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Default price-quality paths for electricity distribution businesses from 1 April 2025

Issues paper

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Associated documents

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14 June 2023	ISBN 978-1-991085-05-4	Report on the IM Review 2023: Part 4 Input Methodologies Review 2023 – Draft Decision
14 June 2023	ISBN 978-1-991085-06-1	Context and Summary of Draft decisions: Part 4 Input Methodologies Review 2023
14 June 2023	ISBN 978-1-991085-04-7	Financing and incentivising efficient expenditure during the energy transition topic paper: Part 4 Input Methodologies Review 2023 – Draft decision
14 June 2023	ISBN 978-1-991085-03-0	Cost of capital topic paper: Part 4 Input Methodologies Review 2023 Draft decision
14 June 2023	ISBN 978-1-991085-07-8	CPP and in-period adjustment mechanisms topic paper: Part 4 Input Methodologies Review 2023 – Draft decision
25 May 2023	ISBN 978-1-99-101299-9	Default price-quality paths for electricity distribution businesses from 1 April 2025 – Proposed Process
23 February 2023	ISBN 978-1-99-101275-3	Duration of the second regulatory period for Chorus' price-quality path – Final decision Reasons paper
30 November 2022	ISBN 978-1-99-101249-4	Electricity Distribution Services Default Price-Quality Path (Powerco transition) Amendments Determination 2022
31 May 2022	ISBN 978-1-99-101206-7	Default price-quality paths for gas pipeline businesses from 1 October 2022 – Final Reasons Paper
20 May 2022	ISBN 978-1-99-101210-4	Input Methodologies Review 2023 – Process and Issues paper
29 April 2021	4072846-6	Open letter – ensuring our energy and airports regulation is fit for purpose
20 May 2020	ISBN 978-1-869458-15-7	Electricity Distribution Services Input Methodologies Determination 2012 – consolidated principal determination and all amendments as of 20 May 2020
20 May 2020	ISBN 978-1-869458-16-4	Electricity Distribution Services Default Price-Quality Path Determination 2020 — consolidated principal determination and amendment determination as of 20 May 2020
27 November 2019	ISBN 978-1-869457-68-6	Default price-quality paths for electricity distributors from 1 April 2020 – Final decision reasons paper

Commerce Commission
Wellington, New Zealand

Contents

Executive summary

Purpose of paper

X1 The current default price-quality path (DPP) for electricity distribution businesses (EDBs) is due to expire on 31 March 2025 and we must set a new DPP by 30 November 2024. This new DPP will determine the maximum revenues and the required quality standards for EDBs over the next four to five years from 1 April 2025 (known as DPP4).[1,2] We are setting this DPP in the context of an energy transition to increased electrification, climate change impacts, high inflation, and significant cost pressures facing both EDBs and consumers.

X2 This Issues paper outlines the context for DPP4, the issues we consider relevant and the ways we propose to apply our tools within the DPP to promote the long-term benefit of consumers. The paper seeks stakeholders' views on specific issues we have identified, and on any issues we may have missed, to assist us in making the DPP4 Draft decision anticipated next May. Submissions on this Issues paper are due Friday, 15 December 2023. Cross-submission are due on Friday, 26 January 2024.

Price-quality regulation of EDBs

X3 Electricity is essential to the everyday lives of New Zealanders; powering everything from heating, cooking, and lighting, to transport and communications. Therefore, the infrastructure that supports getting electricity to where it needs to be (eg, poles, wires, cables and other supporting technologies) is vitally important.

X4 Under Part 4 of the Commerce Act 1986 (the Act), EDBs supplying electricity from the national grid to homes and businesses across Aotearoa New Zealand are regulated as natural monopolies.

X5 Part 4 of the Act is intended to serve the long-term benefit of consumers by promoting outcomes consistent with those in workably competitive markets, such as incentives to innovate, invest, improve efficiency, provide services that meet consumers demands and limit EDBs' ability to extract excessive profits.[3]

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1 More information about DPP4 can be found on our "Electricity lines default price-quality path" webpage.

2 We note the draft IM Review decision was to retain the revenue cap as the form of control. This paper explores the issues associated with DPP4 on the basis of this draft decision. However, no final decision has been made on the form of control as part of the IM Review and, if the final decision were to change from the draft, we would need to address this in the DPP4 process.

3 Commerce Act 1986, section 52A.

X6 Through price-quality paths set under this regulation, the Commission sets the maximum revenue an EDB can recover from its consumers within a regulatory period (which is currently five years duration);[4] and the required standards for the quality of service that each EDB must meet.[5]

X7 There are 29 EDBs of which 16 are subject to both price-quality and information disclosure regulation. The remaining 13 are community-owned and meet certain criteria specified under the Act and are therefore subject to information disclosure regulation only.[6] Chapter 1 provides a map which shows the EDBs subject to price-quality regulation (non-exempt EDBs).

X8 Periodic resets allow us to update the DPP to respond to changing circumstances. This includes responding to changes in EDBs' costs and performance and responding to wider issues affecting the electricity distribution sector.

Summary of the current context

X9 The energy sector is transforming; particularly in relation to the transition to a low carbon and a more climate-resilient economy. EDBs are considering the impacts on their distribution networks from the expected increase in electricity demand driven by the electrification of transportation and process heat, as well as the increased uptake of flexibility services and distributed energy resources (DER).

X10 While this overall direction is clear, there is significant uncertainty over the location, timing and extent of what is needed to transform electricity distribution infrastructure and systems to deliver on the energy transition. Expected emerging technologies and business models may provide a broader suite of energy options that could make electricity demand more responsive to, and/or provide greater opportunities for, services to be supplied more efficiently and at lower cost relative to network upgrades.

X11 Notwithstanding the uncertainty, the size of the investment required by EDBs into their networks as a whole will very likely need to be larger than we have seen in previous resets. Each EDB will be considering how they respond to the energy transition with their own differing network characteristics, technological maturity, and drivers for change. In addition to responding to expected increases in demand, EDBs will need to continue to deliver repairs and replace network assets based on their age and condition.

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4 Commerce Act 1986, section 53M(4)-(5).

5 Previous DPP resets have used the frequency and duration of outages on the network as the relevant measure of quality of service as these are of most importance to consumers.

6 Commerce Act 1986, section 54D.

X12 Network resilience has been an increasing focus for EDBs and consumers following recent extreme weather events. Consumers have an ongoing expectation that EDBs are effectively managing risks related to extreme events caused by severe weather, earthquakes, other natural disasters or criminal activity.

X13 EDBs are also considering investment requirements at a time of increased inflation, potential supply chain pressures resulting in increased costs, delays in delivery of equipment, and challenges regarding the availability of workers to deliver increased investment programmes.

X14 Over the last 10 years, average electricity prices and costs for consumers have grown in line with, or slightly below, general inflation.[7] The costs associated with distribution and transmission together comprise about 38% of the average household electricity bill.[8] These costs are likely to increase, potentially significantly, following the upcoming resets. When placed within a context of high inflation generally and cost of living pressures, this may place a strain on consumers, particularly those in energy hardship.[9]

What the context means for the DPP4 reset

X15 In this reset we are considering how our regulatory tools within the DPP can be best used to promote the long-term benefit of consumers including:

X15.1 **Forecasting efficient expenditure within our regime:** We need to ensure our capital expenditure (capex) and operating expenditure (opex) forecasting approaches appropriately address the increased levels of expenditure forecasted while balancing the role of other regulatory mechanisms available for addressing uncertainty; ie, reopeners and customised price-quality paths (CPPs)

X15.2 **Incentivising continued innovation and efficiency during the energy transition:** We recognise this will include the increased use of non-traditional solutions to minimise the long-term costs to consumers

7 Ministry of Business, Innovation and Employment, "Electricity cost and price monitoring" webpage. This has two sources of residential consumer costs and prices over time, the Household sales-based electricity cost data (QRSS) and Quarterly Survey of Domestic Electricity Prices (QSDEP).

8 Electricity Authority, "Your Power Bill" webpage.

9 Ministry of Business, Innovation and Employment, "Defining Energy Hardship" webpage.

X15.3 **Managing price shock risks and the ability for EDBs to finance investments in a context of increasing electricity bills:** We recognise there is likely to be a significant increase needed in the distribution component of consumer bills in the next regulatory period. Accordingly, we need to consider appropriate options to minimise price shock risks for consumers in the context of concerns from EDBs on their ability to finance step changes in investment.

X16 While the contextual challenges described above will drive our areas of focus for DPP4, quality standards and incentives will also continue to be important components of the price-quality regime. Each of the contextual challenges are described in more detail below and in **Chapters 3 – 5**.

Forecasting efficient expenditure within our regime

X17 Forecasting efficient expenditure is a key aspect of the DPP regulatory regime. Our scrutiny helps give consumers confidence that the forecast expenditure underpinning EDB price increases represents good value for money.

X18 EDBs have raised concerns regarding the potential use of historical information by the Commission to assess forecast expenditure given the significant uplift anticipated by EDBs to enable decarbonisation of the economy. In previous resets we have used a combination of historical information and EDB projections to reset DPPs. We have significant flexibility in how we set the DPP, particularly with regard to setting key building block components of forecast capex and opex. We intend to consider what would be the most appropriate approach for this reset.

X19 The Boston Consulting Group "The Future is Electric" report stated the existing regulations provide for 'just-in-time' investment.[10] Our view is that EDBs who are investing and operating efficiently will be planning to meet expected (future) customer demands for service quantity and quality on a least-cost lifecycle basis as this is provided for under our regime currently.

X20 In reviewing expenditure forecasts, we will consider:

X20.1 whether there is evidence regarding the scale of investment or timing of investment decisions that arises from the current context that is not consistent with a least-cost lifecycle basis

X20.2 on what basis these have been forecast, as well as any likely deferral of efficient investment because of deliverability or financeability concerns.

[10] Boston Consulting Group, "The future is electric: A decarbonisation roadmap for New Zealand's electricity sector" (25 October 2022).

How the regime addresses significant changes in expenditure forecasts

X21 EDB asset management plans (AMPs) indicate a clear expectation within the industry of costs and works increasing in the next regulatory period. To the extent that we use supplier expenditure forecasts, we are mindful there are risks that EDBs' own forecasts may be too high if an EDB takes a conservative approach to forecasting investment needs, timing, or cost. Alternatively, an EDB forecast may be too low and not appropriately identify all investment requirements, their timing, or cost. We acknowledge that even the best forecasts will not be able to provide for everything as circumstances change, such as demand and costs, and deliverability constraints emerge.

X22 Our approach to scrutinising supplier forecasts will maintain consistency with the purpose of default/customised price-quality regulation.[11]

X23 DPPs are to be set in a relatively low-cost way and are not intended to meet all the circumstances that an EDB may face; with CPPs allowing tailoring to meet the particular circumstances of an individual EDB. In addition, reconsideration of the price-quality path is available for DPPs and CPPs through reopeners where certain criteria are met. This allows us to exclude expenditure from the price path where the timing or extent of investment is uncertain, if we judge this to be in the best interests of consumers, knowing it can be included later if the need becomes more certain.

X24 To meet the relatively low-cost purpose of DPP regulation, we will also consider the efficiency, complexity, and costs of the DPP regime as a whole when resetting the DPP. What this means in practice will vary over time but will include consideration of the role of reopeners to address uncertainties about the drivers and timing of certainty expenditure, compared to expenditure which may be able to be reasonably accurately forecasted within the process of setting initial expenditure allowances.

Forecasts of capital expenditure

X25 We expect that we will likely need to adapt our approach to forecasting capex from DPP3. This includes the choice of methodology for forecasting expenditure, specific settings and how we apply these settings. In particular, we note that specific expenditure caps that were applied to capex in setting DPP3 are not specified in our framework for forecasting capex and there are no specific barriers within the regime preventing us from allowing greater increases in expenditure than previously provided.

[11] Commerce Act 1986, section 52A.

X26 For capex forecasts we intend to leverage the findings from an independent engineering consultancy review on the reasonableness of EDBs' demand and expenditure forecasts for the 2025 – 2030 period. Findings from the review will not be available until late 2023, and we intend to further engage with stakeholders on the implications of the review for the capex forecasting framework in early 2024.

X27 There are other important capex forecasting issues which we are seeking feedback on; including, but not limited to, the deliverability of the work programmes associated with the increased capex forecasts. We consider significantly increased capex forecasts, when applied across a number of EDBs, may be challenging given current labour market conditions and wider supply chain constraints.

Forecasts of operating expenditure

X28 For opex our emerging view is that we should retain the general approach used to forecast opex from the 2020 DPP reset (DPP3), which is commonly referred to as the 'base-step-trend' approach. This involves:

X28.1 taking a base level of operating expenditure

X28.2 carrying this forward by certain trend factors

X28.3 applying any known step changes.

X29 We currently consider that the base-step-trend approach to forecasting opex that we have used for previous DPP resets is sufficiently flexible to respond to changing investment and expenditure needs (see **Chapter 3** from page 24).

X30 Within this base-step-trend approach we are proposing, at a high-level, to:

X30.1 use actual opex for the 2024 disclosure year as the base level of operating expenditure

X30.2 retain the general econometric approach to forecasting opex growth due to network scale growth and to investigate other potential drivers of opex in a new environment

X30.3 consider whether retaining a weighted average of the all-industries labour cost and producer price indices to calculate nominal opex reflects the specific cost, workforce, and supply chain pressures EDBs face while maintaining incentives for EDBs to efficiently manage their costs

X30.4 reassess the opex partial productivity factor as part of our overall analysis of EDB productivity and efficiency

X30.5 seek reasons and evidence for any likely step changes applicable to EDBs between 2024 and 2030 and consider whether our criteria for approving step changes remain appropriate.

Incentivising continued innovation and efficiency during the energy transition

X31 Innovation and efficiency have a significant role in the transition to increased electrification, to help reduce costs and deliver value for money to consumers. The increased uptake of new and improving technologies including electric vehicles, batteries, smart meters and flexibility services are expected to drive growth in demand and provide tools to effectively manage it.

X32 We believe the current regime provides incentives for EDBs to innovate and improve efficiency through the partial retention by EDBs of cost reductions. In addition, there may be specific aspects of innovation, beyond the natural incentives to innovate which exist within the price-quality path regime, that could be encouraged. As we have not yet made our final Input Methodologies (IM) Review decision, we cannot substantively discuss detailed options for an innovation and non-traditional solutions scheme such as was proposed in the draft. We have instead described principles for scheme design that we consider would overarch any potential innovation and non-traditional solutions scheme.

X33 Demand-side management and energy efficiency initiatives may defer or avoid investment that would otherwise be required to meet periods of peak demand. We expect these should be a focus of EDBs to ensure expectations of increased electrification are managed as efficiently as possible.

X34 Our initial view is that a specific incentive for energy efficiency and demand-side management is not required for DPP4 as the revenue cap form of control does not impede the implementation of energy efficiency and demand-side management initiatives by EDBs.

Managing price shock and ability for EDBs to finance investments in a context of increasing electricity bills

X35 We anticipate consumer bills for electricity distribution services will significantly increase for the DPP4 regulatory period given expected increases in the inputs we use for calculating revenue allowances. In particular:

X35.1 underlying input costs have increased for EDBs due to a heightened period of inflation which will drive increases in capex and opex forecasts alongside forecasted increases in investment programmes

X35.2 investment and asset base growth based on inflation over the DPP3 period will mean higher revenues as EDBs earn a return on their now-larger asset bases

X35.3 risk-free rates, which are a key component of the Weighted Average Cost of Capital (WACC), have increased sharply from lows in late 2020.

X36 When resetting the DPP we make decisions that seek to provide EDBs the opportunity to recover their forecast efficient costs and earn an ex-ante normal return on investment over multiple regulatory periods. As with the DPP2 and DPP3 resets, our starting point is that the generally applicable rate of change relative to inflation (before considering any adjustments for price shock or undue supplier hardship) for the DPP4 should be 0%, with EDB revenues growing approximately in line with the consumer price index (CPI) (see **Chapter 5** from page 50).

X37 We have a statutory discretion when resetting a DPP to set alternative rates of change to minimise price shocks for consumers and/or undue financial hardship for suppliers. Given the price pressures consumers may face and EDBs' ongoing need for investment, we will have to exercise judgement when trading off price stability and timely revenue recovery. To aid in exercising this judgement, we have set out our emerging view on the approach to assessing price shocks and undue financial hardship (see **Chapter 5** from page 50).

Quality standards and quality incentive scheme

X38 Quality standards are an important part of determining a price-quality path. Quality standards have previously been set on the assumption of no material deterioration in the frequency and duration of outages, as network reliability is the most important dimension of quality to consumers. Quality standards are intended to ensure that any cost savings sought by EDBs do not come at the expense of meeting quality standards.

X39 Declines in quality over previous periods generally could result in lowered quality standards due to the use of historic performance in setting standards, with significant deterioration in quality performance subject to potential enforcement action. The quality incentive scheme is designed in part to discover whether it would be more efficient to increase or decrease quality.

X40 Significant revisions to the quality standards and quality incentive scheme were made for DPP3, compared to DPP2. Our initial view is that the quality standards and incentive scheme appear to be operating as intended. We propose to broadly retain the reliability standards and incentive scheme from DPP3 and not introduce new measures of quality (see **Chapter 4** from page 43).

How we will apply your feedback to the DPP4 reset

X41 This Issues paper outlines our current expectations for the next regulatory period and discusses the ways we propose to apply our tools within the DPP to promote the long-term benefit of consumers. We are looking for your feedback on the proposals and considerations in this paper. Your feedback will contribute to our development of our DPP4 Draft decision. Please see **Chapter 6** for more information about when and how you can provide feedback.

Consideration of the current IM Review

X42 In this paper we outline draft decisions of the current IM Review 2023 that, if finalised, would be required to be implemented in setting the revenue path for the DPP4 reset. We are not inviting comments on the IM Draft decision in response to this Issues paper as stakeholders have been consulted on these draft decisions in the development of the IM Review. If we do receive any such submissions, we will not be able to take them into account within the IM Review process, as the IM Determinations will be published in December 2023.

Next steps in the DPP4 process

X43 As indicated in our 25 May 2023 Process paper, we intend to hold issue-specific workshop(s) following submissions and cross-submissions on the Issues paper where appropriate. We anticipate these workshops will focus on common themes raised by multiple parties in submissions.

X44 We intend to publish a draft decision for DPP4 in May 2024. The draft decision will be followed by a six-week submissions window and a four-week window for cross-submissions. Depending on the submissions we receive on the draft decision we may also need to conduct further engagement to work through topics of interest.

X45 We will publish our final DPP4 decision by 29 November 2024 confirming the maximum revenue, rates of change, quality standards and incentives to improve performance and efficiencies that will apply to EDBs for DPP4.

Chapter 1 Introduction

Purpose of this paper

1.1 This paper seeks feedback on potential issues we have identified in advance of the DPP4 Draft decision.[12] In this paper, we:

1.1.1 set out our approach to regulating EDBs in the context of changes in the energy sector and regulatory environment (**Chapter 2**)

1.1.2 set out and analyse potential issues specific to the DPP4 reset and, where possible, identify options for resolving them (**Chapters 3 – 5** and **Attachments C – I**)

1.1.3 explain the DPP4 process, including further opportunities for stakeholders to participate (**Chapter 6**)

1.1.4 explain our framework for making decisions when resetting the DPP (including explaining the core components of how DPP regulation works and how it fits into the broader regime under Part 4 of the Commerce Act 1986 (the Act)) (**Attachments A and B**).

1.2 We are encouraging submissions to assist us in further developing our approach for resetting the DPP, including identification of issues or options which we have not identified.

1.3 We welcome your views on the matters raised in this paper within the timeframes set out below:

1.3.1 submissions by 5pm on Friday, 15 December 2023

1.3.2 cross-submissions by 5pm on Friday, 26 January 2024.

1.4 Information about how you can provide your views is set out in **Chapter 6** and a summary of all consultation questions is noted in **Attachment J**. A glossary of all terms we have used in this Issues paper is provided in **Attachment K**.

[12] The default price-quality path for electricity distribution businesses that will apply from 1 April 2025 to 31 March 2030.

Structure of this paper

Table 1.1 Structure of this paper

Section	Title	Description
Chapter 1	Introduction	Sets out the purpose of this paper, what it covers, and how it is structured.
Chapter 2	Context and challenges	Sets out our view of the context in which we are setting DPP4 and describes some challenges we need to consider in the reset.
Chapter 3	Enabling investment to meet consumer demands	Outlines initial views related to forecasting operating expenditure and capital expenditure, and proposals related to quality and other regulatory matters.
Chapter 4	Incentivising efficiency and innovation	Outlines the impact of potential revisions to the Input methodologies (IMs) for DPP4 and provides initial views on quality incentives and innovation.
Chapter 5	Setting revenue allowances	Outlines proposals related to revenue. It also explains how we plan to consider the consumer bill impacts of future DPP4 decisions.
Chapter 6	Process from here and how you can provide your views	Explains the next steps in the DPP process, how and when parties may make submissions, and other opportunities to provide your views.
Attachment A	Our decision-making framework for DPP4	Describes our decision-making framework and Part 4 statutory requirements for the DPP.
Attachment B	General information about how the DPP regime is applied to EDBs	Describes the basic regulatory components and how they function. This is for readers who are less familiar with the DPP regime.
Attachment C	Summary of Input Methodologies (IM) Review 2023 Draft decision that may be implemented in the revenue path for DPP and CPP	Describes the draft decisions from the IM Review 2023 that may be implemented in the DPP revenue path if they are accepted in the final IM decision.
Attachment D	Forecasting operating expenditure	Presents early thinking about our approach to forecasting operating expenditure.
Attachment E	Forecasting capital expenditure	Presents early thinking about our approach to forecasting capital expenditure.
Attachment F	Setting quality standards and incentives	Presents early thinking on the approach to setting quality standards and incentives.
Attachment G	Other issues	Discusses the transition of Aurora Energy to the DPP, the regulatory period length, CPP application windows, and accelerated depreciation.
Attachment H	Determining rates of change	Details the decisions we need to make on the revenue path components of the DPP with regard to rates of change, and our early views on how to approach these decisions.
Attachment I	Other incentives, including innovation	Presents early thinking about a potential innovation and non-traditional solutions scheme, and consideration of incentives for energy efficiency, demand-side management, and reduction of energy losses.
Attachment J	Summary of consultation questions	Shows all consultation questions in one place. This is also published in MS Word alongside the Issues paper.
Attachment K	Glossary of terms	Provides a glossary of all terms used in this paper.

EDBs regulated under price-quality regulation

1.5 Businesses which provide electricity distribution services are regulated under Part 4 of the Act.[13] Of the 29 EDBs, 13 are exempt from price-quality regulation because they are consumer-owned.[14]

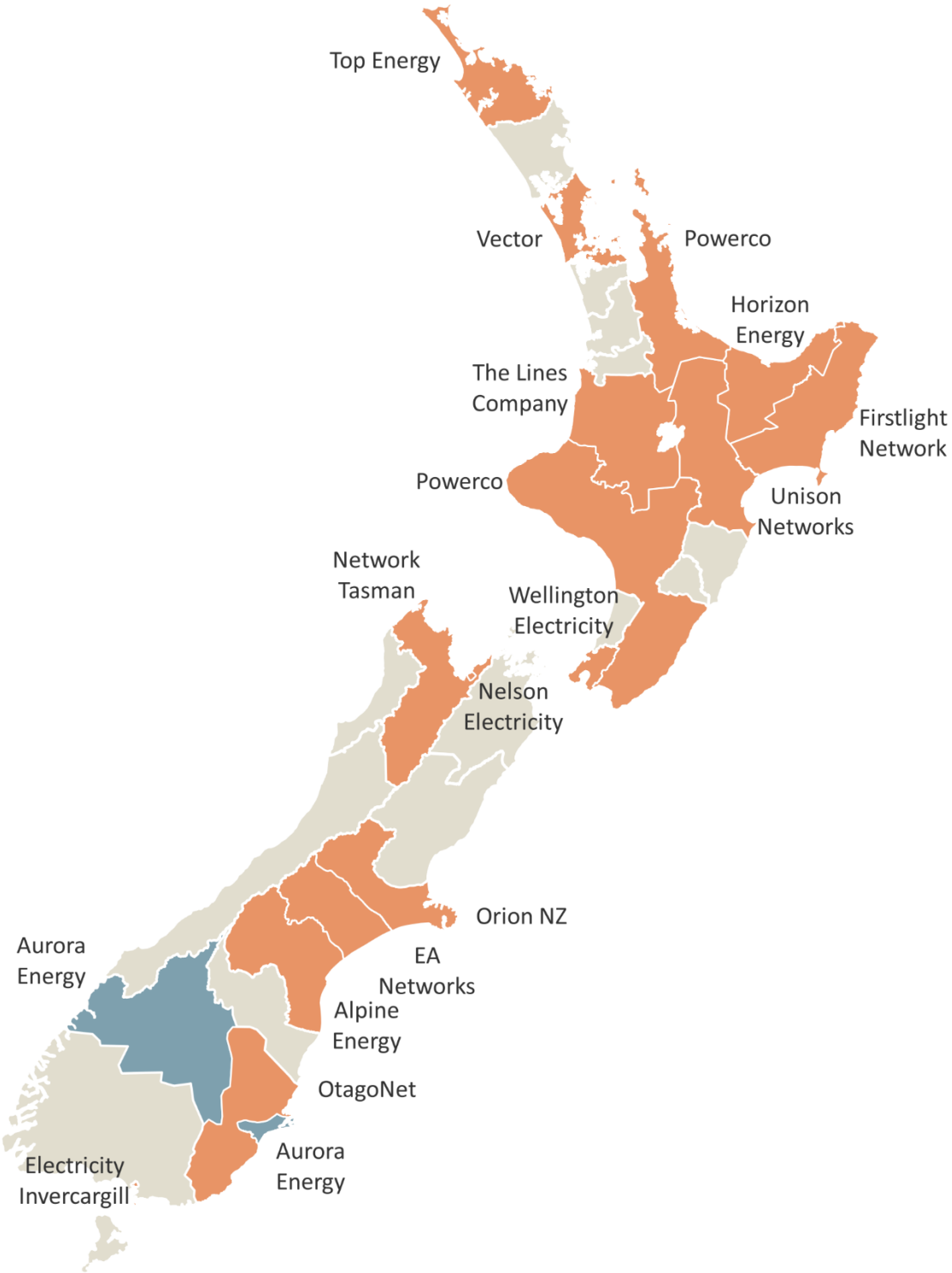
1.6 The EDBs currently subject to price-quality regulation, both the DPP and CPPs, are set out in Table 1.1 and Figure 1.1 below.

Table 1.1 EDBs currently subject to price-quality regulation

EDBs subject to price-quality regulation[15]			
Alpine Energy	Horizon Energy	OtagoNet Joint Venture	Unison Networks
EA Networks	Nelson Electricity	Powerco	Vector
Electricity Invercargill	Network Tasman	The Lines Company	Wellington Electricity
Firstlight Network[16]	Orion	Top Energy	
EDBs subject to a CPP			
Aurora Energy (ends 2026)			

13 Commerce Act 1986, section 54E.
14 'Consumer-owned' is defined in the Commerce Act 1986, section 54D.
15 Centralines used to be subject to the DPP but met the definition of consumer owned in July 2021.
16 Formerly Eastland Network.

Figure 1.1 Map of EDBs currently subject to price-quality regulation



Chapter 2 Context and challenges

Purpose of this chapter

2.1 This chapter discusses the wider context for setting DPP4. We consider that the current context has further evolved from the context of the DPP2 and DPP3 resets.[17,18] Within the DPP3 process we considered the likely increasing importance of decarbonisation and emerging technologies, and the continuing importance of resilience. However, that reset was conducted before the implementation of the first Emissions Reduction Plan and before recent extreme weather events, which have increased the focus on the resilience of EDBs' physical infrastructure and systems.[19] The DPP3 reset was also completed in a period of low and more stable interest rates and inflation (CPI generally less than 2% per annum).[20]

2.2 Our goal in regulating price and quality remains the same: to promote the long-term benefit of consumers by promoting outcomes consistent with competitive markets and ensure EDBs have incentives to innovate, invest, improve efficiency, and provide services at a quality that consumers demand. The long-term benefit of consumers is also promoted by ensuring EDBs share with consumers the benefits of efficiency gains, including through lower prices and limiting an EDBs' ability to extract excessive profits.

2.3 Doing so effectively includes undertaking an assessment of the broad environmental, economic and industry context, including: the challenges and opportunities these create for consumers and suppliers, and the issues these may create for our regulatory settings.

2.4 A recent consumer sentiment survey by the Consumer Advocacy Council reflected increasing concerns about the electricity costs that small business and consumers face.[21] The survey also identified that consumers are getting more worried about the ability of EDBs' networks to withstand extreme weather events.

2.5 EDBs tell us they are facing uncertainty which may impact the timing and nature of investment relating to:

2.5.1 decarbonisation and increased electrification

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17 DPP2 is the default price-quality path for electricity distribution businesses from 1 April 2015 to 31 March 2020.

18 DPP3 is the default price-quality path for electricity distribution businesses from 1 April 2020 to 31 March 2025.

19 Ministry for the Environment, "Towards a productive, sustainable and inclusive economy: Aotearoa New Zealand's First Emissions Reduction Plan" (June 2022).

20 For historical interest rates and inflation, please see the Reserve Bank of New Zealand website.

21 Consumer Advocacy Council, "2023 Consumer Sentiment Survey" webpage.

2.5.2 resilience of electricity distribution infrastructure

2.5.3 innovation, advances in technology and changes in consumer preferences

2.5.4 increasing cost pressures, including from rising inflation.

2.6 We have reflected on the above contextual topics in several stakeholder communications; most recently in the Input Methodologies Review and the DPP4 Process paper.[22] The discussion in this chapter also focusses on the challenges related to each of these topics as they remain top of mind for EDBs, consumers and regulators.

2.7 This chapter concludes with a summary of the implications of this context specifically for the development of the DPP4 reset.

	Number	Request for comment or responses on initial views
Context	1	**We are interested in your views on whether we have properly understood the changing industry context as it relates to the DPP4 reset.** Have we properly understood and represented the changing industry context and are there other implications for the DPP4 you believe we should consider?

Challenges related to deciding on the nature and timing of investments

2.8 While there is a broad consensus that EDBs will need to make significant new investments, as well as make better use of existing assets, to meet the challenges related to the energy transition, there is less clarity over what specific responses EDBs should make and when.[23] Each EDB is faced with differing network characteristics, technological maturity, and drivers for change. We recognise many factors influence the EDBs' decisions about specific responses and timings.

2.9 The DPP4 will heavily influence EDBs' decisions about how they make the necessary investments to address the challenges that they face in meeting their consumers' needs.

[22] For examples, see Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025: Proposed process" (25 May 2023); "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), and "Open letter – ensuring our energy and airports regulation if fit for purpose" (29 April 2021).

[23] For example, see a high-level strategy provided by the Electricity Networks Association, "Network Transformation Roadmap", (April 2019), and "Powering up for change: New Zealand Electricity Distributor Network Transformation Roadmap: A three year update" (April 2022).

2.10 We recognise that EDBs need to balance reliability, affordability, and sustainability of investments (known as the energy trilemma). It is important to note the interrelated nature of each aspect of the trilemma. For example, early adoption of technology that could increase reliability could potentially come at the cost of consumer affordability.

2.11 We also recognise that the size of the investment may need to be larger than we have seen in previous resets, attributable to both the energy transition and the requirement to repair and replace ageing assets on the network.

2.12 Large-scale investment in infrastructure comes with potential deliverability challenges and financial risks.

2.13 When setting the DPP we will consider if there is any need to apply alternative rates of change for any EDB, to minimise any undue financial hardship to the EDB or price shocks to consumers.[24,25] EDBs may also apply for an accelerated depreciation profile which can change cashflow timing.

Decarbonisation and increased electrification

2.14 Energy sector businesses are adapting to the energy transition. EDBs are taking steps towards enabling decarbonisation and preparing for a likely increase in demand from electrification. Uncertainties around the trend in consumers replacing fossil fuels with electricity makes growth forecasting harder than in the past. This means the nature and timing of necessary investments is also harder to plan for.

2.15 Inefficient or poorly timed investments would unnecessarily drive-up prices for consumers, increasing the overall cost of electrification for the country as a whole. These risks include:

2.15.1 insufficient investment to deliver on decarbonisation goals

2.15.2 investment too far in advance of emerging demand or in the wrong geographic areas

2.15.3 investment in the wrong solution, including not making appropriate use of demand-side response tools

2.15.4 inefficient delivery of investments.

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[24] Commerce Act 1986, section 53P(8)(a).

[25] The revenues that distributors can earn in the first year of the DPP are determined by the starting prices we set. In the remaining years of the period, net allowable revenues are determined by the prior year's net allowable revenue and a 'rate of change'. The rate of change is expressed in the form CPI-X, where 'CPI' reflects general inflation, and X is a percentage differential known as the 'X-factor'.

2.16 There is increasing certainty about New Zealand government policy, such as the established Emissions Trading Scheme, although aspects are still developing. In 2019 Parliament passed the Climate Change Response (Zero Carbon) Amendment Act 2019 (the Zero Carbon Act). Amongst other things, this Act sets a target to reduce net emissions of all greenhouse gases (except biogenic methane) to zero by 2050 – known as 'the 2050 target'.[26]

Resilience of electricity distribution infrastructure

2.17 EDBs face the challenge of determining the investment needed to ensure the appropriate level of network resilience to a range of risks. EDBs must be prepared for the impact on electricity distribution infrastructure from natural disasters; criminal activity, including cyber-crime; system design; and human error. This concern now extends to the impacts of climate change causing a greater frequency and magnitude of extreme weather-related events in New Zealand. EDBs' decisions relating to network resilience investments need to be undertaken with regard for consumer preferences and expectations, including both reliability and cost implications.

2.18 EDBs need to consider appropriate investments to reduce the consequences of an event, be ready for a range of events, and be able to respond and recover from an event by having appropriately sophisticated response mechanisms.

2.19 The Government released the first National Adaptation Plan in August 2022.[27] It outlines that infrastructure, including electricity distribution networks, needs to:

2.19.1 reduce the vulnerability of assets exposed to climate change

2.19.2 ensure all new infrastructure is fit for a changing climate

2.19.3 use renewal programmes to improve adaptive capacity.[28]

2.20 Alongside this, the National Emergency Management Agency (NEMA) published the National Disaster Resilience Strategy in April 2019.[29] It offers a mandate for improving the resilience of the built environment, which includes all energy infrastructure. NEMA is currently reviewing its regulatory framework, including developing a new Emergency Management Act, which will likely have implications for operators of Lifeline Utilities.[30]

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26 Climate Change Response (Zero Carbon) Amendment Act 2019, section 5Q.
27 Ministry for the Environment, "Aotearoa New Zealand's First National Adaptation Plan" (August 2022).
28 *Ibid.*, p. 39.
29 National Emergency Management Agency, "National Disaster Resilience Strategy" (10 April 2019), p. 19.
30 National Emergency Management Agency, "Emergency Management Law Reform programme" webpage.

2.21 The Department of the Prime Minister and Cabinet has also consulted on a discussion document on enhancing the resilience of Aotearoa New Zealand's critical infrastructure.[31] Further consultation on this is expected to be undertaken from early 2024.

2.22 We intend for the DPP4 reset to accommodate the necessary investments in resilience by EDBs, while at the same time considering how to ensure that:

2.22.1 the nature and timing of these investments do not unduly impact consumers; for example, in the form of price shocks

2.22.2 EDBs are accountable to their consumers and other stakeholders for delivering these projects.

2.23 See **Chapter 3** for a discussion of how we are developing our understanding about network resilience needs.

Innovation, advances in technology and changes in consumer preferences

2.24 It is part of business-as-usual practice for EDBs to invest in new, sometimes innovative, solutions; modernise their infrastructure; and adapt to changing consumer demands. The DPP regime enables EDBs to recover the efficient costs from consumers, and for both EDBs and consumers to benefit from any cost savings or quality improvements. This section explains other changes to consumer preferences which add pressure for EDBs to innovate and adapt to new technologies.

2.25 For the DPP4 reset, EDBs are facing some new pressures to transform aspects of their businesses, like providing for an expansion of electric vehicle charging infrastructure.[32] They are also considering the role EDBs will play as key enablers of the transition to a low carbon future.[33]

2.26 EDBs' systems and infrastructure have been developed to take traditionally sourced power supplies from transmission points to the static locations where energy consumers are located. This dynamic is becoming more complex:

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31 Department of Prime Minister and Cabinet, "Critical infrastructure Phase 1 Consultation" (Closed on 8 August 2023).

32 Ministry for the Environment, "Aotearoa New Zealand's First Emissions Reduction Plan" (May 2022), chapter 10.

33 Electricity Networks Association, "Powering up for change: New Zealand Electricity Distributor Network Transformation Roadmap: A three year update" (April 2022) and "Network Transformation Roadmap" (April 2019).

2.26.1 an increasing number of consumers are producing surplus electricity that can re-enter the grid (eg, solar panels, micro turbines and other methods of distributed electricity resources (DER)) with increasing expectation of two-way flows of electricity

2.26.2 DER will play an important role in allowing EDBs to manage electricity peaks and increase distribution system flexibility, with external providers increasingly providing services

2.26.3 uncertainty regarding whether demand diversity which was relied on in the previous design of low voltage networks will continue to remain.

2.27 EDBs need to adapt to emerging consumer preferences by investing in new technology and solutions, where doing so is at a lower lifecycle cost than traditional network solutions. Technologies, such as solar panels and batteries, have become more accessible and are enabling consumers to produce, store and use electricity in new ways. Consumers pay for these technologies themselves; however, those consumers that generate surplus energy require the EDB to adjust existing infrastructure for the surplus energy to enter the grid.

2.28 See **Chapter 3** for a discussion of how we propose to apply the regulatory tools in the DPP4 for EDBs to invest well to deliver the necessary transformations.

Increasing cost pressures and the impact on consumer bills

2.29 EDBs must invest in energy technologies as part of the energy transition in the context of cost of living concerns for New Zealanders. While EDBs are likely to need an uplift in revenues, we must promote the long-term benefits of consumers, including by seeking to minimise price shocks to consumers.

2.30 We are currently in a period of high inflation rates. This is challenging for suppliers and consumers with inflation reaching a 32-year high of 7.2% in September 2022.[34]

2.31 The Reserve Bank has been combatting the high inflation by raising the Official Cash Rate, resulting in a period of high interest rates. Forecasts indicate the inflation rate will decline in late 2023.[35] Interest rates are likely to decline at a slower rate to manage the inflationary pressure.

2.32 See **Chapters 3 and 5** for a discussion of how we propose to apply the regulatory tools in the DPP4 for EDBs to manage operating and capital costs and mitigate potential price shocks for consumers during the next regulatory period.

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34 Reserve Bank of New Zealand, "Economic Indicators" webpage.

35 Reserve Bank of New Zealand, "Monetary Policy Statement August 2023" (August 2023), p. 55, Table 7.1.

Implications for the development of the DPP4 reset

2.33 While our fundamental role in the sector remains unchanged – promoting the long-term benefit of consumers as set out in the purpose of Part 4 – what this means in practice changes with context. For the DPP4 reset this will mean:

2.33.1 enabling EDBs to make investments to meet consumer demands even though we are in a context of heighted uncertainty (see **Chapter 3** from page 24)

2.33.2 incentivising efficiency and innovation by EDBs to serve the best interests of consumers (see **Chapter 4** from page 43)

2.33.3 using relevant levers to address issues related to financeability for EDBs, consumer value for money and energy hardship (see **Chapter 5** from page 50).

Chapter 3 Enabling investment to meet consumer demands

Purpose of this chapter

3.1 This chapter:

3.1.1 outlines the issues with enabling investment to meet consumer demands while dealing with increased uncertainty

3.1.2 identifies the relevant levers within the default price-quality path (DPP) to address aspects of these issues

3.1.3 summarises particular areas for stakeholder feedback on:

3.1.3.1 capital expenditure forecasting (see also **Attachment E**)

3.1.3.2 operating expenditure forecasting (see also **Attachment D**)

3.1.3.3 quality standards (see also **Attachment F**)

3.1.3.4 other issues, including regulatory period length and Aurora's transition from CPP to DPP, CPP application windows and accelerated depreciation (see also **Attachment G**).

Issues

3.2 Chapter 2 discussed the context and challenges of investing efficiently in a changing environment. Stakeholders have told us that while the outcomes and policy direction are relatively clear, the path forward and pace are not.

3.3 The IM Review Process and Issues paper includes a high-level grouping of issues and a mapping to the Part 4 regulatory levers through which they might be addressed.[36] The investment and uncertainty issues from that table are shown below.

[36] Commerce Commission, "Input Methodologies Review 2023 – Process and Issues paper" (20 May 2022), p. 39 – 41, Table 6.

Table 3.1 Investment and uncertainty issues

Investment issues we have heard from stakeholders	Uncertainty issues we have heard from stakeholders
Forecasting based on historical expenditure is no longer appropriate. A forward-looking approach is required. General shift from capex to opex (driven both by businesses and changes to IFRS accounting standards). Consumer connection capex is difficult to forecast and often driven by decarbonisation initiatives – a new approach should be considered (eg pass-through costs, removal from Incremental Rolling Incentive Scheme (IRIS))	Need for more dynamic and streamlined price path reopeners. Consider development of contingent allowances, pass-through costs, recoverable costs, or other flexibility mechanisms that can be triggered. There is uncertainty of the timing of the need for investment

3.4 We can address these issues using Part 4 regulatory levers within the IMs, Information Disclosure, or DPP/CPPs, or a combination of these. This chapter focusses on options to address investment and uncertainty issues within the DPP.

Foundational DPP settings which already consider investment and uncertainty issues

3.5 The IMs in place for price-quality paths already have a number of features which help to address issues related to uncertainty, including that they:

3.5.1 identify a range of costs which can be passed-through directly to consumers (pass-through and recoverable costs)

3.5.2 provide for reconsideration of the price-quality path to manage unexpected events or forecast uncertainties (reopeners)

3.5.3 allow an EDB to apply for a CPP to better meet their needs when events cannot be managed with a DPP reopener.

3.6 We note the default price-quality path provides features which respond to these investment and uncertainty issues, which will continue to apply in DPP4. A price-quality determination provides a revenue allowance, and not a cap on what can be spent. It also does not specifically allocate expenditure to particular categories. This gives EDBs flexibility to reprioritise expenditure to respond to a change in circumstances, including changing allocations between opex or capex solutions.

Further choices within the DPP for addressing investment and uncertainty issues

3.7 In submissions following the Expenditure Forecasting workshop, EDBs raised concerns with the use of historical information for forecasting given the significant uplift in expenditure anticipated to be required to accommodate decarbonisation of the economy.[37] In previous resets we have used a combination of historical information and EDB projections to reset DPPs, and we intend to consider the appropriate approach as part of the reset.

3.8 We expect that we will likely need to adapt our approach to forecasting expenditure from the approach used in DPP3. To the extent that we use supplier expenditure forecasts, we are mindful there are risks that EDBs' own forecasts may be too high if an EDB takes a conservative approach to forecasting investment needs, timing, or cost. Alternatively, an EDB forecast may be too low and not appropriately identify all investment requirements, their timing or cost. We acknowledge that even the best forecasts will not be able to provide for everything as circumstances change.

3.9 By assessing forecast expenditure, we help give consumers confidence that the forecast expenditure underpinning EDB price increases represents good value for money.

