



Orion New Zealand Limited

Electricity Distribution Services

Default Price-Quality Path

Determination 2020

Annual price-setting compliance statement

For prices applying from 1 April 2022

Issued 1 March 2022

Orion New Zealand Ltd
565 Wairakei Road
PO Box 13896
Christchurch 8141
+64 3 363 9898
oriongroup.co.nz



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Introduction

- 1 Orion New Zealand Limited (Orion) owns and operates the electricity distribution network in central Canterbury between the Waimakariri and Rakaia rivers, and from the Canterbury coast to Arthur's Pass. Our network covers 8,000 square kilometres of diverse geography, including Christchurch city, Banks Peninsula, farming communities and high-country regions. We receive electricity from Transpower's national grid at seven separate locations and we distribute this electricity to more than 215,000 homes and businesses.
- 2 We charge electricity retailers on a wholesale basis for this delivery service. Retailers, in turn, include this cost in their retail electricity prices - our delivery charges, including Transpower's charges, typically amount to 34% of a household's electricity bill.
- 3 As a natural monopoly service provider, we are subject to government regulation under the Commerce Act 1986. Pursuant to the requirements of this Act, the Commerce Commission has set a regulatory framework that includes information disclosure regulations, default price-quality paths (DPP) and the option for distribution businesses to apply for a customised price-quality path (CPP).
- 4 Orion is subject to the Electricity Distribution Services Default Price-Quality Path Determination 2020 (the Determination) set by the Commerce Commission and applying for the five-year regulatory period from 1 April 2020 to 31 March 2025.
- 5 The Determination requires us to issue an "annual price-setting compliance statement" prior to the start of each assessment period, as well as an "annual compliance statement" within 5 months after the end of each assessment period to demonstrate compliance, or otherwise, with the requirements of the Determination.
- 6 This annual price-setting compliance statement covers the information requirements detailed in clause 11 of the Determination in relation to prices applying from 1 April 2022 to 31 March 2023, the third assessment period in the five-year regulatory period.

Compliance statement

- 7 Orion has complied with the price path in clause 8.4 of the Determination, with forecast revenue from prices of \$231,843.0k being less than the lesser of:
 - 7.1 forecast allowable revenue of \$234,668.6k; and
 - 7.2 forecast revenue from prices in the previous assessment period of \$227,606.3k plus 10%, i.e. \$250,366.9k.
- 8 This statement was prepared and certified on 1 March 2022
- 9 This statement has been certified by a director of Orion and a copy of this certification is attached.
- 10 Details supporting compliance follow.

Supporting information

- 11 Clause 8.4 of the Determination requires that forecast revenue from prices in respect to the second to fifth assessment periods does not exceed the lesser of:
 - 11.1 forecast allowable revenue for that assessment period; and
 - 11.2 forecast revenue from prices in the previous assessment period plus 10% being the limit on the annual percentage increase in forecast revenue from prices.
- 12 Note that all prices, charges, costs and revenue figures in this document are stated excluding GST.

Forecast revenue from prices

- 13 Forecast revenue from prices is calculated as the sum of each price multiplied by each corresponding forecast quantity.
- 14 The schedule of prices that we have set for the assessment period (as published on our website) is included in appendix A.
- 15 Our basis for determining forecast quantities is set out in appendix B. To demonstrate the reasonableness of our forecasts we include a description of our basis for establishing the forecast, the prior period forecast, and the actual quantity from the period before that.
- 16 Multiplying the two together provides our forecast revenue from prices of \$231,843.0k, as shown in the following table.

	FY2023 Delivery Prices	FY2023 Forecast Quantities	Days applicable	Price x Quantity (\$'000)
Streetlighting, general and irrigation connections				
Streetlighting fixed charge	0.0978 \$/con/day	52,206.0 cons	365 days	1,863.6
General fixed charge	0.3000 \$/con/day	214,162.0 cons	365 days	23,450.7
Streetlighting and general connections Peak charge (peak period demand)	0.3660 \$/kW/day	512,727 kW	365 days	68,495.2
Streetlighting, general and irrigation connections volume charge				
Weekdays (Mon to Fri, 7am - 9pm)	0.05946 \$/kWh	1,162,194 MWh		69,104.1
Nights & weekends (Sat & Sun)	0.01844 \$/kWh	1,315,315 MWh		24,254.4
General connections				
Low power factor charge	0.2000 \$/kVA/day	0 kVA	365 days	-
Irrigation connections				
Capacity charge	0.4308 \$/kW/day	76,319 kW	182 days	5,983.8
Power factor correction rebate	(0.1590) \$/kVA/day	22,719 kVA	182 days	(657.4)
Interruptibility rebate	(0.0398) \$/kW/day	47,359 kW	182 days	(343.0)
Major customer connections and embedded networks				
Fixed charge	10.0000 \$/con/day	418.2 cons	365 days	1,526.6
Fixed charge (additional connections)	5.0000 \$/con/day	105.0 cons	365 days	191.6
Extra switches	3.2000 \$/switch/day	112.0 switches	365 days	130.8
11k Metering equipment	4.5000 \$/con/day	45.0 cons	365 days	73.9
11kV Underground cabling	3.7100 \$/km/day	7.3 km	365 days	9.9
11kV Overhead lines	2.6000 \$/km/day	3.0 km	365 days	2.8
Transformer capacity	0.0106 \$/kVA/day	365,749.7 kVA	365 days	1,415.1
Peak charge (control period demand)	0.3547 \$/kVA/day	115,597.7 kVA	365 days	14,965.9
Nominated maximum demand	0.1061 \$/kVA/day	292,133.9 kVA	365 days	11,313.3
Metered maximum demand	0.0701 \$/kVA/day	247,660.9 kVA	365 days	6,336.8
Large capacity connections				
Synlait				
Distribution services				
Ops, maint & admin (dedicated assets)	11.560 \$/kVA/year	19,000.0 kVA	365 days	219.6
Ops, maint & admin (shared assets)	24.480 \$/kVA/year	18,900.0 kVA	365 days	462.7
Asset charge (dedicated assets)	9.200 \$/kVA/year	19,000.0 kVA	365 days	174.8
Asset charge (shared assets)	20.570 \$/kVA/year	18,900.0 kVA	365 days	388.8
Transmission services				
Interconnection charge (winter)	56.100 \$/kVA/year	4,610.0 kVA	365 days	258.6
Interconnection charge (summer)	47.480 \$/kVA/year	13,230.0 kVA	365 days	628.2
Connection charge	5.900 \$/kVA/year	13,230.0 kVA	365 days	78.1
Fonterra				
Distribution services				
Ops, maint & admin (dedicated assets)	7.840 \$/kVA/year	16,000.0 kVA	365 days	125.4
Ops, maint & admin (shared assets)	13.550 \$/kVA/year	13,650.0 kVA	365 days	185.0
Asset charge (dedicated assets)	13.680 \$/kVA/year	16,000.0 kVA	365 days	218.9
Asset charge (shared assets)	23.630 \$/kVA/year	13,650.0 kVA	365 days	322.5
Transmission services				
Interconnection charge (winter)	54.660 \$/kVA/year	2,320.0 kVA	365 days	126.8
Interconnection charge (summer)	46.340 \$/kVA/year	11,120.0 kVA	365 days	515.3
Connection charge	1.450 \$/kVA/year	11,120.0 kVA	365 days	16.1
Customer investment contract charge	0.000 \$/kVA/year	0.0 kVA	365 days	-
Export credits				
Real power component	(0.0682) \$/kW/day	380.9 kW	365 days	(9.5)
Reactive power component	(0.0224) \$/kVA/day	75.0 kVA	365 days	(0.6)
Miscellaneous				
Monthly invoice charge	30.00 \$/invoice	456.0 invoices		13.7
Failure to pay notice	50.00 \$/notice	6.0 notices		0.3
Default and termination notice	100.00 \$/notice	2.0 notices		0.2
Forecast Revenue from Prices FY2023				231,843.0

