,345	
Closing unamortised initial difference in asset values	259,344	247,229	235,268	223,459	211,801	200,293	188,934	
Weighted average remaining life of relevant assets	26.0	25.0	24.0	23.0	22.0	21.0	20.0	
Error check: Opening unamortised initial difference equals closing unamortised initial difference from previous year		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Outputs

Ref	Destination		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.3-o1	1.0-i23	Adjustment to opening unamortised initial differences in asset values for sold or acquired assets	-1,824	-1,741	-1,660	-1,580	-1,500	-1,422	-1,345
4.3-o2	1.0-i24	Weighted average remaining life of relevant assets	26.0	25.0	24.0	23.0	22.0	21.0	20.0

End

Calculation of RAB roll-forward

Inputs

Ref	Source		Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.4-i1	n/a	CPI index, annual average	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Existing assets inputs

Ref	Source	(Nominal \$000, years) Remaining life groupings	Closing RAB excl revals	Weighted average remaining asset life
			2016	2016
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life greater than 7 years	1,384,743	30.2
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 7 years and greater than 6 years	20,143	6.7
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 6 years and greater than 5 years	3,270	5.5
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 5 years and greater than 4 years	2,938	4.6
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 4 years and greater than 3 years	3,840	3.2
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 3 years and greater than 2 years	7,048	2.6
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 2 years and greater than 1 year	1,154	1.6
4.4-i2, 4.4-i3	Direct	Depreciating assets with remaining life less than 1 year	2,313	1.0
4.4-i2, 4.4-i3	Direct	Non-depreciating assets	3,894	-
			1,429,343	

Ref	Source	(Nominal \$000, years) Remaining life groupings	RAB excluding revaluations Disposals						
			2017	2018	2019	2020	2021	2022	2023
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life greater than 7 years	8,556	8,732	10,147	11,969	12,895	13,387	13,658
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 7 years and greater than 6 years	87	40	62	36	34	17	
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 6 years and greater than 5 years	39	53	31	32	16		
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 5 years and greater than 4 years	53	27	27	15			
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 4 years and greater than 3 years	27	23	13				
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 3 years and greater than 2 years	23	11					
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 2 years and greater than 1 year	11						
4.4-i4	Direct	Disposals excluding revaluations for depreciating assets with remaining life less than 1 year	-						
4.4-i4	Direct	Disposals excluding revaluations for non-depreciating assets	-	-	-	-	-	-	-
			8,797	8,886	10,279	12,053	12,945	13,404	13,658

Commissioned asset inputs

Ref	Source	Asset type	Life	Assessment period		CPP period				
				2017	2018	2019	2020	2021	2022	2023
4.4-i5	3.3-04	Commissioned assets with 70 year remaining life	70	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 60 year remaining life	60	28,567	29,634	36,154	44,224	52,091	58,147	61,962
4.4-i5	3.3-04	Commissioned assets with 55 year remaining life	55	25,919	23,747	63,544	31,141	36,164	60,137	56,083
4.4-i5	3.3-04	Commissioned assets with 50 year remaining life	50	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 45 year remaining life	45	26,913	26,980	54,600	52,982	47,252	57,314	59,250
4.4-i5	3.3-04	Commissioned assets with 40 year remaining life	40	18,845	17,556	19,135	21,205	22,131	22,241	21,356
4.4-i5	3.3-04	Commissioned assets with 35 year remaining life	35	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 30 year remaining life	30	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 25 year remaining life	25	5,076	11,022	14,501	14,297	11,946	10,480	9,199
4.4-i5	3.3-04	Commissioned assets with 20 year remaining life	20	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 15 year remaining life	15	5,167	6,266	32,490	12,341	16,943	11,265	10,067
4.4-i5	3.3-04	Commissioned assets with 10 year remaining life	10	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 5 year remaining life	5	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 3 year remaining life	3	-	-	-	-	-	-	-
4.4-i5	3.3-04	Commissioned assets with 0 year remaining life	-	439	817	6,114	2,952	412	1,561	8,512
Total commissioned assets				110,926	116,022	226,538	179,142	186,939	221,145	226,430

Acquired assets inputs

(Nominal \$000)			Assessment period		CPP period				
Ref	Source		2017	2018	2019	2020	2021	2022	2023
4.4-i6	Direct	RAB value of acquired assets	-	-	-	-	-	-	-
4.4-i6	Direct	Weighted average remaining useful life of assets acquired	-	-	-	-	-	-	-
Disposals of assets acquired in the CPP next period									
4.4-i6	Direct	Disposal of assets acquired in 2017	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2018	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2019	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2020	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2021	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2022	-	-	-	-	-	-	-
4.4-i6	Direct	Disposal of assets acquired in 2023	-	-	-	-	-	-	-

RAB roll forward

Existing assets roll forward

(Nominal \$000)		Assessment period		CPP period				
	IM ref	2017	2018	2019	2020	2021	2022	2023
Existing assets - RAB roll-forward								
Opening RAB excluding revaluations	5.3.6(1)	1,429,343	1,363,449	1,300,395	1,237,886	1,176,606	1,115,327	1,054,756
less: Disposals		8,797	8,886	10,279	12,053	12,945	13,404	13,658
add: Commissioned assets		-	-	-	-	-	-	-
less: Adjusted depreciation	5.3.7	57,097	54,168	52,229	49,228	48,333	47,167	45,481
add: Revaluations	5.3.10	-	-	-	-	-	-	-
Closing RAB excluding revaluations	5.3.6(3)	1,363,449	1,300,395	1,237,886	1,176,606	1,115,327	1,054,756	995,616
Weighted average remaining life		25.0	25.2	24.9	25.1	24.3	23.6	23.2
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Error check: Aggregated data sums correctly

Error check: Closing balance is carried forward to opening balance

Commissioned assets roll-forward

(Nominal \$000)

(Nominal \$000)		Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Commissioned assets - Total								
Total Commissioned assets - RAB excluding revaluations roll-forward								
Opening RAB excluding revaluations		-	110,926	224,308	445,295	612,439	782,829	982,523
less: Disposals		-	-	-	-	-	-	-
add: Commissioned assets		110,926	116,022	226,538	179,142	186,939	221,145	226,430
less: Adjusted depreciation		-	2,640	5,552	11,998	16,549	21,451	26,664
add: Revaluations		-	-	-	-	-	-	-
Closing RAB excluding revaluations		110,926	224,308	445,295	612,439	782,829	982,523	1,182,288
Weighted average remaining useful life		-	42.0	40.4	37.1	37.0	36.5	36.8
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Error check: Aggregated data sums correctly

Error check: Closing balance is carried forward to opening balance

Acquired assets roll-forward

(Nominal \$000)

	IM Ref	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Opening RAB of acquired assets	5.3.6(1)	-	-	-	-	-	-	-
<i>less:</i> Disposals		-	-	-	-	-	-	-
<i>add:</i> Acquired assets at RAB excluding revaluations value		-	-	-	-	-	-	-
<i>less:</i> Adjusted depreciation	5.3.7	-	-	-	-	-	-	-
<i>add:</i> Revaluations	5.3.10	-	-	-	-	-	-	-
Closing RAB	5.3.6(3)	-	-	-	-	-	-	-
Weighted average remaining useful life		-	-	-	-	-	-	-
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Error check: Aggregated data sums correctly

Error check: Closing balance is carried forward to opening balance

Total assets roll-forward

(Nominal \$000)

	IM Ref	Assessment period		CPP period				
		2017	2018	2019	2020	2021	2022	2023
Opening RAB excluding revaluations	5.3.6(1)	1,429,343	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279
Disposals		8,797	8,886	10,279	12,053	12,945	13,404	13,658
Commissioned assets		110,926	116,022	226,538	179,142	186,939	221,145	226,430
Adjusted depreciation	5.3.7	57,097	56,807	57,781	61,226	64,882	68,618	72,146
Revaluations	5.3.10	-	-	-	-	-	-	-
Closing RAB excluding revaluations	5.3.6(3)	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	2,177,905
Weighted average remaining useful life		25.0	26.0	26.4	27.5	27.6	27.7	28.2
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Error check: Aggregated data sums correctly

Error check: Closing balance is carried forward to opening balance

Error check: Aggregate Commissioned Assets equal commissioned assets inputs

Outputs

Outputs for all asset categories

Ref	Destination	IM Ref	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
	Opening RAB excluding revaluations	5.3.6(1)	1,429,343	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279
	Disposals		8,797	8,886	10,279	12,053	12,945	13,404	13,658
	Commissioned assets		110,926	116,022	226,538	179,142	186,939	221,145	226,430
	Adjusted depreciation	5.3.7	57,097	56,807	57,781	61,226	64,882	68,618	72,146
	Revaluations	5.3.10	-	-	-	-	-	-	-
	Closing RAB excluding revaluations	5.3.6(3)	1,474,374	1,524,703	1,683,181	1,789,044	1,898,156	2,037,279	2,177,905
4.4-o1	1.0-i41		25.0	26.0	26.4	27.5	27.6	27.7	28.2

End

Calculation of Term Credit Spread Difference

Inputs

Direct inputs

Ref	Source		2016
4.5-i1	Direct	Total book value of interest bearing debt	1,267,763
4.5-i2	Direct	Average opening and closing RAB values	1,502,365

Ref	Source type	Issuing party	Original tenor (years)	BV at issue date (NZ\$000)
4.5-i3	Direct	2005 Guaranteed Bonds - 2	12.0	50,000
4.5-i3	Direct	USPP (2003) US\$65m/NZ\$109.3m	13.0	109,299
4.5-i3	Direct	USPP (2011) US\$72m/NZ\$91.4m	9.0	91,371
4.5-i3	Direct	USPP (2011) US\$90m/NZ\$114.2m	12.0	114,213
4.5-i3	Direct	USPP (2011) US\$83m/NZ\$105.3m	15.0	105,330
4.5-i3	Direct	2011 Wholesale Bond - Fixed rate	7.0	65,000
4.5-i3	Direct	2011 Wholesale Bond - Floating rate	7.0	35,000
4.5-i3	Direct	USPP(2013) US\$25m/NZ\$30.4m	12.0	30,440
4.5-i3	Direct	USPP(2013) US\$80m/NZ\$97.4m	15.0	97,407
4.5-i3	Direct	NZD USPP(2014) NZ\$135m	12.5	135,000
4.5-i3	Direct	2015 Wholesale Bond - Fixed rate	7.0	150,000

Ref	Source		
4.5-i4	1.0-i20	IM specified leverage	42%

Forecast RAB inputs

(Nominal \$000)		Assessment period		CPP period					
Ref	Source	2017	2018	2019	2020	2021	2022	2023	
4.5-i5	4.1-o1	Opening RAB	1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694
4.5-i6	4.1-o1	Closing RAB	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	2,482,065