3.10 The availability of a CPP is an important feature of the regime. This enables deeper specific scrutiny of an EDB's expenditure needs. This includes the choice of methodology for forecasting expenditure, specific settings, and the consistency of how we apply these settings within our DPP framework outlined in **Attachment A**.

3.11 Related to an EDB's expenditure requirements and uncertainties are quality standards which seek to ensure that any cost savings sought by the regulated suppliers do not come at the expense of meeting a minimum level of quality. In setting the DPP, we have significant flexibility in how we set and measure quality standards and quality incentive schemes. In addition, we are also able to change the length of the regulatory period and determine how EDBs on a CPP rejoin the DPP.

Forecasting capital expenditure

3.12 We have a range of options it can use to determine the forecast capex for DPP purposes. This includes fully relying on the capex forecasts in AMPs, setting a limit on total capex, applying different limits to different categories of spend, and setting different limits for different EDBs. The options can be applied at an aggregate or category level and defined in dollar or percentage terms.

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[37] Commerce Commission, "Forecasting and incentivising efficient expenditure workshop" (7 November 2022). This workshop was recorded and is available to view from the Commerce Commission's website.

3.13 The table below sets out specific areas for which we are seeking feedback from stakeholders as we develop our framework for capex. They are each discussed in more detail below.

Table 3.2 Forecasting capex

	Number	Request for comment or responses on initial views
Forecasting capital expenditure	2	**We are proposing to adapt our approach to capex for DPP4 based on feedback from EDBs, that past expenditure is not a good starting point for considering future spend.** Do you have any particular concerns or issues with our proposed approach? If so, how these could be resolved? What alternative data and external sources should we use to support our consideration of capex forecasts, beyond the information in 2023 Asset Management Plans (AMPs), responses to s 53ZD notices and 2024 AMPs, and why these should be used?
	3	**We are proposing to apply the capital goods price index to forecast capex allocations.** Is there a more appropriate index which could be applied; and, if so, why?
	4	**We have concerns about the challenges in delivering increased programmes of work given current labour market, supply chain and economic challenges in New Zealand.** How should our capex forecast take into account potential sector-wide deliverability constraints?
	5	**We will be using a s 53ZD notice to collect information about how EDBs have reflected resilience in their expenditure forecasts.** What engagement have EDBs had with consumers about resilience expectations, especially as it relates to significant step changes in forecast expenditure? What other considerations should we factor into our analysis of the resilience expenditure information collected from the s 53ZD notice and/or what is unlikely to be visible in the forecasts that we should consider?
	6	**We intend to consider how potential changes in capital contributions policies could be accommodated in DPP4.** How could changes to capital contributions policies, either in advance of or within the regulatory period, be accommodated within our capex forecasts for DPP4?
	7	**We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis.** Are there specific investment decisions being considered due to concerns on delivering increased scale of investment in limited time which are not consistent with a least-cost lifecycle basis assessment; for example, areas where EDBs are intending to build well in advance of forecast need or for demand or generation that are only speculative? On what basis are these investments being assessed?

2. We are proposing to adapt our approach to capex for DPP4 based on feedback from EDBs that past expenditure is not a good starting point for considering forecast spend

3.14 Given the relatively low-cost nature of the DPP regime, we are proposing to continue to use AMPs as the starting basis for determining capex for DPP purposes. EDBs are well placed to understand the needs of their customers and communities, and to understand the health of their assets, the risks to delivering safe reliable electricity, and how to manage those risks.

3.15 We regularly review AMPs to monitor the performance of the EDBs and to ensure that the AMPs are fulfilling the purpose of information disclosure.[38] For DPP4, we intend to increase our scrutiny of AMPs to deepen our understanding of EDBs' forecast capex. This will mean our process and timeline is different from DPP3.

3.16 We have asked Innovative Assets Engineering (IAEngg) to review and report on the reasonableness of EDBs' demand and expenditure forecasts for the 2025 – 2030 regulatory period as disclosed in their 2023 AMPs. Findings from this review are expected to be completed and ready for public release in early 2024.

3.17 Findings from the 2023 AMP review are likely to be an important consideration for how we develop the capex forecasting framework. The draft findings from the review are not available until late 2023 which means that we are unable to engage with stakeholders on the draft framework until early 2024.

3.18 In addition to this independent review of EDBs' AMPs, we will also undertake our own high-level assessment of the reasonableness of the AMP capex forecasts. This is likely to include analysis with reference to external forecasts from other sources like Transpower and Statistics NZ.

3.19 In our DPP4 process paper we informed EDBs of our intention to require early disclosure of forecast expenditure information from their 2024 AMPs in late 2023.[39] This will enable us to consider this information alongside the findings from the 2023 AMP review. We will be using the early AMP disclosure information to set forecast capex in the Draft determination.

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38 That is, sufficient information is available for interested persons to assess whether the purpose of Part 4 is being met.

39 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Proposed process" (25 May 2023), paragraph 38.

3.20 EDB submissions noted that the information in the early disclosure is still subject to change and carries the potential risk of errors or inaccuracies in the data provided, as it may not have undergone the same level of scrutiny and validation as the certified AMP. We acknowledge the concerns raised by stakeholders and note that if the changes between the s 53ZD notice and the 2024 AMP are material, then we will need to consider these in moving from the Draft to Final Determinations. Note for practical reasons, similar to past resets, we may not be able use information which is provided late in the process.

3.21 We are proposing a workshop in early 2024 to share our emerging view on capex and how the 2023 AMP review findings have informed this. This will provide an opportunity for EDBs to engage with the review findings, which could include providing written feedback as part of their feedback on the workshop itself. This workshop and any subsequent workshops to design the capex framework will be informed by high-level modelling.

3.22 In summary, our decision to leverage the 2023 AMP review work has the following impacts on the timeline and sequence of milestones compared with DPP3.

Table 3.3 Summary of key capex milestones in DPP4

Date	DPP4 Milestone	DPP3 Comment
November 2023	Issue s 53ZD notice for early disclosure of 2024 AMP forecast expenditure and explanation for material variances	New to DPP4
15 December 2023 (indicative)	Section 53ZD information due	New to DPP4
Early 2024	Publish 2023 AMP review report/findings	New to DPP4
	Potential information gathering request (s 53ZD notice) for more information about EDB forecasts, following release of 2023 AMP review report/findings	New to DPP4
	Potential workshop to get feedback on early thinking on the draft capex framework and how the findings from the 2023 AMP review have been used to shape this	Early thinking on the capex framework included in Issues paper
31 March 2024	2024 AMPs due	No change from DPP3
May 2024	Publish reasons paper and draft determination paper setting out capex framework and draft capex forecast amounts	No change from DPP3
September 2024	Information disclosure data for the year ended 31 March 2024 available	No change from DPP3
By 29 November 2024	Final reasons and determinations paper	No change from DPP3

3: We are proposing to apply the capital goods price index to forecast capex

3.23 Our approach for capex forecasts is to assess capex in constant dollar terms and then express the approved forecast in nominal terms by reinflating the figures using an appropriate index.

3.24 We have used a range of forecast indices in the past to inflate the approved capex forecast. For example, we used the Producers Price Index (PPI) for the last two Gas DPP resets and the Capital Goods Price Index (CGPI) for the EDB DPP3 reset.

3.25 Our current thinking is that the CGPI is the appropriate index for capex. Further detail on our emerging thinking about inflation in the forecast capex setting process is in **Attachment E**.

4: We have concerns about the challenges in delivering increased programmes of work signalled by EDBs given current labour market, supply chain and economic challenges in New Zealand

3.26 Some EDBs have told us that there is likely to be a significant step change in forecast expenditure in their 2024 AMP compared with their 2023 AMP. The increase is driven by a combination of price increases and size of the work programme itself. This is in addition to the significant increase in expenditure already set out by EDBs in their 2023 AMPs.

3.27 We have concerns about the deliverability of the scale of the work programmes included in EDBs' 2023 AMPs and signalled for their 2024 AMPs, given the current labour market conditions and wider supply chain challenges, which is expected to continue in the medium term.

3.28 From a regulatory perspective, deliverability concerns represent a risk that projects are planned but are not delivered, with the result being elevated profits for EDBs not through improved efficiency but non-delivery. This risk is considered as part of the development of the capex framework.

3.29 Deliverability risk will be considered as part of the 2023 AMP review, but we think wider consideration is required on some aspects of deliverability. For example, projects may be feasible at an individual EDB level but not at an aggregate level if other EDBs or Transpower are wanting to deliver similar projects, meaning there is competing demand for the same skills across the industry.

3.30 Deliverability challenges also need to be considered in the context of other infrastructure investment programmes, either proposed or underway, which will provide constraints on a broader resource pool. For example, Waihanga Ara Rau estimates a peak workforce shortage over the next three years of 344,376 people in the infrastructure industry.[40] We are interested in how our capex forecasts should take into account potential sector-wide deliverability constraints.

3.31 Further detail on our emerging thinking about deliverability in the forecast capex setting process is in **Attachment E**.

5: We will be using a s 53ZD notice to collect information about how EDBs have reflected resilience in their expenditure forecasts

3.32 Resilience expenditure is a particular issue for DPP4 because of uncertainty regarding the scale of spend needed to prepare for an increasing number of severe weather and cyber security events. Our view is that recent events are likely to have changed the risks and parameters which EDBs use to assess resilience.

3.33 As part of our s 53ZD notice for early disclosure of 2024 AMP information, we intend to request supporting information that will help us to get a better understanding about resilience-related expenditure.

3.34 We are aware that there are likely to be information or factors that will be useful to consider alongside the information provided under the s 53ZD notice and/or information that is unlikely to be visible in forecasts provided. This includes the engagement EDBs have had with consumers about resilience expectations, especially as it relates to significant step changes in forecast expenditure.

3.35 Further detail on our emerging thinking about resilience in the forecast capex setting process is in **Attachment E**.

6: We would like to understand how potential changes in capital contributions policies could be accommodated in DPP4

3.36 Capital contributions are a substantial offset to many EDBs' expenditure on assets. The forecast (and actual) value of capital contributions is offset against the (forecast and actual) value of the associated assets in the regulatory asset base (RAB). In previous DPPs, we have applied limited scrutiny to the level of contributions EDBs forecasted as we have set forecast capex net of capital contributions. However, changes in the forecast level of contributions can have a material effect on forecast capex.

[40] Waihanga Ara Rau, "Workforce gaps and size of pipeline – Regional view", webpage.

3.37 We have recently observed changes in capital contributions policies which has led to us raising this as a potential area for greater scrutiny than previous DPP resets. We note the significant increase in forecast funding of system growth from capital contributions by Vector, who forecast to recover all system growth costs from capital contributions in their 2023 AMP. This compares with 0.4% actual system growth costs recovered from capital contributions from 2018 to 2022. Historically, capital contributions were predominately used to fund consumer connection and asset relocations, but not system growth.

3.38 Capital contributions were identified by the Electricity Authority as an area of interest in its Issues paper on distribution pricing. They noted the wide variation in pricing approaches for capital contributions and that there is scope to improve incentives and reduce transaction costs. We are interested in whether there is a broader issue with capital contributions which we should be considering as part of this reset.

3.39 Further detail on our emerging thinking about capital contributions in the forecast capex setting process is in **Attachment E**.

7: We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis

3.40 Providing incentives to encourage the right investment at the right time is a key focus for this DPP reset.

3.41 There has been input from some stakeholders on the timing of capital investment, particularly following the Boston Consulting Group "The Future is Electric" report which stated that the existing regulations provide for 'just-in-time' investment.[41]

3.42 Our view is that EDBs who are investing and operating efficiently will be planning to meet expected customer demands for service quantity and quality on a least-cost lifecycle basis. Capacity will therefore be sized over an appropriate planning horizon taking into account the economies of scale and scope inherent in electrical equipment and electricity networks. As a result, there ought to always be some level of growth capacity involved in planning distribution networks for forecast demand because doing so will result in lower lifecycle costs to consumers than always investing incrementally.

[41] Boston Consulting Group "The Future is Electric: A Decarbonisation Roadmap for New Zealand's Electricity Sector" (25 October 2022).

3.43 We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis. That is, are there specific investment decisions being considered due to concerns on delivering increased scale of investment in limited time which are not consistent with a least-cost lifecycle basis assessment? On what basis are EDBs considering these investments? Particularly, are there areas where EDBs are intending to build well in advance of forecast need or for demand or generation this is only speculative?

3.44 Further detail on our emerging thinking about the pace and timing of investment in the forecast capex setting process is in **Attachment E**.

Forecasting operating expenditure

3.45 As discussed in **Attachment D**, we currently consider that the base-step-trend approach to forecasting opex that we have used for previous DPP resets is sufficiently flexible to respond to changing investment and expenditure needs.

3.46 Within this broad framework, we are considering options for revising our approach to components of the base-step-trend methodology to respond to the investment and uncertainty challenges discussed above. These are set out in Table 3.4 and discussed in more detail below.

Table 3.4 Forecasting operating expenditure

	Number	Request for comment or responses on initial views
Forecasting operating expenditure	8	**We are considering amending our approach to forecasting opex input price escalation to better reflect the mix of inputs EDBs face.** Do you have a view on another index, or weighted mix of indices, which would improve the quality of opex forecasting compared to our current approach? (Using a 60/40 mix of percent changes in Labour Cost Index (LCI) all-industries and Producers Price Index (PPI) input indices.) If so, what evidence supports this view?
	9	**We are considering revising our approach to scale growth trend factors, to better reflect EDBs increasing focus on investing to meet growth and renewal needs.** Do you support our emerging view that including forecast capex as a driver of non-network opex could improve opex forecasts, and that this conclusion makes sense in terms of the way EDBs run their businesses? Are there alternative drivers that we should consider, and what evidence is there that they can meaningfully predict EDB scale growth?
	10	**EDBs have identified that insurance costs have been increasing at a greater rate than other costs they face.** What evidence do you have about how these costs are likely to evolve over time? Is the option of trending insurance opex forward using a separate cost escalator workable? How could incentives on EDBs to make efficient risk management decisions be maintained?
	11	**Given the possibility of a greater need for step changes in opex in a context of industry transition, we have clarified further how we are thinking of applying the step-change criteria and the supporting evidence we expect.** Do you consider the expanded descriptions of the step-change criteria provide sufficient clarity about the types of step changes we consider meet the Part 4 purpose?

8: Input price inflation – We are considering amending our approach to forecasting opex input price escalation to better reflect the mix of inputs EDBs face

3.47 In a context of high and less predictable general inflation, workforce challenges, and supply chain issues, increases in the prices EDBs pay for the inputs necessary to run their businesses may be a more significant issue than in past resets.

3.48 Previously, we have relied on all-industries forecasts of the labour cost (LCI) and producer price (PPI) inflation indices to forecast input price increases.[42] Where the specific 'real price effects' (increases in input prices over and above general CPI inflation) EDBs face differ significantly over the medium term, such an approach may no longer reflect EDBs' forecast costs.

[42] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper" (27 November 2019), see Attachment A.

3.49 More detail on this issue can be found in **Attachment D**.

9: Scale factors - We are considering revising our approach to scale growth trend factors, to better reflect EDBs increasing focus on investing to meet growth and renewal needs

3.50 Our established approach to forecasting output changes in opex is to use 'scale factors': forecasts of variables that have a reliable relationship to an EDB's opex needs. Previously, we have used the size of an EDB's network (line length) and customer base (number of installation control points (ICPs)) to produce these forecasts.

3.51 Our initial reassessment of these relationships (using regression analysis) is that they remain robust but could potentially be improved. In a context of increasing capital investment by EDBs we need to consider whether this approach to opex remains the most likely to reflect forecast growth.

3.52 Our initial analysis has shown that there is a reliable historical relationship between the amount of capex an EDB undertakes and its non-network opex. More detail on this issue can be found in **Attachment D**.

10: Treatment of insurance - EDBs have identified that insurance costs have been increasing at a greater rate than other costs they face

3.53 In submissions on the IM Review and from our review of AMPs, EDBs have cited increasing insurance costs as a driver of increases in opex. While we have proposed continuing to treat insurance as ordinary opex rather than as a recoverable cost to preserve incentives to efficiently manage risk, given the increased hazards distribution businesses face it may be necessary to reassess how we forecast insurance to ensure opex allowances reflect efficient costs.

3.54 In addition to retaining our approach of trending forward insurance opex as part of overall opex, we are considering:

3.54.1 including a one-off step change to reflect increases in insurance costs that are driven by a one-off change in level

3.54.2 forecasting insurance as its own separate component (alongside network and non-network capex) with appropriate scale growth and input prices trend factors.

3.55 More detail on this issue can be found in **Attachment D**.

11: Step-change criteria - Given the possibility of a greater need for step changes in opex in a context of industry transition, we have clarified further how we are thinking of applying the step-change criteria and the supporting evidence we expect

3.56 To accommodate known and quantifiable drivers of changes in opex that are not captured by other factors, we can include positive or negative 'step changes' in our forecasts.

3.57 EDBs have a natural incentive to include upward (but not downward) step changes in forecast opex, and we face an asymmetry of information regarding the reliability of these changes. To preserve incentives for efficiency and manage the risk of excess profits, we have developed and applied a set of criteria for assessing step changes. At past resets, we have required any step change to be:

3.57.1 significant

3.57.2 robustly verifiable

3.57.3 not captured in other components of our projections

3.57.4 largely outside of the control of EDBs

3.57.5 be applicable to most, if not all, EDBs.

3.58 In general, we consider these criteria remain appropriate. However, given the changing context identified in **Chapter 2**, we acknowledge EDBs may face more step changes in their costs as they undertake new functions, embrace new technologies, and respond to legislative change. As such, we have provided more detail on how we propose assessing these criteria and the kinds of evidence we would require.

3.59 Given the different conditions different EDBs face, change may not affect all distributors in the same way or at the same time. Because of this, we are interested in how the 'generally applicable' criterion in paragraph 3.57.5 could be modified while preserving an overall relatively low-cost approach.

3.60 More detail on this issue can be found in **Attachment D**.

Quality standards

3.61 Quality standards are an important part of determining a price-quality path. Quality standards ensure that any cost savings sought by the regulated suppliers do not come at the expense of meeting a minimum level of quality.

3.62 The quality standards set in DPP3 focus solely on network reliability, as measured by the duration and number of outages experienced by the average customer. Significant revisions to how quality standards are established, and adjustments allowed to account for significant events were made for DPP3, compared to DPP2. Further detail on the quality standards can be found in **Attachment F**.

3.63 Our initial view is to broadly retain the quality standards from DPP3, but we welcome submissions on whether the approach remains appropriate.

3.64 In addition to the network reliability standards, we could introduce a wider range of measures of quality of service for inclusion as quality standards in the DPP. Introducing additional well-designed quality of service measures would provide an incentive for greater focus on those areas.

Table 3.5 Quality standards

	Number	Request for comment or responses on initial views
Quality	12	**Our initial view is to maintain the principle of no material deterioration and set quality standards on a basis consistent with that established in DPP3.** Do you agree with our proposed approach of maintaining the principle of no material deterioration and setting the quality standards on a basis consistent with DPP3? What other approach could be used, and why is it better? With regard to the quality standards, are the existing reporting obligations appropriate?
	13	**Our initial view is to maintain the DPP3 settings of a 10-year reference period updated for the most relevant information and normalisation approach for major events.** Do you think that we should maintain a 10-year reference period updated for the most relevant information and normalise major events on the same basis as DPP3?
	14	**Our initial view is step changes in reliability, if appropriate, may be accommodated through setting of values or revisions to definitions.** Are there identifiable step changes to reliability parameters for quality standards to manage operational or situational changes outside the control of the distributor compared to historical periods? What value and challenges do you see with different approaches to addressing inconsistencies in the recording of interruptions, the 'multi-count' issue, using either a proxy allocation basis or requiring a recast dataset? Are there alternative approaches which may appropriately address the issue?
	15	**Our initial view is to not introduce new additional quality of service measures.** Are there any other quality of service measures beyond those currently required within DPP3 that we should consider introducing, and why?

12: Our initial view is to maintain the principle of no material deterioration and set quality standards on a basis consistent with that established in DPP3

3.65 The planned and unplanned reliability standards we have previously implemented are based on EDBs' historical performance and are intended to start from the principle of no material deterioration in network performance, in that EDBs should at least maintain the levels of quality they have provided historically, all else being equal.

3.66 While no material deterioration is a starting point for our approach to quality, we also acknowledge the need for EDBs to make trade-offs about the level of quality they deliver, and the cost incurred in doing so. We also note that, as with revenue allowances, our quality standards only apply at an aggregate level.

3.67 We expect individual EDBs to consider the needs and expectations of different customers and customer groups when making trade-offs about quality on different parts of their network. This could include addressing issues related to an EDBs worst performing feeders where the System Average Interruption Duration Index (SAIDI) / System Average Interruption Frequency Index (SAIFI) impact may be limited due to low customer numbers but the impact of lengthy outages on those impacted customers may be significant.

3.68 DPP3 used network reliability measures SAIDI and SAIFI. Unlike DPP2, in DPP3 we separated planned and unplanned interruptions to remove a potential disincentive against investing at the most appropriate and efficient time. The approach also better reveals deterioration of network performance to be assessed against the quality standards. Further detail on the standards and outcomes against the standards are outlined within the "Quality standards" section of **Attachment F**.

13: Our initial view is to maintain the DPP3 settings of a 10-year reference period updated for the most relevant information and normalisation approach for major events

3.69 SAIDI and SAIFI, particularly for unplanned interruptions, are highly volatile, and are strongly influenced by major individual events. For this reason, in DPP3, we applied a filter both to historical reliability and to the way reliability performance is assessed during the regulatory period.

3.70 Our initial view is that a reference period which reflects the most recent 10-year period may best reflect the current underlying level of reliability performance, given the availability of reliable and consistent data.

3.71 Our initial view is to maintain the approach for normalising major events introduced in DPP3, so the impact of significant events does not have a disproportionate impact on quality standard performance. Further detail on the reference period and our normalisation approach are contained within the "Basis for normalisation and its performance" section of **Attachment F**.

14: Our initial view is step changes in reliability, if appropriate, may be accommodated through setting of values or revisions to definitions

3.72 We recognise that operational or situational changes outside the control of the EDB may create a step change to performance which may need to be reflected in our settings, definitions or reliability parameters for quality standards. This includes, but is not limited to, how to account for the potential non-performance of external flexibility solutions.

3.73 We note any adjustments would need to be consistent with the expectation of a relatively low-cost DPP and meet certain step change characteristics. We are particularly interested in potential options to address the issue regarding EDBs historically applying different approaches to recording SAIFI for successive interruptions. Further detail on this is available in the "Step changes in reliability criteria" section of **Attachment F**.

15: Our initial view is to not introduce new additional quality of service measures

3.74 The quality of electricity distribution services has a number of dimensions in addition to reliability, including the ordering and provisioning of a new connection, technical characteristics of service performance, for instance, voltage stability, and customer service.

3.75 Our initial view is that other elements of network performance may be comparatively less material compared to reliability and may be better addressed through our programme of information disclosure and performance analysis.

3.76 If other potential quality standards could be introduced, they would need to align with what consumers value, be measurable (including having a sufficiently robust dataset to establish a reporting standard) and have clarity on what an appropriate target would be such that EDBs can be influenced towards outcomes that represent value for consumers.

3.77 Further detail on this is available in the "Other quality of service measures" section of **Attachment F**.

Other issues

3.78 This section discusses other issues that are also described in **Attachment G**.

Table 3.6 Other issues

	Number	Request for comment or responses on initial views
Other issues	16	**Aurora Energy is scheduled to rejoin the DPP from 1 April 2026.** Do you agree with how we propose to transition Aurora Energy to the DPP in 2026?
	17	**Section 53M(5) allows us to reduce the regulatory period if this would better meet the purposes of Part 4 of the Act. We are considering whether we should reduce the regulatory period from five to four years.** What particular challenges do you perceive may arise from shortening the regulatory period? What are the potential benefits to consumers from maintaining or shortening the length of the regulatory period?

	18	**The DPP sets annual deadlines by which suppliers must make CPP applications to enter into effect the following year.** Do you support retaining a similar approach to setting CPP application windows as was undertaken for DPP3?
	19	**The current IMs provide for a discretionary shortening of asset lives.** What are your views on the existing framework for assessing accelerated depreciation applications?

16: Aurora Energy is scheduled to rejoin the DPP from 1 April 2026

3.79 Aurora's current CPP ends on 31 March 2026. If Aurora does not apply for a new CPP, it will transition on to the DPP from 1 April 2026. Section 53X(2) of the Act gives the Commission two options for determining prices for the CPP-DPP transition:

3.79.1 rolling over the starting prices which applied at the CPP period end, or

3.79.2 with four months' notice to the supplier, determining different starting prices that will apply.[43]

3.80 Our emerging view is that we should include Aurora within the DPP4 expenditure and revenue setting process. This would involve setting indicative opex, capex, and revenue forecasts in 2024 as part of the DPP4 process, then finalising Aurora's revenue path in 2025 prior to the transition, taking account of the most recent information available at the time.

3.81 Aurora's CPP involved a substantial uplift in the level of opex and capex for the CPP period. This means that when determining opex and capex allowance, we will need to consider the extent to which these increases were a temporary factor of the CPP or represent a permanent increase in base expenditure.

17: Section 53M(5) allows us to reduce the regulatory period if this would better meet the purposes of Part 4 of the Act. We are considering whether we should reduce the regulatory period from five to four years

3.82 To help mitigate the uncertainty with expenditure forecasts, particularly in light of potential decarbonisation investment needs, we are considering whether to reduce the regulatory period from five to four years, which s 53M of the Act provides for, if we consider it better meets the Part 4 purpose.[44]

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43 Commerce Act 1986, section 53X(2).

44 Section 53M(4) of the Commerce Act 1986 states that the length of a DPP must be five years; however, section 53M(5) provides for the Commission to set a period of between four and five years if it better meets the purpose of Part 4.

3.83 This issue was raised in the DPP4 Process paper, where the majority of submissions received in response were in favour of retaining the five-year period, but generally lacked detail on specific issues or benefits from shortening the regulatory period for EDBs or consumers.[45]

18: The DPP sets annual deadlines by which suppliers must make CPP applications to enter into effect the following year

3.84 Under the Act we are required to set application windows for CPP proposals. We have previously established application windows recognising the timeframe restrictions stated in the Act at s 53Q(3), s 53S and s 53T. We anticipate taking this approach in the DPP4.

19: The current IMs provide for a discretionary shortening of asset lives

3.85 The IMs provide a mechanism for EDBs to apply for a discretionary net present value-neutral shortening of their remaining asset lives. We have previously applied a framework in assessing applications and our initial view is to apply a similar framework for DPP4.

[45] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2025: Proposed process" (25 May 2023).

Chapter 4 Incentivising efficiency and innovation

Purpose of this chapter

4.1 This chapter:

4.1.1 outlines the issues with incentivising efficiency and innovation by EDBs

4.1.2 identifies the relevant levers within the DPP to address aspects of these issues

4.1.3 summarises areas where we invite stakeholder feedback on how we:

4.1.3.1 outlines that we will apply some IM Review decisions, when finalised, to DPP4 (see also **Attachment C**)

4.1.3.2 apply quality incentives and accounting for non-performance of non-traditional and innovative solutions (see also **Attachment F**)

4.1.3.3 incentivise innovation, energy efficiency and demand-side management (see also **Attachment I**).

Issues

4.2 Innovation and efficiency will play a significant role in the transition to increased electrification, to make it less costly than under business as usual.

4.3 The IM Review Process and Issues paper includes a high-level grouping of issues and a mapping to the Part 4 regulatory levers through which they might be addressed.[46] The innovation and flexibility services issues from this table are shown below. In this chapter we focus on options to address them within the DPP.

[46] Commerce Commission, "Input Methodologies Review 2023 – Process and Issues paper", (20 May 2022), p. 39 – 41, Table 6.

Table 4.1 Innovation and flexibility issues

Innovation issues we have heard from stakeholders	Flexibility issues we have heard from stakeholders
Regulatory framework should encourage EDB collaboration and innovation. The innovation allowance process can be streamlined and enhanced. Consider implementing innovation mechanisms used overseas (eg, regulatory sandbox initiative). Consider allowances to encourage investments like real-time low voltage network monitoring.	Regulatory incentives may be required to encourage EDB uptake of flexibility services and non-network solutions, and there should be a level playing field for third party providers of such services.[47]

Foundational DPP settings which already provide incentives

4.4 We note the default price-quality path provides features which respond to some of these issues, which will continue to apply in DPP4. In particular:

4.4.1 the regime incentivises innovation where it results in a lower cost to serve, as EDBs retain a proportion of any efficiency gain

4.4.2 the Incremental Rolling Incentive Scheme (IRIS) mechanism equalises the strength of the financial incentive to be efficient across the regulatory period and across opex and capex, meaning there is no incentive to defer innovative solutions which may deliver efficiency gains

4.4.3 a price-quality path does not specifically allocate expenditure to particular categories. This allows a supplier to change allocations between opex or capex solutions with IRIS equalising the financial incentive between spending on capex or opex.

Further choices within the DPP for addressing these issues

4.5 This section outlines our early thinking about how in the DPP4 we can apply the IMs; apply quality incentives; account for non-performance of non-traditional and innovative solutions; and incentivise innovation, energy efficiency and demand-side management.

[47] Note this may also fall within the Commission's role under Part 2 of the Commerce Act 1986 regarding restrictive trade practices.

Applying the Input Methodologies

4.6 As noted above in paragraph 4.5, the IMs that the DPP operates under already contain incentives for efficiency and innovation. Our final IM Review decision will be made in December 2023. In the IM Review Draft decision, we proposed:

4.6.1 a suite of changes to minimise EDBs' and consumers' exposure to inflation risk[48]

4.6.2 assessing IRIS efficiency losses/gains in real terms rather than in nominal terms.[49]

4.7 From early 2024, we will need to turn our mind to implementing any changes to the IMs that have been designed to improve DPP incentives. See **Attachment C** for a list of IM Review Draft decisions that, if finalised, would need to be implemented in the DPP4.

Quality incentives

4.8 Allowing distributors to make trade-offs about the level of reliability they deliver, and ensuring consumers share in the benefits of those trade-offs, is an important element of the DPP.

4.9 In previous DPP resets we have included a network reliability-based Quality Incentive Scheme (QIS) to create a relationship between improvements in network reliability and increased revenue allowances, with the intention the QIS is set at a level which reflects consumers cost-quality preferences.

Table 4.2 Quality incentives and accounting for non-performance of flexibility

	Number	Request for comment or responses on initial views
Quality incentives		**Our initial view for DPP4 is to retain revenue-linked quality incentives for both planned and unplanned SAIDI, with targets, caps, collars, incentive rate and revenue at risk set on a consistent basis with DPP3.**
	20	Are EDBs considering the QIS in their investment decisions? Do you consider the proposed settings are appropriate for the QIS, including whether the incentive rate is driving appropriate outcomes with regards to consumer quality expectations?

[48] Commerce Commission, "Financing and Incentivising efficiency expenditure during the energy transition topic paper" (14 June 2023), See Chapter 5 Inflation risk, and Attachment D.

[49] *Ibid.*, see chapter 3.

	21	**Caution around treatment of non-performance of less proven solutions may create a reticence by EDBs to implement these types of solutions and result in a focus on more proven established technologies, typically, capex investments. Our intention is that the compliance with the quality standards and penalties under the QIS do not act as a potential impediment to innovation.** How could we account for non-performance of non-network solutions (regulatory sandboxing)?

20: Our initial view for DPP4 is to retain revenue-linked quality incentives for both planned and unplanned SAIDI, with targets, caps, collars, incentive rate and revenue at risk set on a consistent basis with DPP3

4.10 We propose to maintain a network reliability-based QIS. Our initial view is this would be applied in a way consistent with the no material deterioration principle with the target (the point at which losses turn into gains and vice versa) at the 10-year historical average level of SAIDI.

4.11 Our current view is to maintain the use of Value of Lost Load (VOLL) in establishing the incentive rate, with reductions to VOLL for planned interruptions and notified planned interruptions to incentivise EDBs to provide consumers with better notice of interruptions.

4.12 Further detail on this is available in the "Setting the Quality Incentive Scheme" section of **Attachment F**.

21: Caution around treatment of non-performance of less proven solutions may create a reticence by EDBs to implement these types of solutions and result in a focus on more proven established technologies, typically, capex investments. Our intention is that the compliance with the quality standards and penalties under the QIS do not act as a potential impediment to innovation

4.13 Innovative approaches to capacity constraints may include a range of potential non-network solutions, some of which may be less proven.

4.14 Impacts of non-performance on compliance with quality standards or on penalties under the QIS could create a potential impediment to implementation of innovative solutions, which may be addressed by identification of related interruptions that could be excluded.

4.15 Further detail on this is available in the "Step changes in reliability criteria" section of **Attachment F**.

Incentivising innovation, energy efficiency and demand-side management

4.16 We consider there are specific aspects of innovation, beyond the natural incentives to innovate, which exist within the price-quality path regime that could be encouraged. Table 4.3 and the subsections which follow, outline our early thoughts about how the price-quality path regime can encourage innovation beyond the natural incentives to innovate.

Table 4.3 Innovation

	Number	Request for information or responses on initial views
Innovation		**The regime's baseline incentives may be insufficient to support innovation, such that we consider it is appropriate to have an innovation (and/or non-traditional solutions) incentive scheme.**
	22	Do you agree with our understanding of the regime's baseline incentives to support innovation, and the need for an innovation and/or non-traditional solutions scheme? Would you be interested in participating in a targeted workshop, and if so, are there any topics you consider should be covered?
		We are interested in feedback on our initial thinking about how to design an incentive scheme to encourage innovation and/or non-traditional solutions in DPP4.
	23	What are your views on the key principles (see **Attachment I**)? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? What are your views on the potential scheme design characteristics? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? How could these principles and characteristics be best applied in designing a potential scheme? We would also welcome submissions with examples of overseas schemes/characteristics that you consider appropriate for a DPP.

22: The regime's baseline incentives may be insufficient to support innovation, such that we consider it is appropriate to have an innovation (and/or non-traditional solutions) incentive scheme

4.17 We acknowledge that:

4.17.1 innovation may not be sufficiently incentivised within the regime's baseline settings

4.17.2 the Innovation Project Allowance (IPA) has not had any successful applications so far in the DPP3 period.

4.18 Our initial view is that it is appropriate to consider an innovation scheme for the DPP, to the extent that:

4.18.1 it is consistent with the statutory requirements under Part 4 purpose

4.18.2 we currently can, without presupposing the Final decision of the IM Review.

4.19 We may run a targeted 'innovation and non-traditional solutions workshop' in early 2024, where stakeholders would have further opportunity to provide views. Decisions on workshop topics will be contingent on the IM Review Final decision and the submissions we receive on this paper.

23: We are interested in feedback on our initial thinking about how to design an incentive scheme to encourage innovation and/or non-traditional solutions in DPP4

4.20 Because the Final IM Review decision has not yet been made, we cannot substantively discuss detailed options for the potential innovation and non-traditional solutions allowance (INTSA), as outlined in the IM Draft decision.

4.21 We instead provide principles for scheme design that we consider overarch any potential innovation and/or non-traditional solutions scheme. These principles broadly influence potential design characteristics and offer a preliminary view for how we consider a scheme could be designed and given effect in the DPP4 determination.

4.22 Further detail on this discussion of scheme design principles and characteristics can be found within the "Early thinking about potential scheme design to incentivise innovation and/or non-traditional solutions at DPP4" section of **Attachment I**.

Energy efficiency, demand-side management and reduction of energy losses

4.23 Demand-side management and energy efficiency initiatives involve influencing consumer demand, for example by shifting demand away from peak periods (sometimes referred to as load-shifting), or by reducing energy consumption.

4.24 Such initiatives can defer or avoid investment that would otherwise be required to meet periods of peak demand and accordingly should be a focus of EDBs to ensure expectations of increased electrification are managed as efficiently as possible.

4.25 Increased visibility of the low voltage network by EDBs and improvements in energy efficiency of distribution transformers may assist them to identify areas where targeted investment would reduce losses.

Table 4.4 Energy efficiency, demand-side management, and reduction of energy losses

	Number	Request for information or responses on initial views
Energy efficiency, DSM and losses	24	**Our initial view is that a specific incentive for demand-side management and energy efficiency is not required for DPP4.** Is there a basis for strengthening the incentives for energy efficiency and demand-side management initiatives? How could this best be done in the context of the DPP?
	25	**We are not proposing to implement a QIS for line losses. We believe EDBs improved visibility of low voltage performance and improvements to the energy efficiency of distribution transformers should drive improvements in DPP4 without explicit incentives.** Do you agree with our approach to not introduce a specific QIS related to reducing energy losses?

24: Our initial view is that a specific incentive for demand-side management and energy efficiency is not required for DPP4

4.26 Under a revenue cap EDBs have flexibility to set prices that may incentivise load-shifting and are incentivised to do so where this may lower costs. As part of the IM Review we are considering the incentives for opex/capex trade-offs during and across regulatory periods.

4.27 Our initial view is that a specific energy efficiency and demand-side management scheme is not required for DPP4. However, we are interested in views on whether incentives should be further strengthened.

4.28 Further information on our consideration of this issue is available within the "Energy efficiency and demand-side management" section of **Attachment I**.

25: We are not proposing to implement a QIS for line losses. We believe EDBs improved visibility of low voltage performance and improvements to the energy efficiency of distribution transformers should drive improvements in DPP4 without explicit incentives

4.29 An option to further incentivise EDBs to factor energy losses into their decisions could be through the introduction of a QIS, where EDBs are rewarded for reducing line losses.

4.30 We are not proposing to implement a QIS for line losses. We believe EDBs improved visibility of low voltage performance and the fact that distribution transformers have standards under the Minimum Efficiency Performance Standards (MEPS) scheme should drive improvements in DPP4 without explicit incentives.

4.31 Further information on our consideration of this issue is available within the "Reduction of energy losses" section of **Attachment I.**

Chapter 5 Setting revenue allowances, and price impacts

Purpose of this chapter

5.1 This chapter:

5.1.1 outlines the issues related to consumer value for money and energy hardship, and financeability for EDBs

5.1.2 identifies the relevant levers within the DPP to address aspects of these issues

5.1.3 seeks stakeholder feedback on proposals and considerations for how we could apply the DPP levers from 1 April 2025.

5.2 For more information, please see **Attachment H**.

Issues

Consumer value for money and energy hardship

5.3 An outcome we are seeking when regulating electricity distribution is that consumers get appropriate quality and value for money from these services.[50] Our role is focused on creating incentives for suppliers to improve their performance and placing limits on excessive profits. However, consumers may not obtain the full benefits of energy services where they have difficulty affording them.

5.4 Energy hardship analysis undertaken by Ministry of Business, Innovation and Employment (MBIE) highlights that this problem is particularly acute for some customers, with 110,000 households unable to adequately heat their homes, and 80,000 households being unable to pay their utility bills on time.[51]

5.5 As noted in **Chapter 2**, general inflation across the economy has been high in recent years, adding to the affordability challenges consumers face.[52] Stakeholders have also identified that the price of electricity (including the distribution component) matters for the energy transition; significant and unexpected increases in prices risk reducing demand and delaying electrification.[53]

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50 Commerce Commission "Tauākī Whakamaunga Atu - Statement of Intent 2023-2027" (22 June 2023), p. 20.

51 Ministry of Business, Employment and Innovation, "Report on energy hardship measures: Year ended June 2022" (June 2023), p. 7.

52 Reserve Bank of New Zealand, "Economic Indicators" webpage.

53 Mercury Energy, "Submission on IM Review Draft Decisions" (19 July 2023), p. 3.

5.6 Developments in the energy sector, including with distribution networks, will affect the prices consumers face. As outlined below, the decisions we make will influence this development. Given many electricity distribution investments have long lives, the investment decisions taken by EDBs in the next decade will have a long-term impact on prices.

5.7 As well as challenges, the transition to greater use of the electricity network also creates opportunities for consumers. Stakeholders have pointed to consumers making overall savings on their 'energy wallet' as electricity is substituted for other fuels at a lower cost per unit of energy.[54] Additionally, where the (higher) fixed costs of the network are spread over a greater amount of total demand in the long-term, the overall costs to consumers may rise in the short-term but be lower per customer in the long-term.[55]

5.8 The electricity distribution sector and the Commission's role in regulating it are only a part of the overall picture of value for money and energy hardship. Decisions by other actors in the sector, including consumers themselves, have a large impact on outcomes.

5.9 Distribution charges make up 27% of an average consumer bill, with transmission charges (which the Commission regulates separately via Transpower's individual price-quality path (IPP)) making up a further 11%.[56]

5.10 The primary regulatory tools we have to help with consumers receiving value for money electricity distribution services are:

5.10.1 the revenue limits we impose, which limit EDBs' ability to extract excessive profits

5.10.2 the efficiency incentives we create through the way we set expenditure allowances (as discussed in **Chapter 3**) and the IRIS incentive scheme

5.10.3 the transparency and accountability we provide through asset management plan and pricing methodology disclosures.

5.11 On top of this, and as discussed in more detail below, we can also help minimise price shocks consumers face by smoothing revenue increases over the regulatory period. At the same time, however, this must be balanced against the ability for EDBs to invest in providing consumers the services they demand, without suffering undue financial hardship.

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54 Vector Limited, "IM Review, Process and Issues paper submission" (11 July 2022), paragraph 22.

55 Consumer Advocacy Council, "IM Review, Process and Issues paper submission" (11 July 2022), paragraph 4.3.

56 Electricity Authority, "Your Power Bill" webpage

5.12 The Process and Issues paper on the IM Review noted the consumer affordability issues in the following table.[57]

Table 5.1 Consumer affordability issues

Issues we have heard from stakeholders
Clear regulatory settings are required to support consumer uptake of DER.
Funding investment must not place an undue burden on consumers.
Consideration should be given to how to quantify impacts to consumers, including the social cost of carbon.

Financeability

5.13 Some EDBs have told us that they may face financeability challenges over the next regulatory period. Financeability refers to the ability of firms to raise and repay debt and raise equity in financial markets readily and on reasonable terms. Amongst various factors, the ability to finance investment depends on the availability of cashflow at points in time, which in turn depends in part on:

5.13.1 the level of capex being undertaken

5.13.2 the time profile of capital recovery (including decisions about revenue smoothing made when resetting price-quality paths)

5.13.3 dividend or debt policies and access to capital markets.

5.14 Submitters have identified the inherent tension between mitigating price shocks to consumers and avoiding financial hardship for suppliers.[58] As discussed below, balancing how to address these two risks will require an exercise of judgement based on what is in the consumers' long-term benefit.

DPP levers to address these issues

5.15 When resetting the DPP we seek to make decisions that provide EDBs the opportunity to recover their forecast costs and earn an ex-ante normal return on investment.

[58] Aurora "Cross submission on IM Review Process and Issues Paper and draft Framework paper" (3 August 2022), paragraph 12; and 'Big 6' EDBs – Frontier Economics "A review of the limit on EDB price increases – Submission on the IM Review 2023 Draft Decisions", (19 July 2023), pp. 2-5.

5.16 Part 4 of the Act gives us a discretion when resetting a DPP for a particular regulatory period to set 'alternative rates of change' to minimise price shocks for consumers and/or undue financial hardship for suppliers. In addition, the IMs currently provide for us to limit annual increases in revenue which, when combined with the revenue washup mechanism, allows revenue to be recovered across multiple regulatory periods.[59]

5.17 The way we set the revenue path is key for achieving these outcomes. This section details how we are currently thinking about how we will set revenue allowances when exercising our powers under s 53P of the Act.