Forecast allowable revenue

- 17 The calculation of forecast allowable revenue (FAR) is set out in Schedule 1.5 of the determination as:

$$\text{FAR} = \text{FNAR} + \text{FPRC} + \text{OWAB} + \text{PTBA}$$

where

FNAR is the forecast net allowable revenue;

FPRC is the forecast pass-through and recoverable costs;

OWAB is the opening wash-up account balance; and

PTBA is the pass-through balance allowance.

- 18 The calculation of each of these components is set out below.
- 19 **Forecast net allowable revenue (FNAR)** is stated for Orion in Schedule 1.4 of the Determination as \$164,860k for the third assessment period.
- 20 **Forecast pass-through and recoverable costs (FPRC)** is defined as the sum of all forecast pass-through costs and forecast recoverable costs, excluding any recoverable cost that is a revenue wash-up draw down amount. Schedule 1.5 of the Determination further requires that these forecasts must be demonstrably reasonable.
- 21 The following table sets out the individual components that we have included in the calculation of FPRC. To demonstrate the reasonableness of the amounts we include a description of our basis for establishing the forecast, the prior period updated estimate, and the actual cost from the period before that.

Forecast pass-through and recoverable costs	IM reference ¹	Basis of forecast	FY23 forecast \$000	FY22 updated estimate \$000	FY21 actual \$000
Transpower charges					
Connection	3.1.3(1)(b)	Set to the amounts advised by Transpower in its pricing update and monthly invoices	4,100.6	3,995.8	3,771.5
Interconnection	3.1.3(1)(b)		58,595.6	57,479.1	56,930.6
New investment	3.1.3(1)(c)		730.2	975.2	1,646.4
			63,426.4	62,450.1	62,348.5
Avoided transmission charges					
Addington/Middleton connection charges avoided	3.1.3(1)(e)	Final allowable claim was in FY21	0.0	0.0	2,798.0
Hororata and Islington charges avoided (fourth assessment period following the assessment period in which the purchase occurred)	3.1.3(1)(e)	Calculated in accordance with Determination schedule 5.1 clause 1(a)(i) – the amount determined by Transpower for the year preceding the assessment period in which the charge was first recovered	309.9	309.9	309.9
			309.9	309.9	3,108.0

¹ Clause reference to the Electricity Distribution Services Input Methodologies Determination 2012 [2012] NZCC 26

Incentives					
IRIS incentive adjustment	3.1.3(1)(a)	Nil for assessment period	0.0	0.0	0.0
Quality incentive adjustment	3.1.3(1)(o)	Calculated in accordance with Determination schedule 4. Refer to our Annual compliance statement for the year ending 31 March 2021 for further details ²	996.6	0.0	0.0
Other recoverable costs					
Capex wash-up adjustment	3.1.3(1)(p)	Calculated in accordance with IM reference 3.1.3(8). Refer to appendix C for further details	754.6	733.2	0.0
FENZ levy	3.1.3(1)(w)	Based on the most recent quarterly invoice plus RBNZ forecast CPI movement	102.0	107.7	110.5
Pass-through costs					
Local authority rates on system fixed assets	3.1.2(2)(a)	Based on the most recent quarterly invoice plus RBNZ forecast CPI movement	4,827.0	4,572.7	4,321.3
Commerce Commission Levies	3.1.2(2)(b)(i)	Based on the most recent quarterly invoice plus RBNZ forecast CPI movement. The Commerce Commission levy includes additional allowances for ID and IM reviews	959.0	881.0	356.7
Electricity Authority Levies	3.1.2(2)(b)(ii)		678.0	666.6	649.7
Utilities Disputes Levies	3.1.2(2)(b)(iii)		123.0	122.6	119.6
			6,587.0	6,243.0	5,447.3
Total pass-through and recoverable costs			72,176.5	69,843.9	71,014.2

² Orion's Annual compliance statement for the year ending 31 March 2021 is available at <https://www.oriongroup.co.nz/assets/Company/Regulatory-Disclosures/Orion-DPP-annual-compliance-statement-2021-signed.pdf>

- 22 For all pass-through and recoverable cost allowances that are not stated in the table above, we have considered each allowance and determined that they are not applicable for Orion in the assessment period, and our forecast for each amount is nil.
- 23 The **opening wash-up account balance (OWAB)** is specified in Schedule 1.7 of the Determination and provides for the under or over recovery against allowable revenue to be carried forward two years, with interest.
- 24 The wash-up amount for the first assessment period was calculated in accordance with clause 8.6 and schedule 1.6 of the Determination.
- 25 In our Annual compliance statement for the year ending 31 March 2021, we disclosed a wash-up amount for the period ending 31 March 2021 of -\$2,179.6k. Details of the calculation are available at <https://www.oriongroup.co.nz/assets/Company/Regulatory-Disclosures/Orion-DPP-annual-compliance-statement-2021-signed.pdf>.