Calculations

Recalculation of gross term credit spread differential

Issuing party	Original tenor (years)	BV at issue date (NZ\$000)	Term credit spread difference (cl. 5.3.24(1))	Cost of executing an interest rate swap	Debt issue cost readjustment (cl. 5.4.23(2))
2005 Guaranteed Bonds - 2	12.0	50,000	263	-	-58
USPP (2003) US\$65m/NZ\$109.3m	13.0	109,299	656	-	-135
USPP (2011) US\$72m/NZ\$91.4m	9.0	91,371	274	-	-81
USPP (2011) US\$90m/NZ\$114.2m	12.0	114,213	600	-	-133
USPP (2011) US\$83m/NZ\$105.3m	15.0	105,330	790	-	-140
2011 Wholesale Bond - Fixed rate	7.0	65,000	98	-	-37
2011 Wholesale Bond - Floating rate	7.0	35,000	53	-	-20
USPP(2013) US\$25m/NZ\$30.4m	12.0	30,440	160	-	-36
USPP(2013) US\$80m/NZ\$97.4m	15.0	97,407	731	-	-130
NZD USPP(2014) NZ\$135m	12.5	135,000	759	-	-162
2015 Wholesale Bond - Fixed rate	7.0	150,000	225	-	-86
		983,059	4,607	-	-1,018

Forecast TCSD

(Nominal \$000)			Assessment period		CPP period				
	IM ref	2016	2017	2018	2019	2020	2021	2022	2023
Opening RAB			1,528,013	1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694
Closing RAB			1,600,329	1,679,024	1,865,170	2,000,261	2,138,789	2,308,694	2,482,065
Average RAB	5.3.23(1)(d)	1,502,365	1,564,171	1,639,677	1,772,097	1,932,716	2,069,525	2,223,741	2,395,380
Total book value of interest bearing debt	5.3.23(1)(b)	1,267,763	1,319,918	1,383,633	1,495,375	1,630,912	1,746,358	1,876,493	2,021,329
Commerce Commission Leverage	5.3.23(1)(c)	42%	42%	42%	42%	42%	42%	42%	42%
Gross term credit spread differential	5.3.23(1)(a)	3,589	3,736	3,917	4,233	4,617	4,944	5,312	5,722
Term credit spread differential allowance		1,786	1,860	1,949	2,107	2,298	2,460	2,644	2,848

Outputs

Outputs for all asset categories

Ref	Destination	IM Ref	Assessment period		CPP period				
			2017	2018	2019	2020	2021	2022	2023
4.5-o1	1.0-i10 Term credit spread differential allowance	5.3.23	1,860	1,949	2,107	2,298	2,460	2,644	2,848

End

Opex summary by portfolio

Real \$000		2012	2013	2014	2015	2016	Assessment period		Regulatory Period					CPP
							2017	2018	2019	2020	2021	2022	2023	Total
Network opex														
3.2-o1	Corrective maintenance	9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457	65,584
3.2-o1	Preventive maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	58,539
3.2-o1	Reactive maintenance	6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	36,570
3.2-o1	System operations and network support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	82,486
3.2-o1	Vegetation management	6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677	46,041
Total network opex		38,401	37,187	39,893	38,670	40,019	43,907	46,869	56,462	58,979	59,661	57,667	56,451	289,220
Non-network opex														
3.2-o1	Corporate	17,651	18,652	18,240	19,794	22,017	25,355	23,571	23,572	23,871	23,402	23,056	22,433	116,333
3.2-o1	ICT Opex	2,891	3,411	3,414	3,224	3,397	3,709	4,467	5,274	5,890	5,788	5,663	5,530	28,146
3.2-o1	Insurance and governance	1,846	2,043	2,012	2,097	2,048	1,984	2,062	2,146	2,188	2,227	2,218	2,207	10,986
3.2-o1	Facilities	1,778	1,824	1,791	1,688	1,885	1,856	1,938	1,975	1,897	2,042	2,001	1,968	9,883
Total Non-network opex		24,166	25,930	25,456	26,803	29,346	32,903	32,037	32,966	33,845	33,460	32,939	32,139	165,349
Total opex		62,567	63,116	65,349	65,473	69,365	76,810	78,906	89,428	92,825	93,121	90,605	88,589	454,569
Error check: Real total equals Calculations total		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

Nominal \$000		2012	2013	2014	2015	2016	Assessment period		Regulatory Period					CPP
							2017	2018	2019	2020	2021	2022	2023	Total
Network opex														
3.2-o2	Corrective maintenance	9,443	7,753	11,387	10,314	9,031	12,207	12,264	13,133	14,731	15,058	14,315	14,107	71,344
3.2-o2	Preventive maintenance and inspection	8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828	63,691
3.2-o2	Reactive maintenance	6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243	39,762
3.2-o2	System operations and network support	6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846	89,570
3.2-o2	Vegetation management	6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814	50,000
Total network opex		37,114	36,257	39,403	38,541	40,019	44,309	47,981	58,890	62,822	64,882	63,935	63,838	314,367
Non-network opex														
3.2-o2	Corporate	17,059	18,186	18,016	19,728	22,017	25,587	24,130	24,586	25,427	25,453	25,566	25,374	126,408
3.2-o2	ICT Opex	2,794	3,325	3,372	3,213	3,397	3,743	4,573	5,518	6,308	6,344	6,332	6,307	30,809
3.2-o2	Insurance and governance	1,784	1,992	1,987	2,090	2,048	2,002	2,111	2,242	2,337	2,432	2,470	2,507	11,989
3.2-o2	Facilities	1,719	1,778	1,769	1,682	1,885	1,873	1,984	2,062	2,024	2,227	2,225	2,232	10,771
Total Non-network opex		23,355	25,282	25,143	26,714	29,346	33,204	32,797	34,408	36,097	36,458	36,594	36,420	179,977
Total opex		60,469	61,539	64,546	65,255	69,365	77,514	80,779	93,298	98,919	101,340	100,529	100,257	494,344
Error check: Nominal total equals Calculations total		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

End

CPP real capex summary by portfolio (excluding cost of financing)

Portfolio	Current period					Assessment period		CPP regulatory period					CPP Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
2016 Real \$000													
Renewals capex													
1 Overhead structures	13,785	14,460	22,457	18,774	22,872	23,275	23,345	29,668	35,577	37,702	37,800	36,855	177,602
2 Overhead conductors	1,294	2,174	4,015	2,604	3,230	4,090	4,327	6,809	8,431	11,310	13,821	14,877	55,248
3 Cables	4,906	8,275	4,117	7,661	5,371	11,455	6,699	6,639	7,441	6,832	6,367	5,730	33,010
4 Zone substations	3,234	3,215	5,674	5,009	6,359	7,574	11,515	14,392	14,996	15,078	14,019	13,241	71,726
5 Distribution transformers	7,102	5,690	7,255	8,049	9,743	6,476	6,462	8,239	8,328	8,284	8,068	8,013	40,931
6 Distribution switchgear	6,959	6,997	7,504	7,793	9,847	7,695	8,186	9,218	9,097	9,008	8,950	7,348	43,620
7 Secondary systems	1,815	780	1,648	1,767	1,538	2,935	2,982	8,698	8,651	6,214	2,462	2,256	28,280
Total renewals capex	39,095	41,590	52,670	51,657	58,959	63,500	63,517	83,663	92,521	94,428	91,486	88,320	450,417
Growth and security capex													
10 Papamoa	931	82	237	285	-	7,347	6,102	243	-	-	-	-	243
11 Palmerston North	-	-	168	1,790	456	3,013	7,153	1,399	-	-	3,873	9,543	14,815
12 Putaruru	193	626	480	244	446	341	338	334	5,258	8,465	8,139	-	22,196
13 Whangamata	186	59	58	-	-	60	762	6,100	1,119	59	57	321	7,656
14 Omokoroa	-	-	-	-	-	-	-	1,306	6,444	3,648	880	-	12,278
15 Kopu-Tairua	-	-	-	-	-	-	435	3,791	3,188	1,592	-	-	8,571
16 Kopu-Kauaeranga	289	144	274	136	710	-	220	2,955	297	297	1,446	1,129	6,124
17 Moturoa - NPL GXP	-	-	-	-	-	-	3,534	5,232	-	-	-	-	5,232
18 Kerepehi-Paeroa	-	-	-	-	-	162	161	-	-	1,592	4,289	-	5,881
19 Whenuakite	-	-	-	-	-	-	190	237	238	238	1,487	4,764	6,963
20 Matarangi	-	-	-	-	-	-	-	83	83	1,441	4,025	2,533	8,165
21 Putaruru-Tirau	-	-	-	-	-	-	-	-	2,288	4,437	-	-	6,725
22 Kaimarama-Whitianga	-	-	-	-	-	-	-	165	165	1,398	2,122	2,215	6,066
23 Kereone-Walton	-	-	-	-	-	-	-	-	-	1,193	3,662	1,452	6,307
24 Feilding-Sanson-Bulls	-	-	-	-	-	-	-	231	-	-	2,407	3,367	6,006
26 Pyes Pa	-	-	-	-	-	384	2,135	2,785	-	-	-	-	2,785
27 Inglewood	-	-	-	-	-	-	-	2,287	2,889	751	-	-	5,928
28 Pre CPP major projects	9,460	3,349	1,928	6,758	462	-	-	-	-	-	-	-	-
29 Post CPP major projects	-	-	-	-	-	-	-	-	-	-	-	-	-
Major projects	11,059	4,260	3,145	9,213	2,074	11,307	21,028	27,148	21,970	25,112	32,386	25,325	131,942
25 Minor growth & security works	14,983	24,768	26,264	22,356	23,178	24,890	26,094	29,719	27,895	27,444	21,603	25,973	132,634
51 Reliability	2,056	1,979	2,284	3,683	5,034	2,860	2,662	3,184	4,591	4,720	4,529	4,322	21,345
Total growth and security capex	28,099	31,007	31,693	35,252	30,287	39,057	49,784	60,051	54,456	57,276	58,518	55,620	285,921
Other network capex													
60 Consumer connection	5,148	5,601	5,089	9,681	13,879	14,286	12,523	10,989	10,756	10,516	9,160	9,814	51,235
61 Asset relocations	335	847	553	1,038	1,000	1,034	806	777	787	784	778	771	3,897
52 Network evolution	227	150	801	304	80	-	2,672	2,852	2,867	3,568	4,428	4,412	18,126
Total other network capex	5,710	6,598	6,443	11,023	14,959	15,320	16,001	14,617	14,409	14,868	14,366	14,997	73,258
Non-network capex													
70 ICT capex	4,789	4,928	5,663	3,992	5,071	5,204	14,277	17,902	8,457	13,225	6,860	6,627	53,072
72 Facilities capex	1,470	1,571	471	367	737	123	4,925	2,872	1,307	1,707	2,353	2,069	10,309
Total non-network capex	6,259	6,499	6,135	4,359	5,808	5,327	19,202	20,774	9,765	14,932	9,213	8,696	63,381
Total capex (excluding cost of financing)	79,163	85,694	96,940	102,290	110,013	123,204	148,504	179,106	171,151	181,504	173,583	167,633	872,977