5.18 Some aspects of how the revenue path will operate are determined by the specification of price IMs (including matters where the Commission has discretion when setting the DPP). As the review of the IMs has not yet been finalised, we do not address those issues here. Once we have made our final decision on the IM Review, we intend to engage further on how the DPP will implement any changes to the specification of price IMs.

5.19 We are also interested in other factors specific to an EDB's customers that we might incorporate in our assessment of whether to minimise price shocks (and to what extent).

5.20 Please see the section titled "Modelling of consumer bill impacts" below for a discussion on how we are thinking about evolving our approach to assist consumers in understanding the potential consumer bill impacts.

Setting rates of change

5.21 As explained in more detail in **Attachment B**, the Act requires us to specify the revenue path by:

5.21.1 specifying a 'starting price' for the first year of the regulatory period

5.21.2 determining a 'rate of change' over the course of the regulatory period, used to determine revenue for each subsequent year, composed of:

5.21.3 the rate of increase in CPI

5.21.4 a rate of change relative to CPI (or 'X-factor').

[59] Note that we proposed amending the way this revenue limit operates as part of the IM Review Draft decision and are considering submissions in response. Commerce Commission, "Financing and incentivising efficient expenditure during the energy transition topic paper" (14 June 2023), Attachment D. However, under any specification of price IM setting – including having no secondary revenue control – the way the revenue path operates affects consumer price and supplier financing outcomes.

5.22 As with previous DPP resets, we propose determining the starting price based on the current and projected profitability of each supplier using a building blocks model.[60] The treatment of CPI is determined by the specification of price IMs. This leaves the X-factor as the main component we need to make decisions about.

5.23 By defining the real rate of change in revenues, the X-factor is a tool that can be used to manage the consumer price shocks and supplier financial hardship challenges discussed above.

5.24 These two outcomes are in tension: bringing cashflow forward to minimise financial hardship for suppliers may create or exacerbate a price shock; and, delaying cashflow may create or exacerbate financial hardship for EDBs.

5.25 In some situations, there may be the risk of both a price shock and financial hardship at the same time and we will need to exercise judgement in trading off between them. In some instances, this may go beyond what is possible under the relatively low-cost investment scrutiny and cashflow timing tools available under a DPP, and a CPP may be a better alternative.

Table 5.2 Setting revenue allowances

	Number	Request for comment or responses on initial views
Setting revenue allowances	26	**We are proposing to retain our approach of setting a 'default' X-factor of 0% (before considering price shocks or supplier financial hardship).** We are interested in your views on whether this approach (where long-run changes in sector productivity are accounted for in our building blocks analysis) remains appropriate.
	27	**Our emerging view is to assess price shocks for consumers using the real change in aggregate distribution revenue from year-to-year, with a particular focus on the change between regulatory periods.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a price change amounts to a price shock?
	28	**Our emerging view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a supplier faces undue financial hardship?

[60] See Figures B1 and B2 in Attachment B for an illustration of how this process operates.

26: We are proposing to retain our approach of setting a 'default' X-factor of 0% (before considering price shocks or supplier financial hardship

5.26 Because we propose setting starting prices based on current and projected profitability using a building blocks model:

5.26.1 the X-Factor works in a present-value neutral way – it only changes the timing of cashflow within the regulatory period,[61] not their absolute level

5.26.2 the starting price already incorporates forecast changes in productivity[62], so the rate of change in productivity in the EDB sector relative to the economy as a whole will be 0%.

5.27 This proposal is discussed in more detail in the "Statutory framework for the default X-factor" section in **Attachment H**.

27: Our emerging view is to assess price shocks for consumers using the real change in aggregate distribution revenue from year-to-year, with a particular focus on the change between regulatory periods

5.28 While the Act allows us to consider price shocks for consumers when considering alternative X-Factors, it does not require any specific assessment or threshold. The discretion under s 53P(8)(a) is framed broadly, in terms of whether "in the Commission's opinion, [an alternative X-factor] is necessary or desirable to minimise any undue financial hardship to the supplier or to minimise price shock to consumers".[63]

5.29 In exercising this discretion, our decision will be based on what best promotes the purpose of Part 4, in light of:

5.29.1 promoting the s 53K purpose of DPP/CPP regulation

5.29.2 the circumstances of an EDB and its consumers

5.29.3 any requirements or limitations in the EDB IMs.

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61 There are separate tools available for altering the profile of cashflows over multiple regulatory periods. These are largely either determined by the IMs (such as standard depreciation or indexation of the RAB) or provided for in the IMs but subject to discretionary decisions when setting a DPP or CPP (alternative depreciation.

62 See Attachment D, in the "Partial productivity trend" section.

63 Commerce Act 1986, section 53P(8)(a).

5.30 In a context of high inflation, rising interest rates, and with a heightened need for investment, our view is that we need to consider the question of price shocks in more depth than in previous DPP resets.

5.31 Our initial thinking for undertaking this assessment is one that focuses on:

5.31.1 real changes (increase over and above the rate of CPI inflation)

5.31.2 aggregate revenue (that is, the allowance we set rather than on specific consumer prices)

5.31.3 assessed excluding pass-through costs but including recoverable costs.

5.32 With respect to 5.31.2, we are open to considering alternative approaches, such as a per-user or per-unit of supply measure, as in the context of a growing network, a larger quantity of demand may mitigate the price impact of revenue changes.[64]

5.33 More detail on this proposal can be found in the "Price shocks for consumers" section in **Attachment H**.

28: Our emerging view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers

5.34 As with price shocks for consumers, undue financial hardship is not further defined in the Act. It may also be of greater importance in the DPP4 reset than previous resets given increases in EDBs' forecast capex over the DPP4 period.

5.35 Our view remains that the threshold is a high one. The reference in s 53P(8)(a) is specifically to 'undue' financial hardship – contemplating that not all financial difficulties a supplier faces would warrant accelerated revenue. Our view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers. This may be the case where, for example, the price path is set such that it would not be feasible for any prudent supplier to deliver services under it.

5.36 We will also consider any decision in light of the availability of a CPP as an alternative, where undue financial hardship issues result from an EDB-specific uplift in the level of capex where proportionate scrutiny justifies a higher level of customer engagement about investment and pricing trade-offs.

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64 Aurora Energy "Submission on the IM Review 2023 Draft Decisions", (19 July 2023), see section 4.3 'Improvements to the revenue path'.

5.37 More detail on this proposal can be found from section "Alternate X-factors may be more relevant in DPP4 than in previous resets" in **Attachment H**.

Modelling of consumer bill impacts

5.38 We anticipate consumer bills for electricity distribution services will significantly increase for the DPP4 regulatory period given expected increases in the inputs we use for calculating revenue allowances. In particular, we note the following.

5.38.1 Underlying input costs have increased for EDBs due to a heightened period of inflation which will drive increases in capex and opex forecasts. These will be assessed as part of the capex and opex forecasting workstreams.

5.38.2 Investment in assets has driven increases in RAB values during DPP3 and is forecasted for DPP4, combined with the impact of indexing the RAB to inflation to maintain the value of suppliers' RAB in real terms over time.

5.38.3 Risk-free rates, which are a key component of the WACC, have increased sharply from lows in late 2020.[65]

5.39 RAB growth is primarily caused by EDBs commissioning new assets, added together with revaluation of assets (at CPI), and partially offset by depreciation over the period. The RAB for non-exempt EDBs was $11.4 billion as at 31 March 2022, compared to $9.4 billion as at 31 March 2019 representing a 21% increase.[66]

5.40 In DPP3 the most significant downward driver of revenue allowances compared to the DPP2 period was the change in the WACC, in particular a reduction in the risk-free rate.[67] The methodology for calculating the WACC is determined by the cost of capital IMs, and key parameters within this methodology are calculated in a separate cost of capital determination prior to the DPP reset. Based on changes to the risk-free rate, we expect the WACC to be materially higher for DPP4 than it was for DPP3.

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65 Between the 2019 DPP cost of capital determination and the 2023 ID cost of capital determination for EDBs, the risk-free rate has increased from 1.12% to 4.34%. Commerce Commission *Cost of capital determination for electricity distribution businesses' 2020-2025 default price-quality paths and Transpower New Zealand Limited's 2020-2025 individual price-quality path* [2019] NZCC 12; Commerce Commission *Cost of capital determination for disclosure year 2024 for information disclosure regulation Electricity distribution businesses and Wellington International Airport* [2023] NZCC 8.

66 Values for 2022 have been represented as not all year end disclosures for 2023 for non-exempt EDBs are currently available.

67 Commerce Commission, "Electricity Distribution Business Price-Quality Regulation 1 April 2020 DPP reset Consumer bills impact model: Final determination" (29 November 2019), Figure X1. In DPP3 the WACC reduction represented a 23% reduction in the first year's maximum allowable revenue compared to the DPP2 value.

Table 5.3 Consumer bill impacts

	Number	Request for information or responses on initial views
Consumer bill impacts	29	**Previously we have forecasted indicative consumer bill impacts from information disclosed by EDBs. We are interested in understanding what other information may help refine our approach.** What models or data inputs could be provided by EDBs which would improve our approach to modelling consumer bill impact?

29. Previously we have forecasted indicative consumer bill impacts from information disclosed by EDBs. We are interested in understanding what other information may help refine our approach

5.41 We acknowledge the importance of communicating clearly and accurately the likely bill impact of our DPP reset decision to consumers.

5.42 In previous DPP resets, we have forecasted indicative consumer bill impacts of the DPP decision based off disclosed information from EDBs as we considered this was a key component of communicating the impact of our decisions.[68]

5.43 EDBs may have supporting information or models which would allow us to undertake more targeted modelling of the likely impacts for different classes of stakeholders of changes in revenue allowances for DPP4. We are interested in understanding what information is able to be provided by EDBs which may help refine our previous approach.

[68] Commerce Commission, "Electricity Distribution Business Price-Quality Regulation 1 April 2020 DPP reset Consumer bills impact model: Final determination" (29 November 2019). The 'description' tab of the workbook outlined how we have previously used a combination of information from the MBIE quarterly survey of domestic electricity prices (QSDEP) and ICP numbers disclosed by EDBs under Schedule 8 of the EBD Information disclosure requirements.

Chapter 6 Process from here and how to submit your views

Purpose of this chapter

6.1 This chapter sets out the process we intend to follow for the rest of the DPP4 reset. It details what each step of the process will address and provides details on how you can provide your views on the content of this paper to the Commission.

Process for the DPP4 reset

6.2 The process includes multiple opportunities for interested parties to participate and contribute to the development of the DPP4 reset. Table 6.1 outlines the process we have followed so far. Table 6.2 outlines future DPP4 consultation.

6.3 We note that, outside of the IM Review process, we do not currently intend to make any further amendments to the EDB IMs prior to the DPP4 reset. In previous DPP resets, it has often been desirable to make targeted IM amendments prior to a DPP reset to implement DPP policy developments. As noted in our IM amendment framework, in general these amendments only relate to the rules and processes IMs rather than the 'core' IMs (such as asset valuation or cost of capital).[69] If our view on the need for further IM amendments changes, we will inform stakeholders.

Table 6.1 Process we have followed so far

Date	Publication/Event
7 November 2022	Online workshop with EDBs on the challenges of forecasting and incentivising efficient expenditure[70]
25 May 2023	Publication of the DPP4 process paper[71]
23 June 2023	Submissions on the Process paper were due and have been published on our website[72]
9 August 2023	Online knowledge sharing presentation: An introduction to the DPP[73]
2 November 2023	Issues paper published

69 Commerce Commission, "Part 4: Input Methodologies Review 2023: Framework paper", (13 October 2022).

70 Commerce Commission, "Online workshop: forecasting and incentivising efficient expenditure for EDBs", (7 November 2022).

71 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Proposed process" (25 May 2023).

72 Eleven submissions were provided to the Commerce Commission by 23 June 2023. They are available to view on the following Commerce Commission "Submissions due on process paper" webpage.

73 Commerce Commission, "Online knowledge sharing presentation: An introduction to the default price-quality path", (9 August 2023).

Table 6.2 Dates for future DPP4 consultation

Date	Publication/Event
November 2023	Information gathering request (s 53ZD notice) issued (including 2023 quality of service and early disclosure 2024 AMP expenditure forecasts)
15 December 2023	Submissions due on the DPP4 Issues paper
15 December 2023 (indicative)	Section 53ZD information due
December 2023	2023 Input Methodologies Final Determination published
	2024
26 January 2024	Cross-submissions due on the DPP4 Issues paper
Early 2024	Targeted issues paper on implementing changes to the specification of price input methodologies published
	2023 AMP review findings published
	Potential request for information (s 53ZD notice) in response to Input Methodologies Final determination (eg, for information that will enable us to assess the number of new connections which could meet the large connection contract criteria if introduced)
	Specific issues-based workshops following the Issues paper publication as required, including potential workshops to get early feedback on the draft capex framework and how the findings from the 2023 AMP review have been used to shape this; on the form of any innovation allowance
31 March 2024	2024 AMPs due
May 2024	Draft determination, including draft financial models: • Six-week submission period • Four-week cross-submissions period.
July 2024	Information gathering request (s 53ZD notice) issued for audited interruption information
July – September 2024	Topic-based workshops and/or additional consultation with stakeholders (if required)
31 August 2024	Information disclosure data for the year ended 31 March 2024 available
September 2024	Technical consultation (if required)
By 29 November 2024	DPP4 Final Determination published

Financial model

6.4 In our DPP4 process paper we said that we were planning on using a similar suite of financial models for our 2025 reset as was used in 2020 and were considering providing preliminary versions of these financial models as soon as possible in 2024.

6.5 The submissions from Horizon and Firstgas recommended the Commission provides workshops to walk through the financial models to ensure EDBs understand them prior to the release of the draft determination.[74]

6.6 Our current view is to not release the draft financial models ahead of the draft determination because we are only expecting minor changes to the models used in DPP3 to reflect the final IM decision. The capex model will be released as part of the release of the draft determination to enable stakeholders to engage meaningfully in our proposed approach for capex.

6.7 We intend to publish a full Draft decision for DPP4 in May 2024. This Draft decision will build on the material discussed in this paper and on submissions we receive in response.

6.8 The Draft decision will include:

6.8.1 a reasons paper setting out and explaining our draft decisions on the key aspects of DPP4, including starting prices, rates of change, quality standards, and incentives to improve performance and efficiencies in the DPP4 determination, which we propose should apply to EDBs for DPP4

6.8.2 the financial model used to determine starting prices

6.8.3 the forecasts of operating and capital expenditure that the financial model is based on

6.8.4 any quality of service models used to determine quality standards

6.8.5 the draft DPP4 determination

6.8.6 any associated changes resulting from the 2023 Input Methodology Review determination necessary to implement within the DPP.

6.9 The Draft decision will be based on the data available to be considered in advance of the draft. This will include:

6.9.1 quality of service information from s 53ZD notice and Information Disclosure, and other historical data up to 31 March 2023

[74] Submissions on the DPP4 Process paper are located on at: Commerce Commission, "2025 reset of the electricity default price-quality path" webpage.

6.9.2 expenditure forecasts from the 2024 AMPs - to the extent these are disclosed in advance in accordance with the s 53ZD notice[75]

6.9.3 the cost of capital determined for information purposes on 31 July 2023.

6.10 The Draft decision will be followed by a six-week submissions window and a four-week window for cross-submissions. This may include a workshop where there are topics that require further discussion.

Further engagement between the draft and final determinations, if required

6.11 Depending on the submissions we receive on the draft determination we may also need to conduct further engagement to work through topics of interest. For example, we may need to conduct targeted consultation on technical issues and/or any unresolved policy issues.

Final decision

6.12 We will publish our final DPP4 decision by 29 November 2024 confirming the maximum revenue, rates of change, quality standards and incentives to improve performance and efficiencies that will apply to EDBs for DPP4.

How you can provide your views

Submissions on this paper

Timeframe for submissions

6.13 We welcome your views on the matters raised in this paper, and on any other matters relevant to the DPP4 reset, within the timeframe below:

6.13.1 submissions by 5pm on Friday, 15 December 2023.

6.13.2 cross-submissions by 5pm on Friday, 26 January 2024.

Address for submissions

6.14 Responses should be addressed to:

Ben Woodham, Electricity Distribution Manager

c/o infrastructure.regulation@comcom.govt.nz

6.15 Please include **'Submission on EDB DPP4 reset'** in the subject line of your email.

[75] While the 2024 AMPs will be available shortly before the draft decision, there is not sufficient time for us to adequately assess them between their publication in early April 2024, and the draft decision in May 2024.

Format for submissions

6.16 We prefer submission in both a format suitable for word processing (such as Microsoft Word document) as well as a 'locked' format (such as a PDF) for publication on our website.

6.17 We have included, as **Attachment J**, a table which shows the collection of consultation questions we have posed for submitters throughout **Chapters 2 – 5** in the Issues paper. The consultation questions in **Attachment J** will also be published as a Word file alongside the Issues paper so that submitters can download and use this form as a template to draft their submission if they wish.

Confidential submissions

6.18 We discourage requests for non-disclosure of submissions so that all information can be tested in an open and transparent manner. However, we recognise that there may be cases where parties that make submissions may wish to provide information in confidence.[76] We offer the following guidance.

6.18.1 If it is necessary to include confidential material in a submission, the information should be clearly marked, with reasons why that information is confidential.

6.18.2 Where commercial sensitivity is asserted, submitters must explain why publication of the information would be likely to unreasonably prejudice their commercial position or that of another person who is subject to the information.

6.18.3 Both confidential and public versions of the submission should be provided.

6.18.4 The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.

[76] Parties can also request that we make orders under section 100 of the Commerce Act 1986 in respect of information that should not be made public. Any request for a section 100 order must be made when the relevant information is supplied to us and must identify the reasons why the relevant information should not be made public. We will provide further information on section 100 orders if requested by parties. A key benefit of such orders is to enable confidential information to be shared with specified parties on a restricted basis for the purpose of making submissions. Any section 100 order will apply for a limited time only as specified in the order. Once an order expires, we will follow our usual process in response to any request for information under the Official Information Act 1982.

6.18.5 We request that you provide multiple versions of your submission if it contains confidential information or if you wish for the published electronic copies to be 'locked'. This is because we intend to publish all submissions on our website. Where relevant, please provide both an 'unlocked' electronic copy of your submission, and a clearly labelled 'public version'.

Consultation after the Final determination of the Input Methodologies

6.19 Submissions on the DPP4 Issues paper will not be part of the IM Review record or be taken into account in coming to our final decision on the IM Review. This reflects that:

6.19.1 stakeholders have had opportunities to submit and cross-submit in the consultation on our IM Review Draft decision

6.19.2 the short timeframe between our consultation on the DPP4 Issues paper and when we must make our final decision on the IM Review means it is not feasible to take submissions on the DPP4 Issues paper into account in coming to our final decision on the IM Review.

6.20 The Final determination of the IMs will be published in December 2023.

Workshops

6.21 As indicated in our 25 May 2023 Process paper, we intend to hold issue-specific workshop(s) following submissions and cross-submissions on the Issues paper where appropriate.

6.22 We anticipate these workshops will focus on common themes raised by multiple parties in submissions. We will determine the exact workshop topics after we review the submissions on this Issues paper in early 2024.

6.23 If there are particular topics you consider would merit discussion, you are welcome to indicate as such in your submission in response to this paper, or via email to the Commission.

Attachment A Our decision-making framework for DPP4

Purpose of this attachment

A1 This attachment describes the high-level framework we propose to apply in setting DPP4. To do this, this attachment explains:

A1.1 the requirements for setting DPPs under Part 4 of the Act

A1.2 the overarching objectives in the Act that are relevant when setting a DPP

A1.3 our proposed framework for making decisions on DPP4.

Requirements for setting DPPs under Part 4

A2 Part 4 of the Act provides for the regulation of the price and quality of goods or services in markets where there is little or no competition, and little or no likelihood of a substantial increase in competition.[77] For EDBs, it sets out that regulation should apply in two forms:

A2.1 Information disclosure regulation, under which regulated suppliers are required to publicly disclose information relevant to their performance.[78]

A2.2 Default/customised price-quality regulation, under which price-quality paths set the maximum average price or total allowable revenue that the regulated supplier can charge. They also set standards for the quality of the services that each regulated supplier must meet. This ensures that businesses do not have incentives to reduce quality to maximise profits under their price-quality path.[79]

A3 To set a DPP, Part 4 specifies requirements and limitations which we must follow:

A3.1 the scope and application of the regulatory rules and processes, referred to as IMs, which we are required to set for Part 4 regulation

A3.2 what the determinations used to set DPPs must specify

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77 Commerce Act 1986, section 52.

78 Commerce Act 1986, sections 52B and 54F. As per section 54, information disclosure applies to all EDBs subject to Part 4.

79 Commerce Act 1986, sections 52B and 54G. As per section 54F, default/customised price-quality regulation applies only to EDBs who do not meet the consumer-owned criteria set out in section 54D. EDBs subject to a default price-quality path have the option of applying for a customised price-quality path to better meet their particular circumstances (section 53Q).

A3.3 the content and timing of price-quality paths

A3.4 requirements when resetting DPPs

A3.5 how we must have regard to incentives and the avoidance of disincentives for energy efficiency, demand-side management, and the reduction of losses.

A4 We must consider the Part 4 purpose and what default/customised price-quality regulation is intended to achieve when making our decisions. We discuss these objectives and how we are required to use them to set DPPs in the next section of this chapter.

A5 The statutory requirements for setting DPPs under Part 4 are described in more detail further on in this attachment.

Overarching objectives in the Act used when setting a DPP

Purpose of Part 4

A6 Section 52A of the Act sets out the purpose of Part 4 regulation:

> (1) The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—
>
> (a) have incentives to innovate and to invest, including in replacement, upgraded, and new assets; and
>
> (b) have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and
>
> (c) share with consumers the benefits of efficiency gains in the supply of the regulated goods or services, including through lower prices; and
>
> (d) are limited in their ability to extract excessive profits.

A7 The key component of this statement is that we are to promote the long-term benefit of consumers, and this is our concern in achieving the purpose of Part 4. Section 52A instructs that this is to be achieved by promoting outcomes that are consistent with outcomes produced by competitive markets, and gives us four objectives to pursue that are considered consistent with those of competitive markets.

A8 In practice, when setting a DPP, it is important to note:

A8.1 We do not focus on replicating all the potential outcomes or mechanisms of workably competitive markets; we focus on promoting the section 52A outcomes.

A8.2 None of the objectives listed section 52A(a) to (d) are more important than the others, and they are not separate and distinct from each other; nor, from section 52A(1) as a whole. Rather, we must balance the section 52A(1)(a) to (d) outcomes, and exercise judgement in doing so. [80]

A8.3 When exercising this judgement, we are guided by what best promotes the long-term benefit of consumers.[81]

Purpose of default/customised price-quality regulation

A9 Section 53K of the Act sets out the purpose of default/customised price-quality regulation:

> The purpose of default/customised price-quality regulation is to provide a relatively low-cost way of setting price-quality paths for suppliers of regulated goods or services, while allowing the opportunity for individual regulated suppliers to have alternative price-quality paths that better meet their particular circumstances.

A10 We have taken this purpose to mean that:

A10.1 DPPs are to be set in a relatively low-cost way, and are not intended to meet all the circumstances that an EDB may face

A10.2 CPPs are intended to be tailored to meet the particular circumstances of an individual EDB.

A11 To meet the relatively low-cost purpose of DPP regulation, we will also take into account the efficiency, complexity, and costs of the DPP regime as a whole when resetting the DPP. What this means in practice will vary over time and between sectors. The DPP regime would likely not be relatively low cost if it was set such that most EDBs needed to apply for a CPP to meet their individual circumstances, or if most EDBs needed to seek a reopener mid period for expenditure which can be reasonably forecast within the process of setting expenditure allowances.

A12 Both of those situations would place higher compliance costs on both the EDB and the Commission, and some of those costs would be funded by consumers. However, we note that reopeners can be a relatively low-cost way to achieve an efficient outcome for areas of significant forecast uncertainty and it is possible that there will be an increase of reopener applications in the regulatory period to address increased uncertainty.

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80 *Wellington International Airport Ltd & others v Commerce Commission* [2013] NZHC 3289, paragraph 684.

81 See the discussion of our decision to adopt the 75th percentile for WACC in *Wellington International Airport Ltd & others v Commerce Commission* [2013] NZHC 3289, paragraphs 1391-1492.

A13 In the DPPs we have set under Part 4, over time we have developed a combination of low-cost principles including:

A13.1 applying the same or substantially similar treatment to all suppliers on a DPP

A13.2 setting starting prices and quality standards or incentives with reference to historical levels of expenditure and performance, where appropriate

A13.3 where possible, using existing information disclosed under ID regulation, including suppliers' own AMP forecasts

A13.4 limiting the circumstances in which we will reopen or amend a DPP during the regulatory period.

A14 Regarding the last principle in the above list, we wish to be clear that reopeners are a valid regulatory tool, and that we anticipate that the DPP4 regulatory period will see a greater number of reopeners needed to meet unique and unforeseen circumstances.

A15 As a general point about the principles above, they have been developed over time to support decision making and to elaborate on the purpose of default/customised price-quality regulation provided by section 53K of the Act. We reconsider how to define and apply these principles for each DPP reset to ensure we can address the contextual challenges at the time of each reset. **Chapter 2** describes the contextual challenges for DPP4.

Our proposed framework for making decisions on DPP4

A16 In addition to the section 52A and 53K purpose statements, we intend to use a decision-making framework and set of economic principles that we have developed over time to support our decision-making under Part 4. These have been consulted on and used in prior processes and help provide consistency and transparency in our decisions.

Decision-making framework for DPP4

A17 For this reset, we intend to retain approaches from the third EDB DPP (DPP3) where they remain fit for purpose.[82] We intend to make changes to the DPP3 approaches where those changes would:

[82] These DPP3 approaches are discussed in the relevant attachments to this paper. However, a full discussion of the DPP3 decision can be found in Commerce Commission "Default price-quality paths for electricity distributors from 1 April 2020 – Final decision" (27 November 2019).

A17.1 better promote the purpose of Part 4[83]

A17.2 better promote the purpose of default/customised price-quality path regulation[84]

A17.3 better promote incentives for suppliers of electricity lines services to invest in energy efficiency and demand-side management, and to reduce energy losses (or better avoid disincentives for the same)[85]

A17.4 reduce unnecessary complexity and compliance costs.

A18 This approach has been adapted from the 2016 and 2023 IM Review framework publications. We consider it will help ensure consistency with the low-cost purpose of the DPP.[86]

A19 In addition to the above, we will also:

A19.1 implement any required changes as a result of the 2023 IMs Review

A19.2 where appropriate, carry across new approaches developed as part of price-quality processes since the DPP3 reset.[87]

A20 We will also apply the economic principles described below and fulfil our statutory requirements, as described in the next sections.

Economic principles

A21 We also have three key economic principles that we will have regard to in setting the DPP. These are useful analytical tools when determining how we might best promote the purpose of Part 4:

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83 Commerce Act 1986, section 52A.

84 Commerce Act 1986, section 53K.

85 Commerce Act 1986, section 54Q.

86 Commerce Commission "Input methodologies review decisions: Framework for the IM review" (20 December 2016) Chapter 4. Commerce Commission "Input methodologies review 2023: Framework paper" (13 October 2022) Chapter 4.

87 Commerce Commission, "Decision on Aurora Energy's proposal for a customised price-quality path", (March 2021); Commerce Commission, "Default price-quality paths for gas pipeline businesses from 1 October 2022" (31 May 2022); Commerce Commission "Chorus' price-quality path from 1 January 2022 – Final decision" (16 December 2021)

A21.1 Real financial capital maintenance (FCM): we seek to provide regulated suppliers the ex-ante expectation of earning their risk-adjusted cost of capital (a 'normal return'). This provides suppliers with the opportunity to maintain their financial capital in real terms over timeframes longer than a single regulatory period. However, price-quality regulation does not guarantee a normal return over the lifetime of a regulated supplier's assets.

A21.2 Allocation of risk: ideally, we allocate particular risks to suppliers or consumers depending on who is best placed to manage the risk, unless doing so would be inconsistent with section 52A.

A21.3 Asymmetric consequences of over- and under-investment: we apply FCM recognising the asymmetric consequences to consumers of regulated energy services, over the long-term, of under-investment (versus over-investment).

A22 We elaborated on each of these principles and how they should be applied in the context of price-quality regulation in our 2023 IM Review Framework paper.[88]

Statutory requirements and limitations on how we set DPPs

A23 Part 4 of the Act sets out several formal requirements and limitations on how we set DPPs. These are contained in sections 52P, 53M, 53O, and 53P, and covered in Table A1 below.

Requirement to promote energy efficiency incentives

A24 Section 54Q of the Act states that in regulating electricity lines services, the Commission must promote incentives, and avoid imposing disincentives, for EDBs to invest in energy efficiency and demand-side management, and to reduce energy losses.

A25 This objective is subject to the overall objectives set out in the purpose of Part 4. We discuss our approach for DPP3 to the section 54Q requirement in **Attachment I**.

Requirement to apply relevant Input Methodologies in determining a DPP

A26 IMs are the rules, requirements and processes we determine that must be applied to regulation under Part 4 of the Act. We must apply the IMs when we set price-quality paths and set information disclosure requirements. Regulated businesses are also required to apply the IMs.

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88 Commerce Commission, "Input methodologies review 2023: Framework paper", (13 October 2022), Chapter 4.

A27 The IMs cover matters like how assets are to be valued, depreciated and revalued, how we estimate the costs of capital, how costs can be allocated and how tax should be treated. The IMs also set out when a DPP can be reconsidered. The current IMs applying for EDBs is the Electricity Distribution Services Input Methodologies Determination 2012, including amendments (a version which consolidates all amendments was published in May 2020).[89] The IMs are currently under review, and final decisions will be published in December 2023. These decisions will be implemented in the DPP4 where relevant.

New climate change policy

A28 In 2019 Parliament passed the Climate Change Response (Zero Carbon) Amendment Act (the Zero Carbon Act), committing the Government to reaching net zero long-lived greenhouse gases by 2050 – known as the 2050 target.[90]

A29 This amendment resulted in the inclusion of a permissive consideration that, when exercising or performing a public function, any person, or body, may take into account the 2050 target, an emissions budget or an emissions reduction plan.[91] In carrying out our public function, the Commission will have regard to the permissive considerations under section 5ZN of the Climate Change Response Act (CCRA) 2002, where they are relevant and not inconsistent with promoting section 52A(1)(a) to (d) of the Act.[92]

A30 For a detailed description of the Commission's approach to applying the permissive consideration, please refer to the IM Decision-making Framework paper published 13 October 2022.[93]

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89 Commerce Commission, "Electricity Distribution Services Input Methodologies Determination 2012" (consolidated 20 May 2020).

90 Climate Change Response (Zero Carbon) Amendment Act 2019, section 5Q.

91 Climate Change Response Act 2002, section 5ZN.

92 This is also noted in: Commerce Commission, "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), paragraph 2.5.

93 Commerce Commission, "Part 4 Input Methodologies Review 2023: Framework paper" (13 October 2022), Chapter 2; and Commerce Commission, "Note of clarification – our Part 4 Input Methodologies Review 2023 Framework paper" (December 2022).

Table A1: Formal requirements and limitations on how we set DPPs

Section	Title	Requirement
Section 52P	Determinations by the Commission We must make determinations under this section specifying how the relevant forms of regulation apply to suppliers of regulated goods and services	Determinations must: • set out, for each type of regulation to which the goods or services are subject, the requirements that apply to each regulated supplier • set out any time frames (including the regulatory periods) that must be met or that apply • specify the IMs that apply • be consistent with Part 4 of the Act.
Section 53M	Content and timing of price-quality paths Also allows price-quality paths to include incentives for suppliers to maintain or improve their quality of supply, and allows us to prescribe quality standards in any way we consider appropriate	Sets out: • either the maximum price or prices that may be charged by a supplier or the maximum revenues that may be recovered by the supplier • the quality standards the supplier must meet; and the regulatory period (5 years, or 4 years if the Commission considers that a shorter period would better meet the purpose of Part 4) • the next DPP must be reset at least four months before the end of the current DPP regulatory period (on or before 29 November 2024).
Section 53O	Specific requirements for DPP determinations	Sets out requirements for: • starting prices • the rate of change, relative to the CPI • quality standards • the date the DPP takes effect • the date by which any proposal for a CPP must be received • the date by which compliance with the DPP must be demonstrated.
Section 53P	Requirements when resetting the default price-quality path	Requires us to amend the DPP determination for the forthcoming regulatory period (in this case, from 1 April 2025) before the end of the current regulatory period (in this case, 31 March 2025).
		When resetting the DPP under section 53P, starting prices must not seek to recover any excessive profits made during any earlier period, and must be either: • the prices that applied at the end of the preceding regulatory period • prices that are based on the current and projected profitability of each supplier.

Section	Title	Requirement
		The rate of change we set must be based on the long-run average productivity improvement rate achieved by either or both of suppliers in New Zealand, and suppliers in other comparable countries, of the relevant goods or services. It may take into account the effects of inflation on the inputs of suppliers of the relevant goods and services.

Attachment B General information about how the DPP regime is applied to EDBs

Purpose of this attachment

B1 This attachment provides a summary description of how price-quality regulation is applied to EDBs. This attachment is for readers who are relatively new to price-quality regulation and have an interest in understanding the basic concepts of the regulatory regime applied by the Commerce Commission. A filmed presentation on how the regime operates is also available on our website.[94]

What is price-quality regulation?

B2 Price-quality regulation is intended to influence the behaviour of businesses by limiting what they can recover from their consumers. Each business is constrained by the total revenue it can recover from its consumers, through a price-quality path. There are two types of price-quality paths for EDBs – default price-quality path (DPP) and customised price-quality path (CPP).

B3 The paths also set standards for the quality of service that each business must meet. This ensures that businesses do not have incentives to reduce quality to maximise profits under their price-quality path.

B4 **Attachment A** details the statutory basis for price-quality regulation which sits in Part 4 of the Act. It notes the requirement to apply relevant IMs in determining a DPP and specific provisions that must be applied when the Commission resets the DPP every five years.

What are Input Methodologies?

B5 IMs are the upfront rules, processes and requirements of regulation. IMs under Part 4 of the Act currently apply to:

B5.1 all suppliers of electricity lines services, gas pipeline services and specified airport services subject to information disclosure regulation

B5.2 all suppliers of gas pipeline services, Transpower and 16 suppliers of electricity distribution services subject to price-quality regulation.

[94] Commerce Commission, "Knowledge sharing session", 9 August 2023.

B6 The purpose of IMs, set out in section 52R of the Act, is to promote certainty for suppliers and consumers in relation to the rules, requirements and processes applying to regulation.[95]

Which EDBs are subject to price-quality regulation?

B7 As noted in Chapter 1, out of the 29 EDBs in New Zealand, 16 are currently subject to price-quality regulation. The remaining 13 EDBs meet the definition of being 'consumer-owned' in Part 4; this exempts them from price-quality regulation.[96] All 29 EDBs are subject to information disclosure regulation. See Figure 1.1 on page 16 for a graphic showing the location of non-exempt EDBs.

B8 Fifteen EDBs are on the DPP, and one EDB, Aurora, is on a CPP until 2026.[97] A CPP is a regulatory tool that is applied to an EDB to better suit the specific needs of an EDB and its consumers.

What are the regulatory tools in the DPP?

B9 The DPP regime is made up of the tools described below which are applied within the range of discretion available to respond to the context of the reset.

Revenue path

B10 A revenue path is the set of annual revenues an EDB is allowed to earn over the regulatory period. It has two main parts:

B10.1 'forecast net allowable revenue' (which allows for the smoothed recovery of building blocks allowable revenue (BBAR))

B10.2 pass-through and recoverable costs.

B11 Pass-through and recoverable costs (other than those giving effect to regulatory incentive mechanisms) are generally outside a supplier's control, for example, Transpower costs, local body rates. See the "How we set the revenue path for the DPP" section below for a more detailed description of how the revenue path is determined.

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95 Further information regarding IMs and our most recent review of the IMs is available on the Commerce Commission's "Input methodologies for electricity, gas, and airports" webpage.

96 Commerce Act 1986, section 54G(2).

97 Commerce Commission, "Aurora Energy's CPP and enhanced information disclosure requirements" webpage.

Incentives for efficient investment

B12 If a supplier keeps its opex and capex lower than our forecasts, it can keep some of its savings. This creates an incentive to be efficient. This applies to both opex and capex.

B13 In a DPP reset, forecasted values will reflect past efficiencies achieved, with lower future allowance forecasts due to achieved efficiencies resulting in a sharing of benefits with consumers.

B14 See below for a description of how we apply the IRIS which refines the above-described approach.

Quality standards

B15 Quality standards are intended to require EDBs to provide services at a quality that reflects consumer demands. They reduce the risk that EDBs seek to increase profits by cutting costs and compromising quality. We use measures related to the average frequency (known as SAIFI[98]) and duration (known as SAIDI[99]) of power outages to determine network reliability.

B16 An EDB is non-compliant with its quality standards if it exceeds its planned or unplanned interruption limits or has an extreme event. We 'normalise' our reliability assessments to limit the impact of major events such as severe storms.[100]

Quality Incentive Scheme

B17 We have a revenue-linked QIS that's separate from the quality standard – intended to place the trade-off between cost and quality in front of EDBs. This scheme allows EDBs to earn additional revenue for performing better than the quality target, and less for performing below the quality target; consumers are compensated for poor performance.

What are the key process aspects of the DPP regime?

B18 The following subsections outline the main process aspects for the DPP.

98 SAIFI – System Average Interruption Frequency Index.

99 SAIDI - System Average Interruption Duration Index.

100 'Normalisation' involves using a statistical approach to identifying 'major events' that have a disproportionate impact on quality performance and removing the interruptions attributable to them from both the historic data used to set standards and from actual quality data used to assess compliance. See Attachment F.

Consideration of the context for a DPP reset

B19 Prior to each reset the Commission provides a description of the current context that is relevant to the reset of the DPP. This context is drawn from environmental scanning, and from information available to the Commission from EDBs, professional associations, consumer advocacy groups and other regulators. The context guides how the regulatory tools are applied by the Commission in the next regulatory period.

Consultation on how to reset the DPP for the next regulatory period

B20 There are opportunities for formal consultation at each DPP reset. We typically consult on:

B20.1 the proposed process for the reset

B20.2 the issues we consider are relevant context for the reset and early proposals for how to apply the DPP regime in that context (current step)[101]

B20.3 draft decisions for the DPP reset.

Stakeholder engagement

B21 We can also conduct additional stakeholder engagement throughout the regulatory period. For instance, during the period where the DPP reset is under consideration, the Commission may also host topic-specific workshops to garner detailed stakeholder feedback.

Published information

B22 We publish all relevant information on our website including:

B22.1 videos of filmed information sharing sessions and associated supporting information

B22.2 our consultation documents, such as Issues papers, Draft decision papers, and associated materials including models

B22.3 all submissions and cross-submissions received from stakeholders (with any confidential information excluded) on the Process paper, Issues paper and Draft Decision paper

B22.4 our final determination, reasons paper, and associated materials including models.

[101] Sometimes the consultation on process and contextual issues is conducted at the same time.

DPP decision finalisation and implementation

B23 Final decisions for how the DPP will be reset are determined in November of the year before the new DPP will be implemented. The new DPP will then be implemented from 1 April of the next year.

How we set the revenue path for the DPP

How the maximum revenues are specified

We limit the maximum revenue EDBs can earn

B24 As with the DPP3, in the DPP4 reset we will likely specify the maximum revenues that EDBs can earn over the regulatory period.

B25 The Act gives us a choice as to the 'form of control' (the form of price or revenue regulation) that applies to each regulated supplier.[102] This can be either:

B25.1 a price path, that limits the price (or average price) that a supplier can charge for services

B25.2 a revenue path that limits the total revenue the supplier can earn from supplying regulated services.

B26 At the 2016 IM Review, we determined that a revenue path would apply to EDBs, and our draft decisions for the current IM Review 2023 also proposes applying a revenue path for EDBs.[103]

The limit on revenue provides incentives to focus on controllable costs

B27 Setting revenue limits means that profitability depends on the extent to which EDBs control costs.[104] Actual costs may differ from forecasts for a variety of reasons, but the incentive to increase profits helps to create an incentive for EDBs to find efficiencies that result in reduced costs. This is important because, through our price resetting process described below, efficiencies benefit consumers, including through lower prices than would otherwise be the case.

B28 There is a risk that EDBs may find these cost savings by reducing investment or maintenance. Quality standards play an important role in reducing the risk of this occurring.

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102 Commerce Act 1986, section 53M(1)(a).

103 Commerce Commission, "Part 4 Input Methodologies Draft decision report" (14 June 2023), see decision SP01 on page 201.

104 In this context, where we state revenue limits, we mean either a strict revenue limit or revenue being limited by way of a weighted average price cap.

B29 Costs that EDBs have little or no control over are generally recovered through separate allowances for 'pass-through costs' and 'recoverable costs'. The items that qualify for these categories are set out in the IMs.[105]

The revenue limit setting process

B30 The DPP must specify revenue limits for each EDB for the regulatory period, as set out in section 53M of the Act. The revenue limits are set net of pass-through costs and recoverable costs. The two main components of these revenue limits are:

B30.1 the 'starting price' allowed in the first year of the regulatory period[106]

B30.2 the 'rate of change in price', relative to the CPI, that is allowed in later parts of the regulatory period.