- 26 The opening wash-up account balance (OWAB) was calculated in accordance with the formula:

$$OWAB = Wash - up\ amount \times (1 + 67^{th}\ percentile\ post - tax\ WACC)^2$$

where

67th percentile post-tax WACC is 4.23%.

- 27 Therefore, the opening wash-up account balance is:

$$-\$2,179.6k \times (1 + 4.23\%)^2 = -\$2,367.9k$$

- 28 The **pass-through balance allowance (PTBA)** provides for any under or over recovery of pass-through costs during the prior regulatory period to be carried forward in prices. It is specified as nil for the third to fifth assessment periods of the DPP regulatory period.

- 29 Thus, **forecast allowable revenue (FAR)** for the assessment period is:

$$\begin{aligned} FAR &= FNAR + FPRC + OWAB + PTBA \\ &= \$164,860k + \$72,176.5k - \$2,367.9k + \$0.0k \\ &= \$234,668.6k \end{aligned}$$

Appendix A – Delivery and export price schedules for FY23

Electricity delivery price schedule for Orion NZ Ltd



(applicable from 1 April 2022)

This schedule lists the wholesale prices that Orion uses to charge electricity retailers and directly contracted customers for the electricity delivery service in Orion's network area. This delivery service includes the transmission and distribution of electricity to homes and businesses, but does not include the cost of the electricity itself. Please refer to your electricity retailer for details of retail electricity prices.

All prices exclude GST	Price Category Code ³	Price Component Code ³	Delivery Price	Unit of measure
Streetlighting connections				
	LIG			
Fixed charge		STFXD	0.0978	\$/con/day
Peak charge (peak period demand)		GENPK	0.3660	\$/kW/day
Volume charge				
Weekdays (Mon to Fri, 7am to 9pm)		VOLWD	0.05946	\$/kWh
Nights & weekends (Sat & Sun)		VOLNW	0.01844	\$/kWh
General connections				
	GEN			
Fixed charge		GENFXD	0.3000	\$/con/day
Peak charge (peak period demand)		GENPK	0.3660	\$/kW/day
Volume charge				
Weekdays (Mon to Fri, 7am to 9pm)		VOLWD	0.05946	\$/kWh
Nights & weekends (Sat & Sun)		VOLNW	0.01844	\$/kWh
Low power factor charge		LOWPF	0.2000	\$/kVAr/day
Irrigation connections				
	IRR			
Capacity charge		ICCAP	0.4308	\$/kW/day*
Volume charge				
Weekdays (Mon to Fri, 7am to 9pm)		VOLWD	0.05946	\$/kWh
Nights & weekends (Sat & Sun)		VOLNW	0.01844	\$/kWh
Rebates				
Power factor correction rebate		ICPFC	(0.1590)	\$/kVAr/day*
Interruptibility rebate		ICIRR	(0.0398)	\$/kW/day*
* applied from 1 October to 31 March only				
Major customer and embedded network connections				
	MCC			
Fixed charge		M CFXD	10.0000	\$/con/day
Fixed charge (additional connections)		M CFXDA	5.0000	\$/con/day
Extra switches		EQESW	3.2000	\$/switch/day
11kV Metering equipment		EQMET	4.5000	\$/con/day
11kV Underground cabling		EQUGC	3.7100	\$/km/day
11kV Overhead lines		EQOHL	2.6000	\$/km/day
Transformer capacity		EQTFC	0.0106	\$/kVA/day
Peak charge (control period demand)		M CCPD	0.3547	\$/kVA/day
Nominated maximum demand		M CNMD	0.1061	\$/kVA/day
Metered maximum demand		M CMMD	0.0701	\$/kVA/day
Large capacity connections				
	LCC			
Individually assessed prices advised and charged directly to the customers				
Miscellaneous				
Monthly invoice and contract charge to retailers and directly contracted customers		INVFXD	30.00	\$/invoice
Failure to pay notice		INVFTP	50.00	\$/notice
Default and termination notice		INVDAT	100.00	\$/notice

Notes

1. Full details on how we apply these prices are included in our *Pricing Policy* document, available on our website.
2. Peak and volume prices for streetlighting, general connections and irrigation connections are applied to peak loadings and volumes derived from measurements taken at grid exit points, and it is appropriate to allow for normal network losses when assessing the contribution individual connections make to these charges. All other prices in this schedule are applied against
3. The applicable price category code is recorded against each connection ICP on the Electricity Authority's registry, and the price component code is used in our mandatory 'electricity information exchange protocol' files.

Export credit schedule for Orion NZ Ltd

(applicable from 1 April 2022)



This schedule lists the credit prices that we use to credit electricity retailers or directly contracted customers for exports or contributions from their distributed generation. The credits do not represent the purchase of electricity. They are a recognition of the value to Orion in providing its delivery service. Credits are only available for generation approved by Orion and customers must apply in advance.

For exporting generators that were in place prior to 6 December 2016 and approved by the Electricity Authority an additional credit reflecting any actual savings in Transpower charges is available (at the date of issue of this schedule, no exporting generators have been approved by the Electricity Authority). In addition to applying for our distribution credit, exporting customers can approach Transpower (for example, under Transpower's demand response program) for recognition of any transmission benefit, and approach their electricity retailer for recognition of the value of energy exported.

Export credits are based on electricity exported only during specific time periods. Our prices for credits are:

<i>(excluding GST)</i>				
Generator rated output	Period applied	Credit prices	Price Component Code ³	Unit of measure
0 - 30kW generation ²				
Anytime credits (without PV), or	Anytime	0.00280	EXPA	\$/kWh
Anytime credits (with PV)	(24 hours, 7 days)	0.00010	EXPAPV	\$/kWh
0 - 30kW generation ²				
Peak period credits (with or without PV)	Chargeable peak period	0.19920	EXPPP	\$/kWh
30 - 750kW Control period credits ⁴				
- real power, plus	Chargeable control	0.0682	EXPCP1	\$/kW/day
- reactive power ⁵	period	0.0224	EXPCP2	\$/kVAr/day
above 750kW	<i>Individually assessed prices provided on application</i>			

Notes for export credit pricing

1. Full details, including metering requirements and how credit prices are applied, are available in our *Export Credits Policy* document available on our website.
2. Small 0 to 30kW generators may elect (in advance) to receive the alternative peak period based credits, subject to the installation of appropriate metering to record peak period export.
3. The price component code is used in our mandatory 'electricity information exchange protocol' files.
4. Control period credits are assessed during control periods and applied as an annual credit at 365/366 times the daily credit price.
5. The credit quantity for reactive power (kVAr) export is limited to 33% of the credit quantity for real power (kW) export in each half hour period, the equivalent of exporting with a 0.95 lagging power factor.
6. Approximately 11 connections are approved for export credits.