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CPP nominal capex summary by portfolio (excluding cost of financing)

Portfolio	Current period					Assessment period		CPP regulatory period					CPP Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Nominal \$000													
Renewals capex													
1 Overhead structures	13,323	14,099	22,181	18,711	22,872	23,489	23,900	30,937	37,905	41,066	42,177	42,185	194,269
2 Overhead conductors	1,250	2,119	3,965	2,595	3,230	4,127	4,430	7,173	9,123	12,566	15,777	17,511	62,149
3 Cables	4,742	8,068	4,066	7,636	5,371	11,560	6,858	6,999	8,056	7,584	7,260	6,727	36,626
4 Zone substations	3,126	3,135	5,605	4,992	6,359	7,643	11,789	15,695	17,115	17,493	16,708	16,240	83,250
5 Distribution transformers	6,864	5,548	7,166	8,022	9,743	6,536	6,615	9,272	9,874	10,037	10,075	10,239	49,496
6 Distribution switchgear	6,726	6,823	7,411	7,767	9,847	7,765	8,381	9,832	10,030	10,206	10,424	8,782	49,275
7 Secondary systems	1,754	760	1,628	1,761	1,538	2,962	3,053	9,071	9,234	6,795	2,758	2,595	30,451
Total renewals capex	37,785	40,551	52,023	51,484	58,959	64,082	65,025	88,978	101,336	105,746	105,178	104,278	505,516
Growth and security capex													
10 Papamoa	900	80	234	284	-	7,414	6,247	259	-	-	-	-	259
11 Palmerston North	-	-	166	1,784	456	3,041	7,323	1,495	-	-	4,449	11,325	17,269
12 Putaruru	187	610	474	243	446	344	346	351	5,728	9,604	9,493	-	25,177
13 Whangamata	180	57	57	-	-	61	780	6,376	1,192	64	63	365	8,059
14 Omokoroa	-	-	-	-	-	-	-	1,376	7,060	4,103	1,013	-	13,552
15 Kopu-Tairua	-	-	-	-	-	-	445	3,963	3,412	1,745	-	-	9,120
16 Kopu-Kauaeranga	279	141	271	136	710	-	225	3,089	316	322	1,632	1,304	6,663
17 Moturoa - NPL GXP	-	-	-	-	-	-	3,618	5,540	-	-	-	-	5,540
18 Kerepehi-Paeroa	-	-	-	-	-	164	165	-	-	1,798	4,965	-	6,763
19 Whenuakite	-	-	-	-	-	-	194	247	253	257	1,648	5,697	8,101
20 Matarangi	-	-	-	-	-	-	-	86	88	1,559	4,584	3,001	9,320
21 Putaruru-Tirau	-	-	-	-	-	-	-	-	2,492	4,967	-	-	7,459
22 Kaimarama-Whitianga	-	-	-	-	-	-	-	172	176	1,659	2,444	2,626	7,076
23 Kereone-Walton	-	-	-	-	-	-	-	-	-	1,300	4,207	1,716	7,223
24 Feilding-Sanson-Bulls	-	-	-	-	-	-	-	241	-	-	2,878	4,023	7,143
26 Pyes Pa	-	-	-	-	-	387	2,185	2,995	-	-	-	-	2,995
27 Inglewood	-	-	-	-	-	-	-	2,574	3,426	910	-	-	6,910
28 Pre CPP major projects	9,143	3,265	1,904	6,735	462	-	-	-	-	-	-	-	-
29 Post CPP major projects	-	-	-	-	-	-	-	-	-	-	-	-	-
Major projects	10,688	4,154	3,106	9,182	2,074	11,411	21,528	28,765	24,144	28,288	37,375	30,057	148,629
25 Minor growth & security works	14,481	24,149	25,942	22,282	23,178	25,118	26,714	31,601	30,491	31,234	24,967	31,134	149,426
51 Reliability	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,328
Total growth and security capex	27,157	30,232	31,304	35,135	30,287	39,415	50,966	63,686	59,522	64,656	67,389	66,129	321,383
Other network capex													
60 Consumer connection	4,975	5,461	5,026	9,648	13,879	14,417	12,821	11,946	12,152	12,173	10,910	12,001	59,181
61 Asset relocations	324	826	546	1,035	1,000	1,043	825	821	855	874	890	908	4,348
52 Network evolution	219	146	791	303	80	-	2,735	2,974	3,060	3,901	4,960	5,076	19,971
Total other network capex	5,519	6,433	6,363	10,986	14,959	15,460	16,381	15,741	16,066	16,947	16,760	17,985	83,500
Non-network capex													
70 ICT capex	4,628	4,805	5,594	3,979	5,071	5,252	14,616	18,665	8,984	14,314	7,603	7,521	57,087
72 Facilities capex	1,421	1,532	466	366	737	124	5,042	2,994	1,389	1,847	2,608	2,349	11,187
Total non-network capex	6,049	6,337	6,059	4,344	5,808	5,375	19,658	21,659	10,372	16,161	10,211	9,870	68,274
Total capex (excluding cost of financing)	76,509	83,553	95,749	101,950	110,013	124,333	152,030	190,065	187,297	203,511	199,538	198,262	978,672

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Cost of financing

Portfolio	Current period					Assessment period		CPP regulatory period					CPP Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Nominal \$000													
Renewals capex													
1						-	-	-	-	-	-	-	
2						-	-	-	-	-	-	-	
3						-	-	-	-	-	-	-	
4						-	-	-	-	-	-	-	
5						-	-	-	-	-	-	-	
6						-	-	-	-	-	-	-	
7						-	-	-	-	-	-	-	
Total renewals capex						-	-	-	-	-	-	-	
Growth & security capex													
10						409	707	176	-	-	-	-	
11						262	483	880	-	-	111	544	
12						195	184	247	433	854	1,400	-	
13						68	78	299	136	2	5	17	
14						-	-	38	282	604	60	-	
15						-	11	138	95	45	-	-	
16						171	150	278	9	27	78	167	
17						-	86	380	-	-	-	-	
18						5	13	21	22	69	248	-	
19						-	5	19	35	49	100	302	
20						-	-	2	8	51	214	446	
21						-	-	-	69	274	-	-	
22						-	-	5	16	64	176	331	
23						-	-	-	-	34	179	365	
24						-	-	7	15	15	87	284	
26						12	73	245	-	-	-	-	
27						-	-	-	-	-	-	-	
28						-	-	-	-	-	-	-	
29						-	-	-	-	-	-	-	
Major projects						1,122	1,789	2,734	1,121	2,087	2,659	2,457	
25						-	-	-	-	-	-	-	
51						-	-	-	-	-	-	-	
Total growth and security capex						1,122	1,789	2,734	1,121	2,087	2,659	2,457	
Other network capex													
60						-	-	-	-	-	-	-	
61						-	-	-	-	-	-	-	
52						-	-	-	-	-	-	-	
Total other network capex						-	-	-	-	-	-	-	
Non-network capex													
70						16	217	914	424	260	-	-	
72						-	113	136	-	-	-	-	
Total non-network capex						16	330	1,049	424	260	-	-	
Total cost of financing						1,138	2,119	3,784	1,545	2,347	2,659	2,457	

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Nominal capex summary by portfolio (including cost of financing)

Portfolio	Current period					Assessment period		CPP regulatory period					CPP Total
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Nominal \$000													
Renewals capex													
1						23,489	23,900	30,937	37,905	41,066	42,177	42,185	194,269
2						4,127	4,430	7,173	9,123	12,566	15,777	17,511	62,149
3						11,560	6,858	6,999	8,056	7,584	7,260	6,727	36,626
4						7,643	11,789	15,695	17,115	17,493	16,708	16,240	83,250
5						6,536	6,615	9,272	9,874	10,037	10,075	10,239	49,496
6						7,765	8,381	9,832	10,030	10,206	10,424	8,782	49,275
7						2,962	3,053	9,071	9,234	6,795	2,758	2,595	30,451
Total renewals capex						64,082	65,025	88,978	101,336	105,746	105,178	104,278	505,516
Growth capex													
10						7,823	6,954	434	-	-	-	-	434
11						3,303	7,806	2,374	-	-	4,560	11,869	18,804
12						539	530	599	6,162	10,458	10,893	-	28,111
13						129	858	6,675	1,327	66	68	381	8,517
14						-	-	1,414	7,343	4,707	1,073	-	14,537
15						-	455	4,101	3,507	1,790	-	-	9,398
16						171	376	3,367	325	348	1,710	1,471	7,221
17						-	3,704	5,920	-	-	-	-	5,920
18						169	177	21	22	1,867	5,214	-	7,124
19						-	199	266	288	307	1,747	6,000	8,607
20						-	-	89	96	1,610	4,798	3,448	10,041
21						-	-	-	2,561	5,241	-	-	7,803
22						-	-	177	191	1,723	2,620	2,958	7,668
23						-	-	-	-	1,334	4,385	2,080	7,800
24						-	-	248	15	15	2,966	4,307	7,551
26						399	2,258	3,241	-	-	-	-	3,241
27						-	-	2,574	3,426	910	-	-	6,910
28						-	-	-	-	-	-	-	-
29						-	-	-	-	-	-	-	-
Major projects						12,533	23,317	31,499	25,265	30,375	40,034	32,514	159,687
25						25,118	26,714	31,601	30,491	31,234	24,967	31,134	149,426
51						2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,328
Total growth and security capex						40,537	52,756	66,420	60,643	66,743	70,048	68,586	332,440
Other network capex													
60						14,417	12,821	11,946	12,152	12,173	10,910	12,001	59,181
61						1,043	825	821	855	874	890	908	4,348
52						-	2,735	2,974	3,060	3,901	4,960	5,076	19,971
Total other network capex						15,460	16,381	15,741	16,066	16,947	16,760	17,985	83,500
Non-network capex													
70						5,267	14,832	19,578	9,407	14,574	7,603	7,521	58,684
72						124	5,155	3,130	1,389	1,847	2,608	2,349	11,323
Total non-network capex						5,391	19,987	22,709	10,796	16,421	10,211	9,870	70,007
Total capex (including cost of financing)						125,470	154,149	193,849	188,842	205,858	202,196	200,718	991,463

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Forecast value of commissioned assets by portfolio (including cost of financing)