B31 When setting this starting price under a DPP, section 53P(3) of the Act provides for two approaches:

B31.1 rolling over the prices applying at the end of the preceding regulatory period

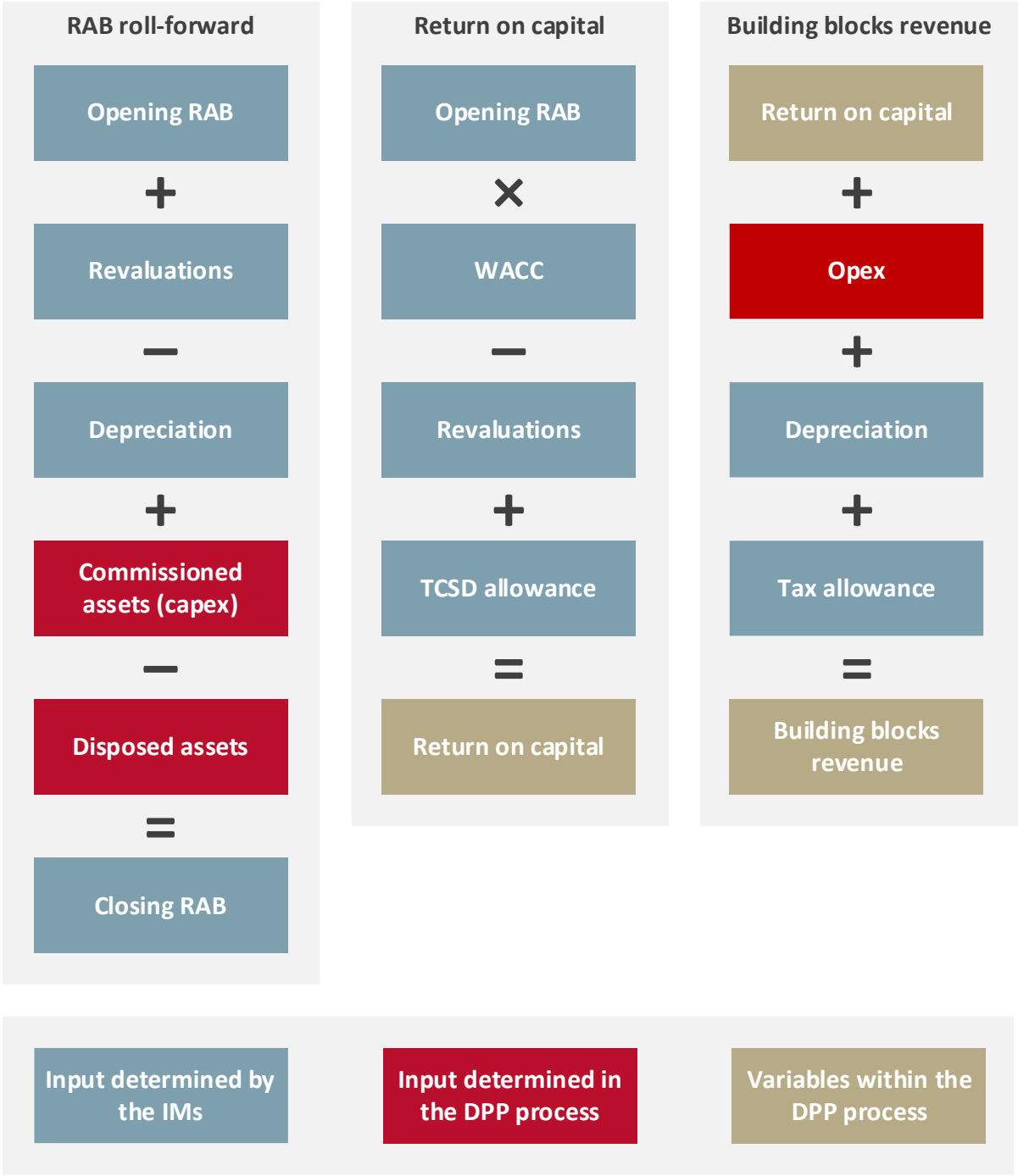
B31.2 setting prices based on the current and projected profitability of each EDB, as determined by the Commission.

B32 To assess the current and projected profitability of each EDB, we use a 'building blocks' approach, which adds up the components of an EDB's forecast costs and sets revenue limits equal to them.

[105] Commerce Commission, "Electricity Distribution Services Input Methodologies Determination 2012" (consolidated 20 May 2020), clause 3.1.3.

[106] Section 53M(1) of the Act states every price-quality path must specify in relation to prices, either or both of the maximum price or prices that may be charged and/or maximum revenues that may be recovered.

Figure B1 How we calculate BBAR



The building blocks allowable revenue approach

B33 The starting prices we set for EDBs are specified in terms of maximum allowable revenue (MAR), which is an amount net of pass-through costs and recoverable costs.[107] We calculate the MAR amount through these two processes.

[107] 'Maximum allowable revenue' is the term we use to describe the smoothed BBAR amount as forecast at the beginning of the DPP period. The maximum amount an EDB can recover in practice is defined as

B33.1 Determining a BBAR for each year of the regulatory period. This process is represented in Figure B1 above.

B33.2 Smoothing each of the BBAR amounts over the regulatory periods by forecast CPI and any applicable X-factor in present value terms. This represents the yearly changes to the revenue limit that are allowed over the regulatory period. This process is represented in Figure B2 below.

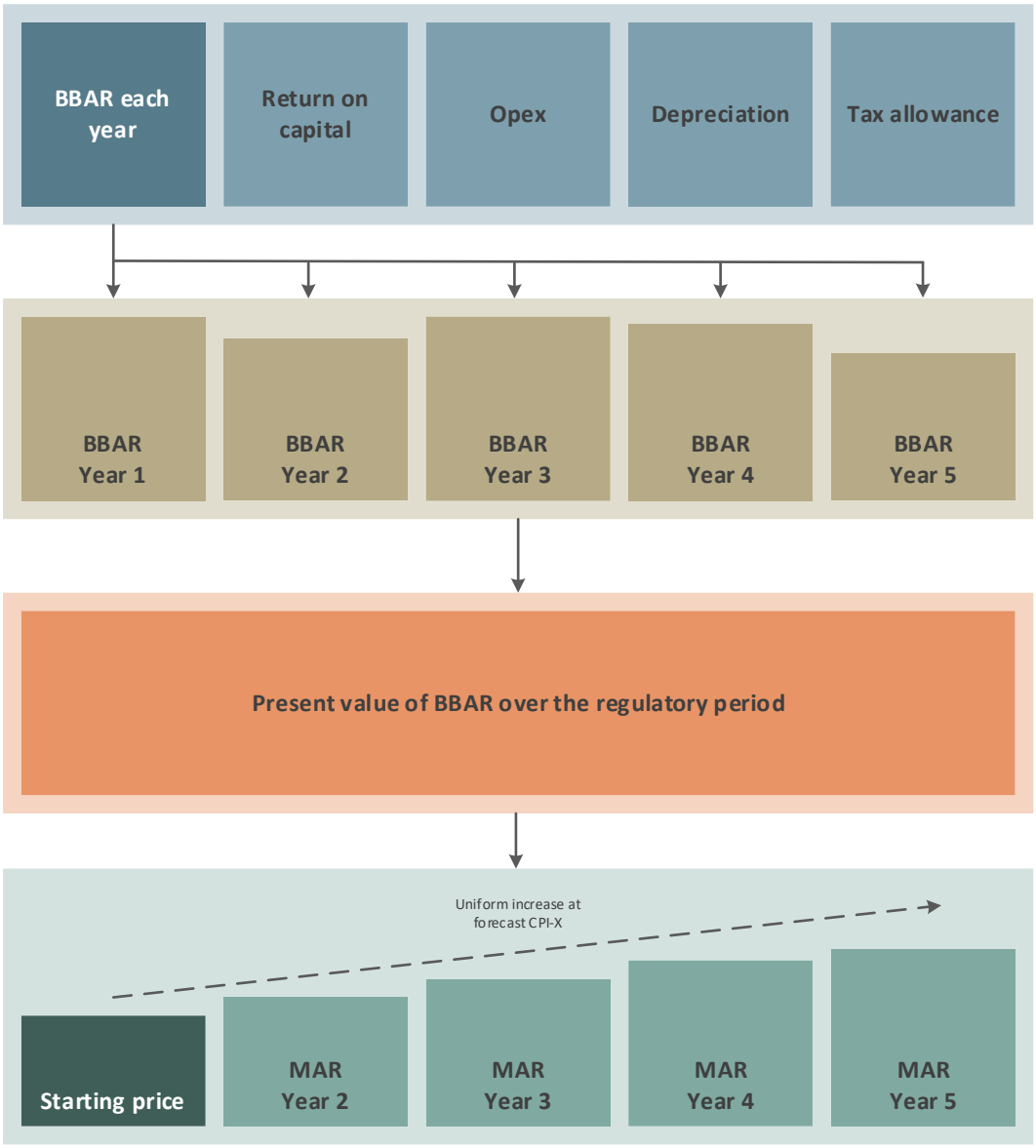
B34 We must forecast capital expenditure and operating expenditure as part of the DPP, as they are not determined by the IMs. Some other inputs come from our ID requirements, while others are specified in the IMs. Some of these ID and IM inputs have a material effect on starting prices, for example, the opening RAB (from ID) or the weighted average cost of capital (WACC) rate (determined based on the IMs).

From building blocks to starting prices

B35 The components in Figure B1 above combine as building blocks to provide total BBAR for each year of the regulatory period. This BBAR is then smoothed into annual MAR figures through applying forecast CPI and the X-factor, while keeping the present value of BBAR and MAR constant. Figure B2 below illustrates this process.

"forecast allowable revenue" or FAR. This figure is updated annually during the period for CPI and includes recovery of pass-through and recoverable costs.

Figure B2 From BBAR to MAR



Incremental Rolling Incentive Scheme (IRIS)

B36 Regulated suppliers under a revenue cap benefit from cost reductions during a regulatory period because they are permitted to earn the same revenue and keep the difference as profit.

B37 IRIS addresses an issue that occurs when price-quality paths are reset at periodic intervals. In the absence of an IRIS mechanism, the strength of the incentive on EDBs to reduce costs declines across a regulatory period, as EDBs can only retain the benefit until the reset, referred to as the 'natural incentive'.

B38 An IRIS mechanism creates a focus on making efficiency savings when they are identified rather than optimising the timing of expenditure under the natural incentive.

B39 In addition to controlling suppliers' incentive to defer savings, there are other key objectives for having an incentive mechanism such as the IRIS mechanism:

B39.1 Having an IRIS allows the control of incentive rates on opex and capex. Without an IRIS there may be significantly different incentive rates between opex and capex, which could lead to an inefficient preference for one type of expenditure over another.

B39.2 The natural incentive rate (without an IRIS) may not be sufficiently high or low. Having an IRIS could be used to determine stronger (or weaker) incentives to reduce costs during a regulatory period.

B39.3 Inherent in incentive regulation that uses revealed costs (such as the base-step-trend approach used to set DPP opex allowances) is EDBs' incentive to inflate costs in the 'base year'. The IRIS helps to mitigate this risk because it treats an increase as a negative saving.

B39.4 The opex IRIS ensures that temporary (short-term) savings are shared between EDBs and consumers. This would generally not occur without an incentive mechanism and can be beneficial for both EDBs and consumers.

What other regulatory tools are available if the DPP cannot meet the needs of a specific EDB?

B40 The DPP provides a relatively low-cost way of setting price-quality paths for regulated EDBs. Other tools exist in the overall price-quality regime to provide additional flexibility to deal with changing circumstances and uncertainty, such as Reopeners and CPPs.

B41 Under the IMs, an EDB that faces a significant change or unexpected shock, such as a significant new connection or severe infrastructure damage resulting from a cyclone, can in certain circumstances seek additional funding mid-period. This is referred to as a DPP reopener.

B42 We apply proportionate scrutiny to reopener applications. Our proportionate scrutiny principle means the configuration of the DPP, CPP, and the path change mechanisms (including reopeners) within them, should generally aim to accommodate EDBs' circumstances at a level of cost and scrutiny that is commensurate with the materiality of the changes to prices or quality experienced by consumers, within the constraints of the DPP/CPP regime. Changes that would lead to material increases in prices or a material change in the quality of service should attract greater scrutiny.

B43 Where an EDB considers substantial changes to the level of expenditure and potentially the level of quality it delivers are necessary, it has the option of applying for a CPP. A CPP provides an opportunity for individual EDBs to have alternative price-quality paths that better meet their particular circumstances, along with proportionately greater levels of assurance, customer consultation, and regulatory scrutiny.

Attachment C Summary of Input Methodologies Review 2023 draft decisions that may be implemented in the revenue path for DPP and CPP

Purpose of this attachment

C1 This attachment outlines six draft decisions from the IM Review 2023 that, if finalised, would be implemented when setting the revenue path for the DPP4 reset.

IM Review 2023

C2 Stakeholders have been consulted on draft decisions in the development of the IM Review. Accordingly, we are not inviting comments on IM draft decisions in response to this Issues paper. The six draft decisions that would be implemented when setting the revenue path for the DPP4 reset are noted here because, if we adopt the decisions as final, they would impact the DPP4 reset.[108]

Process for amending the IMs and implementing changes in the DPP

C3 We received feedback from stakeholders on the IM Review Draft decision in July 2023 (submissions) and August 2023 (cross-submissions). Analysis of the feedback is underway. Final decisions will be made in December 2023.

C4 Table C1 explains the nature of the specific aspects of the IM Review Draft decision relevant to the DPP4 reset. This table includes only the most material proposed changes that we will need to implement in the DPP. In setting the DPP, we must apply all the relevant IMs.

[108] Commerce Commission "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), paragraph 4.9; Commerce Commission, "Financing and incentivising efficient expenditure during the energy transition topic paper" (14 June 2023), Chapter 6 and Commerce Commission, "Cost of capital topic paper" (14 June 2023).

Table C1 Key proposed IM amendments for the DPP

IM Review draft decisions	Change summary
1. Changes to the cost of capital - update the WACC input parameters and WACC percentile	Our draft decision was to lower: • the leverage for EDBs to 41% – down from 42% in the DPP3 period[109] • the WACC percentile to the 65th percentile – down from the 67th percentile that applied in the DPP3 period[110]
2. Changes to IRIS mechanism (incentive scheme)	Our draft decision was to: • apply IRIS in real terms – ie, adjusted for CPI – rather than in nominal terms as it was in the DPP3 • use the midpoint vanilla WACC as the discount rate for estimating the opex incentive rate, rather than applying an uplift to the discount rate[111]
3. Changes to the Innovation Project Allowance	Our draft decision was to amend and expand the current IPA into the 'innovation and non-traditional solutions allowance' to enable more scope and flexibility to set a wider range of schemes to provide better incentives for innovation and non-traditional solutions, at DPP resets or for a CPP[112]
4. Changes to the design and structure of revenue path wash up mechanisms	We have proposed a set of changes to the specification of price IMs intended to: • change the operation of the 'secondary' control on revenue to allow more flexibility in how it is specified at each reset • better manage volatility by moving to a 'balance' approach to the wash-up rather than a 'rolling' one • combine multiple wash-up mechanisms into a single account • bring forward the timing of the wash-up for under-/over-forecasts of CPI

109 Commerce Commission "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), paragraph 4.9; and Commerce Commission "Cost of capital topic paper" (14 June 2023), Chapter 5, paragraph 5.5.

110 Commerce Commission "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), paragraph 4.12; and Commerce Commission "Cost of capital topic paper" (14 June 2023), Chapter 6.

111 Commerce Commission "Part 4 Input Methodologies Review 2023: IM Context and Summary of Draft decision" (14 June 2023), paragraph 4.25.

112 Commerce Commission "Financing and incentivising efficient expenditure during the energy transition topic paper" (14 June 2023), paragraph X60 and paragraphs 6.39 to 6.50.2.

IM Review draft decisions	Change summary – to be explained in Issues paper
5. Changes to the inflation risk	Our draft decision was to: • wash-up allowable revenue for the first year of a regulatory period when inflation differs from expected inflation • exclude from the annual revenue wash-up the difference between: ○ the return on debt for the year (including forecast inflation) ○ the return on debt for the year updated for actual inflation[113]
6. Changes to forecast depreciation	Our draft decision was to require EDBs to 'forecast' the value of depreciation for each individual existing asset for each of the disclosure years in the DPP period, which is then used as the forecast for each disclosure year. The specific calculation, asset by asset, of future depreciation will avoid the overstatement of future depreciation that occurs with the current method.[114] This is instead of using a simplified assumption that the remaining life of the total existing asset base is the weighted average life of the total assets as at the base year less the number of disclosure years from the base year to the disclosure year in question.

Further amendments to the IMs

C5 We do not currently intend to make any further amendments to the EDB IMs prior to the DPP4 reset. In previous DPP resets, it has often been desirable to make targeted IM amendments prior to a DPP reset to implement DPP policy developments.[115] As noted in our IM amendment framework, in general these amendments only relate to the rules and processes IMs rather than 'core' IMs (such as asset valuation or cost of capital).[116]

C6 With the IMs in their entirety having been reviewed, and where necessary amended so recently, at this stage we do not consider other pre-reset amendments are needed.

113 *Ibid.,* paragraph 5.66.

114 Commerce Commission "Part 4 Input Methodologies Review 2023 – Draft Decision: Report on the IM Review 2023" (14 June 2023), Draft decision AV16 on page 31 and paragraph 4.10 on page 32.

115 For example, alongside the DPP2 reset, we amended the IMs to introduce a recoverable cost to enable the revenue-linked quality incentive scheme. Commerce Commission "Final reasons paper – Electricity distribution input methodology amendments (Type 1 and 2)" (27 November 2014), Chapter 5.

116 Commerce Commission, "Part 4 Input Methodologies Review 2023: Framework paper" (13 October 2022), paragraph 2.19.

C7 However, we retain the ability to make further amendments under section 52X of the Act provided the process under section 52V is followed where the proposed amendments are material. While our current view is that we would make amendments only to correct for errors or to resolve any implementation problems discovered as part of the DPP reset, it is possible that the need for other amendments could arise through the DPP4 process. If that were the case, we would follow our usual process for IM amendments in the context of price-quality path resets.

Attachment D Forecasting operating expenditure

Purpose of this attachment

D1 The purpose of this attachment is to:

D1.1 summarise our emerging views on the approach we will take to forecasting opex for DPP4, including retaining, at a high-level, the base-step-trend approach

D1.2 identify potential refinements to our current (DPP3) approach to forecasting opex.

D2 This attachment discusses the components of our opex forecasting approach in technical detail. For a general summary of our approach to opex, see paragraphs D6 - D12 and paragraphs 3.45 - 3.59.

Structure of this attachment

D3 The first section of this attachment provides a broad overview of our base-step-trend approach to forecasting opex and our proposal to retain this approach.

D4 The following sections discuss the major parameters within the base-step-trend model we will need to make decisions on. Specifically:

D4.1 the choice of base year

D4.2 trend factors that capture a change in EDB scale

D4.3 trend factors that capture changes in EDB input prices

D4.4 trend factors that capture forecast changes in opex partial productivity

D4.5 our framework for assessing step changes

D4.6 our emerging views on considering potential step changes, the evidence that may be necessary to support them, or alternative ways of dealing with these issues.

D5 Alongside this paper, we will also publish the initial update of the econometric models used in forecasting scale growth.

High-level approach

Base-step-trend model

D6 We are proposing to retain the 'base-step-trend' approach used to forecast opex that we have applied in successive DPP resets, consistent with our intention to retain approaches from DPP3 where they remain fit for purpose. This approach involves taking a base level of opex, carrying this forward by certain trend factors, and applying any known step changes.

D7 We consider it is appropriate to forecast opex in this way because most opex relates to recurring activities. As such, the expenditure can be expected to be influenced by certain known and predictable factors.

D8 While other approaches such as a 'bottom-up' forecasting approach based on the activities EDBs propose to undertake and their associated costs may be possible, we do not consider such a detailed assessment is appropriate in section 53K terms or workable practically for a DPP with 16 suppliers subject to it. Such an approach (alone if in combination with a base-step-trend model) may be possible under a CPP or an IPP (as is the case for Transpower and Chorus) where these activities and costs can be subject to consumer consultation and independent verification.

Potential changes

D9 At the same time, the application of the base-step-trend model needs to remain flexible given the changing and less certain context we discussed in **Chapter 2**. To achieve this, the components within the overall model may need significant revisions to ensure opex allowances reflect EDBs' forecast costs. We address these potential changes in the following sections on trend factors and step changes.

Relevance of the opex forecasts to incentives

D10 Our overall approach to opex is a 'revealed cost' one. EDBs are rewarded for improvements in operating efficiency as they achieve them, relative to their own past performance. These gains are then shared with consumers.

D11 To achieve this, we need to remove the effect of changes explained by other factors the EDB cannot completely control: scale growth, cost increases, sector-wide productivity, and step changes. Each EDB's own achieved level of efficiency is used as the comparison point given the prohibition on comparative benchmarking.

D12 Opex has a direct effect on the revenue distributors can earn. Opex represented approximately 40% of BBAR in DPP3, as forecast opex is recovered in the year it is forecast to be spent.[117] From an efficiency point of view, the opex allowance we set is the baseline against which any opex IRIS gains and losses are measured.[118]

Determining the base year

D13 As with the DPP3 reset, we propose using year four of the prior period (year-ending 31 March 2024) as the base year for opex forecasting for DPP4. Our reasons for proposing this are two-fold.

D13.1 Using the most up-to-date information to forecast an EDB's future opex best captures the EDB's current level of achieved efficiency. This helps minimise any excess profits (consistent with section 52A(1)(d)) and together with the IRIS mechanism promotes future incentives to improve efficiency (consistent with section 52A(1)(b)).

D13.2 To the extent that the base year contains any 'one-off' increases or decreases in opex that do not reflect an EDB's ongoing base level of opex, the IRIS 'base year adjustment term' ensures these increases or decreases are treated as temporary.

D14 When we make the draft DPP decision in May of 2024, actual opex data for 2024 will not be available. We intend to make use of actual opex data for 2023 in the draft, with an update to include 2024 data before the final decision in November 2024.

Scale trend factors

Problem definition

D15 As an EDB's network grows, the cost of maintaining and managing its network can also be expected to grow. We approximate this 'output' change using an econometric method, and to do this we need to determine:

D15.1 what level of disaggregation in opex we use as the dependant variable(s)

D15.2 what factors we use as the independent variables ('drivers' of the expenditure)

D15.3 the specific parameters of any regression analysis (such as time-period, exclusion of outliers, cost escalators used to deflate historical costs)

[117] Please refer to Attachment B for an explanation of BBAR.
[118] Please refer to Attachment B for an explanation of IRIS.

D15.4 how to forecast these drivers.

Recapping our approach in DPP3

D16 In DPP3, we:

D16.1 disaggregated costs to network and non-network level

D16.2 investigated different drivers and used both ICP count and line length as drivers

D16.3 performed log-log multiple regression (OLS fitting) excluding outliers

D16.4 forecast ICP growth using regional Statistics NZ household growth data, and line-length growth using an extrapolation of past growth.[119]

D17 For log-log regression models, the coefficient for each driver can be interpreted as an 'elasticity'. For example, a value of 0.45 means a 1% increase in the driver variable is correlated with a 0.45% rise in cost variable.

D18 In this section we recap and revisit our modelling from DPP3, which used data from 2013-2019. We assess predictions from this model against reported values for 2020-2022, reassess elasticities when we fit these models including data from 2020-2022, and consider other possible drivers including peak and total energy delivery.

D19 The elasticities between opex and these drivers from DPP3 are shown in Table D1 below.

Table D1 DPP3 opex elasticities

Opex category	Elasticity to ICP growth	Elasticity to circuit length growth
Network opex	0.4514	0.4727
Non-network opex	0.6520	0.2188

Assessment of the performance of our DPP3 econometric model

D20 We have tested whether these trend factors performed well over DPP3. This includes considering whether the right trend factors were chosen and whether the models were correctly specified. These are not the only factors that can impact model performance. Some of the reasons may impact our assessment and some do not, for example:

[119] Statistics New Zealand, "Family and Household projections: 2018(base)-2043" (15 December 2021).

D20.1 The overall accuracy of the forecasts of inputs, for example whether circuit length growth was forecast accurately. However, our assessment of the DPP3 trend factor performance is not impacted by the accuracy of these forecasts. This is because we are testing the trend factors against actual observed drivers. We are interested in any views on whether there are better approaches to forecasting growth in the underlying drivers.

D20.2 Whether inflation/input price factors accurately reflect changes in EDBs nominal input costs. The trend factor analysis is done on real rather than nominal cost values. However, this implicitly assumes that the conversion from nominal to real has been done using the correct index. If the index is inaccurate this will impact our assessment of DPP3 trend factor performance. For example, if actual input price inflation was higher during the forecast period than the forecast index allowed for, then the estimates of trend factors will look too low relative to what was achieved. We discuss potential changes to the escalation approach below, and would reapply any updated escalation series as part of any updated scale driver analysis.

D20.3 Changes in EDB productivity. Similar to the above effect of input price inflation, unforecast changes in EDB productivity may affect the accuracy of scale driver elasticities.

D21 Furthermore, the model may have been the best model given the information available at the time relative to realistic alternatives. Even if the model under- or over-estimated, it does not necessarily mean that model did not perform well. Forecasts will always be subject to uncertainty.

D22 The analysis below partially takes into account a step-change due to IFRS16 operating lease treatment changes. Consistent with our DPP3 decision, no other step changes are accounted for.

D23 We have chosen to undertake three tests of model performance:

D23.1 Mean square error (MSE) for years after 2019 compared to before. The MSE is a measure of the quality of the estimator and is always positive. The 'error' in this case is the difference between the network/non-network costs predicted by the model (in log terms) and what was achieved. As the error approaches zero the distance between the predicted costs and achieved costs approaches zero.

D23.2 Mean absolute error (MAE) for years after 2019 compared to before. The MAE is an alternate measure of the quality of the estimator.

D23.3 Mean error (actual value less estimated value) for years after 2019 compared to before. The mean error provides some indication of the direction of errors. However, it may be impacted by outliers.

D24 We find that for both network and non-network costs the econometric model generally under-predicts scale effects for years post-2019. Regardless of this finding, our judgement is the model performed well. This judgement is primarily based on the performance of the model in terms of MSE and MAE as explained below. In terms of the mean error performance post-2019:

D24.1 as noted above, this could be an effect of inaccurate cost escalation, with EDBs facing higher input price increases than producers in the economy as a whole

D24.2 this could represent a structural break in the relationship between opex and the identified drivers, and may warrant a shorter input data timeseries as discussed below at paragraphs D42 – D46

D24.3 may be a one-off effect of the unique circumstances from 2020-2023 given the COVID-19 pandemic and subsequent supply-chain challenges.

Network opex

D25 The table below provides estimates of the MSE, MAE and mean error by year. Overall, the model performed well even for years following 2019. The MSE and MAE are comparable regardless of whether the year in question was a forecast year or whether information was already available when the prediction was made. The mean error tells a slightly different story, where the direction of the error appears to increase slightly as we move forward from 2019.

D26 This suggests the model has under-predicted network scale growth post-2019.

Table D2 Network opex forecast performance

Year	MSE	MAE	Mean Error
2013	0.0948	0.244	-0.123
2014	0.0797	0.238	0.00234
2015	0.109	0.286	-0.0440
2016	0.0976	0.265	0.00505
2017	0.0878	0.228	0.0416
2018	0.0901	0.242	0.0145
2019	0.0598	0.192	0.0465
2020	0.0660	0.213	0.0913
2021	0.0581	0.180	0.0703
2022	0.0476	0.155	0.1090

Non-network opex

D27 We undertook the same analysis for non-network costs. We find very similar results as for network costs, with the mean error measure in the table below showing a stronger trend of moving upwards as we move forward from 2019.

Table D3 Non-network opex forecast performance

Year	MSE	MAE	Mean Error
2013	0.100	0.243	0.0106
2014	0.0880	0.230	-0.0238
2015	0.0838	0.237	-0.0161
2016	0.0995	0.265	-0.00693
2017	0.102	0.270	0.0214
2018	0.101	0.260	0.0768
2019	0.108	0.275	0.109
2020	0.125	0.294	0.134
2021	0.0989	0.268	0.143
2022	0.132	0.306	0.176

DPP3 model fit over extended data 2020-2022

D28 As another way to test the driver elasticities from our DPP3 modelling, we have reapplied the same approach to include new data. DPP3 models for network and non-network costs were fitted to data from 2013-2016. We have now applied the identical approach to data from 2013-2022 to see what change this has on the ICP and lines elasticities found in DPP3.

D29 We have rerun the model-fitting procedure from DPP3 to fit separate log-log models for network costs and non-network costs against ICP count and lines length.[120] We have included the same outlier elimination procedure, where outlier data points are iteratively identified and removed until the model no longer fails three out of four outlier tests. These outlier tests are DFITS, Cook's distance, Welsch's distance, and leverage.

D30 We find no significant change in the elasticities for ICP and lines when adding the 2020-2022 data. Small movements in these values are within the confidence intervals from their standard errors. This indicates our modelling approach is robust to the change in the date range of data. It is reasonable to assume the same approach applied to DPP4 will remain appropriate, and that the elasticities for ICP and line length are likely to be significantly similar to the DPP3 values.

[120] Econometric modelling for the DPP3 reset was done using Stata, this replication and extension has been done using R. For this we used data up to 31 March 2022.

D31 Likewise, when comparing the effect of including or excluding outliers, we find the elasticities for ICP and lines do not change significantly. The outlier elimination procedure for DPP3 data removed five data points out of 203 for network costs, and three for non-network costs. Our modelling approach, and the elasticities it returns are robust to the small number of data outliers which we have accounted for.

D32 The table below shows the results for the network cost model with and without outliers. The difference in ICP and line length elasticities between these values and the DPP3 values in Table D1 is within the confidence intervals of these estimates. Directionally, the small increase in line length elasticity is consistent with our findings on model performance in Section 3 and particularly the mean error suggesting that network costs may have grown faster than predicted from the DPP3 model post-2019.

Table D4 Re-estimation of network opex

Model	Model type (DPP3 model fit to updated data 2013-2022)	Elasticity to ICP growth	Elasticity to circuit length growth	Adjusted R-squared
Model 1	Network opex	0.4261*	0.5389*	0.9203
Model 2	Network opex – Outliers removed	0.4425*	0.5077*	0.9182

*Significant at greater than 0.01%

D33 The table below shows the results for the network opex model with and without outliers. Again, the changes from DPP3 values are within confidence intervals, as is the difference between removing outliers or not.

Table D5 Re-estimation of non-network opex

Model	Opex category (DPP3 model fit to updated data 2013-2022)	Elasticity to ICP growth	Elasticity to circuit length growth	Adjusted R-squared
Model 3	Non-network opex	0.6194*	0.2507*	0.8905
Model 4	Non-network opex -Outliers removed	0.5986*	0.2795*	0.9002

*Significant at greater than 0.01%

Potential changes for DPP4

D34 In addition to the re-estimation based on additional data presented above, we have identified two other potential changes to our modelling approach:

D34.1 the inclusion of additional or different opex drivers

D34.2 taking a 'rolling' approach to the historical input data used in estimating the elasticities, where new data replaces old data rather than being added to the sample set.

D35 We have also considered the impact of clustering within the data set, and the impact this might have on any conclusions.

D36 Finally, as discussed in the following section on cost escalation, were we to adopt a different forecast cost escalation series (such as an EDB-specific escalator or the use of a CPI-only approach), we would also apply this escalator on a backwards-looking basis when estimating any scale elasticities.

Inclusion of additional opex drivers

D37 In this section we consider alternative independent variables (drivers) of opex. Earlier feedback has suggested we examine network peak and total energy delivered as alternative cost drivers in our modelling. We have also reviewed model fits for a range of different drivers, within our log-log regression approach. There are strong correlations between ICP count, lines length, peak and total energy with all in general increasing or decreasing together. Continuing to add correlated variables does not always improve a model, and in fact can degrade its interpretation and predictive accuracy by overfitting noise or quirks in the data.

D38 The result of our model investigation is that ICP and lines remains our preferred model for both network and non-network cost scaling. The model summary tables below compare model coefficients (with their standard error in brackets underneath) and fit metrics for different models of network and non-network opex.

D39 Here column (1) is for the base model of ICP and lines only. Column (2) is adding peak, column (3) for adding delivery, and column (4) adding capex.

D40 Adding peak or delivery does not improve the fit of either network or non-network models, and the peak and delivery coefficients are not well resolved. We eliminate these as ways to improve our models. From a broader exploration of related models (eg, lines + peak, or ICP + delivery etc) we find that of these correlated variables, the best model fits are for ICP + lines.

D41 An interesting preliminary finding is that adding capex to ICP and lines improves our non-network opex model, although not the network opex model, when measured by adjusted R-squared and residual errors.

Table D6 Comparison of log-log network opex regression models, for data 2016-2022

	Dependent variable:			
	log_network			
	icp+lines	icp+lines+peaks	icp+lines+delivery	icp+lines+capex
	(1)	(2)	(3)	(4)
log_icp	0.426***	0.458***	0.414***	0.477***
	(0.030)	(0.064)	(0.069)	(0.040)
log_lines	0.536***	0.541***	0.533***	0.580***
	(0.037)	(0.038)	(0.039)	(0.043)
log_peak		−0.032		
		(0.056)		
log_delivery			0.014	
			(0.072)	
log_capex				−0.080*
				(0.041)
Constant	−0.221	−0.447	−0.163	−0.339*
	(0.173)	(0.425)	(0.352)	(0.183)
Observations	201	201	201	201
R^2	0.931	0.931	0.931	0.932
Adjusted R^2	0.930	0.930	0.930	0.931
Residual Std. Error	0.256	0.257	0.257	0.255
	(df = 198)	(df = 197)	(df = 197)	(df = 197)
F Statistic	1,336.198***	887.942***	886.470***	904.368***
	(df = 2; 198)	(df = 3; 197)	(df = 3; 197)	(df = 3; 197)
Note:				*p<0.1; **p<0.05; ***p<0.01

Table D7 Comparison of log-log non-network opex regression models, for data 2016-2022

	Dependent variable:			
	log_nonnetwork			
	icp+lines	icp+lines+peaks	icp+lines+delivery	icp+lines+capex
	(1)	(2)	(3)	(4)
log_lines	0.256***	0.239***	0.253***	0.148***
	(0.049)	(0.050)	(0.052)	(0.053)
log_peak		0.108		
		(0.070)		
log_delivery			0.012	
			(0.091)	
log_capex				0.217***
				(0.050)
log_icp	0.616***	0.506***	0.606***	0.471***
	(0.039)	(0.081)	(0.087)	(0.050)
Constant	0.437**	1.204**	0.487	0.746***
	(0.218)	(0.543)	(0.446)	(0.220)
Observations	196	196	196	196
R^2	0.891	0.893	0.891	0.901
Adjusted R^2	0.890	0.891	0.890	0.900
Residual Std. Error	0.316	0.314	0.316	0.302
	(df = 193)	(df = 192)	(df = 192)	(df = 192)
F Statistic	790.880***	531.796***	524.573***	582.866***
	(df = 2; 193)	(df = 3; 192)	(df = 3; 192)	(df = 3; 192)
Note:				*p<0.1; **p<0.05; ***p<0.01

D42 In a context where EDBs are anticipating a greater focus on undertaking capital projects in preparation for significant demand growth, there may be good reason to further investigate the inclusion of capex as a driver in our approach to forecasting opex.

D43 The capex elasticity in the network cost model (4) in Table D6 is negative (-0.080 with standard error 0.041). At face value this suggests that increasing capex is associated with decreasing network opex. While this may make some sense, this value:

D43.1 is not statistically significant, being within 2 standard errors of zero. (Moreover, when we apply the robust standard errors procedure (see next section) this standard error more than doubles to be greater than the value)

D43.2 does not materially improve the explanatory power of the model versus the base-case model, increasing the adjusted R-squared by only 0.001.

D44 On this basis, we do not propose pursuing capex as a candidate variable for modelling network opex.

D45 In contrast, the capex elasticity in the non-network model is statistically significant (0.22 with standard error 0.05) and adding capex to the ICP + lines model does improve model metrics. This conclusion stands after considering robust standard errors discussed below. There are modelling grounds to further consider capex as a driver of non-network opex.

D46 We are interested in your views on the initial finding that capex is a significant driver of non-network capex but not network capex. One possible explanation is that network activities associated with projects are much more likely to be capitalised as they contribute to the construction of a specific asset, whereas non-network costs necessary to support delivery of an investment programme may not be.

Rolling forward the date range for DPP4

D47 The analysis of the econometric model's performance in mean error terms over DPP3 presented above at paragraphs D20 – D27 may suggest that the underlying relationship (elasticity) between the drivers and opex has changed.

D48 One response to this would be to limit the input dataset to fewer, more recent years, with the additional data available since the 2019 reset replacing the oldest data in the series (2013-2015).

D49 However, reducing the sample size will eventually impact the robustness of the regression analysis, so it is only possible up to a point. We also need to consider whether the years from 2020 to 2023 reflect a 'new normal' of EDB operations, or whether the unique circumstances of the COVID19 pandemic and its aftermath create temporary distortions.

Applying robust standard errors to data clustered by EDB

D50 We fit the trends between costs and scale drivers over data from 29 EDBs. When plotted, the data from individual EDBs are generally grouped into mostly non-overlapping 'clusters' of points. Calculating 'robust standard errors' is a typical addition to regression analysis of clustered data. This can improve the accuracy in determining which drivers are statistically significant and which combinations of drivers provide the best network and non-network cost models. Applying robust standard errors to the models fit above does not change the elasticity values themselves but does increase their standard errors (ie, widens their confidence intervals). It strengthens the key conclusions:

D50.1 network and non-network cost models with lines and ICP variables remain significant

D50.2 including peak and delivery does not improve these models

D50.3 from a modelling point of view, it is worth considering the addition of capex to the non-network opex model, but not to the network opex model.

Input price trend factors

Problem definition

D51 The cost of the inputs (labour, materials, and services) EDBs require to deliver the outputs expected of them changes over time, for predictable reasons beyond their control. Put another way, the opex allowances we produce in constant-price terms must be adjusted for inflation, to be incorporated into the financial model.

D52 The proposal as part of the draft 2023 IM Review decision to move to a 'real IRIS' (one where gains and losses in efficiency are measured on an CPI-adjusted basis) would reduce the CPI inflation risk associated with opex escalators.[121] However, if this draft decision is finalised, EDBs will still be exposed to real prices effects (input price changes relative to CPI inflation).

[121] Commerce Commission, "Financing and incentivising efficient expenditure during the energy transition topic paper" (14 June 2023), see Chapter 4, paragraphs 4.135-4.161.

D53 In a higher and less predictable inflation environment, where different categories of inputs may be subject to different supply constraints or demand pressures, these real prices effects can have a material impact on EDB profitability.

D54 As set out below, the forecast escalators we have previously used were under-forecast for DPP3. However, this is largely explained by CPI being higher than anticipated. Were we to retain a nominal approach to efficiency incentives (a nominal IRIS), replicating this approach for DPP4 could have a material impact on maintaining an ex-ante expectation of a normal return and EDBs' incentives to invest or conversely limits on excessive profits. Under the proposed real IRIS approach, this CPI difference is effectively washed-up for.

D55 However, it is possible that forecast real price effects (either for producer inputs generally, or for EDB inputs specifically) will differ from general inflation. We consider options for addressing this residual effect at the end of this section. In the follow section on step changes, we also consider the use of step changes for one-off changes in specific input costs.

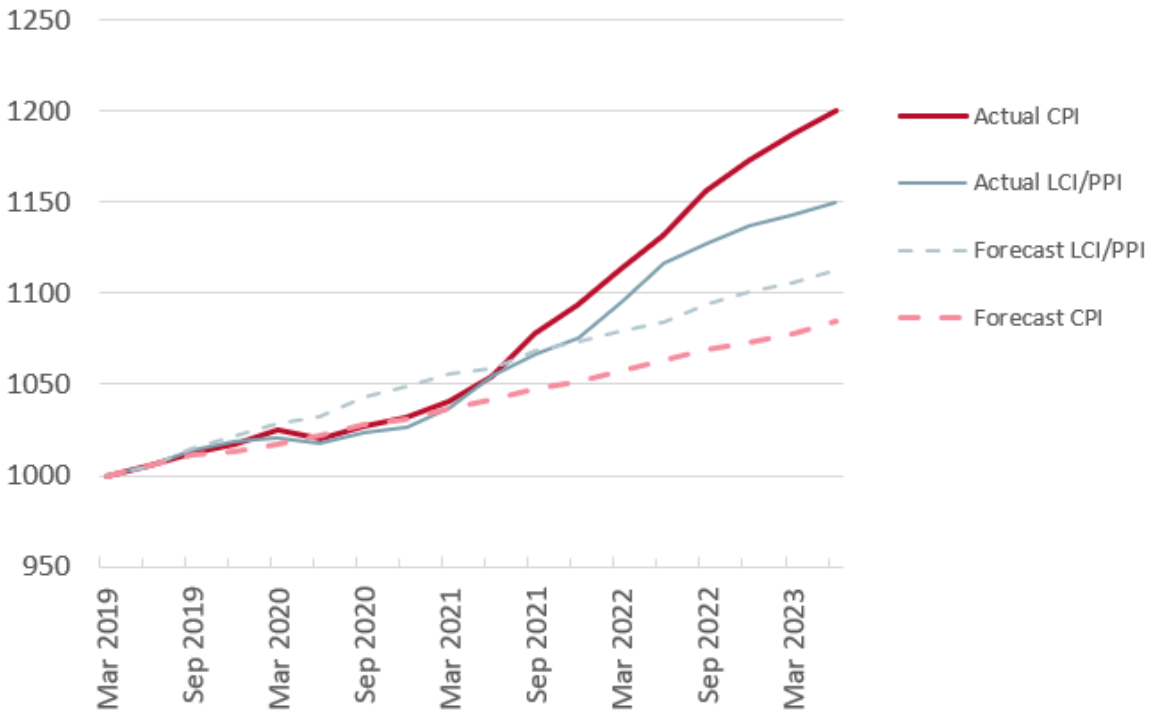
Approach in DPP2 and DPP3

D56 In both the most recent EDB DPP resets, we applied a blend of the all-industries LCI and PPI, using forecasts prepared by NZIER.[122] We may retain this approach for DPP4, but are considering refinements and changes in light of developments over DPP3.

D57 As shown in Figure D1, the forecast LCI/PPI escalator we applied for DPP3 has so far resulted in an under-forecast of cost escalation.

[122] Commerce Commission, "Default Price-Quality Paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019), see Attachment A.

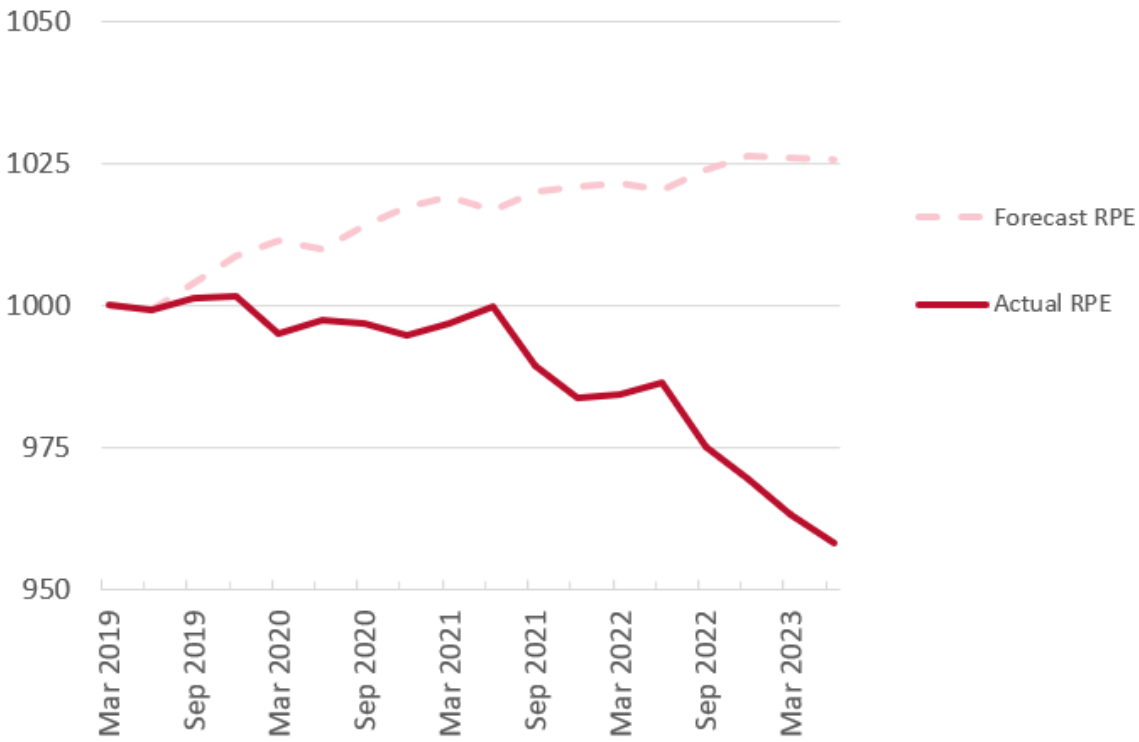
Figure D1 Cumulative DPP3 forecast versus actual inflation



D58 Looking at the comparison with forecast and actual CPI, much of the difference in the LCI/PPI series can be explained by the difference in general inflation. A real IRIS (if implemented) will adjust for the impact of CPI inflation, meaning what would matter is the forecast and actual escalation series net of CPI – or the real price effects.