Appendix B – Forecast quantities

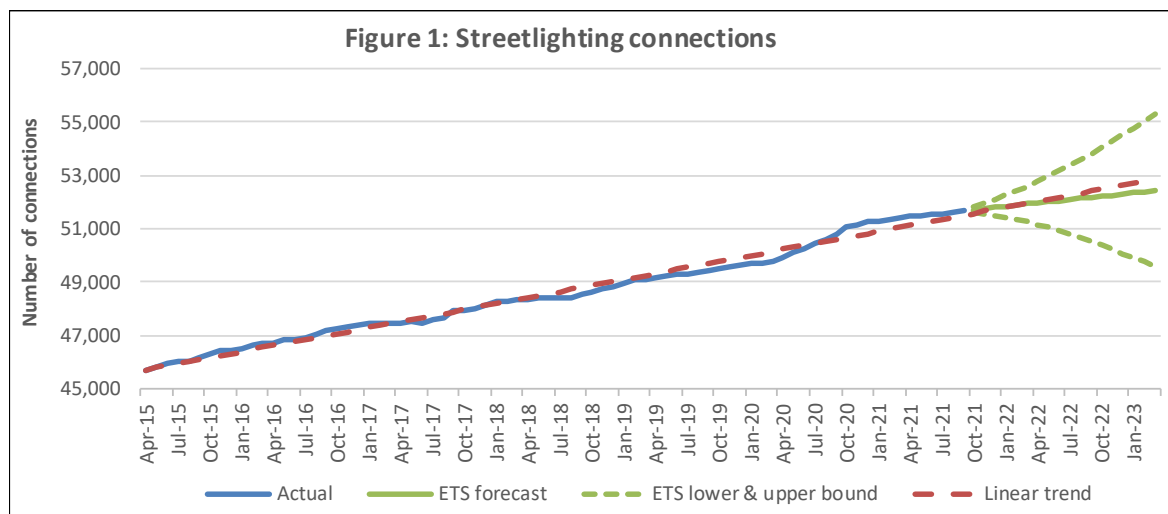
- B1 Schedule 1.3 of the Determination requires all forecast quantities used to calculate forecast revenue from prices to be demonstrably reasonable.
- B2 The following table shows our quantity forecasts for the year ending 31 March 2023 along with updated estimates for the prior year and the actual quantities for the year ending 31 March 2021.

Quantity forecasts for FY23						
Price component	Units	Forecast	Updated forecast	Actual	Basis of forecast	
		FY23	FY22	FY21		
Streetlighting connections						
Fixed charge	Connections	52,206	51,698	50,816	Time series forecast using exponential smoothing	
Peak charge (peak period demand)	kW	1,027	1,490	2,151		
Volume charge					Estimates based on an historical streetlighting profile and a projection of streetlighting capacity which has been reducing by 13% per annum since 2018 as a result of CCC's ongoing LED replacement program	
Weekdays (Mon to Fri, 7am - 9pm)	MWh	2,130	2,380	2,850		
Nights & weekends (Sat Sun)	MWh	14,310	16,055	19,209		
General Connections						
Fixed charge	Connections	214,162	210,011	205,257	Time series forecast using exponential smoothing	
Peak charge (peak period demand)	kW	511,700	493,297	469,988	The winter 2021 peak result was the highest recorded by almost 10MW. The forecast for FY23 is based on last year with an ~20MW adjustment to allow for an anticipated increase in the network limit.	
Volume charge					8 year linear trend. Values prior to FY20 adjusted for structural re-categorisations.	
Weekdays (Mon to Fri, 7am - 9pm)	MWh	1,102,648	1,102,427	1,079,568		
Nights & weekends (Sat Sun)	MWh	1,220,021	1,211,194	1,186,564		
Low power factor charge	kVar	0	0	0	Assume no customers have this applied	
Irrigation connections						
Capacity charge	kW	76,319	76,558	77,306	Post CPW stage 2 time series forecast using exponential smoothing	
Volume charge					Estimate based on linear regression model using chargeable capacity and NIWA historical average rainfall and soil moisture deficit data.	
Weekdays (Mon to Fri, 7am - 9pm)	MWh	57,416	61,613	63,803		
Nights & weekends (Sat Sun)	MWh	80,984	87,006	89,993		
Rebates					Post CPW stage 2 time series forecast using exponential smoothing	
Power factor correction rebate	kVar	22,719	23,489	23,783		
Interruptibility rebate	kW	47,359	47,836	49,498		
Major customer connections & embedded networks						
Fixed charge	Connections	418	405	400	Existing major customer connections plus works in progress with expected completion dates prior to April 2023	
Fixed charge (additional connections)	Connections	105	100	93		
Dedicated equipment					Existing major customer connections plus works in progress with expected completion dates prior to April 2023	
Extra switches	Switches	112.0	110.2	107.3		
11kV Metering equipment	Connections	45.0	45.0	41.0		
11kV Underground cabling	km	7.3	7.3	7.3		
11kV Overhead lines	km	3.0	3.0	3.0		
Transformer capacity	kVA	365,750	345,578	334,033		
Peak charge (control period demand)	kVA	115,598	108,301	112,343	Based on HH metering data for existing major customer connections for 12 months ending Sep-21 plus estimates for new connections and anticipated re-categorisations	
Nominated maximum demand	kVA	292,134	272,660	262,494		
Metered maximum demand	kVA	247,661	230,149	226,792		
Large capacity connections						
Distribution charges						
Ops, maint & admin (dedicated assets)	kVA	19,000.0	19,000.0	19,000.0	Individually assessed using historical loading levels and input from the customer	
Ops, maint & admin (shared assets)	kVA	18,900.0	18,500.0	18,290.0		
Asset charge (dedicated assets)	kVA	19,000.0	19,000.0	19,000.0		
Asset charge (shared assets)	kVA	18,900.0	18,500.0	18,290.0		
Ops, maint & admin (dedicated assets)	kVA	16,000.0	16,000.0	16,000.0		
Ops, maint & admin (shared assets)	kVA	13,650.0	13,650.0	13,430.0		
Asset charge (dedicated assets)	kVA	16,000.0	16,000.0	16,000.0		
Asset charge (shared assets)	kVA	13,650.0	13,650.0	13,430.0		
Transmission charges						
Interconnection charge (winter)	kVA	4,610.0	4,390.0	4,390.0		
Interconnection charge (summer)	kVA	13,230.0	11,830.0	8,642.1		
Connection charge	kVA	13,230.0	11,830.0	8,642.1		
Interconnection charge (winter)	kVA	2,320.0	2,271.0	1,781.6		
Interconnection charge (summer)	kVA	11,120.0	11,120.0	10,999.6		
Connection charge	kVA	11,120.0	11,120.0	10,999.6		
Customer investment contract charge	kVA	0.0	16,000.0	16,000.0		
Export credits						
0 - 30kW generation						
Anytime (without PV)	kWh	0.0	0.0	0.0	There are no connections currently approved to receive these credits and no applications have been received pending approval	
Anytime (with PV)	kWh	0.0	0.0	0.0		
Peak period (with or without PV)	kWh	0.0	0.0	0.0		
30 - 750kW generation						
Control period real power	kW	380.9	380.9	449.6	With the removal of transmission credits on 1 April 2019 following Electricity Authority rule changes we observed a large reduction in generation during our chargeable control periods in FY20. Until a clear trend is observed we have adopted the same quantity as last year for our FY22 projection	
Control period reactive power	kVar	75.0	75.0	117.5		
Miscellaneous						
Monthly invoice and contract charge	Invoices	456	421	438	29 retailers and 9 major directs	
Failure to pay notice	Notices	6	2	9		
Default and termination notice	Notices	2	0	2		