Portfolio	Assessment period		CPP regulatory period					CPP Total
	2017	2018	2019	2020	2021	2022	2023	
Nominal \$000								
Renewals capex								
1 Overhead structures	23,285	23,764	28,924	36,054	40,496	42,265	42,604	190,344
2 Overhead conductors	3,831	4,330	6,339	8,590	11,624	14,971	17,183	58,708
3 Cables	9,518	8,410	7,023	7,799	7,806	7,429	6,949	37,005
4 Zone substations	7,219	10,421	14,563	16,832	17,551	17,110	16,538	82,593
5 Distribution transformers	7,594	6,589	8,488	9,780	10,087	10,164	10,293	48,812
6 Distribution switchgear	8,452	8,177	9,452	10,067	10,254	10,463	9,346	49,581
7 Secondary systems	2,492	3,023	7,175	9,274	7,619	3,996	2,668	30,732
Total renewals capex	62,392	64,714	81,964	98,395	105,437	106,400	105,581	497,776
Growth capex								
10 Papamoa	-	-	18,073	-	-	-	-	18,073
11 Palmerston North	-	-	16,096	-	-	-	16,429	32,526
12 Putaruru	-	-	-	-	-	31,997	-	31,997
13 Whangamata	-	-	-	10,002	-	-	-	10,002
14 Omokoroa	-	-	-	-	-	14,537	-	14,537
15 Kopu-Tairua	-	-	4,556	3,507	1,790	-	-	9,853
16 Kopu-Kauaeranga	-	-	6,516	-	-	-	-	6,516
17 Moturoa - NPL GXP	-	-	9,624	-	-	-	-	9,624
18 Kerepehi-Paeroa	-	-	-	-	-	7,470	-	7,470
19 Whenuakite	-	-	-	-	-	-	8,806	8,806
20 Matarangi	-	-	-	-	-	-	10,041	10,041
21 Putaruru-Tirau	-	-	-	-	7,803	-	-	7,803
22 Kaimarama-Whitianga	-	-	-	-	-	-	7,668	7,668
23 Kereone-Walton	-	-	-	-	-	-	7,800	7,800
24 Feilding-Sanson-Bulls	-	-	-	-	-	-	7,551	7,551
26 Pyes Pa	-	-	5,898	-	-	-	-	5,898
27 Inglewood	-	-	1,751	3,188	1,699	273	-	6,910
28 Pre CPP major projects	-	-	-	-	-	-	-	-
29 Post CPP major projects	-	-	-	-	-	-	-	-
Major projects	-	-	62,514	16,697	11,291	54,276	58,295	203,074
25 Minor growth & security works	24,478	26,187	30,304	31,151	31,316	27,097	29,657	149,524
51 Reliability	3,595	2,778	3,157	4,435	5,109	5,123	5,019	22,844
Total growth and security capex	28,073	28,965	95,975	52,283	47,716	86,496	92,971	375,442
Other network capex								
60 Consumer connection	14,239	13,347	12,354	12,207	12,288	11,398	11,805	60,051
61 Asset relocations	1,029	897	831	853	876	894	912	4,366
52 Network evolution	26	1,832	2,925	3,063	3,679	4,692	5,093	19,452
Total customer connections and relocations capex	15,295	16,077	16,110	16,123	16,844	16,984	17,810	83,870
Non-network capex								
70 ICT capex	4,840	6,041	24,906	10,866	15,219	8,860	7,620	67,470
72 Facilities capex	326	225	7,584	1,475	1,724	2,406	2,447	15,636
Total non-network capex	5,167	6,266	32,490	12,341	16,943	11,265	10,067	83,106
Total forecast value of commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1,040,194

Error check: Report total equals the total calculated forecast value of commissioned assets

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Closing WUC

Portfolio	2016	Assessment period		CPP regulatory period				
		2017	2018	2019	2020	2021	2022	2023
Nominal \$000								
Renewals capex								
1 Overhead structures	7,518	7,722	7,858	9,871	11,721	12,290	12,202	11,782
2 Overhead conductors	1,062	1,358	1,458	2,291	2,824	3,766	4,571	4,899
3 Cables	1,766	3,808	2,256	2,233	2,491	2,268	2,098	1,877
4 Zone substations	2,090	2,514	3,882	5,014	5,297	5,240	4,837	4,539
5 Distribution transformers	3,203	2,144	2,170	2,954	3,049	2,999	2,909	2,854
6 Distribution switchgear	3,237	2,550	2,753	3,134	3,097	3,049	3,010	2,446
7 Secondary systems	505	975	1,005	2,901	2,860	2,036	798	725
Total renewals capex	19,381	21,071	21,383	28,397	31,339	31,648	30,426	29,122
Growth capex								
10 Papamoa	2,862	10,685	17,639	-	-	-	-	-
11 Palmerston North	2,613	5,916	13,722	-	-	-	4,560	-
12 Putaruru	2,816	3,356	3,885	4,484	10,646	21,104	-	-
13 Whangamata	1,013	1,142	2,000	8,675	-	66	134	515
14 Omokoroa	-	-	-	1,414	8,757	13,463	-	-
15 Kopu-Tairua	-	-	455	-	-	-	-	-
16 Kopu-Kauaeranga	2,602	2,773	3,149	-	325	673	2,383	3,853
17 Moturoa - NPL GXP	-	-	3,704	-	-	-	-	-
18 Kerepehi-Paeroa	-	169	346	367	390	2,256	-	-
19 Whenuakite	-	-	199	465	753	1,059	2,807	-
20 Matarangi	-	-	-	89	185	1,795	6,593	-
21 Putaruru-Tirau	-	-	-	-	2,561	-	-	-
22 Kaimarama-Whitianga	-	-	-	177	368	2,091	4,711	-
23 Kereone-Walton	-	-	-	-	-	1,334	5,719	-
24 Feilding-Sanson-Bulls	-	-	-	248	263	278	3,244	-
26 Pyes Pa	-	399	2,657	-	-	-	-	-
27 Inglewood	-	-	-	824	1,062	273	0	0
28 Pre CPP major projects	-	-	-	-	-	-	-	-
29 Post CPP major projects	-	-	-	-	-	-	-	-
Major projects	11,906	24,439	47,756	16,741	25,309	44,392	30,150	4,369
25 Minor growth & security works	7,619	8,259	8,786	10,082	9,422	9,340	7,211	8,688
51 Reliability	1,655	946	893	1,056	1,509	1,534	1,457	1,376
Total growth and security capex	21,180	33,644	57,434	27,880	36,240	55,267	38,818	14,433
Other network capex								
60 Consumer connection	4,562	4,740	4,213	3,805	3,749	3,634	3,146	3,342
61 Asset relocations	329	343	271	261	264	261	257	253
52 Network evolution	26	-0	902	952	948	1,170	1,438	1,421
Total customer connections and relocations capex	4,917	5,083	5,387	5,018	4,961	5,065	4,841	5,017
Non-network capex								
70 ICT capex	1,667	2,094	10,886	5,558	4,100	3,455	2,198	2,099
72 Facilities capex	242	40	4,970	516	430	553	755	657
Total non-network capex	1,909	2,134	15,855	6,074	4,529	4,008	2,954	2,756
Total closing WUC	47,387	61,932	100,059	67,369	77,069	95,988	77,039	51,327

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End

Outputs for CPP schedule E

Table 1a: Summary of all capex projects and programmes

Number	Project reference	Project/programme name	Capex category	Brief description of project/programme	Forecast cost in constant prices (\$000)	Reference to primary supporting information
1	1	Overhead structures	Asset replacement and renewal	Renewals capex on Overhead structures	177,602	Main proposal - chapter 11
2	2	Overhead conductors	Asset replacement and renewal	Renewals capex on Overhead conductors	55,248	Main proposal - chapter 11
3	3	Cables	Asset replacement and renewal	Renewals capex on Cables	33,010	Main proposal - chapter 11
4	4	Zone substations	Asset replacement and renewal	Renewals capex on Zone substations	71,726	Main proposal - chapter 11
5	5	Distribution transformers	Asset replacement and renewal	Renewals capex on Distribution transformers	40,931	Main proposal - chapter 11
6	6	Distribution switchgear	Asset replacement and renewal	Renewals capex on Distribution switchgear	43,620	Main proposal - chapter 11
7	7	Secondary systems	Asset replacement and renewal	Renewals capex on Secondary systems	28,280	Main proposal - chapter 11
8	10	Papamoa	System growth	New subtransmission switchgear and circuits from Te Matai GXP to	243	Main proposal - chapter 12
9	11	Palmerston North	System growth	New subtransmission circuits, subtransmission upgrade and a new z	14,815	Main proposal - chapter 12
10	12	Putaruru	System growth	New 110kV circuit from Arapuni and new GXP at Putaruru to suppor	22,196	Main proposal - chapter 12
11	13	Whangamata	System growth	Energy storage and diesel generation installation at Whangamata tc	7,656	Main proposal - chapter 12
12	14	Omokoroa	System growth	Additional subtransmission circuit from Greerton, Tauranga, to Omok	12,278	Main proposal - chapter 12
13	15	Kopu-Tairua	System growth	Capacity upgrade of the subtransmission circuit between Kopu GXP	8,571	Main proposal - chapter 12
14	16	Kopu-Kauaeranga	System growth	New subtransmission circuit between Kopu GXP and the existing sul	6,124	Main proposal - chapter 12
15	17	Moturoa - NPL GXP	System growth	New subtransmission switchgear and circuits between Moturoa subs	5,232	Main proposal - chapter 12
16	18	Kerepehi-Paeroa	System growth	New subtransmission link between Paeroa zone substation and Kere	5,881	Main proposal - chapter 12
17	19	Whenuakite	System growth	New subtransmission and zone substation to support load growth at	6,963	Main proposal - chapter 12
18	20	Matarangi	System growth	New subtransmission and zone substation to support load growth at	8,165	Main proposal - chapter 12
19	21	Putaruru-Tirau	System growth	New subtransmission circuit between Tirau zone substation and Put	6,725	Main proposal - chapter 12
20	22	Kaimarama-Whitianga	System growth	Additional subtransmission circuit between Kaimarama and Whitiang	6,066	Main proposal - chapter 12
21	23	Kereone-Walton	System growth	Reinforcement of the subtransmission between Kerone and Walton s	6,307	Main proposal - chapter 12
22	24	Feilding-Sanson-Bulls	System growth	New subtransmission circuit between Sanson zone substation and B	6,006	Main proposal - chapter 12
23	25	Minor growth & security works	System growth		132,634	Main proposal - chapter 12
24	26	Pyes Pa	System growth	New zone substation to supply greenfield development at Tauriko, P	2,785	Main proposal - chapter 12
25	27	Inglewood	System growth	Conversion of the existing 6.6kV distribution network at Inglewood tc	5,928	Main proposal - chapter 12
26	28	Pre CPP major projects	System growth		-	
27	29	Post CPP major projects	System growth		-	
28	51	Reliability	Quality of supply	Includes network automation projects to help manage the reliability p	21,345	Main proposal - chapter 12
29	52	Network evolution	System growth	Provides for research and development of new network and non-net	18,126	Main proposal - chapter 13
30	60	Consumer connection	Consumer connection	Consumer connections expenditure	51,235	Main proposal - chapter 13
31	61	Asset relocations	Asset relocations	Asset relocations expenditure	3,897	Main proposal - chapter 13
32	70	ICT capex	Non-network assets	ICT capex	53,072	Main proposal - chapter 14
33	72	Facilities capex	Non-network assets	Facilities capex	10,309	Main proposal - chapter 14