D59 As shown in Figure D2, our forecasts of real price effects for DPP3 have resulted in an over-forecast up to this point in the DPP period. Under a nominal IRIS (as applied in DPP3) it is the overall escalation forecast shown in Figure D1 that matters for incentives and profitability. Under a real IRIS (as proposed in the draft IM decision) it is the escalation forecast net of CPI shown in Figure D2 that matters.

Figure D2 Cumulative vs actual DPP3 real price effects



Changes we are considering

D60 In addition to retaining the DPP3 approach described above, we are also considering whether RPE forecast accuracy could be improved by either:

D60.1 commissioning a sector-specific forecast series based on a basket of input commodities and services that better reflects the make-up of EDBs' input costs

D60.2 applying a 'CPI-only' approach – effectively setting a 0% real price effect forecast.

Sector-specific approach

D61 For the DPP3 reset, we decided not to apply a more specific escalation series (the LCI and PPI for Electricity, Gas, Water, and Waste (EGWW) services) on the basis that:

D61.1 the additional specificity was not likely to improve forecasts materially given the close long-term correlation between the all-industries and sector-specific indices[123]

[123] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision: Reasons paper" (29 May 2019), Attachment A, paragraph A108.

D61.2 for the PPI specifically:

D61.2.1 the index was volatile due to the inclusion of energy costs[124]

D61.2.2 there were issues with its composition, as it included the output cost of electricity distribution services themselves, creating a circularity[125]

D61.3 'off-the-shelf' forecasts were not readily available.[126]

D62 As shown below in Figure D3 and based on the feedback we have heard in other consultation processes, we are revisiting the assumption that the 'all industries' series is a suitable proxy for EDB input costs. Over the medium to long-term, different industries have shown sustained different levels of real input price changes. If there is reason to believe this will persist, then an EDB-specific escalator might be justified.

D63 While our concerns about the EGWW index specifically remain, a customised EDB index could be designed to exclude inappropriate inputs like energy or distribution services themselves.

D64 Note that this approach would only apply on a forecast basis and would not be subject to a wash-up over and above the real IRIS CPI wash-up described above. While general inflation is beyond EDBs' control, their own input costs are not, and applying a wash-up to real price effects would undermine incentives to control costs and improve efficiency (contrary to section 52A(1)(b)).

D65 Based on our experience in the Transpower and Chorus reset processes, we do not consider forecasting at this level of detail is necessarily unduly high cost given the materiality of the impact on expenditure and revenue allowances. [127]

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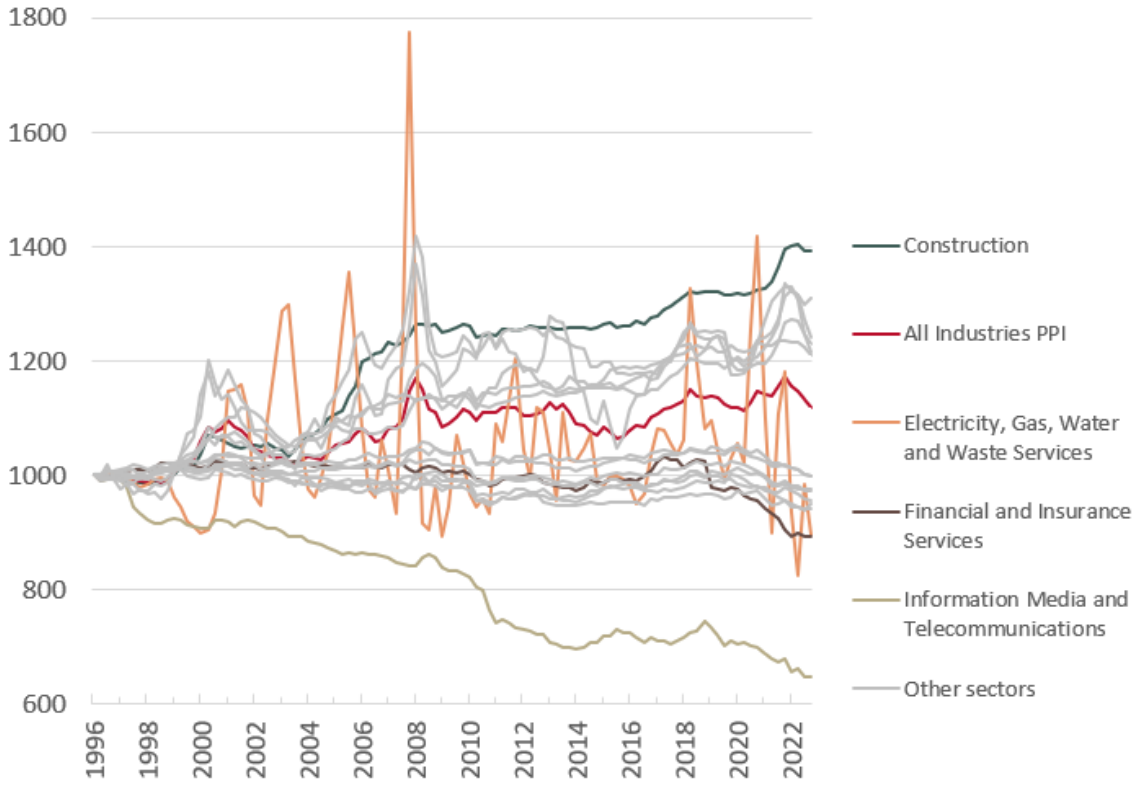
124 *Ibid*., paragraph A109.
125 *Ibid*., paragraph A111.2.
126 *Ibid*., paragraph A111.1.
127 Transpower "RT03 Cost escalation model – RCP3" (November 2018); NZIER "Description of Chorus Price Index information" (31 March 2020).

Figure D3 Comparison of long-term sector-specific PPI (inputs) real price effects



D66 To undertake this analysis, we would require evidence of what commodities and other services best reflect EDBs' costs.

D67 In terms of level of detail, we would likely apply the escalation series to either:

D67.1 all categories equally

D67.2 a separate mix of inputs for network and non-network opex.

D68 Examples of how this could affect RPE forecasts are shown in figures D4 and D5 below for select PPI and LCI components. We note that differences are more pronounced for PPI inputs than for labour ones.

D69 On the one hand, a single series for all opex (the approach taken in DPP3) is more straight-forward. On the other hand, applying escalation at the network/non-network level would account for the different mix of opex categories EDBs have.

D70 It may also make sense to treat certain identifiable categories of opex separately. In particular, we are interested in whether escalating insurance separately would help mitigate the issues with insurance costs identified below in the section on step-changes.

Figure D4 Cumulative real price effects for selected PPI components over DPP3

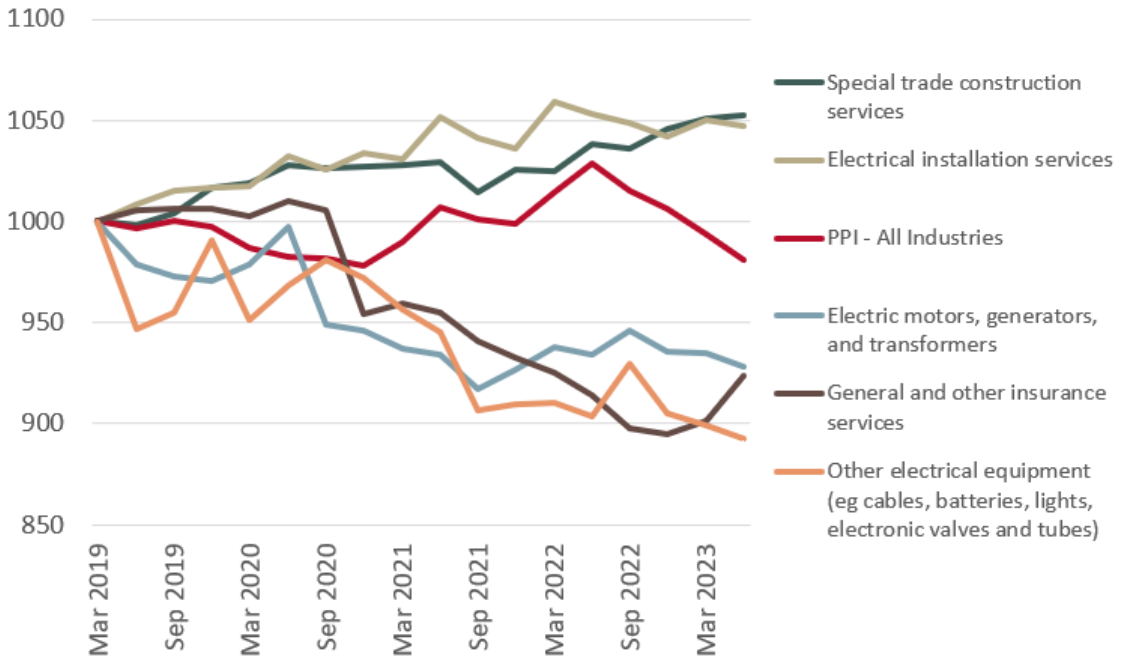
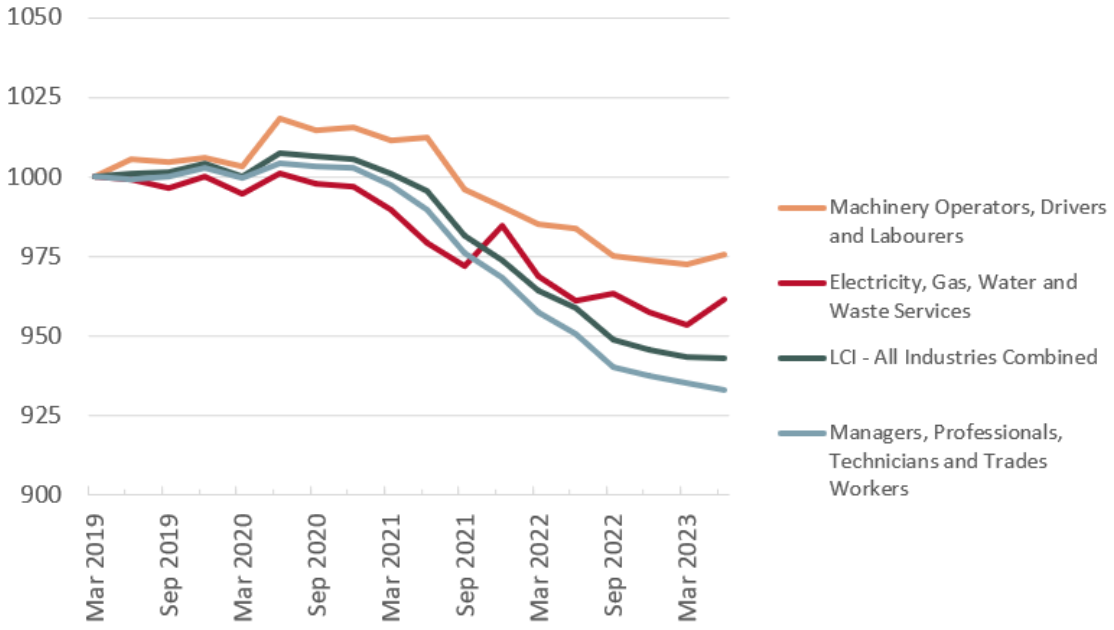


Figure D5 Cumulative real price effects for select LCI series over DPP3



D71 At this point we do not intend to explore supplier or region-specific forecasts. As noted in DPP3, not only would this go against the principle that the DPP applies the same or substantially similar treatment to all suppliers but given the nationwide markets for many of the relevant inputs, we do not consider it would materially improve any forecast.[128]

CPI-only escalator

D72 Given the lower materiality of the escalator decision assuming the move to a real IRIS, it may not be necessary to include a specific cost escalator over and above CPI forecasts.

D73 Advantages of this approach are that it is simple, relatively low-cost, and avoids the risk of spurious accuracy in forecasting how input prices may change at a sector or commodity specific level.

D74 Under any approach to forecasting RPE, EDBs would still be exposed to real input cost risk, an outcome we consider appropriate as it gives them an incentive to manage their real costs. This would effectively set an RPE forecast of 0% for all opex, with the assumption that the risk of over- or under- forecasting RPE is symmetric.

Links with other forecasting decisions

D75 The choice of escalators matters for forecasting opex in real terms, but it also affects any analysis of productivity and scale elasticities on a historical basis. For consistency, we intend to apply the same series to any backwards-looking analysis.

D76 For our capex forecasts, we will explore a similar approach to the CGPI.

Partial productivity trend

Problem definition

D77 Industry-wide changes in productivity can result in more (or less) output per unit of input. To reduce the risk of general productivity changes giving distributors windfall gains or losses, the opex allowance should be adjusted by a productivity factor.

D78 For DPP3, we set a 0% forecast PPF drawing on evidence from an update of the 2014 PPF study and on international comparisons for the sector.[129] While we are interested in long-term trends in productivity, we consider that we need to update this productivity analysis to reflect changes in the sector over the past 10 years.

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128 Commerce Commission, "Default Price-Quality Paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019), paragraph A135.

129 Commerce Commission, "Default Price-Quality Paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019), Chapter 5, p. 107.

D79 Separate from the DPP4 process, we are undertaking a study of EDB efficiency and productivity as part of our summary and analysis work.[130] The first phase of this process will focus on the productivity of the sector as whole. We intend to use the outcomes of this analysis to support our decision making on the opex PPF decision.

Framework for assessing step changes

D80 Step changes are intended to reflect known and predictable opex changes common to EDBs that are not already captured elsewhere in regulatory allowances.

D81 This section sets out the criteria that we intend to apply when assessing whether any opex step changes are necessary for DPP4. As part of this, we provide guidance on the level of supporting evidence that will be required for us to consider a step change where it is proposed by stakeholders.

D82 The following section then identifies categories of step changes that may be relevant for DPP4, based on feedback that we have received from stakeholders to date, and discusses each potential step change in light of the proposed criteria.

D83 Our goal is to provide stakeholders with guidance on how we will assess proposed step changes, with a view to soliciting complete and relevant evidence so that we are able to consider proposals. We are seeking input from stakeholders on the criteria and our intended application of these, in addition to views on other step changes that may be put forward.

Proposed framework for considering step changes

D84 Setting opex allowances by trending forward the base year does not capture 'step changes' in expenditure expected during the regulatory period. These step changes can have a material impact on EDBs' revenue, and EDBs have an incentive to seek the inclusion of as many (positive) step changes as possible. As such, we need to have a robust basis for considering whether to include them.

D85 At a high-level, we propose to retain a defined set of step change criteria. However, given the changing context outlined in Chapter 2 and the new challenges EDBs may face, we are conscious that these criteria may need broadening and more clarity provided about how we intend to apply them, including the evidence necessary.

D86 These set an appropriately high threshold for evidence, due to the presence of information asymmetry around positive and negative step changes. We consider that this approach is in the best long-term interest of consumers.

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[130] Commerce Commission "Commerce Commission – Stakeholder update on reviews of EDB 2023 AMPs and efficiency" (31 August 2023).

D87 Under the current criteria, a step change must:

D87.1 be significant

D87.2 be robustly verifiable

D87.3 not be captured in the other components of the DPP allowance (base year, trend factors, capex, pass-through and recoverable costs, or reopeners)

D87.4 be largely outside the control of the distributor

D87.5 in principle, be applicable to most, if not all, distributors.

D88 We consider it is important to assess step changes against criteria which align with the purposes of section 52A of the Act. We also consider that our approach should reflect the proportionate scrutiny principle. That is, our assessment of step changes should be commensurate with the materiality of the potential impact on prices or quality experienced by consumers. It may not be proportionate to assess very costly or complex step changes within the constraints of the DPP regime. In these circumstances, a CPP may be more appropriate.

D89 We describe the criteria and explain our intended interpretation of the criteria below.

D90 We also give examples of the types of evidence that we consider necessary to assess proposed step changes. It is important to note that the evidence EDBs can provide is not limited by these examples. EDBs should seek to address all the criteria in their proposals for a step change to be considered.

Significance

D91 Not every forecast step-change will be material enough to justify the evidentiary burden on EDBs and the effort to assess its validity (in terms of the criteria set out here) by the Commission and other stakeholders. This is not a matter of a precise dollar or percentage-terms threshold. Consistent with the proportionate scrutiny principle, a smaller step-change with clear drivers and an objectively assessable cost may be appropriate to include, whereas a change of similar magnitude with less certain drivers and costs that are more difficult to estimate with certainty (without substantial analysis) may not be.

D92 We consider a step change to be significant if allowances are insufficient to cover the costs without a step change. We would consider evidence to show that EDBs have taken reasonable steps to control the cost. We only consider significant but well understood costs due to the principle that the DPP should be a low-cost regime.

Robustly verifiable

D93 For a proposed step change to be robustly verifiable, the evidence EDBs provide us must be such that we can establish whether the key elements of our criteria have been met with sufficient confidence. In particular, this includes knowing with reasonable certainty the costs involved.

D94 We consider both the likelihood and efficiency of a step change to be important in relation to the objectives of Part 4, that suppliers are limited in their ability to extract excessive profits and that they are incentivised to improve efficiency, consistent with section 52A(1)(b) and (d).

D95 Accordingly, to be considered, step changes must be supported by quantitative estimates of costs over the DPP4 period. This evidence should:

D95.1 clearly identify the assumptions and data sources underlying the estimates and provide justification that these are reasonable

D95.2 clearly identify the activities and services associated with the additional costs. (For example, a step-change to gather more information about low voltage asset interruptions data should provide a precise description of the data to be collected and the means of doing so)

D95.3 highlight any uncertainty around the magnitude of the estimates, and how the EDB has considered this in forming their proposal

D95.4 where possible, support cost estimates with independent evidence. For example, submissions in relation to insurance premiums could provide quotes and correspondence from insurance brokers, and submissions in relation to digitalisation could provide quotes and correspondence from service providers.[131]

D96 In addition, submitters should also provide evidence that the proposed step change is efficient. This could include providing information on other options that were considered (and rejected) by the EDB in developing the proposed step change. The EDB should demonstrate how they have taken reasonable steps to minimise the costs associated with the step change.

[131] We acknowledged that costs further out into the forecasting period may be more difficult to estimate with certainty. In these cases, it may be possible to project costs forward on a similar trend basis used for forecasting 'base' opex.

D97 Within the context of the low-cost DPP regime, it is not proportionate to undertake external verification of proposals, such as through modelling or extensive advice prepared by external experts to support our assessment of step changes. For this reason, DPP step change applications should relate to topics that are relatively well understood. A step change related to a novel way to running the network or high-cost activity would be more appropriately considered in the context of a CPP.

Not captured in other components

D98 We consider whether costs are captured elsewhere in regulatory allowances. An example could be a new cost which would not be captured in the base year. This is to prevent EDBs from being remunerated twice-over for the same cost within their allowances. This criterion links to the purposes of Part 4 that suppliers are limited in their ability to extract excessive profits, consistent with section 52A(1)(d).

D99 Given the changes to reopeners that have been proposed in the draft 2023 IM decision, it will be important to consider whether an immediate step change to opex is the appropriate response, or where there are significant uncertainties about cost and timing, whether later use of a reopener may be a preferable option.

Outside the control of the distributor

D100 We consider whether step changes are outside of the EDB's control and largely unavoidable.

D101 This criterion is not so strict as to only cover events that are completely beyond EDB control (such as catastrophic weather events), but rather focuses on whether a prudent and efficient EDB could not avoid undertaking the activity that gives rise to the cost. At the same time, while the driver may not be within the EDB's control, aspects of the total cost of responding to the step change may still be (and therefore it is appropriate for it to face ongoing efficiency incentives rather than making use of a recoverable cost mechanism).

D102 Examples may include material new obligations that have been introduced through legislation. The reason we do not consider expenditure drivers that are directly under EDB control is because EDBs are able to choose how to spend their allowed revenue and may reprioritise within their regulatory allowance in order to undertake discretionary activities. This criterion relates to the purposes of Part 4 that suppliers have incentives to improve efficiency and share the benefits with consumers, consistent with sections 52A(1)(b) and (c).

D103 To support an assessment of a proposed step change against this criterion, stakeholders should provide evidence demonstrating the following.

D103.1 That the step change is unavoidable. We recognise that there may be some grey areas around what is strictly unavoidable.

D103.1.1 For example, we note that changes in the energy system may create requirements for EDBs to undertake new activities to plan and operate their networks within technical standards. This may include obtaining smart meter data to monitor low voltage (LV) networks, which is not strictly a regulatory obligation, but may nonetheless be required to support the efficient planning and operation of distribution networks as DER uptake increases.

D103.1.2 It is important to distinguish this example from a more general case, where an EDB might propose to undertake a new activity to realise a cost efficiency. EDBs already face appropriate incentives to make efficient decisions when allocating their opex allowance, through the base-step-trend process and the IRIS mechanism. Accordingly, it would be inappropriate to also provide EDBs with a step change allowance in these circumstances.[132]

D103.1.3 In cases where strictly no new obligation exists, we would expect EDBs to clearly demonstrate the need for the proposed activity and why it is in the interests of consumers. For example, EDBs may present cost-benefit analysis to demonstrate the prudency and efficiency of their proposals, or results from consumer engagement demonstrating that the activity is supported by the EDB's customers.

D103.2 That the new obligation or activity is likely to occur within the DPP4 period: As highlighted in our draft IM Review determination in relation to opex reopeners, and in relation to DPP3, we are unlikely to accept proposed step changes for potential regulatory or policy changes that are not confirmed or defined.

D103.3 That it is efficient to address the new obligation within the DPP4 period: For example, if there is a binding timeframe for compliance, we would expect EDBs to demonstrate why it is efficient to commence activity to achieve compliance within the DPP4 period.

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[132] This incentive effect may not hold true where the additional opex is necessary to realise a capex efficiency beyond the DPP forecasting period. We discuss this point in the draft IM Review decision when considering the introduction of the innovation and non-traditional solutions allowance. See Commerce Commission, "Financing and incentivising efficient expenditure during the energy transition topic paper" (14 June 2023), paragraphs 6.62-6.66.

Applicable to most or all distributors

D104 This criterion aligns to one of the low-cost principles we have applied to recent DPPs, where we seek to apply the same or substantially similar treatment to all suppliers on a DPP. We consider there are other mechanisms for distributors to mitigate individual risks.

D105 At the same time, a strict application of this criterion could lead to a rejection of a step change that is relevant to many EDBs, even if not most or all. If assessing a step change for the relevant group of EDBs would be more efficient than each of these EDBs submitting a CPP proposal, then it would be consistent with the intent of the DPP framework to consider the step change as part of DPP4. In other words, we will consider relaxing this criterion where it would still result in a DPP process that is lower cost than multiple CPPs. We are proposing to take a similar approach when assessing capex forecasts (as outlined in **Attachment E**).

D106 Accordingly, we propose to adopt a more flexible approach to interpreting this criterion for the purpose of DPP4. To illustrate this, we propose that we might consider a step change if:

D106.1 A step change applies to a group of EDBs, but not all EDBs. For example, a group of suppliers in a particular region of New Zealand may consider that they are increasingly susceptible to the impact of cyclones and likely to incur more resilience-related expenditure relative to DPP3. In this scenario, even though the step change is not relevant to all EDBs on the DPP, it may be still efficient for us to assess a step change application for the affected group of EDBs. For example, this could be the case if the likelihood of additional resilience expenditure could be assessed with reference to similar evidence for all affected EDBs.

D106.2 A step change will eventually apply to most or all EDBs, but not at the same time. For example, EDBs may experience different rates of DER connections to their networks. If high levels of DER uptake result in additional costs for EDBs, some EDBs may be affected to a greater extent or sooner than others. Even though the step change might affect EDBs to different extents and at different times, it may still be efficient for us to assess the step change in DPP4.

D107 While we do not propose a strict minimum threshold, assessing a step change is more likely to be consistent with the purpose of DPPs if it applies to a greater number of EDBs or an identifiable ‘class’ of EDBs that share a common objective characteristic.

D108 We will also consider the extent of analysis required to determine:

D108.1 whether the step change applies to a given EDB

D108.2 the magnitude of the efficient step change to be included in each EDB's allowance.

D109 For example, we recognise that there are some instances where certain common factors could impact EDBs differently based on the demographic of their customers or network characteristics. If assessing the step change in a way that is in the interests of consumers (ie, such that we are satisfied of its efficiency) would require detailed bespoke analysis for many individual EDBs (rather than analysis that could apply commonly across multiple EDBs), consideration of the step change within the DPP framework may not be appropriate.

Emerging views on potential step changes

D110 We have undertaken a horizon scan to identify categories of step changes that may arise in consultation on DPP4. Below, we discuss considerations that will be relevant to our assessment of these proposals, and our emerging views on each of them.

D111 Based on submissions on previous consultations and our own horizon scan, we have identified the following potential drivers of step changes:

D111.1 demand changes as a result of electrification

D111.2 legislative and regulation changes

D111.3 digitalisation and data

D111.4 LV monitoring

D111.5 cyber security

D111.6 insurance

D111.7 network resilience spend in relation to weather events

D111.8 macroeconomic factors

D111.9 distribution system operator-related costs

D111.10 avoided cost of distribution payments.

Demand changes resulting from decarbonisation

D112 We recognise that decarbonisation efforts are likely to alter demand (in connection, energy delivery, or peak demand terms) for electricity over the regulatory period. In November 2022, we ran a workshop with EDBs on the challenges of forecasting and incentivising efficient expenditure in the context of increasing electrification being seen across New Zealand.[133] From several stakeholders, we heard concerns that the base-step-trend approach to expenditure forecasting is unlikely to provide EDBs sufficient revenue to cover their efficient costs of responding to decarbonisation.

D113 As noted above when discussing the base-step-trend model overall, we consider it has sufficient flexibility in terms of responding to changing demands where there is robust evidence for these changes. As discussed in the section above on scale trend factors, this may be through linking opex forecasts to different drivers where there is a robust relationship between them (eg, potentially to forecast capex). Alternatively, where a clearly identifiable one-off uplift is necessary, this may be through a step change.

D114 We consider there are two main categories where increasing electrification could occur:

D114.1 changes in demand from large-scale customers, including new connections

D114.2 changes in demand due to smaller customer demand growth, including electric vehicles.

Large-scale customer demand

Stakeholder views

D115 Alpine Energy identified that the decarbonisation strategies of heat processing customers and the decisions of other large industrial users around transport electrification could result in a significant step change in electrification. They also identified several instances where new large-scale connections at several grid exit points could materially increase network requirements to meet new demand.[134]

D116 Vector raised large-scale customers (including point loads such as data centres, industrial gas fuel conversion, rail development, and bus or ferry charging stations) as drivers of step changes in expenditure.[135]

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[133] Commerce Commission, "Forecasting and incentivising efficient expenditure workshop" (7 November 2022).

[134] Alpine Energy "Alpine Energy Submission on Expenditure Forecasting Workshop" (30 January 2023), pp.5-7.

[135] Vector "Vector Submission on Expenditure Forecasting Workshop" (16 December 2022), pp.7-8.

D117 Network Tasman and Wellington Electricity also noted they were forecasting large step changes in expenditure requirements from large decarbonisation load.[136]

Commission emerging views

D118 We recognise that decarbonisation efforts are likely to increase demand for electricity over the regulatory period and that decisions of large customers are an area of great demand forecasting uncertainty for EDBs from new connections and network capacity (system growth) perspectives.

D119 Our initial assessment is that in many cases, the expenditure necessary to accommodate this growth will be capex rather than opex. However, where this involves incurring opex, several proposed changes to the IMs may be relevant.

D120 In our 2023 IM Review draft decision we proposed extending the Foreseeable and Unforeseeable Major Projects reopeners to include opex based solutions for addressing network capacity constraints due to demand growth rather than just capex solutions. We also proposed extending these reopeners to include one-off opex that is directly related to the implementation of capex solutions.[137] The Foreseeable Major Projects reopeners may also be applied where projects that were previously forecast for beyond the current regulatory period are required to be brought forward due to changes in demand.

D121 Where significant but uncertain expenditure is required to meet the needs of large-scale customers it may be suitable for EDBs to apply for a reopener.

D122 Our IM Review Draft decision also introduced a 'large connection contract' (LCC) mechanism for EDBs that would allow connection assets created and costs incurred under LCCs to be excluded from the RAB and opex base respectively, where certain conditions around workable competition and the size of the connection are met.[138] If introduced, this mechanism will provide EDBs with an avenue other than a reopener to recover costs associated with large new customer-initiated connections.

D123 For a step change to be considered in relation to large customer decarbonisation, we would need to be satisfied that:

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136 Network Tasman "Network Tasman Submission on Expenditure Forecasting Workshop" (16 December 2022), p. 4; Wellington Electric "Wellington Electric Submission on Expenditure Forecasting Workshop" (16 December 2022), p. 7.

137 Commerce Commission "Part 4 IM Review 2023 Draft Decision – CPPs and in-period adjustments topic paper" (14 June 2023), p. 82-85.

138 Commerce Commission "Part 4 IM Review 2023 Draft Decision – CPPs and in-period adjustments topic paper" (June 2023), p. 125.

D123.1 Increased demand arising from decarbonisation efforts will result in a significant change to EDB's opex requirements that are not adequately able to be captured in other components of the regulatory system. This includes via the reopener mechanisms outlined above, as well as through the opex trend factors that capture network growth (line length, ICP growth, or a potential capex driver).[139] These considerations relate to the significance and 'not captured elsewhere' criteria.

D123.2 The step change can be robustly verified. For example, it would be difficult to assess a step change in opex resulting from large-scale decarbonisation efforts that are not imminently underway using the current step change criteria. The amended reopeners may provide opportunities for in-period alternative options to respond once the timing and magnitude of expenditure requirements are better known.

Smaller customer demand

Stakeholder views

D124 Both Network Tasman and Vector identified electric vehicle (EV) uptake and charging requirements as drivers of increased load on LV networks that could require a step change in opex.[140]

D125 Alpine Energy also identified a recent increase in the need for EV charging stations across its network, which it expected could be accommodated through to 2025. Post 2025, Alpine Energy consider that upgrades or other emerging technologies may be required on LV networks in certain residential areas.[141]

D126 Powerco noted signs of accelerating uptake of solar and batteries, including small domestic installations. However, their submission also noted that network investment related to solar is less critical to expenditure forecasts, and that batteries could potentially contribute to reducing peak demand if agreement with the owners can be reached.[142]

Commission emerging views

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139 As noted above in the discussion of scale trend factors, there has not been a reliable historical relationship between demand (either peak or volume) and opex.

140 Network Tasman "Network Tasman Submission on Expenditure Forecasting Workshop" (16 December 2022), p.4; Vector "Vector Submission on Expenditure Forecasting Workshop" (16 December 2022), pp. 7-8.

141 Alpine Energy "Alpine Energy Submission on Expenditure Forecasting Workshop" (30 January 2023), pp. 1 and 6.

142 Powerco "Powerco Submission on Expenditure Forecasting Workshop, 19 December 2022" p.5.

D127 We recognise that as electric vehicle (EV) uptake and charging requirements increase across the network, there will be an increase in network load and requirements for new connection expenditure. We understand from our November workshop on expenditure forecasting that where available, many EDBs intend to include data on anticipated EV uptake as inputs to their expenditure forecasts. This category will need to be considered alongside decisions on the trend factors applied in the DPP reset. It would not be appropriate to apply a step change where opex associated with network growth is captured by the trend factors or where it is largely capex.

D128 It may also be possible to meet immaterial discrepancies that occur during the DPP4 period from LV network growth through reprioritisation. For material differences, EDBs could seek to apply for the Foreseeable Major Projects reopener in-period, as through our 2023 IM Review draft decision we have extended the definition of 'system growth' in the reopener to include opex for capacity growth and investment required on the network to provide for new technologies. However, in the draft IM decision we recognised that consideration of reopeners relating to new and emerging technologies is likely to be more challenging for the EDB to evidence and the Commission to assess.

D129 Accordingly, to consider an opex step change related to this LV demand growth, we would expect to see evidence that associated changes in efficient opex are both significant, and not already captured through the network growth trend factors or reopeners. For example, if EDBs were to propose that the trend factors are not adequate, we would expect to see evidence of why changing LV demand would invalidate the relationships estimated for the trend factors.

Table D8 Decarbonisation cost case study

Case study: Australian Energy Regulator (AER) – Powercor distribution determination 2021-26 – Solar Enablement step change
Powercor proposed a step change totalling $4.8 million (AU$2020–21) to remove voltage constraints on its network and enable more customers to export excess solar back into the network. The proposed step change comprised of: $4.5 million (AU$2020–21) to manually tap down distribution transformers to remove a proposed 2,292 voltage constraints at a unit cost of $1,959. $1.2 million (AU$2020–21) to undertake a monitoring and compliance regime to ensure appropriate (compliant) inverter settings have been applied. [143] The AER noted that while it is not their standard approach to provide a step change to manage activities in a changed operating environment, as opex increases in line with output growth forecast would typically provide adequate compensation to a prudent operator for operating and maintaining a network, they acknowledged that where output growth does not fully account for growing distributed energy resources, it may be appropriate to allow a step change for DER management. The AER's final decision approved a step change of $2.3 million. They accepted Powercor's proposed tapping activities and volume was prudent and reasonable, after reviewing the business case developed by Powercor which: [144] • Included a solar forecast for its network and the network capacity to accommodate it • Discussed why there was a need to accommodate more solar • Outlined options for accommodating more solar and considered their merits • Detailed the proposed solution, including how they would ensure the investment was targeted and efficient • Provided expected results, including an NPV of the proposed program benefits. However, the AER did not consider the unit cost of $1,959 ($2020-21) as efficient and concluded following advice from their consultants, EMCA, that an efficient unit cost for tapping would be $1,000. The AER did not consider that Powercor's monitoring and compliance program was prudent and efficient because Powercor had not been able to justify that the proposed solution was the most cost-effective option to address non-compliance of solar installations. Powercor submitted that it "had not modelled a complete cost-benefit analysis of ensuring compliance."

Legislative and regulatory changes

D130 Legislative or regulatory changes that result in EDBs amending their operations have previously been raised as potential step changes.

[143] AER (2020), Draft decision - Powercor distribution determination 2021-26 - Attachment 6 - Operating expenditure, September, p. 51.

[144] Powercor (2019), *PAL BUS 6.02 Solar enablement Jan2020 – Public – Regulatory proposal 2021-2026*, August. The business case is available on the AER's website as supporting information to Powercor's regulatory proposal in January 2020.

Stakeholder views

D131 Across the last DPP reset, several legislative and regulatory step changes were proposed: [145]

D131.1 Higher expenditure related to changes to work on electrified (live) lines said to result from the Health and Safety at Work Act 2015.

D131.2 Higher expenditure related to expected changes to the regulations governing vegetation management.

D131.3 Higher expenditure related to changes in traffic management requirements and increasing congestion in Auckland.

D131.4 Higher expenditure related to legislative changes under the Employment Relations Amendment Act 2018.

D131.5 Increased costs from the recommendation for 'accelerated electrification' in the Interim Climate Change committee report and, the Climate Change Response Amendment Bill.

D131.6 Increasing regulatory requirements, including the Electricity Authority's Innovation and Participation Advisory Group (IPAG) and Pricing Reform, and updated quality standards under Part 4 requirements.

D132 In the lead up to the current DPP reset, we have heard that legislative and regulatory changes are continued causes of uncertainty.

D133 Network Tasman consider legislative and government policy changes may impact forecasting scenarios as a key driver of uncertainty.[146] Vector and Wellington Electricity mentioned the Government's Emission Reduction Plan (ERP) and Gas Transition Plan (GTP) as examples of upcoming policy changes in their submissions.[147]

Commission emerging views

D134 We did not implement any of the legislative or regulatory step changes proposed for the last DPP reset, primarily due to the proposed step changes not meeting the significance or robustly verifiable tests, particularly when step changes were proposed for anticipated but unconfirmed changes.

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145 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper" (29 November 2019), pp. 171-173, Table A4.

146 Network Tasman "Submission on Expenditure Forecasting Workshop" (16 December 2022), p. 4.

147 Vector "Submission on Expenditure Forecasting Workshop" (16 December 2022), p. 7; Wellington Electricity "Submission on Expenditure Forecasting Workshop" (16 December 2022), p. 6.

D135 We note that the review of the review of the Electricity (Hazards from Trees) Regulations 2003 (the tree regulations) is still ongoing and may result in regulatory changes soon.[148] To consider step change applications in relation to any new regulations, we would need to be satisfied that the other criteria are likely to be met – noting that the intent of the changes is to improve the efficiency and effectiveness of the regulations.

D136 The recent policies raised by stakeholders as potential drivers of expenditure forecasting uncertainty are in early stages of development. The GTP which seeks to manage the gas industry's transition to a low emissions future has an Issues paper open for submissions until November 2023. The New Zealand Energy Strategy is still under development, with consultation indicated for late 2023/early 2024.[149] We also understand the Electricity Authority's ongoing targeted reform of distribution pricing may impact EDBs in the next regulatory period; however, this work is still at the Issues paper stage.[150]

D137 For a step change to be considered, we would need to be satisfied that legislative changes will result in a significant change to EDBs opex requirements that are not adequately captured in other components. It would be difficult to assess a step change in opex resulting from legislative changes that are not confirmed using the current step change criteria.

D138 If an EDB is reasonably certain of a legislative or regulatory change coming into effect during the regulatory period that will require a step change in expenditure, and the efficient costs of meeting the change are known, this could be considered for a step change where other criteria are met. EDBs could consider supporting evidence that shows:

D138.1 whether the need to respond to the new obligations is largely outside the control of the EDB

D138.2 what options were considered to meet the change in regulatory obligation and whether the proposed option is an efficient option – that is, whether the EDB took appropriate steps to minimise its expected cost of compliance from the time there was sufficient certainty that the obligation would become binding and what the efficient cost is

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148 Ministry of Business, Innovation, and Employment "Review of the Electricity (Hazards from Trees) Regulations 2003 – Discussion Document" (March 2023).

149 Ministry of Business, Innovation and Employment, "Gas Transition Plan" and "New Zealand Energy Strategy" webpages.

150 Electricity Authority, "Targeted reform of distribution pricing" webpage. Consultation on the first set of Code amendments proposed (if any) would begin in late 2023.

D138.3 whether the costs can be met from existing regulatory allowances or other components

D138.4 when the change event occurs and when it is efficient to incur expenditure to comply with the changed obligation

D138.5 when the EDB can be expected to make the changes to meet the changed regulatory obligations, including whether it can be completed over the regulatory period.

D139 Finally, we note that there may be cases where a change to legislation or regulations may work to decrease EDB obligations or compliance costs. In such cases, where the criteria are met, we would consider a negative step change.

Digitalisation and data

Stakeholder views

D140 We have heard from stakeholders following the expenditure forecasting workshop that EDBs foresee considerable expenditure required on digitalisation and data; however, the scale and timing of this expenditure is unknown.

D141 Alpine Energy and Vector also responded to our draft decision to exclude digitalisation and data as a reopener expenditure category in the IM Review.

D142 Vector noted:[151]

> Enabling distribution system operation services through better data and digitalisation of networks will also be crucial as the LV network becomes even more important to manage growing capacity. The Commission must ensure the DPP4 reset is amenable to those costs being accepted as essential and enabling expenditure items. […] If digitalisation and data, the monitoring of LV networks and increased insurance premiums are not considered as reopener worthy expenditure types, then then Commission must ensure that these costs are accepted in EDBs' opex allowances for the next reset DPP4.

D143 Alpine Energy consider that:[152]

> We are increasingly exploring options to utilise non-network digital solutions as a means to manage network load, therefore, we expect non-network solutions to become more important in network planning in the coming years. […] If there is no mechanism available to find or recover the investment in digital technology, adoption, and management of new technologies, like solar photovoltaics, and other non-network solutions, the incorporation of these alternatives in network planning will be delayed. We believe this will not benefit the consumers in the long-term as we need to be ready to respond to the changing consumer needs.

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151 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p. 65.

152 Alpine Energy "Submission on IM Review Draft Decisions" (19 July 2023), p. 7.

Commission emerging views

D144 Our IM Review Draft decision was to not include digitalisation and data reopeners. The requests from suppliers to consider providing a reopener appeared to be based on uncertainty regarding the ability to accurately forecast costs in the short-term rather than an ongoing requirement. Specifically for digitalisation and data, we noted some of these costs will be outside of the control of suppliers, but a significant proportion will be driven by supplier choices, including network strategy and the use of outsourcing compared to internal delivery of services. Further, efficiency gains from deployment of new technologies and approaches might lead to a decrease in costs over time, which could offset the upfront costs.

D145 For digitalisation and data expenditure to be considered for a step change, it needs to adequately address the step change criteria. In particular it will be important that EDB proposals:

D145.1 Clearly distinguish between step changes that represent a necessary change in requirements (either regulatory or technical), rather than a discretionary change or a change to improve overall efficiency. These cases would not be likely to meet the criterion that costs are outside the control of the EDB, rather than driven by management decisions. This is because EDBs already face appropriate incentives to make efficient decisions when allocating their opex allowance.

D145.2 Demonstrate that they have considered where an increase in one type of opex might result in savings in other opex categories, or a reduction in capex. For example, a move to a digital solution may result in existing expenditure being no longer required. Consideration of this issue would be necessary to address the criterion that the step change is not covered elsewhere in the regulatory allowance.

D145.3 Adequately specify the nature of the proposed expenditure, noting that digitalisation and data is a broad category. To meet the significance and robustly verifiable criteria, the proposed step change will need to be based on identified activities that can at a minimum be quantitatively estimated, rather than general trends towards increasing digitalisation.

D146 It may be also appropriate to consider how funding from any innovation and/or non-traditional solutions scheme may be utilised to support efficient non-network expenditure. For further discussion of a potential innovation and/or non-traditional solutions scheme, please see **Attachment I**.

Low voltage monitoring

Stakeholder views

D147 LV network monitoring was raised as a potential step change in the last DPP reset by the ENA, Orion, Wellington Electricity and Vector.[153]

D148 Like digitalisation and data, Vector raised concerns that LV network monitoring would require a step change in expenditure and should be adequately allowed for in the DPP reset when responding to our IM Draft decision to not include LV network monitoring as its own reopener expenditure category.[154]

Commission emerging views

D149 We did not consider LV monitoring satisfied the step change criteria at the last DPP3 reset due to a lack of evidence to determine the significance, to robustly verify the expense, or to know how applicable this cost is to most distributors. We note that one distributor quantified the costs in a confidential submission. However, we did not consider it appropriate to allow this ex-ante given the uncertainties involved.

D150 Our IM Draft decision was to not include a reopener to provide for LV monitoring. We reasoned that a step change in costs may be incurred, but it is not clear that ongoing volatility is likely to be an issue or whether funding at a DPP reset could be sufficient.

D151 We would consider applying a step change for LV monitoring where EDBs can demonstrate:

D151.1 That the step change is not within the EDB's control. Evidence would be needed to identify a change in requirements and link this to a specific activity that incurs opex.

D151.2 That costs are not covered elsewhere in allowances; for example, because the opex trend factors demonstrably do not cover the change in requirements.

D151.3 That the step change meets the robustly verifiable and significance criteria, by providing a quantification of the costs and demonstrating that the proposed expenditure is the most cost-effective option to unlock the benefits of LV monitoring.