B3 The following sections describe in more detail how we derived the forecast quantities used in the calculation of forecast revenue from prices.

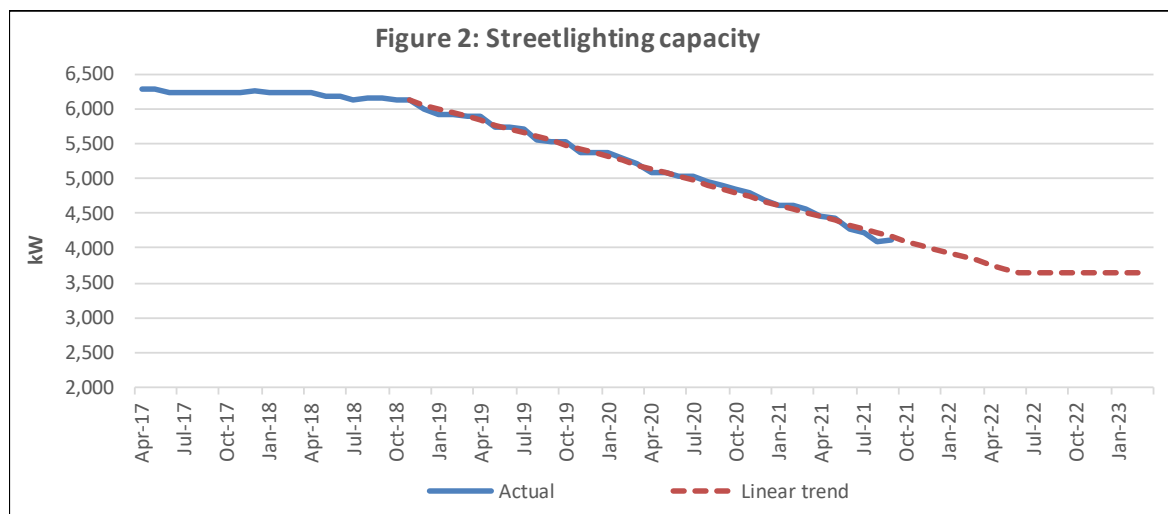
Streetlighting connections

B4 The forecast of monthly streetlighting connections through to 31 March 2023 was produced using the exponential smoothing (ETS) method. Figure 1 illustrates how the ETS forecast compares to the historic linear trend.



B5 The peak and volumes forecasts are based on an historical streetlighting half-hourly profile and monthly projections of lighting capacity through to 31 March 2023.

B6 A program of work undertaken by Christchurch City Council in late 2017 to replace sodium vapour lamps with energy efficient LED lamps has resulted in capacity reducing by 13% per annum on average over the past 3-4 years. This decline is forecast to continue through to the middle of 2022 when we anticipate the work program being completed.

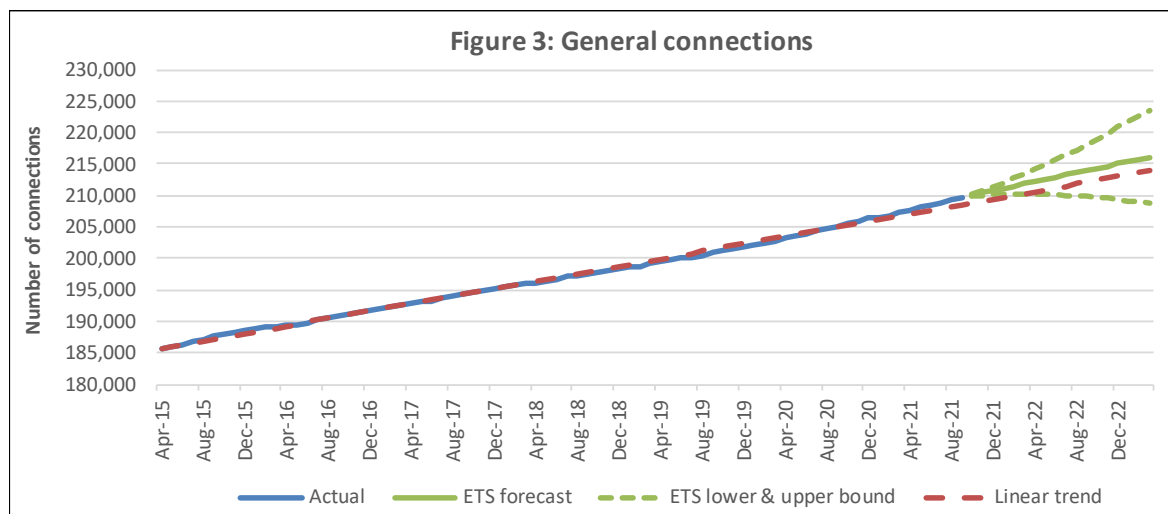


B7 Volumes are forecast to reduce roughly in proportion with capacity, however, the peak quantity is forecast to decline by over 30%. In addition to reducing capacity, controlling the network to a higher limit (as discussed in B10 below) will eliminate a higher proportion of early morning and

evening peak when streetlights are turned on compared with late morning and afternoon peaks when streetlights are off.