Table 1b: Summary of all opex projects and programmes

Number	Project reference	Project/programme name	Opex category	Brief description of project/programme	Forecast cost in constant prices (\$000)	Reference to primary supporting information
1	ARR	Corrective maintenance	Routine and corrective maintenance and insp	Forecast corrective maintenance expenditure	65,584	Main proposal - chapter 15
2	RCI	Preventive maintenance and inspection	Asset replacement and renewal	Forecast preventive maintenance and inspection expenditure	58,539	Main proposal - chapter 15
3	SIE	Reactive maintenance	Service interruptions and emergencies	Forecast reactive maintenance expenditure	36,570	Main proposal - chapter 15
4	SON	System operations and network support	System operations and network support	Forecast system operations and network support expenditure	82,486	Main proposal - chapter 15
5	VEG	Vegetation management	Vegetation management	Forecast vegetation management expenditure	46,041	Main proposal - chapter 15
6	COR	Corporate	Business support	Forecast corporate operating expenditure	116,333	Main proposal - chapter 16
7	FAC	Facilities	Business support	Forecast facilitiesoperating expenditure	9,883	Main proposal - chapter 16
8	I&G	Insurance and governance	Business support	Forecast insurance and governance expenditure	10,986	Main proposal - chapter 16
9	IST	ICT Opex	Business support	Forecast ICT operating expenditure	28,146	Main proposal - chapter 16

Error check: Total of table 2c reconciles with Table 2d per IM cl. 5.4.30(2)(b)

End

Outputs for CPP schedule E

Table 2: Capex Summary

2a Actual and forecast capex in constant prices (\$000)

\$000 (in constant prices) Row ref	Current period					Assessment period		Next period					Total CPP
	C-4	C-3	C-2	C-1	C0			CPP period					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Consumer connection	16,815	18,377	16,664	26,265	32,469	36,770	35,608	32,018	31,075	30,447	26,442	28,250	148,232
System growth	26,269	29,178	30,210	31,872	25,332	36,197	49,794	59,719	52,732	56,124	58,417	55,711	282,703
Asset replacement and renewal	39,095	41,590	52,670	51,657	58,959	61,059	62,283	79,285	87,826	89,938	88,310	84,823	430,182
Asset relocations	2,431	2,896	1,398	2,329	2,350	2,661	2,292	2,263	2,273	2,270	2,246	2,220	11,272
<i>Reliability, safety and environment</i>													
Quality of supply	2,056	1,979	2,284	3,683	5,034	2,860	2,662	3,184	4,591	4,720	4,529	4,322	21,346
Legislative and regulatory	-	-	-	-	-	-	-	1,551	1,558	1,556	-	-	4,665
Other reliability, safety and environment	-	-	-	-	-	2,442	1,234	2,827	3,137	2,934	3,176	3,496	15,570
<i>Total reliability, safety and environment</i>	2,056	1,979	2,284	3,683	5,034	5,302	3,896	7,562	9,286	9,210	7,705	7,818	41,581
Total Expenditure on network assets	86,666	94,020	103,226	115,806	124,144	141,989	153,873	180,847	183,192	187,989	183,120	178,822	913,970
Total expenditure on non-network assets	6,259	6,499	6,135	4,359	5,808	5,327	19,202	20,774	9,765	14,932	9,213	8,696	63,380
Total expenditure on assets	92,925	100,519	109,361	120,165	129,952	147,316	173,075	201,621	192,957	202,921	192,333	187,518	977,350
Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

2b Actual and forecast capex spend in nominal prices \$(000)

Nominal \$000 Row ref	Current period					Assessment period		Next period					Total CPP
	C-4	C-3	C-2	C-1	C0			CPP period					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Consumer connection	16,249	17,916	16,460	26,178	32,469	37,109	36,454	33,826	33,724	33,768	30,019	32,797	164,134
System growth	25,388	28,449	29,839	31,766	25,332	36,529	50,976	63,340	57,694	63,423	67,303	66,267	318,027
Asset replacement and renewal	37,785	40,551	52,023	51,484	58,959	61,618	63,762	84,237	96,052	100,567	101,325	99,948	482,129
Asset relocations	2,350	2,824	1,380	2,322	2,350	2,685	2,346	2,367	2,433	2,484	2,513	2,542	12,339
<i>Reliability, safety and environment</i>													
Quality of supply	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,326
Legislative and regulatory	-	-	-	-	-	-	-	1,617	1,662	1,701	-	-	4,980
Other reliability, safety and environment	-	-	-	-	-	2,464	1,263	3,124	3,622	3,479	3,852	4,329	18,406
<i>Total reliability, safety and environment</i>	1,988	1,930	2,256	3,671	5,034	5,350	3,988	8,061	10,172	10,314	8,898	9,267	46,712
Total Expenditure on Network assets	83,760	91,670	101,958	115,421	124,144	143,291	157,526	191,831	200,075	210,556	210,058	210,821	1,023,341
Expenditure on non-network assets	6,049	6,337	6,059	4,344	5,808	5,375	19,658	21,659	10,372	16,161	10,211	9,870	68,273
Total expenditure on assets	89,809	98,007	108,017	119,765	129,952	148,666	177,184	213,490	210,447	226,717	220,269	220,691	1,091,614
plus: Cost of financing						1,138	2,119	3,784	1,545	2,347	2,659	2,457	12,792
less: Value of capital contributions	13,300	14,454	12,268	17,815	19,939	24,333	25,154	23,425	23,150	23,206	20,731	22,429	112,941
plus: Value of vested assets	-	-	-	-	-	-	-	-	-	-	-	-	-
Total capital expenditure	76,509	83,553	95,749	101,950	110,013	125,471	154,149	193,849	188,842	205,858	202,197	200,719	991,465
Error check: Report total equals the sum of the Forecast Expenditure inputs	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

2c Forecast as commissioned capex in nominal prices \$(000)

Nominal \$000 Row ref	Current period					Next period					Total CPP		
	C-4 2012	C-3 2013	C-2 2014	C-1 2015	C0 2016	Assessment period		CPP period					
						2017	2018	2019	2020	2021	2022	2023	
Consumer connection						14,239	13,347	12,354	12,207	12,288	11,398	11,805	60,052
System growth						24,504	28,019	95,743	50,911	46,286	86,065	93,045	372,050
Asset replacement and renewal						41,765	43,594	52,807	63,320	70,084	72,991	73,392	332,594
Asset relocations						1,029	897	831	853	876	894	912	4,366
<i>Reliability, safety and environment</i>													
Quality of supply						3,595	2,778	3,157	4,435	5,109	5,123	5,019	22,843
Legislative and regulatory						1,745	2,068	3,332	3,890	3,656	2,400	1,667	14,945
Other reliability, safety and environment						18,882	19,053	25,824	31,185	31,697	31,009	30,523	150,238
<i>Total reliability, safety and environment</i>						24,222	23,899	32,313	39,510	40,462	38,532	37,209	188,026
Total Expenditure on Network assets						105,759	109,756	194,048	166,801	169,996	209,880	216,363	957,088
Expenditure on non-network assets						5,167	6,266	32,490	12,341	16,943	11,265	10,067	83,106
Total forecast value of capex resulting in commissioned asset	66,670	77,635	101,470	102,247	113,407	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1,040,194
Error check: Report total equals the sum of the Forecast VCA outputs table						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

2d Forecast as commissioned capex by provider in nominal prices \$(000)

Nominal \$000 Row ref	Current period					Next period					Total CPP		
	C-4 2012	C-3 2013	C-2 2014	C-1 2015	C0 2016	Assessment period		CPP period					
						2017	2018	2019	2020	2021	2022	2023	
EDB	-	-	-	-	-	-	-	-	-	-	-	-	-
Related party	-	196	318	192	101	-	-	-	-	-	-	-	-
Other sources (to be tendered)	66,670	77,439	101,152	102,055	113,306	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1,040,194
Total value of commissioned assets	66,670	77,635	101,470	102,247	113,407	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1,040,194
Error check: Total of table 2c reconciles with Table 2d per IM cl. 5.4.30(2)(b)						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

End

Outputs

Schedule E table 3: Opex summary

Forecast in Constant Prices	Current period					Assessment period		CPP period				
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opex categories												
Reactive maintenance	6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288
Vegetation management	6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677
Preventive maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328
Corrective maintenance	9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457
Total network opex	31,382	29,391	31,283	28,900	29,268	31,873	32,956	40,999	42,500	42,604	40,881	39,750
System operations and network support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701
Business support	24,166	25,930	25,457	26,803	29,346	32,903	32,037	32,966	33,846	33,460	32,938	32,138
Total non-network opex	31,185	33,725	34,066	36,573	40,097	44,937	45,950	48,429	50,325	50,517	49,724	48,839
Total operating expenditure	62,567	63,116	65,349	65,473	69,365	76,810	78,906	89,428	92,825	93,121	90,605	88,589

Error check: Real total equals calculations total

TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE

Forecast in Nominal Prices	Current period					Assessment period		CPP period				
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Opex categories												
Reactive maintenance	6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243
Vegetation management	6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814
Preventive maintenance and inspection	8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828
Corrective maintenance	9,443	7,753	11,387	10,314	9,031	12,207	12,264	13,133	14,731	15,058	14,315	14,107
Total network opex	30,331	28,657	30,899	28,803	29,268	32,166	33,739	42,775	45,294	46,370	45,364	44,992
System operations and network support	6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846
Business support	23,354	25,281	25,144	26,715	29,346	33,204	32,797	34,409	36,098	36,458	36,595	36,419
Total non-network opex	30,138	32,882	33,647	36,452	40,097	45,348	47,040	50,523	53,625	54,970	55,165	55,265
Total operating expenditure	60,469	61,539	64,546	65,255	69,365	77,514	80,779	93,298	98,919	101,340	100,529	100,257