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153 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper" (29 November 2019), p. 168.

154 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p. 66, paragraph 248.

D152 For example, we approved an opex step change related to data for LV monitoring in Powerco's transition to the 2020-25 DPP.[155] Our decision was supported by evidence from Powerco that demonstrated the prudency of the expenditure and allowed us to determine that the proposed cost estimates were reasonable.

Table D9 Case study – LV monitoring costs

Case study: AER analysis of LV monitoring costs
When the AER provided a step change to three Victorian EDBs in the 2021-2026 regulatory period for solar enablement, they did not provide allowances for monitoring and compliance activities on the basis they were not provided sufficient evidence that the proposed solution was the most cost-effective option to address non-compliance, such as a complete cost-benefit analysis of ensuring compliance.[156] The AER did provide a step change to the South Australian EDB, SA Power Networks, in the 2020-2025 regulatory period for LV Management Future Networks. The step change was proposed to support the development of new operational systems and business processes to actively manage the integration of rooftop solar, battery storage and virtual power plants into the distribution network. This included activities in addition to the purchase of smart meter data. In providing this step change, the AER noted:[157] > We would normally not provide a step change in opex to operate and maintain a new asset. The standard approach of allowing opex increases in line with the output growth forecast would normally compensate a prudent operator for operating and maintaining a network not faced with an unusual operating environment. However, with distributed energy resource management, SA Power Networks appears to be facing significant demands to manage its network and address its customers' needs, including potential voltage non-compliance issues. We accepted this step change because there is a likelihood that the output growth forecast may not fully compensate for the higher opex to address distributed energy resource management. SA Power Networks provided information on the cost build-up of each of the program's components. The costing for the proposed opex was based on (as appropriate): expert analysis, third party quotes, and standard market rates (that had been market tested for external contractors) to the AER that supported their decision that a step change was required, and the option presented was the least-cost option.[158]

155 Commerce Commission (2022), "Powerco Limited's transition to the 2020-25 default price-quality path – Reasons Paper", paragraphs 3.103 to 3.113.

156 AER, "Final decision – Powercor distribution determination 2021-26 Attachment 6 – Operating expenditure" (April 2021), section 6.4.3.1, p.31.

157 AER, "SA Power Networks – Distribution determination 2020 to 2025 Attachment 6 Operating expenditure" (June 2020), p. 21.

158 AER, "SA Power Networks 2020-25 – Draft decision Attachment 6 Operating expenditure" (October 2019), p. 50.

Cyber security

Stakeholder views

D153 Cyber security costs were raised as a potential step change in the last DPP reset by several EDBs.[159] One key concern raised was whether EDBs would be required to meet Voluntary Cyber Security Standards for Industrial Control Systems Operators, introduced in 2019.

D154 Both Orion and Vector raised the system operators' approach to security as a potential area of major increase in the DPP4 reset and sought the inclusion of this type of expenditure for reopeners.[160]

Commission emerging views

D155 In the IM Review Draft decision, we acknowledged that technology transformation may result in increases in the amount of cyber security costs for some suppliers and that suppliers are considering whether they need to increase spend on their networks to manage a landscape of increasing risks, such as cyber security threats.[161] Our IM Review Draft decision to extend reopeners to provide targeted resilience-based expenditure did not include cyber security expenditure (see Network resilience).[162] We also noted that cybersecurity costs are not well suited to being recoverable costs because there is a substantial element of supplier control over the quantum of costs, based on network design decisions and operating models.[163]

D156 Where EDBs can clearly demonstrate new requirements or obligations in relation to cyber security, this may be a category of expenditure for which a step change could in principle be considered. We did not consider cyber security costs met the step change criteria in the last DPP reset due to a lack of information on whether costs are robustly verifiable, if there would be significant increases, and considering that some cyber security costs are included in existing allowances as these costs are usual for any businesses.[164] Accordingly, EDB proposals in relation to cyber security should focus on providing high quality evidence in relation to these criteria.

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159 Stakeholders include Centralines, ENA, Unison, Orion, Vector and PowerNet. See: Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons Paper" (27 November 2019), p. 165.

160 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p.65; Orion "Submission on IM Review Draft Decisions" (19 July 2023), p. 8.

161 Commerce Commission "Part 4 IM Review 2023 Draft Decision – CPPs and in-period adjustments topic paper" (14 June2023), p. 10 and 136.

162 *Ibid.* p. 93.

163 *Ibid*. p. 136.

164 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons Paper" (27 November 2019), p. 169.

Insurance premiums

Stakeholder views

D157 Increased insurance premiums were raised as a potential step change in the last DPP reset by several stakeholders.[165]

D158 Both Orion and Vector raised increased insurance premiums as a potential area of major increase in the DPP4 reset and sought the inclusion of this expenditure category for reopeners.[166] Following our draft IM Review decision to not include increased insurance premiums as an expenditure reopener category, Vector noted that if increased insurance premiums were not considered a reopener worthy expenditure type, then then Commission must ensure that these costs are accepted in EDBs' opex allowances for the next DPP reset.[167]

Commission emerging views

D159 We did not consider increased insurance premiums for a step change at the last DPP reset because existing insurance premiums may be included in the opex baseline (and are therefore projected forward in line with the network growth trend factors) and where evidence of costs were provided, these were not sufficiently significant increases.[168]

D160 In the IM Draft decision, we have excluded insurance premium expenditure for reopeners or recoverable costs because the costs should instead be reflected in the report on forecast operational expenditure and considered as part of the DPP reset process.[169] We also proposed not introducing any new pass-through or recoverable costs in our IM Draft decision to cover categories of expenditure (such as insurance premiums), as this would disincentivise suppliers to actively manage such costs and expose consumers to volatility in these costs.[170]

D161 As noted above in relation to cost escalation, we are investigating whether a separate escalation approach could be applied to insurance premiums to project this category of expenditure forward where the input cost of insurance is increasing over and above the level of general input price inflation.

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165 Stakeholders included Centralines, ENA, Orion, Unison, Wellington Electric and PowerNet.

166 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p. 65; Orion "Submission on IM Review Draft Decisions" (19 July 2023), p. 8.

167 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p.248.

168 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper" (27 November 2019), p. 172.

169 Commerce Commission "Part 4 IM Review 2023 Draft Decision – CPPs and in-period adjustments topic paper" (14 June 2023), p. 104.

170 *Ibid.,* p. 132-133.

D162 If EDBs intend to propose step changes related to insurance, evidence to allow us to consider this category should include:

D162.1 In relation to the robustly verifiable criterion, evidence to support an insurance premium step change could include showing that EDBs had taken appropriate steps to accurately quantify the efficient level of expenditure, such as through third party quotes from insurance providers or brokers. Estimates should separately identify significant increases above the opex base year.

D162.2 In relation to the not captured elsewhere criterion, evidence that the change is not adequately captured in the network growth trend factors and/or the escalation approach for insurance premiums.

Network resilience

D163 Increased expenditure on network resilience in the wake of climate change concerns and natural disasters was raised across submissions to the IM review as an area of major cost increase that was not adequately covered in the IM re-openers.[171]

D164 Aurora submitted that increased expenditure on disaster readiness is likely to be foreseeable, but the expenditure growth may be greater than other opex growth, and therefore the Commission's 'step and trend' forecasting processes need to be responsive to this.[172]

D165 Vector and Wellington Electricity submitted that resilience-based expenditure programmes are not always foreseeable, including local government sea level adaptation programs that also require electrical assets to be shifted or wider earthquake resilience programs that also capture electrical assets.[173]

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171 Aurora "Submission on IM Review 2023 Draft Decisions" (19 July 2023), p. 6; ENA "Submission on IM Review 2023 Draft Decisions" (19 July 2023), p. 5; Vector "Submission on IM Review 2023 Draft Decisions" (19 July 2023), p. 14; Wellington Electricity "Submission on IM Review 2023 Draft Decisions" (19 July 2023), p. 46.

172 Commerce Commission "Part 4 IM Review 2023 Draft Decision – CPPs and in-period adjustments topic paper" (14 June 2023), p. 92.

173 Wellington Electricity, "Submission on Price-quality path workshop" (21 December 2022), p. 4; Vector "Submission on Price-quality path workshop" (20 December 2022), p.4.

D166 Vector suggested that a use-it-or-lose-it allowance, a mechanism used in the RIIO-ED2 framework, for resilience could be incorporated into the IMs to ensure EDBs are being funded efficiently to respond to climate adaptation. They also suggested that a cost pass through for Storm Response could be used to ensure EDBs are being funded efficiently to respond to severe weather events without needing to apply through the Catastrophic Event reopener. They stated:[174]

> Climate change will result in more severe weather events. It is not practical or efficient for EDBs to always use the Catastrophic event reopener to recover costs incurred responding to these events.

Commission emerging views

D167 In our IM Review Draft decision, we extended the Foreseeable and Unforeseeable Major Projects reopeners to provide for targeted resilience-related expenditure to support EDBs to reduce the vulnerability of electricity lines to adverse weather events from the impacts of climate change and other natural disasters and maintain reliability and security of supply.

D168 Where the driver of additional opex related to resilience is linked to uncertain future risks, a reopener is likely to be a better option than providing an ex-ante step change that may in fact not be needed (or conversely, may not be adequate). On the other hand, where EDBs (or a subset of them) can demonstrate a clear causal link between preparing for an established risk (such as increasing severe storm frequency) and the necessary opex required, a step change may be justified.

Macroeconomic factors

Stakeholder views

D169 Labour skills shortages potentially exacerbated by the increased demand from Powerco's CPP capex program were raised as a potential step change in the last DPP reset by EDBs.[175]

D170 In submissions to the IM review, stakeholders raised concerns relating to input cost escalation. Orion noted they had seen increases in costs in materials such as copper, and contractor labour costs over the past two years, which have been more than inflationary increases in revenue adjustments.[176]

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174 Vector "In period adjustments" (6 April 2023), p. 5.

175 NZCC (2019), *Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper*, November, Public version, p. 165.

176 Orion "Submission on IM Review Process and Issues paper and draft Framework paper" (11 July 2022), p. 39.

Commission emerging views

D171 We did not consider the potential price impacts of labour skills shortages qualified for a step change in the last DPP reset because this cost driver is accounted for in the input cost trend factor.[177]

D172 In our IM Review Draft decision, we recognised suppliers may face challenges with escalating costs rising quicker than inflation and the impact that global growth of decarbonisation strategies is likely to increase the cost of key network infrastructure components and drive higher competition for skilled labour.

D173 As discussed earlier in this Attachment, we are reconsidering our approach to cost escalation. As these cost pressures are likely of a broad and ongoing nature, we consider a revised escalation approach would be a more adequate response than a one-off step change.

Cost associated with distribution system operations (DSO)

Stakeholder views

D174 DSO type services were raised by Orion and Vector in submissions to the IM review as a potential area of major cost increase in the DPP4 reset and sought the inclusion of this expenditure category for reopeners.[178]

Commission emerging views

D175 In the New Zealand context, the activities that fall under 'DSO type services' are yet to be precisely defined.[179] Broadly speaking, we understand that stakeholders use the term to imply dynamic management of injections and withdrawals of electricity from distribution network connection points, to ensure that the flows of electricity stay within the operating limits of the network. For example, DSO type services might include provision of a real-time market-based platform to optimise use of the distribution network, analogous to the transmission system operator role played by Transpower.

D176 One relevant question about whether DSO type services would justify a step change is whether they form part of the regulated lines service itself or are an input to the provision of the regulated service. Specifically, section 54C(1) of the Act defines electricity lines services as:

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177 NZCC (2019), "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper", November, Public version, p. 172.

178 Vector "Submission on IM Review Draft Decisions" (19 July 2023), p.65; Orion "Submission on IM Review Draft Decisions" (19 July 2023), p.8.

179 For example, see ENA (2022), "Powering up for change: New Zealand Electricity Distributor Network Transformation Roadmap: A three-year update", April 2022, p. 7.

D176.1 the conveyance of electricity by line in New Zealand

D176.2 with respect to the services performed by Transpower, includes services performed as system operator.

D177 We consider that some activities that could be included under 'DSO type services' may not fall within this definition. For example, this might apply to the operation of a market-based platform to manage real-time injections and withdrawals of electricity. However, if an EDB were to contract with the platform operator to obtain an input that assists in the conveyance of electricity on its network, this could potentially fall within the definition.

D178 Where these costs fall outside the regulated service, as part of considering any step change, we would expect to consider evidence not just that an EDB proposes to undertake DSO type activities, but how doing so would benefit consumers of the regulated lines service.

D179 Finally, we note that (where consistent with the definition of electricity lines services) innovative activities to explore DSO type services may qualify for inclusion in an innovation and non-traditional solutions scheme.

Avoided cost of distribution and flexibility services

D180 Avoided cost of distribution (ACOD) payments relate to an EDB entering into a contract with a DER to avoid the need for network augmentation or reinforcement.[180] For example, ACOD payments could arise where a DER has the ability to reduce peak at a grid supply point, with the effect of deferring the need for distribution network reinforcement that would otherwise be required as a result of load growth. In this situation, the EDB faces a choice of whether to invest in network assets to meet growing demand (capex), or to contract with the DER for services to delay the need for investment (opex).

[180] ACOD payments result from the distributed generator pricing principles set out in the Electricity Industry Participation Code 2010 (the Code). Specifically, the pricing principles (Schedule 6.4 of the Code) state that charges for distributed generators are *"to be based on recovery of reasonable costs incurred by distributor as a result of connecting the distributed generator and to comply with connection and operation standards within the distribution network, and must include consideration of any identifiable avoided or avoidable costs"*. Following the Electricity Authority's 2022 decision, these provisions no longer relate to avoided costs associated with the transmission network. Electricity Authority (2022), "Avoided Cost of Transmission (ACOT) – TPM-related amendments – Decision Paper", 20 December 2022, Appendix B.

D181 More broadly, EDBs may seek to purchase 'flexibility' services, which are services provided by DER to flexibly alter their consumption or generation of electricity to satisfy a network need. For example, EDBs might contract for flexibility services to defer network investment, or to resolve voltage control issues.

D182 Horizon Energy highlighted ACOD payments to generators as a potential opex reopener.[181] Orion also raised ACOD payments as a source of increasing expenditure that is not covered by a reopener mechanism.[182]

D183 Wellington Electricity highlighted that flexibility services may help to defer or avoid augmentation expenditure, but that these services need to be developed further before their effect can be accurately modelled.[183] Powerco and Aurora also highlighted flexibility services as an area of uncertainty, and noted the challenges associated with incorporating flexibility services into opex projections.[184] Orion has noted that it has issued its first tender in relation to flexibility services.[185] This suggests that EDBs are at different stages of considering and planning for the use of flexibility services.

Commission views

D184 Under the base-step-trend approach to setting allowances, and the operation of the IRIS mechanism, EDBs have incentives to manage their networks to required levels of service quality in the most efficient way. Depending on the circumstances, purchasing flexibility services or making ACOD payments may be the most efficient solution for an EDB. The EDB may face an opex-capex substitution decision. For example, entering into a contract for flexibility services may increase opex, but reduce capex that would otherwise have been required (as in the peak demand example above). If substituting opex for capex results in overall lower costs to consumers, the decision to enter into the flexibility services contract is efficient. We understand that flexibility services and ACOD payments have not yet been widely adopted by EDBs in New Zealand.

D185 Efficient use of these options for delivering lines services may not be captured in the trend factors if this changes the historic relationship between opex and growth in line length/ICPs.

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183 Wellington Electricity, *Submission on expenditure forecasting workshop*, (16 December 2022), p. 2.

184 Powerco, *Submission on expenditure forecasting workshop*, (19 December 2022), p. 9; and Aurora, *Submission on expenditure forecasting workshop*, (16 December 2022), p. 9.

185 Orion, *Submission on expenditure forecasting workshop*, (16 December 2022), p. 4.

D186 Accordingly, if an EDB is faced with this choice prior to the DPP4 decision, it may be appropriate to consider an opex step change. This depends on the circumstances and evidence provided. To be able assess such a proposal against the criteria, we would expect to see evidence of the network need clearly identified in the AMP, a well-supported quantitative estimate of the costs associated with the flexibility services contract / ACOD payments, evidence that these costs are efficient (ie, the best among available options), and evidence of a commensurate amount of capex avoided (consistent with the AMP).

D187 If this choice arises for an EDB during DPP4, the base-step-trend allowance and the IRIS mechanism provide it with appropriate incentives to make the efficient choice. That is, if entering into the flexibility services contract / making ACOD payments results in the lowest overall costs, the EDB would overspend against its opex allowance, but this would be more than offset through the underspend against its capex allowance. The IRIS mechanism allows the EDB to retain a proportion of the efficiency gain, with the remainder shared with consumers.

D188 This assessment is consistent with our draft IM decision to not include an opex reopener related to ACOD payments, because these (and payments for flexibility services more broadly) should be reflected and well documented in the AMPs, and accordingly considered as part of the DPP reset process.

Alternative mechanisms for accommodating step changes

D189 The preceding discussion has highlighted that there may be multiple mechanisms within the regulatory framework that could be used to manage anticipated changes in efficient expenditure (that cannot reasonably be accommodated through reprioritisation within EDBs' base opex). Recognition of these alternatives does not mean that a step change is not the appropriate mechanism to address significant changes in efficient opex through the DPP4 reset. However, we will carefully consider such alternatives as part of assessing step change applications, to ensure that efficient expenditure is only remunerated once, and that the most appropriate mechanism is adopted.

Summary of our requests for information or responses to initial views

D190 We welcome your response to the items in the below list as well as any other feedback you would like to submit which is relevant to the DPP4 reset.

	Number	Request for comment or responses on initial views
Forecasting operating expenditure	8	**We are considering amending our approach to forecasting opex input price escalation to better reflect the mix of inputs EDBs face.** Do you have a view on another index, or weighted mix of indices, which would improve the quality of opex forecasting compared to our current approach? (Using a 60/40 mix of percent changes in LCI all-industries and PPI input indices.) If so, what evidence supports this view?
	9	**We are considering revising our approach to scale growth trend factors, to better reflect EDBs increasing focus on investing to meet growth and renewal needs.** Do you support our emerging view that including forecast capex as a driver of non-network opex could improve opex forecasts, and that this conclusion makes sense in terms of the way EDBs run their businesses? Are there alternative drivers that we should consider, and what evidence is there that they can meaningfully predict EDB scale growth?
	10	**EDBs have identified that insurance costs have been increasing at a greater rate than other costs they face.** What evidence do you have about how these costs are likely to evolve over time? Is the option of trending insurance opex forward using a separate cost escalator workable? How could incentives on EDBs to make efficient risk management decisions be maintained?
	11	**Given the possibility of a greater need for step-changes in opex in a context of industry transition, we have clarified further how are thinking of applying the step-change criteria and the supporting evidence we expect.** Do you consider the expanded descriptions of the step-change criteria provide sufficient clarity about the types of step-changes we consider meet the Part 4 purpose?

Attachment E Forecasting capital expenditure

Purpose of this attachment

E1 The purpose of this attachment is to:

E1.1 explain how we will develop our capex forecasting framework and the opportunities for stakeholders to get early visibility of the details of that framework

E1.2 seek your feedback on our emerging view on the approach for forecasting capex and associated topics which are likely to influence the detail of that approach.

Introduction

E2 The forecast value of commissioned assets is a material variable in determining the revenues EDBs may earn during the DPP period.

E3 We use forecast capex to determine the future value of commissioned assets for the purposes of setting revenue allowances and applying the Incremental Rolling Incentive Scheme (IRIS) capex incentive during the regulatory period.

E4 An independent review of EDBs' 2023 AMPs is due in early 2024. Findings from this review are likely to inform our DPP4 framework for forecasting capex, including how we use EDB forecasts.

How this attachment is organised

E5 The information in this attachment is organised into three sections:

E5.1 **Approach to capex forecasts** – Provides a high-level summary of how the Commission has previously set capex forecasts for DPP purposes and our early thinking on the approach for DPP4.

E5.2 **Other forecast capex issues** – This section sets out specific issues that have been identified in our environmental scan and early engagement with stakeholders. We are seeking to get a better understanding of these issues.

E5.3 **Summary of feedback requested from stakeholders** – This section collates all our proposals and requests for information into one table for easy reference.

E6 We also include a reference section, outline the key features and steps in the capex forecasting for the three most recent DPP resets, 2017 Gas DPP2, 2019 EDB DPP3, and 2022 Gas DPP3.

Approach to capex forecasts

E7 Our price-quality regime relies on forecasting and incentivising efficient capital expenditure, to ensure that consumers get value for money and that they are paying for the least-cost whole-of-life solutions, including to electrify the economy.

E8 We anticipate some changes from our approach to forecasting capex in DPP3 and are seeking your feedback on these below. Key drivers of the need for change are the uncertainty and pace of change around increased electrification and a focus on resilience after recent severe weather events.

E9 In assessing capex we are aware of the asymmetric consequences of over and under investment as outlined in our Economic Principles in **Attachment A**. Reopeners are a mechanism to protect consumers against capex being set too low and a CPP is available for very specific circumstances or a change in context. Managing this risk well means that consumers are less likely to pay for investments that do not proceed, and that distributors are more likely to receive IRIS rewards only for genuine efficiency savings.

E10 As in previous resets there are some forecasting options that are possible, but which we do not think are appropriate, including:

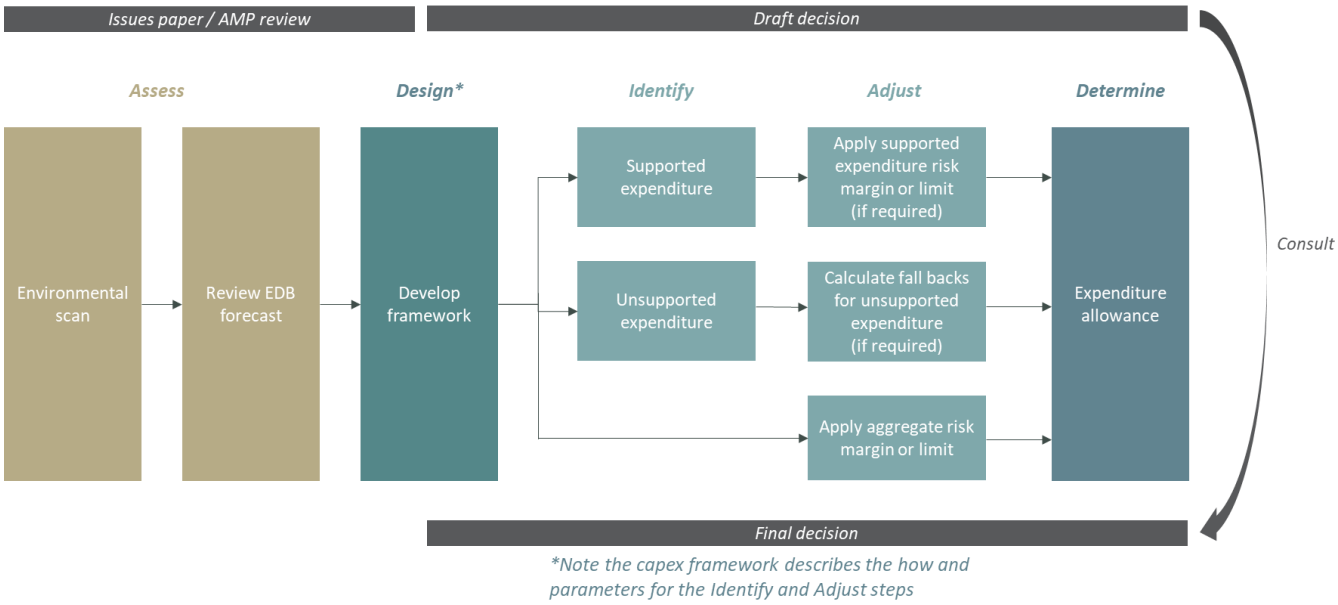
- E10.1 bottom-up independent forecast of capex for each EDB, because it would be inconsistent with the relatively low-cost purpose of DPP/CPP regulation
- E10.2 models that make use of efficiency comparisons between the relative performance of EDBs because this would be inconsistent with section 53P(10) of the Act
- E10.3 step and trend methodology which is not well suited for some capex categories because of the variable timing of growth projects and asset replacement.

E11 In developing our capex approach for EDB DPP4 we will draw on lessons from past DPP processes, particularly the 2017 and 2022 GPB and 2020 EDB resets. Capex forecasting in these processes is summarised at the end of this Attachment. An important difference between the past three resets was our use of an independent engineer in the 2017 GPB DPP reset to review aspects of the AMPs. This did not occur in the 2020 EDB and 2022 GPB DPP resets. As discussed below, an independent review of 2023 AMPs will be an important part of our information gathering to further inform our capex forecasting for the current reset.

E12 At a high-level, our proposed approach for forecasting capex has the same general structure as previous resets and is outlined in Figure E1. There are a number of choices for delivering each step in this framework. Below we explain each of the steps and discuss our early thinking for DPP4 with respect to these areas of choice.

E13 Opportunities for engaging in the process are set out in **Chapter 6**, which include specific issues-based workshops in early 2024 and further engagement if needed in July/September 2024 after the draft determination has been released.

Figure E1 Proposed summary of steps for setting capex forecasts for DPP4



Assess

E14 In the 'Assess' step we consider the external factors and trends that are likely to be facing EDBs over the regulatory period and assess EDB AMPs to understand how they are planning to respond to them. The 'Assess' step enables us to identify risks that need to be mitigated and areas where our approach for assessing capex forecasts can be improved. We have reflected our understanding of the issues and opportunities in this Issues paper.

Our environmental scan reveals significant challenges and uncertainty for the energy sector to respond to over the next 5-10 years

E15 In addition to leveraging stakeholder insights from the IM Review process, we have engaged with stakeholders to gain an understanding of the emerging challenges they are seeing. This has included consultation on the DPP4 process paper in May 2023 (where we reflected our understanding of the changing landscape for EDBs and consumers and the challenge this creates for DPP4), a workshop on forecasting and incentivising efficient expenditure, and targeted engagement about expenditure forecasting in November 2022. [186, 187, 188]

E16 The feedback from these engagements has been used alongside our own monitoring and analysis work of EDB information disclosures and engagement with EDBs, other energy stakeholder groups and relevant government entities, including MBIE and the Electricity Authority.

E17 There are evolving contextual factors which need to be considered over the next five to 10 years. There was positive feedback from stakeholders about how our Process paper reflected these factors and challenges ahead. These included:

E17.1 greater levels of electrification and uncertain timing, driven by decarbonisation

E17.2 increasing challenge of resilience of networks, including both climate change and cyber security

E17.3 declining health and performance of existing infrastructure

E17.4 increasing availability of non-network solutions

E17.5 evolving technology providing greater visibility requirements of LV networks

E17.6 changing consumer expectations and greater involvement with the electricity network and/or retailers

E17.7 historically high inflation, supply chain challenges and shortages in the labour market.

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186 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2025: Proposed process" (25 May 2023).

187 Commerce Commission, "Online workshop: forecasting and incentivising efficient expenditure for EDBs", (7 November 2022).

188 Commerce Commission, "Request for feedback – Expenditure forecasting by electricity distribution businesses and areas of focus for the 2025 default price-quality path reset" (15 November 2022).

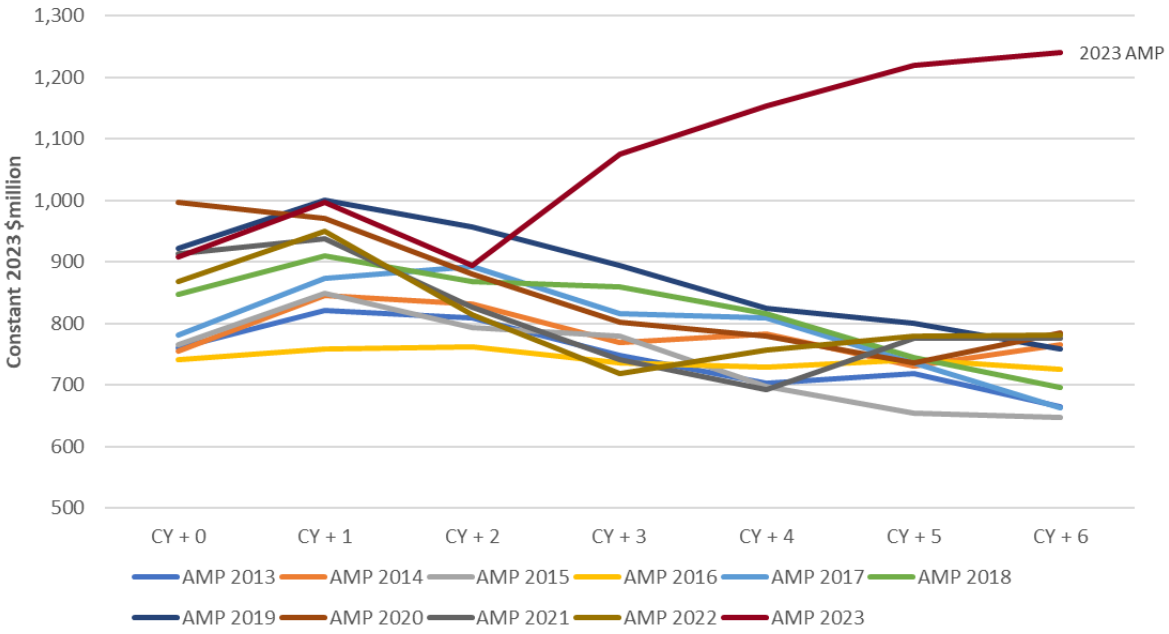
E18 The scale and timing of actions required to respond to these factors will not be uniform across EDBs or within an EDB's own network.

EDBs are anticipating a need for significantly higher capex in the future

E19 The 2023 AMPs show that some EDBs are planning significant increases in expenditure on their networks. These mark a step change from 2022 AMP forecasts and in some cases (eg, Orion and Wellington Electricity) exceed the increases considered previously in CPPs. Some EDBs have also signalled they expect 2024 AMP forecasts to be higher than the 2023 AMP forecasts, particularly as resilience expenditure is reconsidered in light of recent extreme weather events.

E20 Figure E2 shows the capex forecasts over the past 11 years, totalled over the 16 price-quality regulated EDBs, including those on a CPP.[189] This shows a clear step change with total capex forecast to lift in 2026 (CY+3 for 2023 AMP) to levels well above previous years, and to grow rather than flatten or ease over the regulatory period.

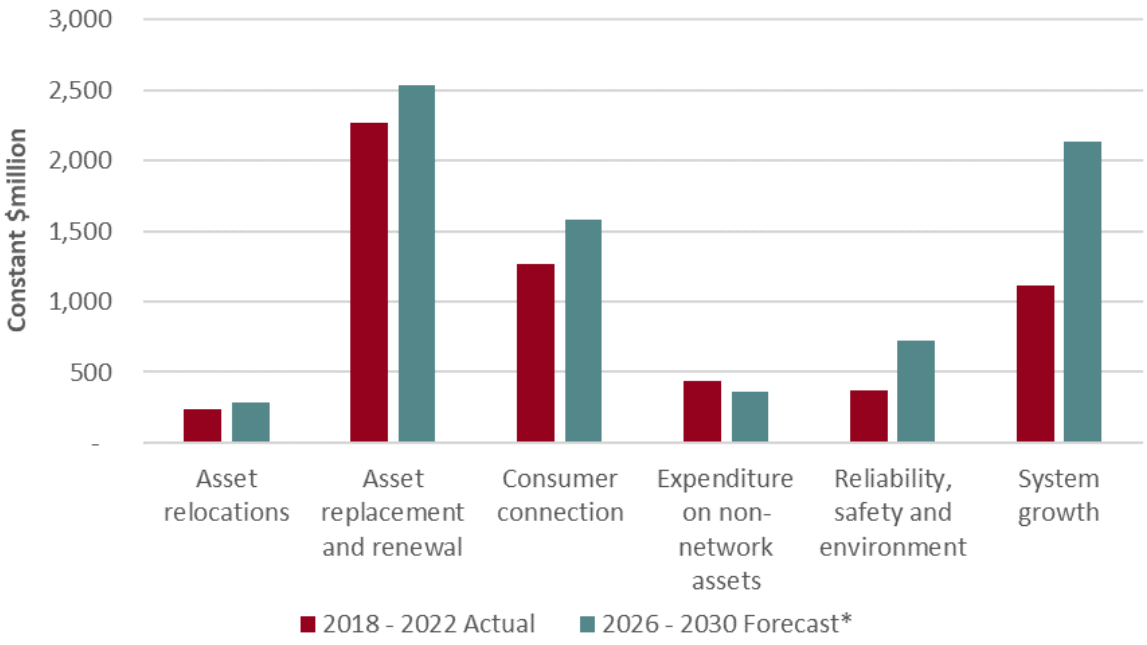
Figure E2 Comparison of capital expenditure forecasts from EDB AMPs forecasts



E21 Breaking this down in Figure E3, EDBs are overall expecting to significantly increase spend on most network capex categories. Most pronounced is the increase in system growth, driven by factors including an expectation of higher consumption.

[189] Orion 2014-2019, Powerco 2018-2023, Wellington Electricity 2018-2021 and Aurora Energy 2021 – 2026.

Figure E3 Breakdown of expenditure on assets



** Note, this includes 2022 AMP forecasts for Eastland/Firstlight and Unison, instead of AMP 2023 which were unavailable*

E22 Recent severe weather events including Cyclone Gabrielle and the January 2023 Auckland floods have highlighted the need for EDBs to focus on resilience, defined by the Institute of Electrical and Electronics Engineers (IEEE) as *"The ability to protect against and recover from any event that would significantly impact the grid"*. Some EDBs have undertaken risk assessments to identify weakness in preparation for, and recovery from, high impact low probability (HILP) events. Some EDBs have also signalled a further increase in the 2024 AMPs to reflect the lessons from these recent severe weather events, and government policies and strategies on energy and decarbonisation.

EDB AMPs continue to be a good starting point for setting forecast capex for DPP purposes

E23 We consider that AMPs provide a good starting basis for determining capex for DPP purposes. EDBs are in a good position to understand the needs of their customers and communities, and they ought to understand the health of their assets, the risks to delivering safe reliable electricity and what is required to manage those risks. EDBs have access to information on factors like:

E23.1 current and future demand drivers for distribution services (both the quantities of demand, and the level of quality expected)

E23.2 how to efficiently respond to this demand through conventional investment or through innovative or non-traditional approaches

E23.3 the current and future condition of their assets and the quality and safety risks these pose

E23.4 the costs incurred in providing these services.

E24 As indicated in our DPP4 process paper, we expect that we will likely need to adapt how we use AMPs in our approach to forecasting capex compared to our approach in DPP3. To the extent that we utilise EDBs' own expenditure forecasts, we are mindful that there are risks that these forecasts could be too high; for example, if they take a conservative approach to spend need, timing and/or cost, as well as too low, if not all the spend need, timing and/or cost have been appropriately identified. Acknowledging that even the best forecasts will not be able to provide for everything as circumstances, demands, costs, and other factors change.

EDB expenditure forecasts will be assessed by an independent engineering consultancy

E25 We regularly review AMPs to monitor the compliance and performance of the EDBs and to ensure that the AMPs are fulfilling the purpose of information disclosure (that sufficient information is available for interested persons to assess whether the purpose of Part 4 is being met).

E26 As above, some of the 2023 AMPs have large step changes in forecast expenditure. If we are to rely on these forecasts, particularly where there are material step-changes in forecast expenditure and historical expenditure provides less guidance on what is appropriate, having confidence in the AMPs is critical. We signalled in our DPP4 Process paper that we consider it prudent to seek external expert support in undertaking our review of the AMPs and to give particular consideration to the basis of forecasts that may be used to set the DPP.

E27 We have recently engaged the services of engineering consultancy IAEngg to review and provide a view on the reasonableness of EDBs' demand and expenditure forecasts for the 2025 – 2030 period as disclosed in the 2023 AMPs.[190] IAEngg have been asked to identify and analyse key drivers of change, forecast assumptions, uncertainties, and variables in financial and demand forecasts, and to provide an opinion on the reasonableness of these factors. The reviews are not intended as an audit of EDB quantitative information, a physical inspection of assets, or a review of the state of any EDB's network.

[190] Commerce Commission, "External reviews of electricity distribution businesses' 2023 asset management plan and of efficiency and productivity", (31 August 2023).

E28 We are intending to leverage off this work to inform the development of our framework for setting capex forecasts for DPP4 purposes. More information about the review and opportunities for EDBs to engage with this process are set out on the Commission's website.[191]

E29 The findings from the IAEngg review will be considered alongside our own high-level assessment of reasonableness of the capex forecasts. This is likely to include ratio analysis, using forecasts from other sources like Transpower, Statistics NZ and other external sources to test the reasonableness of forecasts in EDB AMPs.[192]

Design

E30 The 'Design' step is where we develop our framework for calculating forecast capex for DPP purposes and reflects our response to specific risks and opportunities identified in the 'Assess' step. For example, an upper limit based on the five-year historical average was used in the 2022 Gas DPP reset to reflect expectations of a future decline in the use of natural gas.

E31 We have a range of options we can use to determine the forecast capex for DPP purposes. This includes adopting the capex forecasts in AMPs, setting a limit on total capex allocation, applying different limits to different categories of spend, and setting different limits for different EDBs. The options can be applied at an aggregate or category level and defined in dollar or percentage terms.

E32 The framework provides a consistent approach for applying these options to non-exempt EDBs based on a set of principles or criteria.

E33 A key consideration when designing the framework is the ability for entities to have their revenue limit reconsidered if they consider their capex requirements exceed the forecasted values provided for in the DPP, including access to reopeners and CPPs. We are mindful that this may lead to a higher number of reopener and CPP applications than we have seen in the past which could lead to an overall increase in cost but note that this can still be consistent with the principle of a relatively low-cost regime.

E34 We apply the framework to produce capex forecasts for non-exempt EDBs for inclusion in the draft determination. Stakeholders can provide feedback on both the framework and resulting capex forecast as part of the consultation on the draft determination. In reaching our final decisions on the framework and forecast capex, we will take into account feedback from consultation with stakeholders.

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191 *Ibid.*

192 Such as the ratio of asset replacement and renewal to depreciation to consider whether planned investment is sufficient.

We are expecting to respond to greater uncertainty in capex forecasts than in past DPP processes

E35 Given the higher uncertainty and pace of change signalled by EDBs for the DPP4 period, we will be applying more scrutiny to EDB AMPs than in past resets. Understanding how these factors have been reflected in EDB forecasts will help us to consider the extent to which we can rely on the AMP forecasts and how we might use the forecasts for DPP purposes.

E36 In the past, we have been more likely to rely on capex forecasts that:

E36.1 do not represent a material variance from historical averages

E36.2 may represent a material variance, but the dollars are not proportionately material

E36.3 represent a material variance but the variance is appropriately supported by information in the AMP as evidenced through the AMP review and/or our analytics.

E37 EDBs have told us that unlike past resets, past expenditure is unlikely to be as relevant an indicator for future capex for DPP4. We have considered this feedback and consider our proposed approach of making use of the findings from the IAEngg AMP review reflects this. We will consider alternative forecast capex options when designing our framework.

EDBs will have an opportunity to engage with early thinking on how the findings from the 2023 AMP review could be used in DPP4

E38 The findings from the 2023 AMP review will inform the design of the framework and identify or inform the inputs for calculating alternate or fall-back forecasts for expenditure that is not well supported.

E39 At this early stage, we do not know what elements of the review findings will be most useful in the design of the capex framework for DPP purposes. This will need to be managed along with the timing of additional information that we might receive during the overall process, whether from the 2024 AMPs and/or info gathering requests.

E40 IAEngg are planning to complete their review in late 2023 and our intention is to make their report publicly available early in 2024. In line with the DPP4 Process paper, our intention is to have a workshop in early 2024 where we discuss our emerging thinking on the draft framework and how the findings from the 2023 AMP review have informed this.

Identify

E41 The 'Identify' part of the process consists of applying the tests within the capex framework for identifying expenditure that appears reasonable (supported) and expenditure that does not (unsupported expenditure), as defined in our framework. For example, in the 2017 Gas DPP reset, expenditure forecast in GPB AMPs were classified as either 'supported' or 'unsupported', based on whether they passed a set of variance tests.[193]

E42 In addition to the findings from the 2023 AMP review, we may also apply complementary analysis, like consumer connections, system growth, and forecasting accuracy with EDB historical and Statistics NZ forecasts, to give us a broader evidence base to assess forecast capex.

Adjust

E43 This part of the process is where any adjustments to capex forecasts are applied to manage forecast risks that the Commission considers necessary to mitigate. In the past this has included the use of caps and fall-back or alternative forecasts to address the risk of over-forecasting, or of under-forecasting, that cannot be otherwise managed by flexibility mechanisms.

E44 We note that we have significant flexibility in establishing the framework to determine whether to apply caps at:

E44.1 an expenditure category, and if they do then what the nature of the cap should be

E44.2 an aggregate expenditure level and if so what the nature of the cap should be.

E45 There are a range of ways to define any cap to manage uncertainty and forecast risks, including:

E45.1 a uniform percentage cap, where any expenditure beyond a certain percentage of historical capex is limited

E45.2 a 'sliding scale cap' where the cap applied varies based on some other factor

E45.3 a uniform dollar value cap, where expenditure which is more than a given amount above historical levels is limited.

[193] See the Summary of forecasting capex for the previous three resets section below for more detail.

E46 We recognise that in the current environment past approaches may not be appropriate, such as the aggregate expenditure cap of 120% of historical spend applied as part of DPP3. The level of any cap will be considered afresh for DPP4 and includes the option to not apply a cap.

E47 For example, in the GPB 2017 DPP process, which included an external AMP review process, supported expenditure was accepted and included at that level for DPP setting purposes.[194]

E48 We have tended to use fall-back or alternative forecasts (Commission derived values) for expenditure that appears inconsistent with its cost drivers. For DPP3 we used historical average expenditure or derived an amount reflective of an external assessment of a key cost driver, like Statistics NZ forecasts of household growth, to derive expenditure for consumer connection.

E49 EDBs raised concerns in submissions following the Expenditure Forecasting workshop with the use of historical information for forecasting, given the significant uplift in expenditure anticipated to be required to accommodate decarbonisation of the economy. In previous resets we have used a combination of historical information and projections to reset DPPs. This does not limit the approach we may take in DPP4 and we intend to consider the appropriate approach as part of the reset.

E50 The findings from the 2023 AMP review will likely be an important consideration for how we apply adjustments to capex forecasts for DPP4. The results of the AMP review will identify the key areas of expenditure and how these affect the overall expenditure for EDBs. The review will also provide an independent opinion on the reasonableness of the forecasts.

Determine

E51 This part of the process is where we determine forecast capex for DPP purposes. We will present our approach and resulting forecast in the Draft reasons paper and Draft determination for stakeholder feedback. We will repeat the 'Determine' step in our final decision based on any changes to the framework, approach, methodologies, and input data.

[194] Note gas resets involves five regulated suppliers compared to 16 for EDBs.

E52 For our draft decision in May 2024, we intend to use the data and information from the 2023 AMPs and the responses to our section 53ZD notice requesting early disclosure of 2024 AMP forecast expenditure, discussed below. This is a change from our Process paper, where we noted that we would use only the 2023 AMP information and data.[195]

We will be requesting advanced disclosure of 2024 AMP forecasts and explanations for material changes

E53 Some EDBs have indicated that their 2024 AMPs may have considerably increased expenditure compared to their 2023 AMPs. Where the increases are substantial, it may be difficult to consider large changes in the time available between draft and final decision.