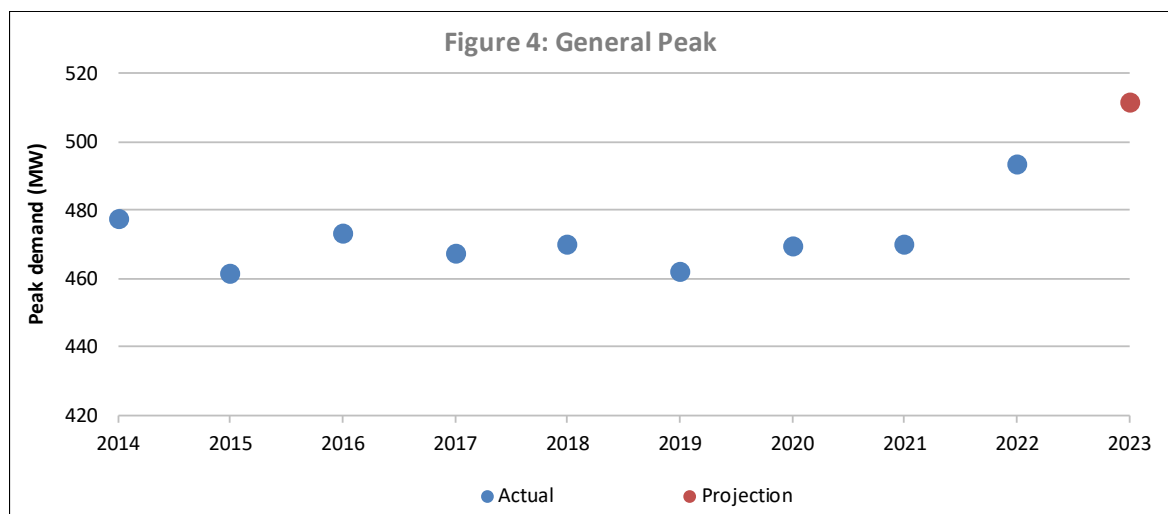
General connections

B8 The monthly forecast of general connections through to 31 March 2023 was produced using the exponential smoothing (ETS) method. Figure 3 illustrates how growth in connections has remained consistent over the past 6-7 years.

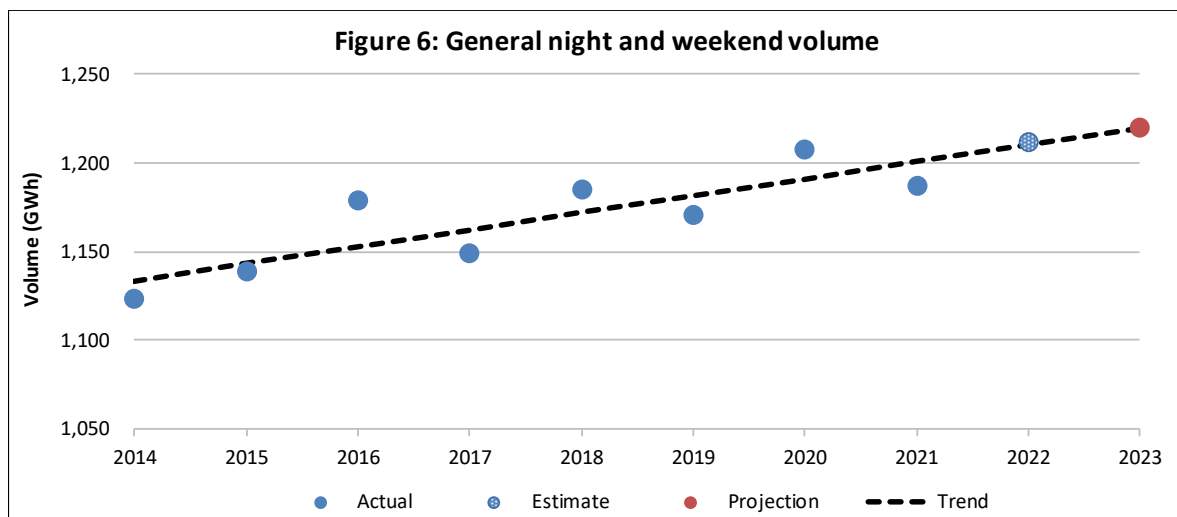
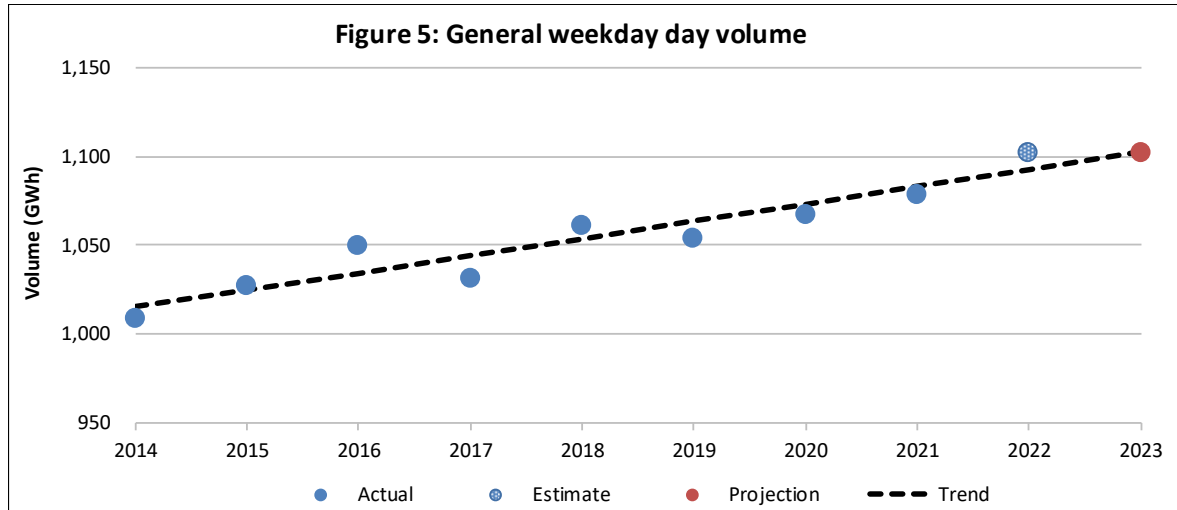


B9 The general connection peak quantity remained relatively stable for several years, fluctuating between 461 MW and 478 MW as depicted in figure 4. However, last winter the general peak was measured at over 493 MW, the highest on record and 25 MW above the forecast we used for setting prices.