Error check: Nominal total equals input total

TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE TRUE

End

Outputs for CPP schedule E

Table 4: Capex projects and programmes

		Capex planned spend in nominal prices (\$000)												
		Current period					Assessment period		Next period					Total CPP
Proj. Ref	Doc Ref	C-4	C-3	C-2	C-1	C0	2017	2018	2019	2020	CPP period	2022	2023	
		2012	2013	2014	2015	2016								
4a Consumer connection														
60	Consumer connection	16,249	17,916	16,460	26,178	32,469	37,109	36,454	33,826	33,724	33,768	30,019	32,797	164,134
	Other consumer connection	-	-	-	-	-	-	-	-	-	-	-	-	-
	Consumer connection expenditure	16,249	17,916	16,460	26,178	32,469	37,109	36,454	33,826	33,724	33,768	30,019	32,797	164,134
	Capital contributions	11,274	12,456	11,434	16,528	18,589	22,691	23,633	21,879	21,572	21,596	19,108	20,795	104,950
	Consumer connection expenditure less capital contributi	4,975	5,460	5,026	9,650	13,880	14,418	12,821	11,947	12,152	12,172	10,911	12,002	59,184
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4b System growth														
10	Papamoa	900	80	234	284	-	7,414	6,247	259	-	-	-	-	259
11	Palmerston North	-	-	166	1,784	456	3,041	7,323	1,495	-	-	4,449	11,325	17,269
12	Putaruru	187	610	474	243	446	344	346	351	5,728	9,604	9,493	-	25,176
13	Whangamata	180	57	57	-	-	61	780	6,376	1,192	64	63	365	8,060
14	Omokoroa	-	-	-	-	-	-	-	1,376	7,060	4,103	1,013	-	13,552
15	Kopu-Tairua	-	-	-	-	-	-	-	3,963	3,412	1,745	-	-	9,120
16	Kopu-Kauaeranga	279	141	271	136	710	-	225	3,089	316	322	1,632	1,304	6,663
17	Moturoa - NPL GXP	-	-	-	-	-	-	3,618	5,540	-	-	-	-	5,540
19	Whenuakite	-	-	-	-	-	-	194	247	253	257	1,648	5,697	8,102
20	Matarangi	-	-	-	-	-	-	-	86	88	1,559	4,584	3,001	9,318
21	Putaruru-Tirau	-	-	-	-	-	-	-	-	2,492	4,967	-	-	7,459
22	Kaimarama-Whitianga	-	-	-	-	-	-	-	172	176	1,659	2,444	2,626	7,077
23	Kereone-Walton	-	-	-	-	-	-	-	-	-	1,300	4,207	1,716	7,223
24	Feilding-Sanson-Bulls	-	-	-	-	-	-	-	-	-	-	2,878	4,023	7,142
25	Minor growth & security works	14,481	24,149	25,942	22,282	23,178	25,118	26,714	31,601	30,491	31,234	24,967	31,134	149,427
52	Network evolution	219	146	791	303	80	-	2,735	2,974	3,060	3,901	4,960	5,076	19,971
	Other systems growth	9,142	3,266	1,904	6,734	462	551	2,349	5,570	3,426	2,708	4,965	-	16,669
	Total system growth expenditure	25,388	28,449	29,839	31,766	25,332	36,529	50,976	63,340	57,694	63,423	67,303	66,267	318,027
	less Capital contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
	System growth expenditure less capital contributions	25,388	28,449	29,839	31,766	25,332	36,529	50,976	63,340	57,694	63,423	67,303	66,267	318,027
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4c Asset replacement and renewal														
1	Overhead structures	13,323	14,098	22,182	18,711	22,871	23,489	23,900	30,937	37,906	41,066	42,176	42,184	194,269
2	Overhead conductors	1,250	2,119	3,965	2,595	3,230	4,127	4,430	7,173	9,123	12,566	15,777	17,511	62,150
3	Cables	4,742	8,068	4,066	7,636	5,371	11,560	6,858	6,999	8,056	7,584	7,260	6,727	36,626
4	Zone substations	3,126	3,135	5,605	4,992	6,359	5,893	11,243	14,396	15,419	15,984	14,805	13,824	74,428
5	Distribution transformers	6,864	5,548	7,166	8,022	9,743	5,822	5,897	8,068	8,600	8,736	8,786	8,973	43,163
6	Distribution switchgear	6,726	6,823	7,411	7,767	9,847	7,765	8,381	9,211	9,377	9,537	9,763	8,134	46,022
7	Secondary systems	1,754	760	1,628	1,761	1,538	2,962	3,053	7,453	5,771	5,094	2,758	2,595	25,471
	Other asset replacement and renewal	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total asset replacement and renewal expenditure	37,785	40,551	52,023	51,484	58,959	61,618	63,762	84,237	96,052	100,567	101,325	99,948	482,129
	less Capital contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
	Asset replacement and renewal expenditure less capital	37,785	40,551	52,023	51,484	58,959	61,618	63,762	84,237	96,052	100,567	101,325	99,948	482,129
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4d Asset relocations														
61	Asset relocations	2,350	2,824	1,380	2,322	2,350	2,685	2,346	2,367	2,433	2,484	2,513	2,542	12,339
	Other asset relocations	-	-	-	-	-	-	-	-	-	-	-	-	-
	Asset relocations expenditure	2,350	2,824	1,380	2,322	2,350	2,685	2,346	2,367	2,433	2,484	2,513	2,542	12,339
	less Capital contributions	2,026	1,998	834	1,287	1,350	1,642	1,521	1,546	1,578	1,610	1,623	1,634	7,991
	Asset relocations expenditure less capital contributions	324	826	546	1,035	1,000	1,043	825	821	855	874	890	908	4,348
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e1 Quality of supply														
51	Reliability	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,326
	Quality of supply expenditure	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,326
	less Capital contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
	Quality of supply expenditure less capital contributions	1,988	1,930	2,256	3,671	5,034	2,886	2,725	3,320	4,888	5,134	5,046	4,938	23,326
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e2 Legislative and regulatory														
7	Secondary systems	-	-	-	-	-	-	-	1,617	1,662	1,701	-	-	4,980
	Total legislative and regulatory expenditure	-	-	-	-	-	-	-	1,617	1,662	1,701	-	-	4,980
	less Capital contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
	Legislative and regulatory expenditure less capital contr	-	-	-	-	-	-	-	1,617	1,662	1,701	-	-	4,980
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e3 Other reliability, safety and environment														
4	Zone substations	-	-	-	-	-	1,751	545	1,298	1,696	1,510	1,902	2,415	8,821
5	Distribution transformers	-	-	-	-	-	713	718	1,204	1,274	1,300	1,289	1,266	6,333
6	Distribution switchgear	-	-	-	-	-	-	-	622	652	669	661	648	3,252
	Total other reliability, safety and environment expendit	-	-	-	-	-	2,464	1,263	3,124	3,622	3,479	3,852	4,329	18,406
	less Capital contributions	-	-	-	-	-	-	-	-	-	-	-	-	-
	Other reliability, safety and environment expenditure les	-	-	-	-	-	2,464	1,263	3,124	3,622	3,479	3,852	4,329	18,406
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4f Non-network assets														
4f1: Routine non-network expenditure														
70	ICT capex	4,628	4,805	5,593	3,978	5,071	5,251	14,616	18,665	8,983	14,313	7,603	7,521	57,085
72	Facilities capex	13	285	212	163	119	113	264	352	254	754	130	553	2,043
	All other projects - routine expenditure	-	-	-	-	-	-	-	-	-	-	-	-	-
	Routine expenditure	4,641	5,090	5,805	4,141	5,190	5,364	14,880	19,017	9,237	15,067	7,733	8,074	59,128
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4f2 Atypical non-network expenditure														
72	Facilities capex	1,408	1,247	254	203	618	11	4,778	2,642	1,135	1,094	2,478	1,796	9,145
	All other projects - routine expenditure	-	-	-	-	-	-	-	-	-	-	-	-	-
	Total atypical non-network	1,408	1,247	254	203	618	11	4,778	2,642	1,135	1,094	2,478	1,796	9,145
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
	Total non-network expenditure	6,049	6,337	6,059	4,344	5,808	5,375	19,658	21,659	10,372	16,161	10,211	9,870	68,273
Error check: Capex category total equals schedule E: table 2 capex cd		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
	Total expenditure network assets	83,760	91,670	101,958	115,421	124,144	143,291	157,526	191,831	200,075	210,556	210,058	210,821	1,023,341
	Total expenditure network assets less capital contributi	70,460	77,216	89,690	97,606	104,205	118,958	132,372	168,406	176,925	187,350	189,327	188,392	910,400
Error check: Report total equals the sum of the forecast expenditure in		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
Error check: Table 4 report total equals Table 2 report total		TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