E54 To mitigate this risk, we intend to issue a section 53ZD notice in early November 2023 to request early disclosure of 2024 AMP forecast capex with explanations for material variations and the underlying drivers to justify the revised expenditure forecasts. We informed EDBs of our intention to request this information in our DPP4 Process paper.[196]

E55 If required, we will engage with EDBs or hold a workshop to discuss any material differences between the final and early disclosure of 2024 AMP expenditure forecasts and any material changes to our capex framework from the draft determination.

E56 Findings from the 2023 AMP review will inform the design of our framework and how we use the information disclosed under the section 53ZD notice and the final 2024 AMP to set forecast capex for DPP4.

E57 EDB submissions noted that information provided in response to the Commission's request would still be subject to change and carries the potential risk of errors or inaccuracies in the data provided, as it may not have undergone the same level of scrutiny and validation as the certified AMP.

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195 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2025: Proposed process" (25 May 2023), paragraph 38.

196 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025: Proposed process" (25 May 2023).

E58 We acknowledge the concerns raised by stakeholders and note that if the changes between the section 53ZD notice and the 2024 AMP are material, then we will need to consider these, to the extent practicable in the time available, in moving from the Draft to Final Determinations. Note for practical reasons, similar to past resets, we may not be able use information which is provided late in the process.

E59 Table E1 provides an overview of how the 2023 AMP review, section 53ZD request for early disclosure of 2024 AMP information and final 2024 AMP review work fit within the overall DPP4 process. It also notes where the milestone was in the DPP3 process. Further process details are in **Chapter 6**.

Table E1 Summary of key capex milestones in DPP4

Date	DPP4 Milestone	DPP3 Comment
November 2023	Issue section 53ZD notice for early disclosure of 2024 AMP forecast expenditure and explanation for material variances	New to DPP4
15 December 2023 (indicative)	Section 53ZD information due	New to DPP4
Early 2024	Receive and publish 2023 AMP review report/findings	New to DPP4
	Potential information gathering request (section 53ZD notice) for more information about EDB forecasts, following release of 2023 AMP review report/findings	New to DPP4
	Potential workshop to get early feedback on the draft capex framework and how the findings from the 2023 AMP review have been used to shape this.	Early thinking on the capex framework included in Issues paper.
31 March 2024	2024 AMPs due	Same date
May 2024	Publish reasons paper and draft determination paper setting out capex framework and draft capex forecast amounts.	No change from DPP3
31 August 2024	Information disclosure data for the year ended 31 March 2024 available	No change from DPP3
By 29 November 2024	Final reasons and determinations paper	No change from DPP3

Other issues related to our forecast of capex

E60 In addition to the AMP review, we have identified a number of areas where we think it would be helpful to test our position with stakeholders or to obtain further information to progress our analysis. These are set out below.

We are proposing to apply the capital goods price index to forecast capex

E61 Our approach for capex forecasts is to assess capex in constant dollar terms and then express the approved forecast in nominal terms by reinflating the figures using an appropriate index.

E62 We have used a range of forecast indices in the past to inflate the approved capex forecast. For example, we used the PPI for the last two Gas DPP resets and the CGPI for the EDB 2020 DPP reset.

E63 The PPI measures movements in goods and services purchased and used by business' at 'user cost' while the CGPI measures movements in the purchase and construction of capital assets (buildings, machinery, infrastructure).[197]

E64 Our current thinking is that the CGPI is the appropriate index for capex in the DPP4 regulatory period. We are interested in stakeholder views on this.

We are concerned about the challenges in delivering increased programmes of work signalled by EDBs given current labour market, supply chain and economic challenges in New Zealand

E65 As discussed in the Assess section above, there is likely to be a significant step change in expenditure in the 2024 AMP compared with the 2023 AMP. This is in addition to the significant increase in expenditure already reflected in the 2023 AMPs.

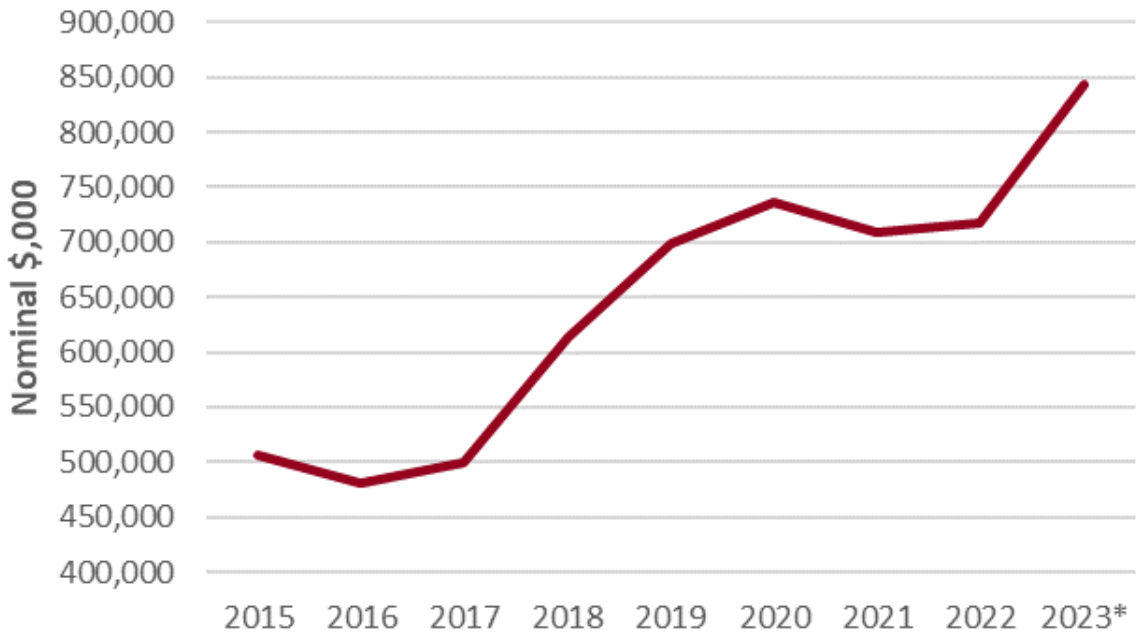
E66 We note that there is a distinction between a significant step change in expenditure driven by a significant step change in the size of the work programme, and a step change in expenditure driven by increased costs. The removal of inflation from our assessment of EDB capex forecasts largely removes the price increase component and enables us to consider the size of the volume of work delivered and the potential value of that work.

E67 This will help us to assess the achievability of the work programme. We can then set capex allowances that accounts for the risk of over-forecasting, or of under-forecasting, that cannot be otherwise managed by flexibility mechanisms.

E68 Figure E4 shows actual nominal capex from 2015 to 2023 across all regulated EDBs (except Alpine Energy). The graph shows a step change in expenditure of approximately $736 million or 47% from 2017 to 2020.

[197] Statistics New Zealand "Alternative Frameworks for Price Indexes" download.

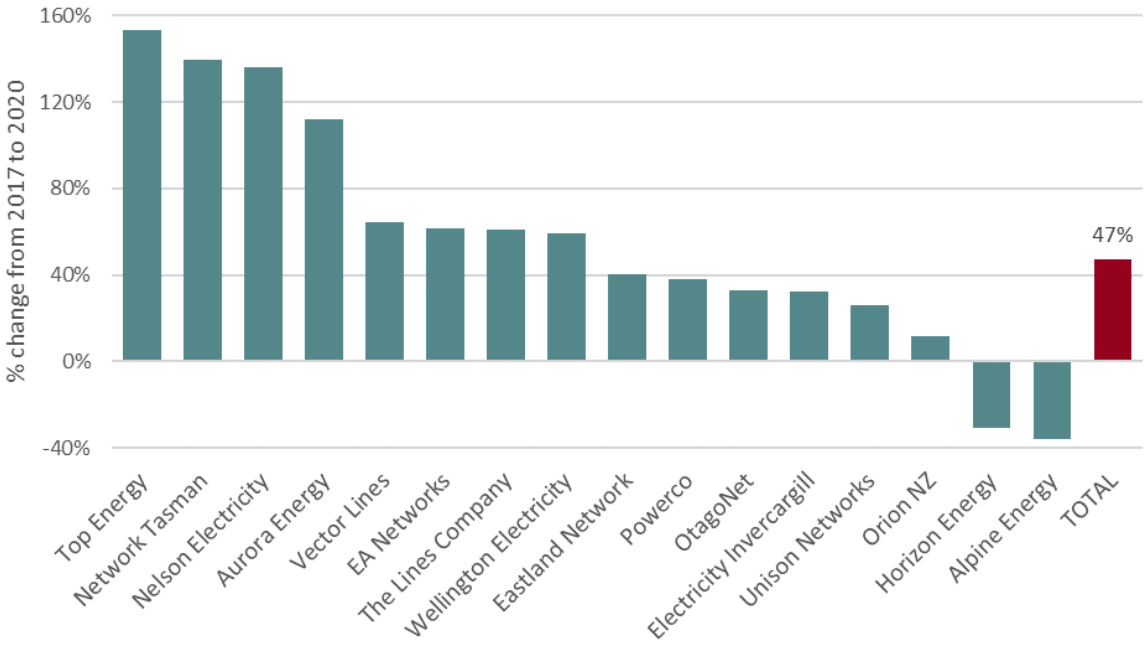
Figure E4 Actual capex net of disposals



**Excludes Alpine Energy*

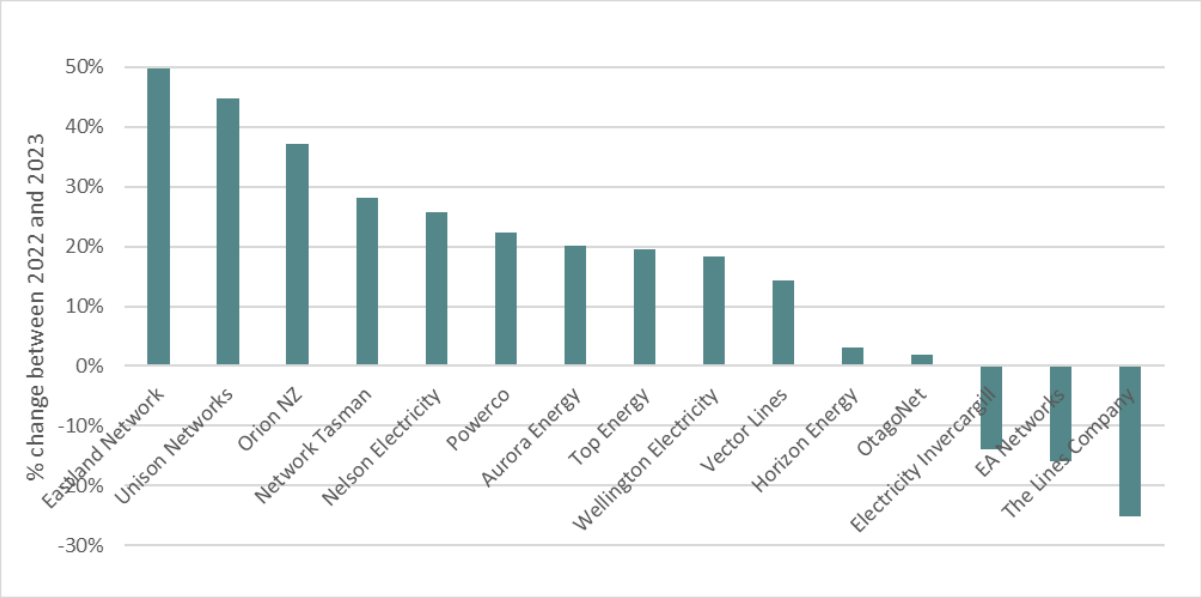
E69 Figure E5 shows that the step increase between 2017 and 2020 was not limited to a few EDBs but was experienced by the majority of EDBs. The change in expenditure ranged from -36% and +153%, with a median change of +50%.

Figure E5 Increase in actual capex (net of disposals) from 2017 to 2020 by EDB



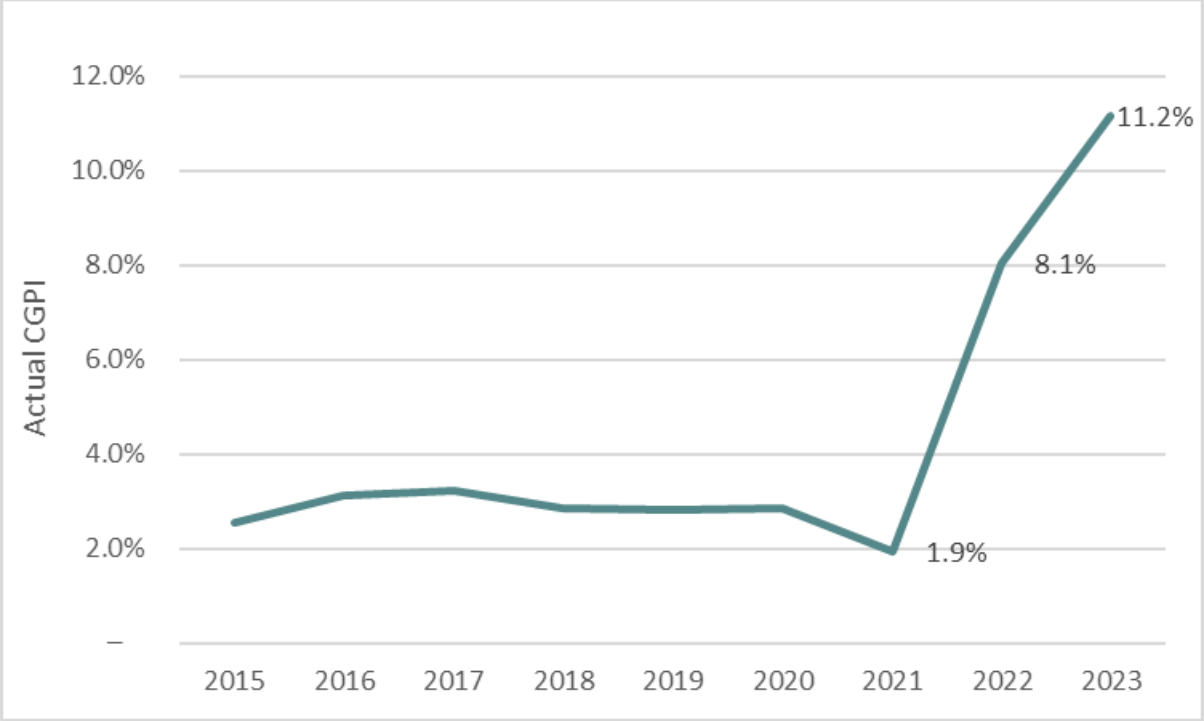
E70 Actual capex in 2023 was approximately $844 million, excluding Alpine Energy whose information was unavailable due to an extension granted to enable them to provide this in November rather than in August 2023. The increase in expenditure from 2022 to 2023 was approximately 17%, which is similar to the average annual increase of 16% from 2017 to 2020. The median increase across the 15 regulated EDBs was 19% (see Figure E6).

Figure E6 Change actual capex (net of disposals) from 2022 to 2023 by EDB



E71 Two key contributors to the capex increase from 2022 to 2023 are the response to severe weather events and inflation. Figure E7 shows the CGPI increasing significantly to 8.1% in 2022 and 11.2% in 2023, well beyond the band of 2-3% recorded from 2015 to 2021.

Figure E7 Capital Goods Price Index – Actual from 2015 to 2023



Challenges in delivering increased programmes of work

E72 From a regulatory perspective, deliverability risk is the concern that required works are allowed for but not delivered, with the result being increased profits for EDBs not through improved efficiency but non-delivery. Deliverability risk is considered as part of the development of our capex framework and will be considered in the 2023 AMP review and more broadly.

E73 We understand that it may be challenging for EDBs to deliver required consumer connection and system growth capex work, while maintaining their asset renewal and replacement programmes with the current pool of available resources. As part of our role, we will be closely monitoring compliance with expected quality standards and will respond to incidents of non-compliance.

E74 We consider deliverability of significantly increased work programmes may be challenging given current labour market conditions and wider supply chain issues. The price impact of these issues is to a certain extent reflected in the current historical high rate of increase in the CGPI, but there are also availability impacts.

E75 Deliverability risk will be considered as part of the 2023 AMP review, but we think wider consideration is required on some aspects of deliverability. For example, projects may be feasible at an individual EDB level but not possible at an aggregate level if other EDBs or Transpower are wanting to deliver similar projects or if there is competing demand for the same skills across the industry. The EEA Workforce capability survey in 2019 showed current and future skill shortage areas and highlighted future skill capabilities needed by industry to support future power system transformation.[198]

E76 In addition to considering across all EDBs, delivery challenges also need to be considered in the context of the scale of other infrastructure investment programmes either proposed or under way which will provide constraints on a broader resource pool. For example, Waihanga Ara Rau estimate a peak workforce shortage over the next three years of around 344,000 people in the infrastructure industry.[199]

E77 We note that in response to concerns about current and future skill shortages, the Professional development group initiative, workforce survey and workforce development strategy was developed by industry partners in conjunction with Connexis and later Waihanga Ara Rau. [200, 201]

E78 The Commission understands that the industry is actively considering deliverability challenges. We are interested in understanding how our capex forecast should take into account potential sector-wide deliverability constraints.

We will be using the section 53ZD notice to collect information about how EDBs have reflected resilience in their expenditure forecasts

E79 Resilience expenditure is a particular issue for DPP4 because of uncertainty regarding the scale of spend needed to prepare for an increasing number of severe weather and cyber security events. The higher frequency and impact of these events has also prompted the Department of the Prime Minister and Cabinet (DPMC) to focus on this as a critical issue for New Zealand.[202]

198 Electrical Engineers' Association (EEA) "EEA Submission – Updating the Regulatory Settings for Distribution Networks" (27 September 2021).

199 Waihanga Ara Rau, "Workforce gaps and size of pipeline – Regional view" webpage.

200 Connexis, "New Industry-backed research report to re-energise electricity supply workforce" (webpage, at 8 February 2022).

201 Orion, Transpower, Genesis, Powerco, Counties Energy, and the Electricity Engineers' Association.

202 Department of Prime Minister and Cabinet, "Lifting the resilience of New Zealand's critical infrastructure", webpage.

E80 The IEEE in its technical report "Resilience Framework, Methods and Metrics for the Electricity Sector" (the IEEE Report)[203] provides a useful starting point for considering EDB's resilience response and our ability to rely on their resilience expenditure forecasts. The IEEE defines resilience as:

> "The ability to withstand and reduce the magnitude and/or duration of disruptive events, which includes the capability to anticipate, absorb, adapt to, and/or rapidly recover from such an event."

E81 The IEEE Report recommends the use of resilience frameworks and metrics because this helps quantify risks within an overall framework, weigh resilience improvements against other goals, and support investment strategies.

E82 We note the review by IAEngg includes a separate programme of work to consider resilience planning undertaken by EDBs as part of the 2023 AMP.

E83 Our view is that recent events are likely to have changed risks and parameters which EDBs use to assess resilience. We are therefore intending to request additional information about resilience-related expenditure, as part of our section 53ZD notice for early disclosure of 2024 AMP information.

E84 We are aware that there are likely to be information or factors that will be useful to consider alongside the information provided under the section 53ZD notice and/or information that is unlikely to be visible in forecasts provided. This includes the engagement EDBs have had with consumers about resilience expectations, especially as it relates to significant step changes in expenditure are forecast.

We would like to understand how potential changes in capital contributions policies could be accommodated in DPP4

E85 Capital contributions are a substantial funding source used by many EDBs' to meet the expenditure on assets. In previous DPPs, we applied limited scrutiny to the level of contributions EDBs forecast as we set forecast capex net of capital contributions. However, changes in the forecast level of contributions can have a material effect on forecast capex.

E86 In its issues paper on distribution pricing the EA notes that there is a wide variation in pricing approaches for capital contributions and that there is scope to improve incentives and reduce transaction costs.[204]

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[203] IEEE PES Resource Centre, "Resilience Framework, Methods, and Metrics for the Electricity Sector" (October 2022).

[204] Electricity Authority, "Targeted Reform of Distribution Pricing: Issues paper", (5 July 2023).

E87 We note that if the EA mandates changes to EDB capital contributions policy during the DPP4 regulatory period through a Code change, it is possible that the impacts of changes on expenditure requirements could be accommodated under section 54V(5) of the Act. Section 54V(5) requires the Commission to reconsider its DPP determination if asked by the EA, in certain circumstances, such as Code changes that affect distribution pricing methodologies.

E88 In DPP3 we considered whether capital contributions were forecast to be a similar, higher or lower proportion of expenditure compared to historical levels. The results suggested some distributors were conservative in their approach to forecasting capital contributions.[205]

E89 We have recently observed changes in capital contributions policies which have led to us raising this as a potential area for greater scrutiny than in previous DPP resets. We note the significant increase in forecast funding of system growth from capital contributions by Vector, who forecast to recover all system growth costs from capital contributions in their 2023 AMP.[206] This compares with 0.4% actual system growth costs recovered from capital contributions by Vector from 2018 to 2022. Historically, capital contributions were predominately used to fund consumer connections and asset relocations.

E90 We are mindful of the EA consultation on these issues. To the extent there are concerns on capital contributions which may require regulatory rule changes we will look to consult on these before the DPP is reset.

E91 We are interested in views on how changes to capital contributions policies, either in advance of or within the regulatory period, could be accommodated within our capex forecasts for DPP4.

The forecast capex allocation will need to reflect final IM decisions relating to the proposed large connection contract mechanism

E92 The Draft decisions for the 2023 Input Methodologies review includes the proposed introduction of a 'large connection contract' (LCC) mechanism.[207] This new mechanism was proposed in response to concerns raised by stakeholders regarding expenditure uncertainty resulting from large new customer-initiated connections.

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205 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019), paragraphs B167 – B174.

206 Vector Limited, Electricity Asset Management Plan 2023 – 2033, (2023).

207 Commerce Commission, "CPP and in-period adjustment mechanisms topic paper" (14 June 2023), Chapter 8 Introduction of a large connection contract mechanism for EDBs.

E93 The proposed LCC mechanism would enable connection assets created under LCCs to be excluded from regulated asset bases, and associated revenue to be excluded from compliance with revenue limits, where certain conditions are met.

E94 We will need to take the potential uptake of the new LCC mechanism into consideration when setting the expenditure allowance for EDBs. To enable this to occur we intend to issue a section 53ZD notice, once the IMs have been finalised, to establish:

E94.1 the forecast cost of projects which may meet the criteria for the LLC mechanism if this is implemented in the IM

E94.2 how larger projects are reflected in expenditure forecasts in later years of the regulatory period where direct indication from a significant customer of their intentions may not be available.

Timing of investment and pace of change

E95 Providing incentives to encourage the right investment at the right time is a key focus for this DPP reset.

E96 There has been input from some stakeholders on the timing of capital investment, particularly following the Boston Consulting Group report: "The Future is Electric: A Decarbonisation roadmap for New Zealand's Electricity Sector" (25 October 2022) which stated that the existing regulations provide for 'just-in-time' investment.[208]

E97 Our view is that EDBs who are investing and operating efficiently will be planning to meet expected customer demands for service quantity and quality on a least-cost lifecycle basis. Capacity will therefore be sized over an appropriate planning horizon taking into account the economies of scale and scope inherent in electrical equipment and electricity networks. As a result, there ought to always be some level of growth capacity involved in planning distribution networks for forecast demand because doing so will result in lower lifecycle costs to consumers than always investing incrementally.

E98 We expect EDBs' AMP forecasts to already provide for prudent capacity for future growth recognising the time horizon over which forecasts are made. We appreciate that capacity may at times be difficult to forecast where there is uncertainty on needs and timing of connections or size, particularly in the current environment of decarbonisation.

[208] Boston Consulting Group, "The Future is Electric: A Decarbonisation roadmap for New Zealand's Electricity Sector" (25 October 2022), see page 11.

E99 We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis. That is, are there specific investment decisions being considered due to concerns on delivering increased scale of investment in limited time which are not consistent with a least-cost lifecycle basis assessment? On what basis are EDBs considering these investments? Particularly, are there areas where EDBs are intending to build well in advance of forecast need or for demand or generation this is only speculative?

In-period changes to DPP is being considered as part of the IMs review

E100 We note that there is a risk that expenditure allowances provided under the DPP do not align with investment requirements during the DPP regulatory period as:

E100.1 high levels of uncertainty on the future pace of change may mean some EDBs do not forecast a sufficient level of expenditure in their AMPs to meet decarbonisation, resilience, technological change or consumer expectation requirements compared to outcome requirements

E100.2 forecast expenditure is subject to such high levels of uncertainty that it may be inappropriate to provide for within a DPP allowance.

E101 The current DPP regime allows for changes in response to unexpected changes or events through reopeners and CPPs. The IM Review is considering whether these mechanisms are still fit for purpose and the application requirements.

E102 We will consider the impact of any changes to these mechanisms once the IMs have been finalised.

Capex retention rate

E103 Having an IRIS mechanism allows the control of incentive rates on opex and capex. Without an IRIS there may be significantly different incentive rates between opex and capex, which could lead to an inefficient preference for one type of expenditure over another.

E104 The current Draft IMs propose continuing to use retention factors for operating expenditure and capital expenditure in order to provide EDBs with incentives to seek efficiency gains over the regulatory period, with the strength of incentives remaining constant over the regulatory period.

E105 The process for calculating the opex incentive rate (also known as the ‘retention factor’) is set out in the EDB IMs and is determined as a result of the length of retention of cost under- or overspends and the WACC value.

E106 This is based on the supplier's ability to retain the saving for five years after making the saving, with savings being discounted at the current WACC rate over the life of the saving. This provides suppliers with a constant incentive rate to make savings over a regulatory period.

E107 The approach for capex operates in a different way than the approach for opex, but with a similar effect.

E108 The difference is due to:

E108.1 differences in the way that capital expenditure is recovered over time, ie, through a return on and of capital

E108.2 the fact that cost variance from expenditure allowances in one year are unlikely to have a direct bearing on cost variances from expenditure allowances in subsequent years (unlike opex variances which can be recurring and hence persist into the future).

E109 The capex IRIS requires us to determine an incentive rate (applied to the retention adjustment for over- and underspends) for each supplier at the time of each price-quality path reset. Suppliers therefore have certainty that the incentive rate will be specified in advance of any efficiency improvements being achieved.

E110 The incentive amount is calculated as the incentive rate set in the price-quality path determination multiplied by the difference between forecast and actual assets commissioned.

$$Retention\ adjustment = Incentive\ rate \times (PV\ forecast\ commissioned\ assets - PV\ actual\ commissioned\ assets)$$

E111 In our EDB DPP3 decisions, we determined the capex incentive rate to be equal to the opex incentive rate (which is dependent on the WACC and the length of time that savings are carried forward). For DPP3 the incentive rate in the opex and capex IRIS was 23.5%.

E112 The joint application of the capex IRIS and the opex IRIS was intended to ensure non-exempt EDBs are financially neutral between choosing opex and capex solutions in terms of regulatory expenditure incentives.

E113 Our initial view is to set the capex incentive rate to an equivalent value as the opex incentive rate to ensure EDBs are financially neutral between choosing opex and capex solutions in terms of regulatory expenditure incentives.

E114 Given the opex incentive rate uses WACC as an input to the calculation we expect the rate may increase compared to DPP3 due to increases in the risk-free rate which is a core component of the WACC calculation. If we are to set the incentive rates to be equivalent as currently proposed this will have consequential impacts on the capex incentive rate.

Summary of feedback requested from stakeholders

E115 The table below sets out the main areas where we are seeking specific feedback from stakeholders. We are also interested to know if there are any specific areas that stakeholders think is important to consider as we develop our framework for capex.

Table E2 Summary of requests for comment or responses on initial views

	Number	Request for comment or responses on initial views
Forecasting capital expenditure	2	**We are proposing to adapt our approach to capex for DPP4 based on feedback from EDBs, that past expenditure is not a good starting point for considering future spend.** Do you have any particular concerns or issues with our proposed approach? If so, how these could be resolved? What alternative data and external sources should we use to support our consideration of capex forecasts, beyond the information in 2023 AMPs, responses to section 53ZD notices and 2024 AMPs, and why these should be used?
	3	**We are proposing to apply the capital goods price index to forecast capex allocations.** Is there a more appropriate index which could be applied; and, if so, why?
	4	**We have concerns about the challenges in delivering increased programmes of work given current labour market, supply chain and economic challenges in New Zealand.** How should our capex forecast take into account potential sector-wide deliverability constraints?
	5	**We will be using a s 53ZD notice to collect information about how EDBs have reflected resilience in their expenditure forecasts.** What engagement have EDBs had with consumers about resilience expectations, especially as it relates to significant step changes in forecast expenditure? What other considerations should we factor into our analysis of the resilience expenditure information collected from the s 53ZD notice and/or what is unlikely to be visible in the forecasts that we should consider?
	6	**We intend to consider how potential changes in capital contributions policies could be accommodated in DPP4.** How could changes to capital contributions policies, either in advance of or within the regulatory period, be accommodated within our capex forecasts for DPP4?
	7	**We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis.** Are there specific investment decisions being considered due to concerns on delivering increased scale of investment in limited time which are not consistent with a least-cost lifecycle basis assessment; for example areas where EDBs are intending to build well in advance of forecast need or for demand or generation that are only speculative? On what basis are these investments being assessed?

Summary of the capex forecasting approach for the previous three DPP processes

E116 This section contains for reference a summarised representation of the capex forecasting approach from the three most recent DPP processes across gas pipeline and EDBs. Further information on these processes is available on the Commission's website.[209]

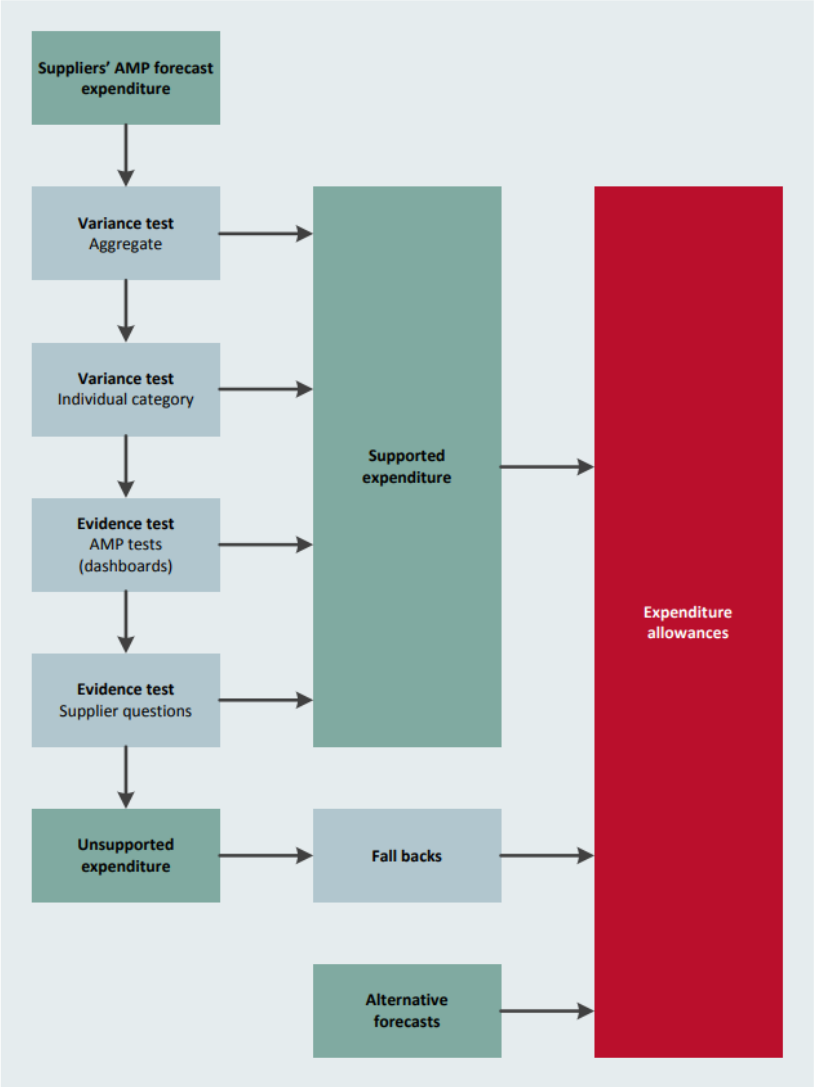
2017 Gas DPP process

E117 For the 2017 Gas DPP process, we tested GPB AMPs and scrutinised capex forecasts that exceeded historical averages with 10% margins added. Our view was that the 10% margin struck a balance between identifying expenditure that required further evidence and an approach that was consistent with the low-cost approach of setting DPPs.

E118 We accepted forecast expenditure that was under the cap and scrutinised expenditure above the cap. Our process is summarised in Figure E9 and explained further below.

[209] Commerce Commission, "Default price-quality paths for gas pipeline businesses from 1 October 2017: Final reasons paper", (31 May 2017); Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020: Final decision", 27 November 2019); and Commerce Commission, "Default price-quality paths for gas pipeline businesses from 1 October 2022: Final reasons paper", (31 May 2022).

Figure E8 2017 Gas DPP capex forecast steps



E119 At each 'test' step, expenditure forecasts in GPB AMPs were classified as either 'supported' if they passed the variance test or 'unsupported' if they didn't. Supported expenditure was accepted and included at that level in our forecast.

E120 Forecasts were also supported for any year where the forecast aggregate opex or forecast aggregate capex was less than the BAU level.

E121 Categories of expenditure were supported if they were:

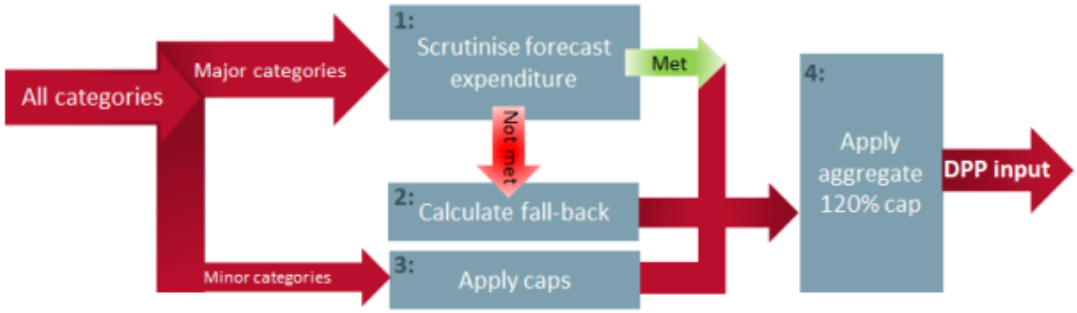
E121.1 less than the BAU level for that category

E121.2 no more than 5% above the 5-year historical average opex and no more than 10% above the 5-year historical average capex.

E122 Expenditure categories that were above BAU levels were subject to a more detailed assessment by an independent reviewer. This scrutiny consisted of 'AMP evidence' and 'supplier evidence' steps in our process diagram above. The recommendations from the independent reviewer were used to make a decision on whether to support the forecast figure or not. We used own fall-back calculations or alternate forecasts to determine expenditure for unsupported expenditure categories.

E123 Figure E10 outlines the four main components of the EDB DPP3 approach:

Figure E9 2020 EDB DPP capex forecast steps



E124 **Step 1 – scrutinise forecast expenditure:** We scrutinised categories of capex within the current AMP forecasts, using the expenditure categories within ID. We applied scrutiny to expenditure used for meeting growth — comprising 'consumer connection' and 'system growth' capex — and expenditure used to renew or improve existing capabilities — comprising 'asset replacement and renewals' (ARR) and 'reliability, safety and environment' (RS&E) capex. We identified cost drivers for these bundled categories and assessed whether the expenditure for each category appeared consistent with those cost drivers — within a tolerance commensurate with the high-level nature of the analysis.

E125 **Step 2 – calculate fall-back expenditure where necessary:** Where we concluded that the forecasts for the capex categories we scrutinised do not reflect their cost drivers, we calculated an expenditure allowance for that category that is more consistent with those cost drivers.

E126 **Step 3 – cap 'other' expenditure:** We capped the remaining, minor categories of expenditure—being asset relocations and non-network expenditure. We used the higher of a dollar cap and a percent-based cap on growth over historical average expenditure. The percent-based cap used the same 'sliding scale' that was used for expenditure on non-network assets in DPP2.

E127 **Step 4 – apply an aggregate cap:** As a final step, we capped our aggregate capex forecasts for each distributor at 120% of its historical average expenditure. This is like DPP2 where we capped expenditure for network assets at 120% of historical average levels. This overall cap was intended to reflect the point at which we considered the cost impact on consumers justified further scrutiny of expenditure.

2022 Gas DPP process

E128 The process for setting the capex expenditure forecast for the 2022 Gas DPP is summarised below.

E129 Set capex allowances using a top-down approach based on GPBs' own forecasts of capex but capped by their five-year historical average spend. In contrast to the 2017 Gas DPP, the capex allowance for this reset did not include a margin to the historical capex. (See more below.)

E130 Seek additional information from GPBs regarding capex items that needed to be explained, accounted for in top-down analysis using historical capex projection, or modelled as capex step changes.

E131 Consider GPB capital contributions policies, new connection growth and scrutinise GPB non-network capex separately due to the fluctuating nature of this category of expenditure. This led to the use of GPB forecasts for new connection growth, consumer connection capex, ICP growth and short-term natural gas demand in the 2022 Gas DPP reset.

E132 Introduce reopeners to mitigate the risk that DPP expenditure allowances would be insufficient to address network capacity issues or mitigate a risk that was unknown at the time the DPP was set. Capex reopener provisions were made available for expenditure associated with demand growth or risk events. An opex reopener was also made to allow for situations where opex is demonstrably more cost effective than capex for the risk event reopener.

E133 In the 2017 Gas DPP we tested GPB AMPs and scrutinised capex forecasts that exceeded historical averages with 10% margins added. This served the dual purpose of setting DPP capex allowances and testing gas GPB asset management practices. For the 2022 Gas DPP reset, we did not consider it appropriate to allow more capex than the historical average. This reflected expectations of a future decline in the use of natural gas.

Attachment F Setting quality standards and incentives

Purpose of this attachment

F1 Section 53M of the Act requires that every DPP must specify "the quality standards that must be met by the regulated supplier" and "may include incentives for an individual supplier to maintain or improve its quality of supply."[210]

F2 This attachment summarises the approach that we used to setting quality standards and incentives in DPP3 (current DPP) and the potential options we are considering for price-quality regulated EDBs in DPP4.

Summary of our considerations

F3 The Act does not prescribe what should be included in a quality standard stating that standards may be prescribed in any way the Commission considers appropriate.[211] The approach we have taken in previous DPPs is to set quality standards for distributors based on a principle of no material deterioration of network reliability. We consider reliability is the most important dimension of quality to consumers, and we have the most robust historical data on reliability measured at the aggregate network level.

F4 Quality standards are an important part of determining a price-quality path. Quality standards are intended to ensure that any cost savings sought by the regulated suppliers do not come at the expense of meeting a minimum level of quality.

F5 The quality standards and QIS in DPP3 focus solely on network reliability, as measured by the duration and number of outages experienced by the average customer, known as SAIDI and SAIFI respectively.[212, 213]

F6 Significant revisions to the quality standards and QISs were made for DPP3, compared to DPP2. We are considering broadly retaining the reliability standards and incentive scheme from DPP3, but welcome submissions on whether to amend certain aspects.

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210 Commerce Act 1986, section 53M.

211 *Ibid,* section 53M(3).

212 The System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) respectively measure the average duration and frequency of interruptions experienced by customers each year.

213 The extreme event quality standard introduced in DPP3 included a SAIDI value limit and a total customer interruption minutes limit incurred during any period of 24 hours.

F7 This attachment outlines our indicative planned approach and areas for further consideration with respect to:

F7.1 quality standard(s)

F7.2 reference periods, normalisation and step changes to historical reliability parameter settings

F7.3 the QIS

F7.4 compliance reporting obligations

F7.5 other quality of service measures.

F8 Each section of this attachment concludes with a high-level summary of key positions and provides statements or questions which we are requesting submissions on. Please note this does not limit other comments on positions within the paper which may not be clearly covered by the question, or submissions on aspects of quality standards or quality incentives which are not addressed within this paper.

Quality standards

F9 The planned and unplanned quality standards in DPP3 are intended to capture instances of potential material deterioration in the reliability of electricity distribution services delivered to consumers.

Principle of no material deterioration

F10 Consistent with our overall relatively low-cost DPP principle, our starting point for a DPP is that distributors should at least maintain the levels of quality that they have provided historically, all else being equal. We refer to this principle as 'no material deterioration'.

F11 The planned and unplanned reliability standards we have previously implemented are based on distributors' historical performance and are intended to give effect to the no material deterioration principle.

F12 While no material deterioration is a starting point for our approach to quality, we also acknowledge the need for distributors to make trade-offs about the level of quality they deliver, and the cost incurred in doing so. This consideration is addressed, at least in part, by the QIS. The QIS is compatible with the IRIS incentive scheme as it takes into account that costs are shared between the suppliers and customers.

F13 We also note that our quality standards only apply at an aggregate network level. We expect EDBs to consider the needs and expectations of different customers and customer groups when making trade-offs about quality on different parts of their networks and to reflect these in their AMPs.

F14 The extreme event standard in DPP3 was set at a fixed amount for all distributors.[214] This is because we considered that it was not possible to set a limit based on the reference period for an expectation of no material deterioration because of the infrequency of such events.

How the standards are specified in DPP3

F15 An EDB is deemed to be non-compliant with a quality standard if it:

F15.1 exceeds the SAIDI or SAIFI limit for planned interruptions for the DPP regulatory period

F15.2 exceeds the SAIDI or SAIFI limit for unplanned interruptions for the DPP assessment period

F15.3 has an extreme event (excluding those attributable to major external factors) in the assessment period.[215]

F16 Where the 'regulatory period' is the full period to which the DPP Determination relates (ie, five years) and 'assessment period' is a 12-month period commencing on 1 April.

SAIDI and SAIFI as the measures

F17 The SAIDI and SAIFI respectively measure the average duration and frequency of interruptions experienced by customers each year.[216]

F18 SAIDI and SAIFI are generally used as the measures of reliability for the purposes of the quality standard. SAIDI and SAIFI are internationally recognised and are the most common methods of measuring reliability. There is also a significant amount of historical SAIDI and SAIFI data available for New Zealand EDBs.

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214 In DPP3 the extreme event standard was set at an unplanned SAIDI value of 120 minutes and a total of six million customer interruption minutes in a 24-hour period, excluding events arising from major external factors.

215 Extreme event means any period of 24 hours where the extreme event standard limits specified in the DPP3 Determination at Schedule 3.3 paragraph (1)(a) and paragraph (1)(b) are exceeded, excluding those attributable to major external factors. Major external factors are one or more of natural disaster, third party interference, a fire that does not originate on the non-exempt EDB's network or wildfire.

216 A higher SAIDI or SAIFI represents poorer reliability performance.

F19 The exception is the extreme event standard which applies a limit of six million interruption minutes for any 24-hour unplanned interruption.

Unplanned interruptions are normalised

F20 SAIDI and SAIFI reliability measures are highly susceptible to major events such as extreme storms. A boundary value has been implemented for unplanned SAIDI and SAIFI to limit the impact of such events and reduce the variability of these measures in order to focus on material deterioration (limiting false-positives for extreme years).