B10 Our general peak forecast for winter 2022 is essentially the same as what we observed last winter plus an additional 20 MW to allow for operating the network to a higher limit. For the majority of last winter, we operated the network to a limit of 600 MW or lower. Following the peak loading levels we observed last winter we anticipate operating at 615 MW or higher next winter.

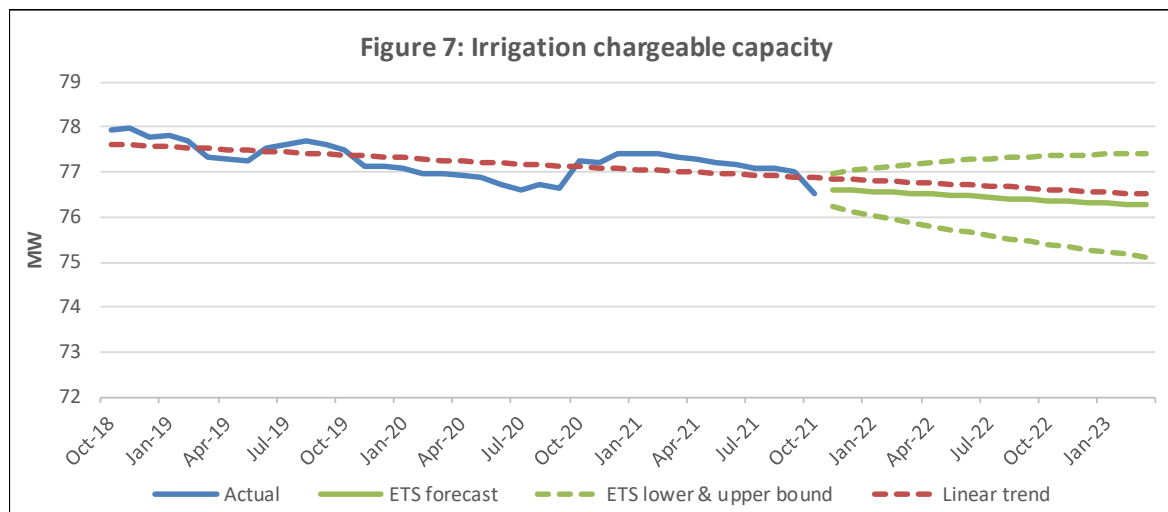


B11 Volume forecasts are based on an 8-year linear trend. Using a long-term trend has the advantage of diluting the impacts of extreme weather and unforeseen events such as pandemic enforced lockdowns on individual observations. Figures 5 and 6 illustrate average growth in both weekday day and night and weekend volume of 0.8% per annum since 2014.



Irrigation connections

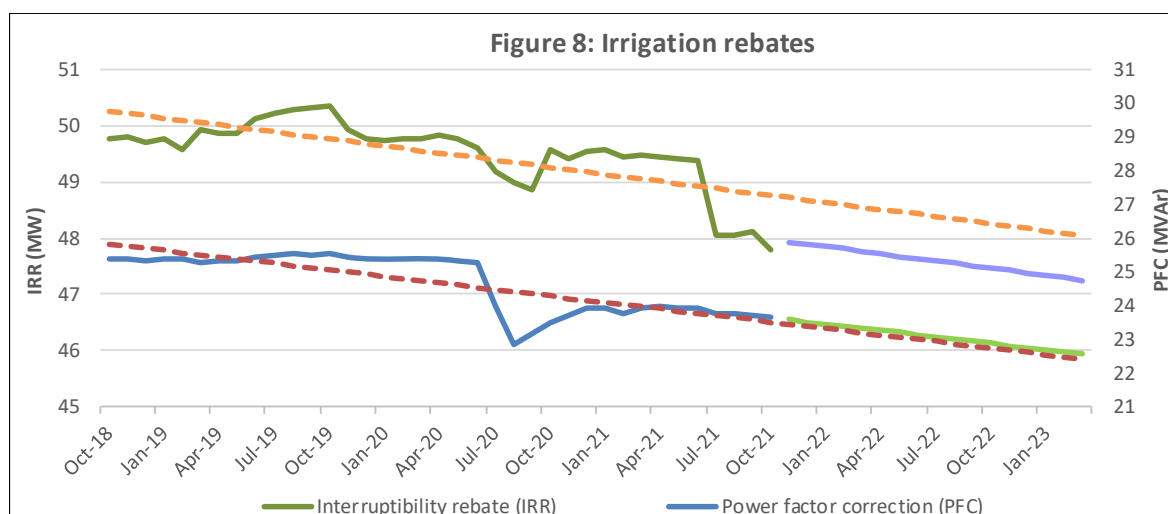
B12 Since the completion of the Central Plains Water Enhancement Scheme (CPW) in September 2018 we have observed a steady decline in chargeable capacity as illustrated in figure 7. Both the ETS model and underlying linear trend support continued decline in chargeable capacity of 0.3% per annum.



B13 As with chargeable capacity, the rebate quantities have reduced following the completion of CPW. The power factor correction and interruptibility rebate chargeable quantities have declined at an annual rate of 2.3% and 1.3% respectively since October 2018 as depicted in figure 8.