End

Outputs for CPP schedule E

Table 4: Capex projects and programmes

			Capex planned commissioned assets in nominal prices (\$'000)					Total CPP		
			Assessment period		Next period					
Proj. Ref	Doc Ref	Project Name	2017	2018	2019	2020	CPP period 2021	2022	2023	
4a Consumer connection										
60		Consumer connection	14,239	13,347	12,354	12,207	12,288	11,398	11,805	60,052
		Other consumer connection	-	-	-	-	-	-	-	-
		Consumer connection expenditure	14,239	13,347	12,354	12,207	12,288	11,398	11,805	60,052
		Capital contributions	-	-	-	-	-	-	-	-
		Consumer connection expenditure less capital contributi	14,239	13,347	12,354	12,207	12,288	11,398	11,805	60,052
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4b System growth										
10		Papamoa	-	-	18,073	-	-	-	-	18,073
11		Palmerston North	-	-	16,096	-	-	-	16,429	32,525
12		Putaruru	-	-	-	-	-	31,997	-	31,997
13		Whangamata	-	-	-	10,002	-	-	-	10,002
14		Omokoroa	-	-	-	-	-	14,537	-	14,537
15		Kopu-Tairua	-	-	4,556	3,507	1,790	-	-	9,853
16		Kopu-Kauaeranga	-	-	6,516	-	-	-	-	6,516
17		Moturoa - NPL GXP	-	-	9,624	-	-	-	-	9,624
19		Whenuakite	-	-	-	-	-	-	8,806	8,806
20		Matarangi	-	-	-	-	-	-	10,041	10,041
21		Putaruru-Tirau	-	-	-	-	7,803	-	-	7,803
22		Kaimarama-Whitianga	-	-	-	-	-	-	7,668	7,668
23		Kereone-Walton	-	-	-	-	-	-	7,800	7,800
24		Feilding-Sanson-Bulls	-	-	-	-	-	-	7,551	7,551
25		Minor growth & security works	24,478	26,187	30,304	31,151	31,316	27,097	29,657	149,525
52		Network evolution	26	1,832	2,925	3,063	3,679	4,692	5,093	19,452
		Other systems growth	-	-	7,649	3,188	1,698	7,742	-	20,277
		Total system growth expenditure	24,504	28,019	95,743	50,911	46,286	86,065	93,045	372,050
		less Capital contributions	-	-	-	-	-	-	-	-
		System growth expenditure less capital contributions	24,504	28,019	95,743	50,911	46,286	86,065	93,045	372,050
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4c Asset replacement and renewal										
1		Overhead structures	23,286	23,766	28,924	36,053	40,496	42,267	42,605	190,345
2		Overhead conductors	3,831	4,330	6,339	8,590	11,624	14,971	17,183	58,707
3		Cables	9,518	8,410	7,023	7,799	7,806	7,429	6,949	37,006
4		Zone substations	67	1,872	2,052	698	1,470	2,075	1,472	7,767
5		Distribution transformers	240	186	196	195	83	19	173	686
6		Distribution switchgear	4,076	4,075	4,429	4,601	4,642	4,634	4,009	22,315
7		Secondary systems	747	955	3,844	5,384	3,963	1,596	1,001	15,788
		Other asset replacement and renewal	-	-	-	-	-	-	-	-
		Total asset replacement and renewal expenditure	41,765	43,594	52,807	63,320	70,084	72,991	73,392	332,594
		less Capital contributions	-	-	-	-	-	-	-	-
		Asset replacement and renewal expenditure less capital	41,765	43,594	52,807	63,320	70,084	72,991	73,392	332,594
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4d Asset relocations										
61		Asset relocations	1,029	897	831	853	876	894	912	4,366
		Other asset relocations	-	-	-	-	-	-	-	-
		Asset relocations expenditure	1,029	897	831	853	876	894	912	4,366
		less Capital contributions	-	-	-	-	-	-	-	-
		Asset relocations expenditure less capital contributions	1,029	897	831	853	876	894	912	4,366
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e1 Quality of supply										
51		Reliability	3,595	2,778	3,157	4,435	5,109	5,123	5,019	22,843
		Quality of supply expenditure	3,595	2,778	3,157	4,435	5,109	5,123	5,019	22,843
		less Capital contributions	-	-	-	-	-	-	-	-
		Quality of supply expenditure less capital contributions	3,595	2,778	3,157	4,435	5,109	5,123	5,019	22,843
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e2 Legislative and regulatory										
7		Secondary systems	1,745	2,068	3,332	3,890	3,656	2,400	1,667	14,945
		Total legislative and regulatory expenditure	1,745	2,068	3,332	3,890	3,656	2,400	1,667	14,945
		less Capital contributions	-	-	-	-	-	-	-	-
		Legislative and regulatory expenditure less capital contr	1,745	2,068	3,332	3,890	3,656	2,400	1,667	14,945
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4e3 Other reliability, safety and environment										
4		Zone substations	7,152	8,548	12,511	16,133	16,081	15,035	15,066	74,826
5		Distribution transformers	7,354	6,403	8,291	9,585	10,004	10,145	10,120	48,147
6		Distribution switchgear	4,376	4,102	5,022	5,466	5,612	5,829	5,338	27,266
		Total other reliability, safety and environment expenditu	18,882	19,053	25,824	31,185	31,697	31,009	30,523	150,238
		less Capital contributions	-	-	-	-	-	-	-	-
		Other reliability, safety and environment expenditure les	18,882	19,053	25,824	31,185	31,697	31,009	30,523	150,238
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
4f Non-network assets										
4f1: Routine non-network expenditure										
70		ICT capex	4,841	6,041	24,906	10,866	15,220	8,859	7,620	67,471
72		Facilities capex	115	214	327	288	606	319	436	1,976
		All other projects - routine expenditure	-	-	-	-	-	-	-	-
		Routine expenditure	4,956	6,255	25,233	11,154	15,826	9,178	8,056	69,447
4f2 Atypical non-network expenditure										
72		Facilities capex	211	11	7,257	1,187	1,117	2,087	2,011	13,659
		All other projects - routine expenditure	-	-	-	-	-	-	-	-
		Total atypical non-network	211	11	7,257	1,187	1,117	2,087	2,011	13,659
		Total non-network expenditure	5,167	6,266	32,490	12,341	16,943	11,265	10,067	83,106
		<small>Error check: Capex category total equals schedule E: table 2 capex ct</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		Total expenditure network assets	105,759	109,756	194,048	166,801	169,996	209,880	216,363	957,088
		Total expenditure network assets less capital contributi	105,759	109,756	194,048	166,801	169,996	209,880	216,363	957,088
		<small>Error check: Report total equals the sum of the forecast expenditure in</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE
		<small>Error check: Table 4 report total equals Table 2 report total</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

End

Outputs for CPP schedule E

Table 5: Capex by asset expenditure categories

Capex planned spend in constant prices

\$000 (in constant prices) Row ref	Current period					Next period							Total CPP Period
	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
5.1: System growth													
Subtransmission lines	1,553	2,463	2,457	1,469	2,103	1,571	2,403	8,953	6,040	5,155	8,882	8,481	37,511
Subtransmission cables	2,143	3,105	3,033	3,411	1,884	7,130	11,264	9,959	15,931	14,671	18,186	12,462	71,209
Zone substations	13,556	13,967	11,003	11,218	5,433	8,843	10,756	16,229	6,940	17,074	12,097	15,692	68,032
Distribution and LV lines	2,619	2,742	3,787	4,156	4,166	4,330	4,217	4,053	4,112	4,147	4,042	3,935	20,289
Distribution and LV cables	2,466	2,753	3,651	3,855	3,873	4,111	5,223	4,516	3,769	3,738	3,823	4,089	19,935
Distribution substations and transformers	461	483	667	732	734	762	743	3,001	3,613	1,481	712	693	9,500
Distribution switchgear	2,647	2,806	3,844	4,188	4,200	4,360	4,236	4,063	4,121	4,157	4,079	4,096	20,516
Other network assets	824	859	1,768	2,843	2,939	5,090	10,952	8,945	8,206	5,701	6,596	6,263	35,711
System growth expenditure	26,269	29,178	30,210	31,872	25,332	36,197	49,794	59,719	52,732	56,124	58,417	55,711	282,703
Less capital contributions funding system growth	-	-	-	-	-	-	-	-	-	-	-	-	-
System growth less capital contributions	26,269	29,178	30,210	31,872	25,332	36,197	49,794	59,719	52,732	56,124	58,417	55,711	282,703
<small>Error check: Report total equals summary total from COF & VCA worksheet</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	
5.2: Asset replacement and renewal													
Subtransmission lines	1,812	2,511	3,450	3,363	3,800	4,237	3,723	4,537	5,892	4,809	3,891	2,623	21,752
Subtransmission cables	696	1,451	182	1,451	472	5,422	491	-	595	-	-	-	595
Zone substations	3,228	2,644	2,965	4,961	7,745	7,833	11,535	15,525	15,682	14,000	12,742	12,119	70,068
Distribution and LV lines	13,267	14,122	23,021	18,014	22,303	23,128	23,949	31,940	38,115	44,203	47,729	49,109	211,096
Distribution and LV cables	4,210	6,824	3,935	6,211	4,899	6,034	6,208	6,639	6,847	6,832	6,367	5,730	32,415
Distribution substations and transformers	6,952	5,690	7,242	7,680	9,352	5,604	5,597	7,007	7,091	7,211	7,036	6,838	35,183
Distribution switchgear	7,109	6,997	7,517	8,162	10,237	7,860	8,350	8,816	8,693	8,442	8,406	7,011	41,368
Other network assets	1,821	1,351	4,358	1,815	151	941	2,430	4,821	4,911	4,441	2,139	1,393	17,705
Total asset replacement and renewal expenditure	39,095	41,590	52,670	51,657	58,959	61,059	62,283	79,285	87,826	89,938	88,310	84,823	430,182
Less capital contributions funding asset replacement and renew	-	-	-	-	-	-	-	-	-	-	-	-	-
Total asset replacement and renewal less capital contributions	39,095	41,590	52,670	51,657	58,959	61,059	62,283	79,285	87,826	89,938	88,310	84,823	430,182
<small>Error check: Report total equals summary total from COF & VCA worksheet</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

Capex planned spend in nominal prices

\$000 (in nominal prices) Row ref	Current period					Next period							Total CPP Period
	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
5.1: System growth													
Subtransmission lines	1,501	2,402	2,426	1,464	2,103	1,585	2,461	9,358	6,459	5,628	9,949	9,811	41,205
Subtransmission cables	2,071	3,027	2,996	3,400	1,884	7,195	11,531	10,528	17,343	16,417	20,934	14,793	80,015
Zone substations	13,102	13,618	10,868	11,182	5,433	8,926	11,011	17,303	7,679	19,801	14,338	19,166	78,287
Distribution and LV lines	2,531	2,673	3,740	4,142	4,166	4,369	4,317	4,245	4,410	4,556	4,554	4,559	22,324
Distribution and LV cables	2,383	2,684	3,606	3,842	3,873	4,148	5,347	4,783	4,106	4,185	4,402	4,861	22,337
Distribution substations and transformers	446	471	659	729	734	769	760	3,377	4,284	1,795	889	885	11,230
Distribution switchgear	2,558	2,736	3,797	4,174	4,200	4,400	4,337	4,417	4,655	4,808	4,848	4,987	23,715
Other network assets	796	838	1,747	2,833	2,939	5,137	11,212	9,329	8,758	6,233	7,389	7,205	38,914
System growth expenditure	25,388	28,449	29,839	31,766	25,332	36,529	50,976	63,340	57,694	63,423	67,303	66,267	318,027
Less capital contributions funding system growth	-	-	-	-	-	-	-	-	-	-	-	-	-
System growth less capital contributions	25,388	28,449	29,839	31,766	25,332	36,529	50,976	63,340	57,694	63,423	67,303	66,267	318,027
<small>Error check: Report total equals summary total from COF & VCA worksheet</small>	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

5.2: Asset replacement and renewal													
Subtransmission lines	1,752	2,448	3,408	3,351	3,800	4,276	3,812	4,738	6,287	5,252	4,361	3,023	23,661
Subtransmission cables	673	1,414	179	1,446	472	5,471	502	-	648	-	-	-	648
Zone substations	3,120	2,578	2,928	4,945	7,745	7,905	11,809	16,823	17,749	16,231	15,176	14,822	80,801
Distribution and LV lines	12,822	13,770	22,739	17,954	22,303	23,339	24,518	33,372	40,742	48,380	53,592	56,672	232,758
Distribution and LV cables	4,069	6,653	3,887	6,190	4,899	6,089	6,356	6,999	7,408	7,584	7,260	6,727	35,978
Distribution substations and transformers	6,718	5,548	7,153	7,654	9,352	5,656	5,730	7,886	8,408	8,736	8,786	8,737	42,553
Distribution switchgear	6,871	6,823	7,425	8,135	10,237	7,932	8,548	9,392	9,569	9,537	9,763	8,370	46,631
Other network assets	1,760	1,317	4,304	1,809	151	950	2,487	5,027	5,241	4,847	2,387	1,597	19,099
Total asset replacement and renewal expenditure	37,785	40,551	52,023	51,484	58,959	61,618	63,762	84,237	96,052	100,567	101,325	99,948	482,129
Less capital contributions funding asset replacement and renew	-	-	-	-	-	-	-	-	-	-	-	-	-
Total asset replacement and renewal less capital contributions	37,785	40,551	52,023	51,484	58,959	61,618	63,762	84,237	96,052	100,567	101,325	99,948	482,129
Error check: Report total equals summary total from COF & VCA worksheet	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