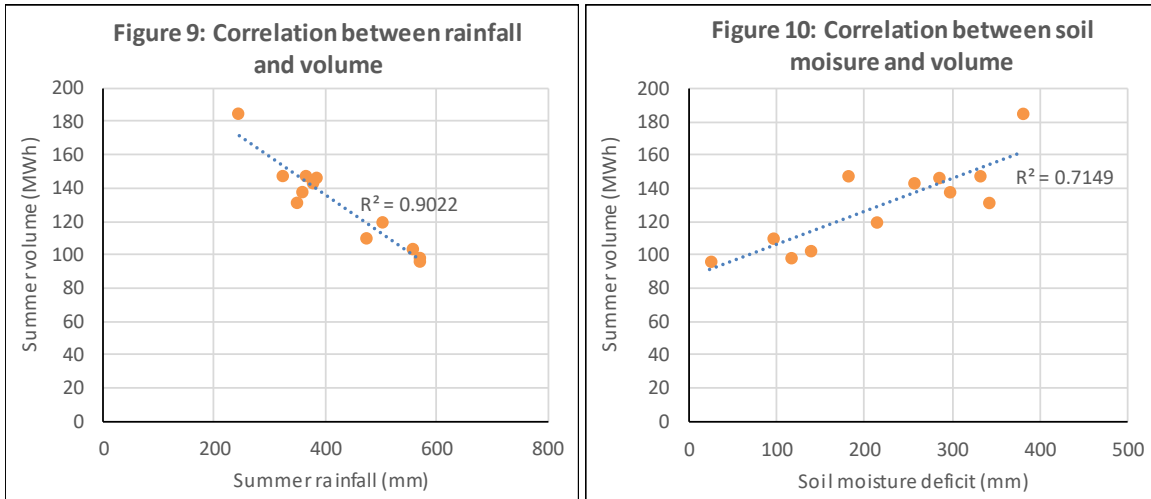
B14 Whilst CPW represents a major factor in the decline, the re-commencement of annual irrigation audits following a 4-year absence appears to be another significant contributing factor. The sharp reductions followed by smaller increases are indicative of Orion’s stance to remove rebates as audits uncover discrepancies and restore them if, and only if, remedial action is taken by the irrigation owner.

B15 Our forecasts for the year ending 31 March 2023 use an ETS model which aligns with the recent linear trend in terms of rate of decline.



B16 Irrigation volume forecasts are based on a linear regression model using chargeable capacity and rainfall and soil moisture deficit data from NIWA’s climate database as explanatory variables. The regression model explains over 90% of the variation in volume.

B17 Figures 9 and 10 illustrate the strong negative correlation between volume and rainfall and a weaker positive correlation between soil moisture deficit and volume.



B18 The regression model uses 30-year average rainfall and soil moisture deficit levels, in the absence of long-range weather forecasts, to forecast volumes for the year ending 31 March 2023.

Major customer connections

B19 Our forecasts for the major customer pricing components are derived from existing connections and new connections that are scheduled to be completed before the end of March 2023.

B20 The nominated maximum demand is reviewed monthly and increased if the average of the 12 highest half-hourly loads in the previous 12 months exceeds the current level by 10 kVA or more. For our forecast we allow monthly growth of 0.6%

B21 The control period and metered maximum demand charges for existing major customer connections that will apply from 1 April 2022 are calculated from half-hourly metered volumes during the period 1 January 2021 to 31 December 2022. For our forecasts we have used the 12 months ending 30 September 2021.

Large Capacity Connections

B22 Chargeable quantities for large capacity connections are based on loading levels observed during the prior year together with feedback from the customer around future expansion plans and likely plant operations through to 31 March 2023.

Appendix C – Capex wash-up allowance

- C1 In setting starting prices for the current DPP regulatory period the Commerce Commission used a forecast value of commissioned assets for the year ending 31 March 2020 for the purpose of determining building blocks allowable revenue (BBAR).
- C2 The Electricity Distribution Services Input Methodologies Determination 2012 (IMs) contain a clause - 3.1.3(1)(p) - requiring EDBs to calculate a capex wash-up by determining the difference in BBAR from adopting the actual value of commissioned assets instead of the forecast value of commissioned assets. The wash-up is applied across years 2 to 5 of the regulatory period.
- C3 The capex wash-up must be calculated in accordance with clause 3.1.3(9)(b) of the IMs. We achieved this by replacing the forecast value of commissioned assets with the actual value of commissioned assets³ in the Commerce Commission’s financial model⁴. The value of commissioned assets and BBAR before and after are shown in the table below.

	Forecast (\$000)	Actual (\$000)	Difference (\$000)
Value of commissioned assets for year ending 31 March 2020	66,443.0	78,414.0	11,970.0
Building blocks allowable revenue	734,520.0	737,329.0	2,809.0

- C4 The capex wash-up allowance was calculated in accordance with the formula:

$$\left(\frac{\text{capex wash - up adjustment}}{l - 1} \right) x (1 + r)^{y+0.5}$$

where

l is 5 being the number of years in the DPP regulatory period;

r is 2.92% being the cost of debt applying to the DPP regulatory period; and

y is the number of disclosure years preceding the disclosure year in question in the DPP regulatory period.

- C5 Hence, the capex wash-up allowance applying to the third assessment period is:

$$\left(\frac{\$2,809k}{5 - 1} \right) x (1 + 2.92\%)^{2+0.5} = \$754.6k$$

- C6 The following table shows the allowance for each assessment period in the DPP regulatory period.

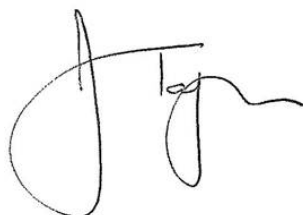
Assessment period	Capex wash-up allowance (\$000)
2	733.2
3	754.6
4	776.6
5	799.3

³ The actual value of commissioned assets for the year ending 31 March 2020 was disclosed in Orion’s Information Disclosure for the year ended 31 March 2020 which is available at <https://www.oriongroup.co.nz/assets/Company/Regulatory-Disclosures/Information-Disclosure-for-the-year-ended-31-March-2020.pdf>

⁴ https://comcom.govt.nz/_data/assets/excel_doc/0025/191464/Financial-model-EDB-DPP3-final-determination-27-November-2019.xlsx

Director's certificate for annual price-setting compliance statement

We, Deborah Jane Taylor and Bruce Donald Gemmell, being directors of Orion New Zealand Limited certify that, having made all reasonable enquiry, to the best of our knowledge and belief, the attached annual price-setting compliance statement of Orion New Zealand Limited, and related information, prepared for the purposes of the *Electricity Distribution Services Default Price-Quality Path Determination 2020* has been prepared in accordance with all the relevant requirements, and all forecasts used in the calculations for forecast revenue from prices and forecast allowable revenue are reasonable.



Deborah Jane Taylor



Bruce Donald Gemmell

1 March 2022