Capex planned commissioned assets in nominal prices

\$000 (in nominal prices) Row ref	Current period					Next period					Total CPP Period		
	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					
	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021		2022	2023
5.1: System growth													
Subtransmission lines						1,331	1,280	13,024	7,444	3,693	4,276	16,342	44,779
Subtransmission cables						1,307	1,209	31,663	3,474	10,156	36,031	26,736	108,060
Zone substations						4,110	3,061	23,028	13,765	9,364	23,399	27,346	96,902
Distribution and LV lines						4,303	4,335	4,310	4,401	4,558	4,600	4,604	22,473
Distribution and LV cables						3,983	3,982	6,483	4,101	4,202	4,381	4,776	23,943
Distribution substations and transformers						758	763	2,548	4,037	2,584	1,169	895	11,233
Distribution switchgear						4,334	4,358	4,435	4,626	4,809	4,885	4,997	23,752
Other network assets						4,378	9,031	10,252	9,063	6,920	7,324	7,349	40,908
System growth expenditure	-	-	-	-	-	24,504	28,019	95,743	50,911	46,286	86,065	93,045	372,050
Less capital contributions funding system growth	-	-	-	-	-	-	-	-	-	-	-	-	-
System growth less capital contributions	-	-	-	-	-	24,504	28,019	95,743	50,911	46,286	86,065	93,045	372,050
Error check: Report total equals summary total from COF & VCA worksheet						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	
5.2: Asset replacement and renewal													
Subtransmission lines						4,118	3,965	4,480	5,854	5,625	4,672	3,441	24,072
Subtransmission cables						3,821	2,142	166	447	201	-	-	814
Zone substations						127	847	1,656	857	415	523	632	4,083
Distribution and LV lines						23,000	24,130	30,784	38,790	46,495	52,565	56,345	224,979
Distribution and LV cables						5,696	6,268	6,857	7,352	7,605	7,429	6,949	36,192
Distribution substations and transformers						-	19	17	4	23	19	4	67
Distribution switchgear						4,316	4,242	4,608	4,791	4,702	4,634	4,178	22,913
Other network assets						686	1,980	4,239	5,225	5,018	3,149	1,842	19,473
Total asset replacement and renewal expenditure	-	-	-	-	-	41,764	43,593	52,807	63,320	70,084	72,991	73,391	332,593
Less capital contributions funding asset replacement and renewal	-	-	-	-	-	-	-	-	-	-	-	-	-
Total asset replacement and renewal less capital contributions	-	-	-	-	-	41,764	43,593	52,807	63,320	70,084	72,991	73,391	332,593
Error check: Report total equals summary total from COF & VCA worksheet						TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

End

Outputs for CPP schedule E

Table 6: Opex projects and programmes

			Actual and forecast opex in constant prices (\$000)												
			Current period					Next period							
Proj. Ref	Doc Ref	Project Name	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					Total CPP
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
6a: Service interruptions and emergencies															
	SIE	Reactive maintenance	6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	36,570
Total Service interruptions and emergencies			6,530	5,492	6,518	7,030	6,732	6,733	7,081	7,214	7,311	7,409	7,348	7,288	36,570
6b: Vegetation management															
	VEG	Vegetation management	6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677	46,041
Total vegetation management			6,613	5,686	4,808	5,025	6,026	5,750	5,500	9,939	9,237	8,957	9,231	8,677	46,041
6c: Routine and corrective maintenance and inspection															
	RCI	Preventive maintenance and inspection	8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	58,540
Total Asset replacement and renewal expenditure			8,469	10,261	8,429	6,496	7,479	7,294	8,396	11,261	12,134	12,409	11,408	11,328	58,540
6d: Asset replacement and renewal															
	ARR	Corrective maintenance	9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457	65,583
Asset relocations expenditure			9,770	7,952	11,528	10,349	9,031	12,096	11,979	12,585	13,818	13,829	12,894	12,457	65,583
Total network opex			31,382	29,391	31,283	28,900	29,268	31,873	32,956	40,999	42,500	42,604	40,881	39,750	206,734
Error check: Report total equals the sum of the Forecast Expenditure inputs			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

End

Outputs for CPP schedule E

Table 6: Opex projects and programmes

			Actual and forecast opex in nominal prices (\$000)												
			Current period					Next period							
Proj. Ref	Doc Ref	Project Name	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period			Total		
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	CPP
6a: Service interruptions and emergencies															
	SIE	Reactive maintenance	6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243	39,761
Total Service interruptions and emergencies			6,311	5,355	6,438	7,006	6,732	6,795	7,249	7,524	7,788	8,058	8,148	8,243	39,761
6b: Vegetation management															
	VEG	Vegetation management	6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814	49,999
Total vegetation management			6,392	5,544	4,749	5,009	6,026	5,803	5,631	10,367	9,840	9,742	10,236	9,814	49,999
6c: Routine and corrective maintenance and inspection															
	RCI	Preventive maintenance and inspection	8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828	63,691
Total Asset replacement and renewal expenditure			8,185	10,005	8,325	6,474	7,479	7,361	8,595	11,751	12,935	13,512	12,665	12,828	63,691
6d: Asset replacement and renewal															
	ARR	Corrective maintenance	9,442	7,753	11,387	10,315	9,031	12,206	12,263	13,133	14,732	15,059	14,316	14,107	71,347
Asset relocations expenditure			9,442	7,753	11,387	10,315	9,031	12,206	12,263	13,133	14,732	15,059	14,316	14,107	71,347
Total network opex			30,330	28,657	30,899	28,804	29,268	32,165	33,738	42,775	45,295	46,371	45,365	44,992	224,798
Error check: Report total equals the sum of the Forecast Expenditure input:			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE

End

Outputs for CPP schedule E

Table 7: Non-network opex

			Actual and forecast opex in constant prices (\$000)												
			Current period					Next period							
Proj. Ref	Doc Ref	Project Name	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					Total CPP
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
7a System operator and network support															
	SON	System operations and network support	7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	82,486
Total Service interruptions and emergencies			7,019	7,795	8,609	9,770	10,751	12,034	13,913	15,463	16,479	17,057	16,786	16,701	82,486
7b Business support															
	COR	Corporate	17,651	18,652	18,239	19,794	22,016	25,354	23,570	23,571	23,870	23,403	23,057	22,434	116,335
	FAC	Facilities	1,778	1,824	1,791	1,688	1,885	1,856	1,938	1,975	1,897	2,042	2,001	1,968	9,883
	I&G	Insurance and governance	1,846	2,043	2,012	2,097	2,048	1,984	2,062	2,146	2,188	2,227	2,218	2,207	10,986
	IST	ICT Opex	2,891	3,411	3,414	3,224	3,397	3,709	4,467	5,274	5,890	5,788	5,663	5,530	28,145
Total vegetation management			24,166	25,930	25,456	26,803	29,346	32,903	32,037	32,966	33,845	33,460	32,939	32,139	165,349
Total network opex			31,185	33,725	34,065	36,573	40,097	44,937	45,950	48,429	50,324	50,517	49,725	48,840	247,835
Error check: Report total equals the sum of the Forecast Expenditure inputs			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

End

Outputs for CPP schedule E

Table 7: Non-network opex

			Actual and forecast opex in nominal prices (\$000)												
			Current period					Next period							
Proj. Ref	Doc Ref	Project Name	C-4	C-3	C-2	C-1	C0	Assessment period		CPP period					Total CPP
			2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
7a System operator and network support															
	SON	System operations and network support	6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846	89,569
Total Service interruptions and emergencies			6,784	7,601	8,503	9,737	10,751	12,144	14,243	16,114	17,527	18,512	18,570	18,846	89,569
7b Business support															
	COR	Corporate	17,058	18,186	18,016	19,729	22,016	25,587	24,129	24,587	25,429	25,454	25,567	25,374	126,411
	FAC	Facilities	1,719	1,778	1,769	1,682	1,885	1,873	1,984	2,062	2,024	2,227	2,225	2,232	10,770
	I&G	Insurance and governance	1,784	1,992	1,987	2,090	2,048	2,002	2,111	2,242	2,337	2,432	2,470	2,507	11,988
	IST	ICT Opex	2,794	3,325	3,372	3,213	3,397	3,743	4,573	5,518	6,308	6,344	6,332	6,307	30,809
Total vegetation management			23,355	25,281	25,144	26,714	29,346	33,205	32,797	34,409	36,098	36,457	36,594	36,420	179,978
Total network opex			30,139	32,882	33,647	36,451	40,097	45,349	47,040	50,523	53,625	54,969	55,164	55,266	269,547
Error check: Report total equals the sum of the Forecast Expenditure inputs			TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

End

Outputs for CPP schedule E

Schedule E table 8: Opex summary

Asset category	Forecast commissioned asset values in nominal terms (\$000)							Total CPP period
	Assessment period		CPP period					
	2017	2018	2019	2020	2021	2022	2023	
Subtransmission lines	5,524	5,311	17,564	13,359	9,380	9,011	19,848	69,162
Subtransmission cables	5,239	3,452	31,921	4,012	10,450	36,119	26,827	109,329
Zone substations	13,496	14,862	40,841	34,958	29,831	41,649	45,012	192,291
Distribution and LV lines	28,566	29,633	36,154	44,224	52,093	58,147	61,962	252,580
Distribution and LV cables	15,584	15,753	18,357	16,355	16,745	16,433	16,524	84,414
Distribution substations and transformers	13,429	12,167	15,575	18,391	17,420	15,800	15,635	82,821
Distribution switchgear	18,845	17,556	19,135	21,205	22,131	22,241	21,356	106,068
Other network assets	5,076	11,022	14,501	14,297	11,946	10,480	9,199	60,423
Non-network assets	5,167	6,266	32,490	12,341	16,943	11,265	10,067	83,106
Total forecast commissioned assets	110,926	116,022	226,538	179,142	186,939	221,145	226,430	1,040,194
Error check: Total agrees with Schedule E table 2	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	
Error check: Total agrees with Schedule E table 4	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	TRUE	

End

Outputs for CPP schedule E

Schedule E table 9: Cost escalation factors

Escalator name and description	2012	2013	2014	2015	2016	Assessment period		CPP period				
						2017	2018	2019	2020	2021	2022	2023
Capex and opex historic cost escalators												
Annual average CPI using the inflation rate as defined in IM cl. 3.3.15(5).	2.29%	0.88%	1.30%	0.91%	0.33%							
Capex input cost escalators												
Labour						0.92%	1.44%	1.88%	2.46%	2.57%	2.48%	2.76%
Cables						0.92%	1.44%	7.12%	3.77%	3.15%	3.66%	4.24%
Conductor						0.92%	1.44%	6.96%	3.70%	3.12%	3.73%	4.39%
Transformers						0.92%	1.44%	11.94%	6.02%	2.09%	3.21%	2.22%
Switchgear						0.92%	1.44%	11.32%	5.69%	2.93%	2.87%	1.84%
Other based on an independent forecast of CGPI						0.92%	1.44%	1.84%	1.88%	1.89%	2.40%	2.40%
Capital contributions escalator												
Annual average CPI using the inflation rate as defined in IM cl. 3.3.15(5).						0.92%	1.44%	1.63%	2.04%	2.06%	2.04%	2.02%
Opex input cost escalators												
Labour based on an independent forecast of LCI						0.92%	1.44%	1.75%	2.03%	2.00%	1.93%	2.00%
Non-labour opex based on an independent forecast of PPI						0.92%	1.44%	2.20%	2.36%	2.35%	2.00%	2.00%

End