Separate standard for planned interruptions

F21 A planned interruption is any interruption in respect of which not less than 24 hours' notice was given, either to the public or to all electricity customers affected by the interruption.

F22 Separation of the planned interruptions from the unplanned interruptions eliminates the ability of an EDB to avoid contravening its unplanned reliability standard by deferring planned work when it forecasts that it is otherwise likely to contravene. We considered in DPP3 that this separation better promotes the purpose of Part 4 because it does not create a disincentive to investing at what might be the most appropriate and efficient time, and it better reveals deterioration of network performance to be assessed against the quality standards.

Setting the standards – unplanned SAIDI and SAIFI

F23 Unplanned SAIDI and SAIFI are assessed on an annual basis, with the unplanned reliability standard set at two standard deviations above the normalised historical average. In setting DPP3 we considered that reducing the impact of major events and the buffer above the historical mean are effective means of setting the standards in a way that provides a good balance between the risk of false-positives and false negatives.

F24 Our initial view for DPP4 is that using the historical mean with an additional buffer is working well in capturing material deterioration in reliability and provides a suitable level of protection against random variability.[217]

F25 In DPP3 the buffer was set at two standard deviations, instead of one, to reflect the move to an annualised test from a ‘2 out of 3’ year approach.

[217] We note that we have not completed investigations into any unplanned SAIDI and SAIFI contraventions in the DPP3 regulatory period, as all reported contraventions relate to the most recent assessment period, for the year ended 31 March 2023.

Instances of non-compliance under DPP3

F26 There have only been three assessment periods completed under DPP3. Accordingly, we have a relatively limited dataset on which to assess the performance of the quality standards, following the revisions to them made for DPP3 and have not yet investigated the 2023 contraventions.

F27 Figure F1 represents the number of instances of non-compliance with the SAIDI and SAIFI unplanned limits.

Figure F1 Unplanned Limits exceeded for DPP3 regulatory period to date

EDB	SAIDI limit exceeded in	SAIFI limit exceeded in
Alpine Energy	-	-
EA Networks	-	-
Eastland/Firstlight Network	2023	-
Electricity Invercargill	-	-
Horizon Energy Distribution	-	-
Nelson Electricity	-	-
Network Tasman	-	-
Orion NZ	-	-
OtagoNet NZ	-	-
The Lines Company	2023	2023
Top Energy	2023	2023
Unison Network	-	-
Vector	2023	-
Wellington Electricity	-	-

F28 We are interested in EDBs' views on whether 2 standard deviations, when combined with other quality settings, is leading to the right trade-off between false negative risk and false positive risk.

Setting the standards – planned reliability standard

F29 The planned reliability standard was set at three times the historical average and assessed across the full regulatory period for DPP3. This allows EDBs to schedule planned works in a way that works best for their business and consumers, rather than to comply with an annual planned reliability standard.

F30 No EDBs have been identified as being non-compliant with the planned SAIDI or SAIFI limits. However, we have provided graphs showing performance against a pro-rated limit. As expected, most EDBs are not in exceedance of the pro-rated limit given the limit has been set at three times the historical average. The only exception here is Electricity Invercargill, who are tracking 10.4% ahead of their pro-rated SAIFI limit.

Figure F2 Planned SAIDI v pro-rated limit

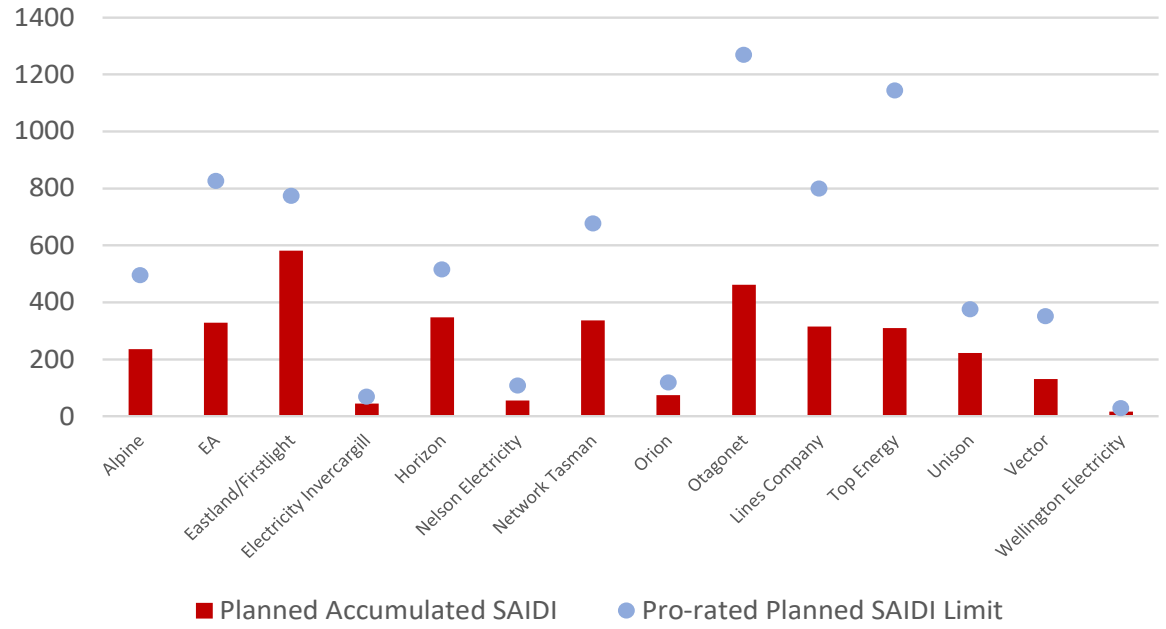
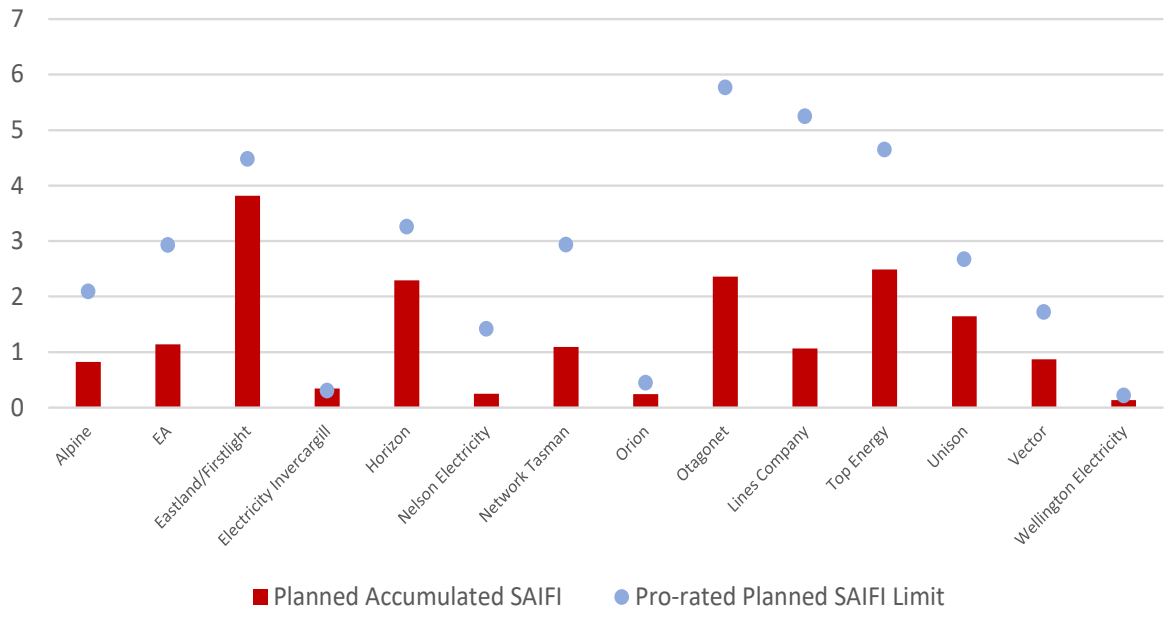


Figure F3 Planned SAIFI v pro-rated limit



Setting the standards – extreme event standard

F31 An extreme event standard introduced in DPP3 was used to deal with extreme one-off events that may cause serious inconvenience for consumers. The standard was set at the lower of either 120 SAIDI minutes or six million customer interruption minutes and it applies to events not caused by major external factors.

F32 No EDBs have represented non-compliance with the extreme event standard for the DPP3 regulatory period to date.

Specific feedback requested on the quality standard

F33 Our initial view is to maintain the principle of no material deterioration and set quality standards on a basis consistent with that established in DPP3. We invite stakeholder views on this position.

Reference periods, normalisation, and step changes to historical reliability parameters

Application to quality standards and quality incentive scheme

F34 The descriptions of the operation and application of the reference period, normalisation and step changes to historical reliability parameters within this section apply to both the quality standards and QIS, aside from elements relating to SAIFI which is not utilised in the QIS in place for DPP3.

Reference period

F35 For DPP3, we set quality standards and financial incentives separately for planned and unplanned interruptions and used the same reference period, being the 10-year period from 1 April 2009 to 31 March 2019.

F36 A 10-year reference period should mitigate year-on-year variability as the duration captures longer-term weather cycles and the latest data best reflects the current situation.

F37 Alternatively, we could extend the reference period dataset to cover a longer period of time, for instance, 15 years. In extending the reference period dataset there is a trade-off between more data evening out variations, but potentially being less reflective of the current network and associated interruption management approaches ie, use of live lines maintenance practices.

F38 Our initial view is that a reference period which reflects the most recent 10-year period may be preferable as it better reflects the current underlying level of reliability performance and network operation practices. Further sections of this paper identify potential challenges where the reference period dataset may not be calculated on a consistent basis which will need to be considered. See the “Change in recording approaches including inconsistency of SAIFI outage recording” section below.

F39 We intend to request the most recent data under a section 53ZD notice and will further consider what approach best manages these considerations.

Consistency of targets between periods

F40 We have previously limited the change in unplanned reliability targets (ie, the historic average) between regulatory periods to ±5%.

F41 Given the aggregate nature of our quality scheme, in DPP3 we did not consider it appropriate to embed significant deterioration or improvements in the reliability parameters without further scrutiny of whether it is in consumers' best interests over the long-term. Similarly, we did not consider it appropriate that deteriorating performance should be rewarded with more relaxed standards and improved performance penalised through stricter standards.

F42 We have not analysed the underlying data to determine what the potential impact of this approach may be for DPP4 but consider the broader principle may still be appropriate to maintain. We will consider whether maintaining the ±5% threshold appropriately achieves this.

DPP3 approach to normalisation

F43 SAIDI and SAIFI, particularly for unplanned interruptions, are highly variable, and are strongly influenced by major individual events. For this reason, in DPP3, we applied a filter both to historical reliability and to the way reliability performance are assessed during the DPP3 period. This applies to both the unplanned reliability standards and to the incentive scheme for unplanned SAIDI.

F44 Events beyond a certain statistical boundary are identified as major events and the underlying SAIDI is replaced with a pro-rated boundary value.

Major events and the use of boundary values

F45 For DPP3, we changed the definition of a 'major event' from a calendar day that is over a given boundary value, to a 24-hour rolling period that is over a given boundary value.[218]

F46 The major event boundary is the equivalent of the 1104th highest half-hourly rolled 24-hour period within the 10-year reference period.

F47 The move to a rolling approach was driven by:

F47.1 the arbitrary nature of calendar days when it comes to major events

[218] Explanation of how the DPP3 approach aligned with the Institute of Electrical and Electronics Engineers "IEEE 1366 Guide for Electric Power Distribution Reliability Indices" 2012 is outlined in Attachment K "Identification and treatment of major event days" within Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019).

F47.2 the availability of sufficiently accurate recording of the start times of interruptions.

F48 For DPP3, we undertook the following steps to calculate the boundary value using the reference data set:

F48.1 aggregated the raw SAIDI and SAIFI values from each unplanned interruption into half-hour blocks (rounding each interruption down to the nearest half-hour)

F48.2 summed the raw SAIDI and SAIFI values of each half-hour block with the respective SAIDI and SAIFI values of the following 47 half-hour blocks (to create a rolled 24-hour value for SAIDI and SAIFI)

F48.3 separately identified the 1104th highest rolled half-hour values for SAIDI and SAIFI to determine the respective SAIDI and SAIFI boundary values.

F49 To normalise the dataset of unplanned interruptions over the reference period, and for each assessment period, we replaced each half-hour with 1/48th of the boundary value if:

F49.1 that half-hour was part of any 24-hour rolled period that exceeds the applicable SAIDI or SAIFI major event boundary value; and

F49.2 that half-hour exceeded 1/48th of the applicable SAIDI or SAIFI boundary value.

F50 During the assessment period, when a SAIDI major event or SAIFI major event is identified, the half-hours within the major event period that are over 1/48th of the boundary value are replaced with a SAIDI or SAIFI value that is 1/48th of the boundary value.

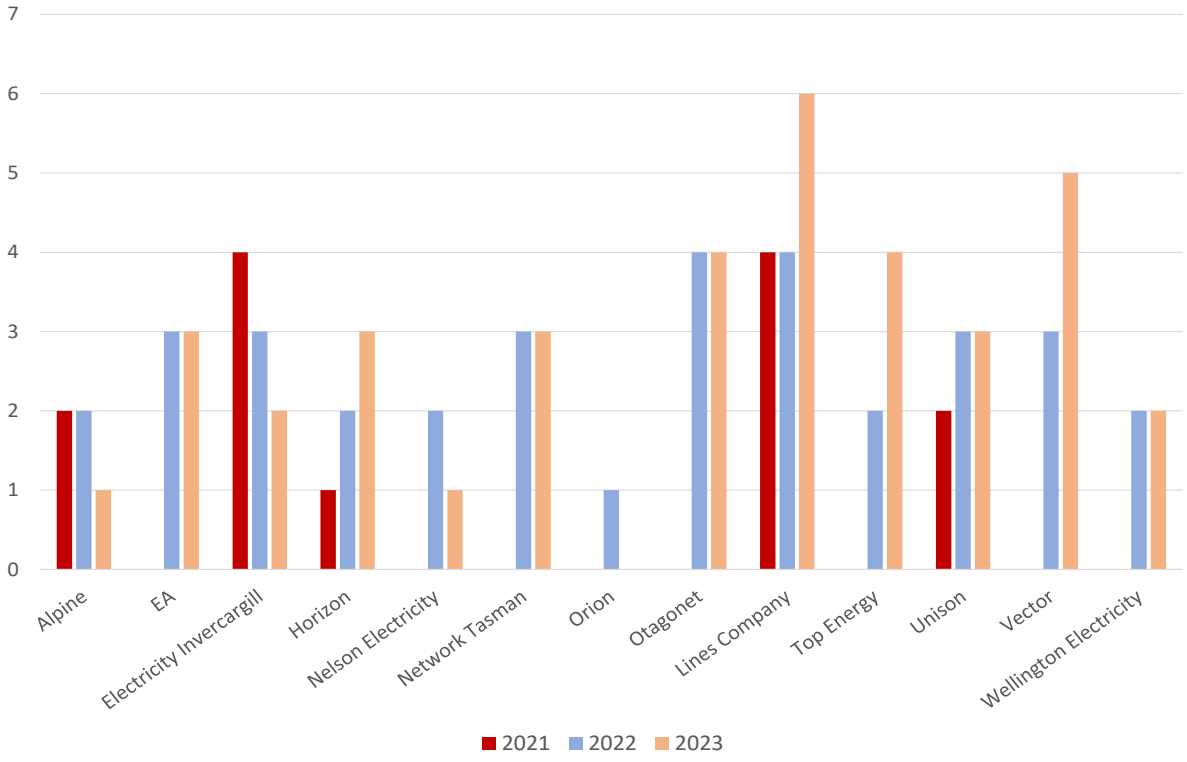
F51 The exception to this approach is EDBs with smaller networks which can expect to have fewer interruptions relative to larger networks and accordingly fewer major events.

F52 Historically, Electricity Invercargill and Nelson Electricity have significantly fewer interruptions than other price-quality regulated distributors. In DPP3 we reduced the expected frequency of major events if a distributor has less than 1,000 kilometres of circuit length.[219] DPP3 reduced the number of 'major half-hours' based upon a pro-rated value against a 1,000 km circuit length. If we were to keep a similar methodology for DPP4 we would propose a similar adjustment.

Assessment of outcomes under DPP3 approach

F53 Figures F4 and F5 represent that the number of major event days being recorded per year aligns broadly with our statistical expectation of 2.3 events per year.

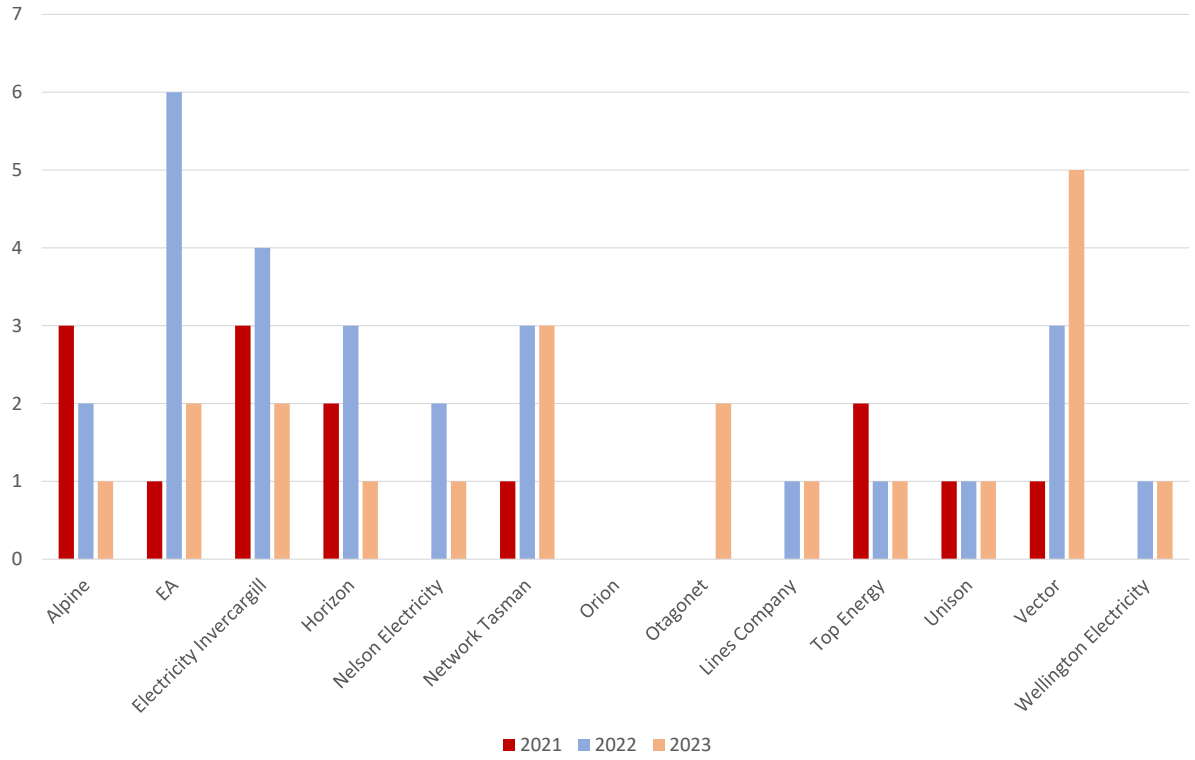
Figure F4 Number of SAIDI major event days per year[220]



[219] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision", (27 November 2019), paragraph K44 – K49 for further detail on how this was considered in the DPP3 reset.

[220] We have removed Eastland / Firstlight network analysis from this dataset due to some inconsistencies identified in the number of major event days disclosed.

Figure F5 Figure F5: Number of SAIFI major event days per year



Outcome of normalisation approach on values

F54 The normalisation of major events is intended to limit the impact of the most substantial interruptions on underlying reliability data. In DPP3 we considered that replacing the entire major event with the full boundary value may create too big of a driver for standards and incentives. However, we did not consider removing the impact completely would be appropriate.

F55 While some major events (such as those caused by extreme weather) are somewhat beyond the control of EDBs, the degree of controllability is not always clear. The underlying performance of the network does have some effect on how well networks respond to significant events.

F56 Figures F6 and F7 represent the impact of major event day normalisation on recorded SAIDI and SAIFI values respectively.

F57 The approach of normalising major event days for each half hour over the threshold down to 1/48th of the boundary value results in some major events having allocated values significantly less than the boundary value.

F58 While this was anticipated when setting DPP3 the scale of normalisation is significant and we will consider whether this policy position and methodology is returning appropriate outcomes, noting that the normalisation also applies in setting the target and quality standards.

F59 Both Figures F6 and F7 exclude entities who were on a CPP and accordingly subject to a different approach. This applies to Aurora Energy for 2022 and 2023 (who we have excluded from the analysis), Powerco for all three years and Wellington Electricity for 2021.

Figure F6 Impact of major event day normalisation on SAIDI values

EDB	2021			2022		2023	
	Unplanned SAIDI boundary value	Pre-normalised (total all MEDs)	Normalised (MEDs only)	Pre-normalised (total all MEDs)	Normalised (MEDs only)	Pre-normalised (total all MEDs)	Normalised (MEDs only)
Alpine Energy	9.17	32.27	1.07	128.03	5.63	14.34	0.53
EA Networks	6.25	0.00	0.00	72.59	4.80	56.38	3.54
Eastland/Firstlight Network	13.10	18.29	3.27	158.34	11.37	1195.81	20.30
Electricity Invercargill	4.13	26.78	0.56	62.48	0.81	18.14	0.17
Horizon Energy Distribution	14.69	14.78	1.34	163.31	4.41	79.32	3.96
Nelson Electricity	8.68	0.00	0.00	24.15	0.36	14.33	0.18
Network Tasman	7.22	0.00	0.00	32.41	1.87	51.32	2.22
Orion NZ	7.60	0.00	0.00	11.87	1.81	0.00	0.00
OtagoNet NZ	11.81	0.00	0.00	79.31	8.86	120.59	8.04
The Lines Company	11.17	62.29	2.51	66.29	11.14	436.95	19.87
Top Energy	27.92	0.00	0.00	420.09	21.26	1330.21	52.52
Unison Network	4.48	37.52	2.56	21.57	3.66	1749.61	4.68
Vector	4.83	0.00	0.00	20.49	7.71	312.09	19.78
Wellington Electricity	2.16			6.40	0.68	5.97	0.71

Figure F7 Impact of major event day normalisation on SAIFI values

EDB	2021			2022		2023	
	Unplanned SAIFI boundary value	Pre-normalised (total all MEDs)	Normalised (MEDs only)	Pre-normalised (total all MEDs)	Normalised (MEDs only)	Pre-normalised (total all MEDs)	Normalised (MEDs only)
Alpine Energy	0.0671	0.3598	0.0194	0.1740	0.0220	0.0742	0.0032
EA Networks	0.0729	0.2600	0.0042	0.7069	0.0338	0.1628	0.0288
Eastland/Firstlight Network	0.1765	0.1800	0.0093	1.0980	0.0440	2.2749	0.1695
Electricity Invercargill	0.0804	0.3833	0.0050	0.7303	0.0085	0.2501	0.0034
Horizon Energy Distribution	0.1170	0.3635	0.0164	0.5390	0.0358	0.1240	0.0073
Nelson Electricity	0.1430	0.0000	0.0000	0.2980	0.0060	0.1490	0.0030
Network Tasman	0.0688	0.0697	0.0029	0.3824	0.0165	0.4490	0.0148
Orion NZ	0.0668	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
OtagoNet NZ	0.1776	0.0000	0.0000	0.0000	0.0000	0.3817	0.0281
The Lines Company	0.1596	0.0000	0.0000	0.1617	0.0040	0.6362	0.0917
Top Energy	0.2284	1.0187	0.0143	0.6260	0.1140	1.0700	0.2200
Unison Network	0.0735	0.0854	0.0199	0.0840	0.0227	0.3929	0.0484
Vector	0.0371	0.0470	0.0050	0.3020	0.0550	0.5326	0.1147
Wellington Electricity	0.0313			0.0351	0.0051	0.0465	0.0072

Step change to historical reliability parameters

F60 As noted earlier we consider 'no material deterioration' to continue to be an appropriate starting point for quality standards and QIS. However, we recognise that operational or situational changes outside the control of the EDB may create a requirement to include a step change to reliability parameters for quality standards and incentives as compared to the reference period, or an ability to exclude certain interruptions.

Step changes in reliability criteria

F61 In the DPP3, the criteria for assessing step changes in reliability were that any changes:

F61.1 be significant

F61.2 be robustly verifiable

F61.3 be largely outside the control of the distributor

F61.4 in principle, affect the reliability of most, if not all, distributors

F61.5 not be captured in the other components of our reliability parameters (reference period, normalisation methodology).

F62 We consider these criteria to be broadly appropriate but note challenges may arise in clearly meeting the threshold for some issues ie, items which have significant uncertainty may be difficult to provide an indication of data series impacts which are robustly verifiable.

F63 We note that where step changes are specific to an EDB they may more appropriately be the subject of a quality standard variation reopener, or where the investment is significant, a CPP proposal.

F64 We consider that there are potentially a number of underlying drivers where an adjustment to our settings or definitions might be appropriate to better account for expected performance. Any adjustments would need to be consistent with the expectation of a relatively low-cost DPP and meet the step change characteristics (outlined above). These include:

F64.1 expectations of increases in planned interruptions where there is increasing capex spend

F64.2 increasing risk of significant weather events due to climate change

F64.3 change in recording approaches, including inconsistency of SAIFI outage recording

F64.4 change in maintenance and issue resolution processes which may result in inconsistencies in the dataset ie, live lines practices, tree regulations

F64.5 dealing with demand management / load shedding

F64.6 accounting for the potential non-performance of non-network solutions

F64.7 changing consumer expectations, particularly regarding resilience expectations

F64.8 accommodating industrial consumers desire for lower security of supply than N-1 to manage costs.

F65 We have outlined our initial consideration of each of these issues below.

Expectations of increases in planned interruptions where there is increasing capex spend

F66 An increase in planned interruptions may be anticipated where significant network augmentation is forecasted to occur in the DPP regulatory period.

F67 We note that from a high-level review of EDBs' 2023 AMPs who had significant capex expenditure forecasted there is inconsistency in the forecasted impact on planned interruptions as disclosed in Schedule 12d. For example, Wellington Electricity have a step change in planned interruptions in the 2023 AMP which may be driven by the significant uplift in forecast capex, but Orion who also has a significant planned uplift in the capex programme do not have a commensurate increase in planned interruptions.[221]

F68 There may be a statistical linkage between an increased capex programme and increased planned interruptions. However, it is not clear this could be applied consistently on a basis consistent with the relatively low-cost DPP framework.

F69 We consider the buffer provided for in DPP3, where the limit was set at three times the historic average, should appropriately mitigate this concern. We also exercise enforcement discretion when considering instances of non-compliance.

Increasing risk of significant weather events due to climate change

F70 We acknowledge that there is an increasing risk of significant weather events in future regulatory periods due to climate change.

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[221] Wellington Electricity, "Wellington Electricity 10 year Asset Management Plan: 1 April 2023 – 31 March 2033"; and Orion, "Asset Management Plan 2023".

F71 However, the scale, timing and potential impact of these events is likely to be practically difficult to forecast. We also consider establishing the level of consistency or inconsistency of these events with those within a 10-year historic reference period would be challenging.

F72 We consider the treatment of major event days, the use of standard deviations when setting quality standards and an updated historic reference dataset should be a more appropriate basis to address this risk than forecasting specific adjustments in this regard.

F73 We note we are expecting an increase in expenditure from EDBs on the resilience of their networks.

Change in recording approaches including inconsistency of SAIFI outage recording

F74 It was identified during the setting of DPP3 that EDBs had been applying inconsistent approaches to recognising and recording successive interruptions in calculating SAIFI values following an initial interruption.[222]

F75 If an interruption to the supply of electricity distribution services is followed by restoration, and then by a successive interruption, some EDBs had been calculating the relevant SAIFI values based on a single interruption, rather than multiple interruptions.

F76 Other EDBs were only recognising successive interruptions after they completed certain operational practices. This is referred to as an 'aggregation' approach. From engagement with EDBs at the time of setting DPP3, it appeared the EDBs that are applying this approach were using different logic for distinguishing when a subsequent interruption is recognised, and additional SAIFI values are incurred.

F77 Our understanding of the situation of EDBs, based on their annual compliance statements and a position statement from the ENA, is that most EDBs were applying an aggregation method while a small number were applying a multi-count method.[223]

F78 EDBs' different approaches to recognising and recording interruptions will have led to reporting different SAIDI and SAIFI values for comparable events.

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222 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Recording od successive interruptions for SAIFI – Consultation paper" (7 October 2019).

223 Electricity Networks Association (ENA), "ENA Position Statement on SAIFI calculation" (30 August 2019). Note that EDBs were queried on their ability to back-cast on a multi-count methodology, as it is believed that EDBs who have been recording on a more detailed multi-count methodology would have the information available to aggregate if required.

F79 For DPP3 it was determined that SAIDI and SAIFI should be recorded using the same approach to successive interruptions as that used by the EDB in the interruption data disclosed in response to our section 53ZD request.[224]

F80 The recording of successive interruptions was considered as part of the Targeted Information Disclosure Review (TIDR) which was published on 25 November 2022.[225]

F81 This amendment required that EDBs record successive interruptions as an additional SAIFI and SAIDI interruption value if restoration of supply occurs for longer than one minute, adopting what is referred to as the 'multi-count approach'. With the reporting requirement introduced on a transitional basis for the 2024, 2025, and 2026 disclosure years.

F82 EDBs that prior to the 2024 disclosure year did not record their SAIFI and SAIDI values using the new 'multi-count approach' as described, will continue to record their SAIFI and SAIDI values on the same basis that they employed as at 31 March 2023. This will be disclosed alongside their SAIFI and SAIDI values using the new 'multi-count approach'.

F83 Our initial view is, ideally, we would align the DPP4 recording and reporting practice with the 'multi-count approach'. The multi-count approach provides a uniform assessment capability, which as part of TIDR, will be measured consistently across all EDBs during the DPP4 regulatory period.

F84 However, we are conscious of concerns raised by submitters as part of the TIDR process regarding the impact of altering the SAIFI/SAIDI methods on DPP4 targets, and the potential requirement to restate past performance using historical data.[226,227]

F85 We recognise that EDBs may have needed to make changes to the way they currently report successive interruptions to enable a 'multi-count approach'.

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224 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision" (27 November 2019), paragraph J2.6.

225 Commerce Commission, "Targeted Information Disclosure Review for Electricity Distribution Businesses Tranche 1 Final decisions reasons paper" (25 November 2022), Q11 – successive interruptions, p. 69.

226 Electricity Networks Association (ENA) "Submission on Targeted Information Disclosure Review – Draft Decision" (31 August 2022), p. 12.

227 Horizon Networks "Horizon Energy Distribution Limited (Horizon Networks) submission on Targeted Information Disclosure Review – Electricity Distribution Businesses Draft decisions paper – Tranche 1" (31 August-2022), p. 5.

F86 To further understand this issue, we intend to request under a section 53ZD notice from each price-quality regulated EDB what historical datasets they have available on a 'multi-count approach', including whether this was part of audited disclosures or not.

F87 For DPP4, we could set quality standards for EDBs using different approaches dependent on the robustness of available information. This would still apply the same no material deterioration principle but would be varying the recording methodology depending on the availability of info. This is similar to the current approach where EDBs apply different recording practices based upon what the underlying information reflected in the section 53ZD notices. This may result in EDBs having to record interruptions using different approaches between the DPP and ID as EDBs progressively move to a 'multi-count' approach.

F88 Alternatively, we could make an adjustment based on a proxy determined by assessing the difference between a 'multi-count' dataset and that established under an aggregation approach for datasets where this is available. We are interested in stakeholder views on application of a proxy uplift to the historic reference dataset representing the move to a 'multi-count' basis from an aggregation approach if only a limited dataset were available to establish the proxy. It is unlikely that the transitional information under TIDR would be sufficient for this purpose as the reporting is only required at an aggregate basis, so it is likely that the 2024 section 53ZD could require detailed interruption information be provided under both basis for those EDBs who have only recently moved to the 'multi-count' approach.

F89 Based upon engagement with EDBs during the DPP3 reset we understand that there is likely to be mixed ability across EDBs to back cast information to create a multi-year historic dataset using a 'multi-count' approach for those previously applying an aggregation approach. The ability to back cast is dependent on the availability of information which may be challenging, particularly where digital information is not available and availability of paper records is unclear, or settings to allow this were not configured in IT systems. In addition, a back cast requirement may require assumptions on impact regarding the network configuration at the time which may be difficult to assess and audit.

Change in maintenance and issue resolution processes which may result in inconsistencies in the dataset

F90 We are interested in material changes in maintenance, issue resolution processes, or other requirements which may result in inconsistencies between a historical reference dataset (previous 10 years) and expected performance outcomes during the DPP4 regulatory period.

F91 In DPP3 we considered whether there was an explicit adjustment in planned SAIDI and SAIFI required in relation to the potential reductions in live lines work proposed to be undertaken compared to the reference dataset.

F92 At the time we considered that the planned reliability standard buffer set at triple the historical average provided for work practices that may increase the impact of planned works on SAIDI or SAIFI. For example, live lines working practices.

F93 MBIE are currently considering the Electricity (Hazards from Trees) Regulations 2003. We are unclear what the outcome of this review could be and the timing of when any change might apply. We consider this is best dealt with via a reopener, subject to the appropriate criteria being met, unless the change occurs in advance of the reset date.

Dealing with demand management / load shedding

F94 The DPP3 Determination has a number of exclusions from the definition of interruption, including those:

F94.1 in accordance with any requirements in the Electricity Industry Participation Code 2010 relating to extended reserves; or

F94.2 as a result of an automatic under voltage, under frequency, or rolling outage scheme or similar arrangement required as part of the system operator services or other instruction from an authorised regulator.

F95 Under section 53M(3), we have broad scope and flexibility to decide how to set and apply these standards in resetting the price-quality path, including excluding certain types of outages from the application of the relevant quality standards and incentives.[228]

F96 We want to understand whether there are other instances of demand management/load shedding which are not appropriately covered by these exclusions.[229]

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[228] For example, we have set DPP/ CPP normalisation measures ex-ante so that:
(a) the extreme event quality standard excludes any unplanned interruption that is the result of major external factors; and
(b) the SAIDI/ SAIFI boundary value we set under paragraph (1) of Schedule 3.2 of DPP3 normalises an unplanned major event by replacing any half-hour within an identified major event that is greater than 1/48th of the boundary value with 1/48th of the boundary value.

[229] We note the definition of interruption is based on outages on a 'prescribed voltage electric line', which is defined as a line that is capable of conveying electricity at a voltage equal to or greater than 3.3 kilovolts.

Accounting for non-performance of non-traditional and innovative solutions

F97 We recognise that innovative approaches to capacity constraints may include a range of potential non-traditional and innovative solutions including non-network solutions, some of which may be less proven.

F98 We understand that price-quality regulated EDBs have concerns regarding less proven solutions including:

F98.1 an external flexibility solution provider may not deliver a contracted service

F98.2 an internal non-network solution may not respond in an anticipated way

F98.3 operational difficulties may arise with implementation of non-network solutions in practice ie, a system established to recognise where the DER are established but the system fails to identify or forecast that it is required.

F99 Interruptions associated with these causes would be recorded against the EDB and have both quality standard and QIS impacts. Caution around this may create a reticence to implement these types of solutions and result in a focus on more proven established technologies, typically capex investments.

F100 Our intention is that the compliance with the quality standards and penalties under the QIS do not act as a potential impediment to innovation.

F101 Currently, certain outages are able to be excluded from the definition of 'interruption'.[230] We are interested in potential framing of further exclusions from the definition of interruption to reflect this issue.

Changing consumer expectations

F102 Consumer expectations will vary between consumers and may evolve with the increased reliance on electricity, due to reduced energy source diversity or with the increased availability of PV and batteries that may provide alternative back-up supply.

F103 It is difficult to take into account changing consumer expectations without a lot of information about willingness to pay, also considering that will differ by EDB. Absent better information about the level of reliability consumers demand, we consider historical reliability to be a reasonable proxy at an aggregate level for the quality which consumers demand.

[230] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision" (27 November 2019), defines the term 'interruption' within clause 4.2.

Accommodating industrial consumers' preference for lower security of supply than N-1 to manage costs

F104 We recognise that the nature of the SAIDI and SAIFI metrics we use are aggregate in nature. This can result in individual consumers receiving a service level higher or lower than they demand relative to the cost of lines services.

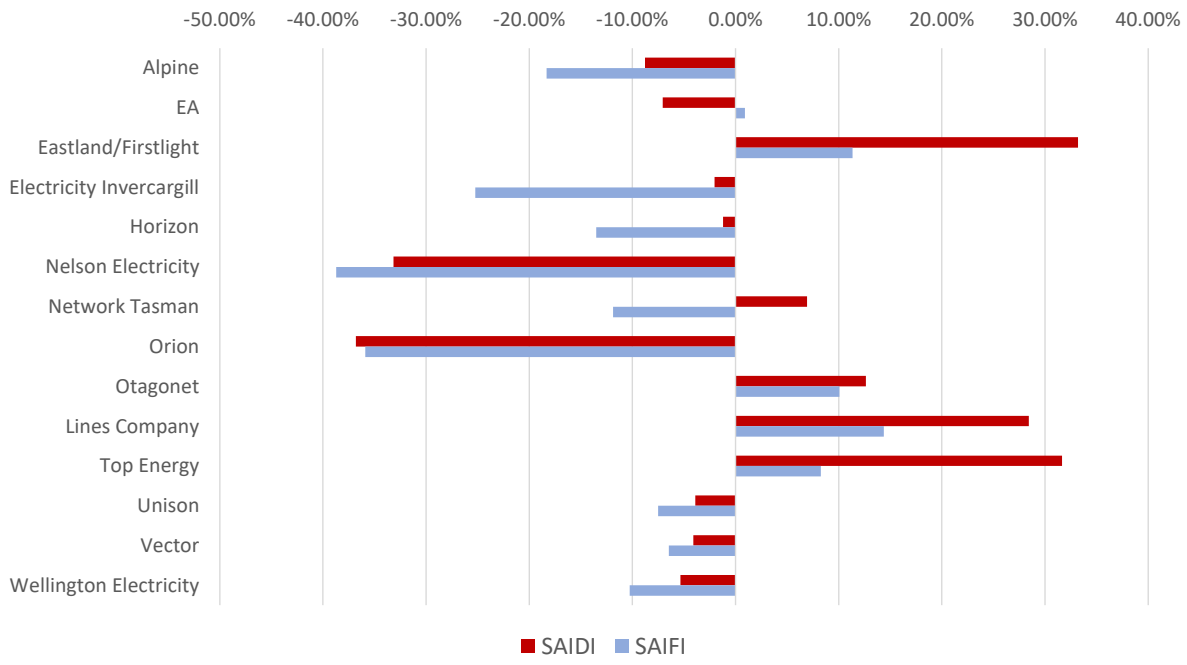
F105 We do not currently consider that we have sufficient disaggregation to allow for targeted / tailored quality standards or incentives, and accordingly our initial view is to not make a specific adjustment to reflect individual consumers' preferences.

F106 We note this issue is unlikely to be material because SAIDI and SAIFI treats each ICP equally, and we are not aware of requests for lower security of supply occurring at a significant volume.

Consistency of DPP3 performance with historical baseline

F107 Figure F8 reflects a mix of performance during the DPP3 period for unplanned SAIDI and SAIFI compared to the historical average. Note the historical average is represented on a normalised basis and limited to a 5% movement between regulatory periods for unplanned interruptions.

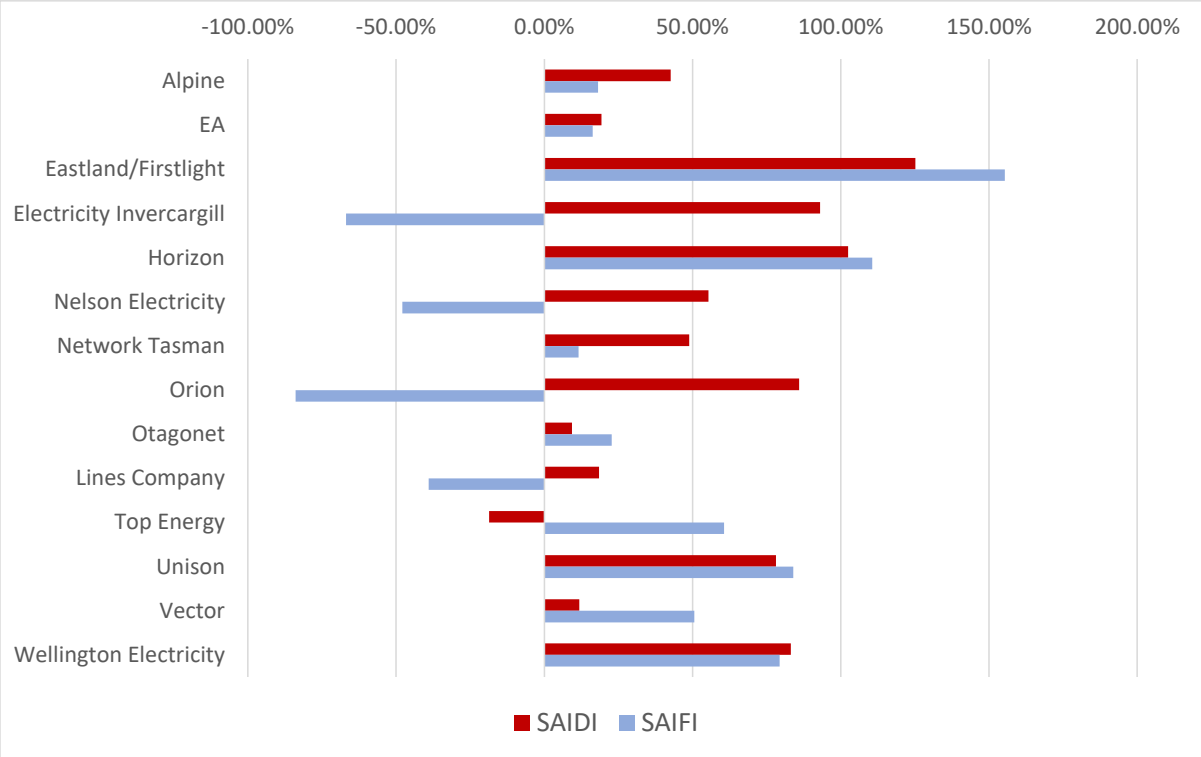
Figure F8 Average percentage difference of unplanned SAIDI & SAIFI to historical baseline



F108 Figure F9 reflects that a number of EDBs have significantly increased the level of planned SAIDI and SAIFI compared to the historical average.

F109 We note that Figure F9 shows planned SAIDI for the DPP3 reference period which has a 50% de-weighting applied to notified interruptions, but the comparison is to an unweighted historical baseline. While this does not show a direct comparison between periods it illustrates the impact of the de-weighting approach applied within the DPP3 Determination.

Figure F9 Average percentage difference of planned weighted SAIDI & SAIFI to unweighted historical baseline[231]



Approach to quality standards within the Aurora CPP

F110 The Aurora CPP decision included the same types of requirements and incentives as set in DPP3, but with mostly different parameters.[232] The limit for planned interruptions and extreme events as set in the CPP is the same as was set for DPP3.

F111 However, other parameters were set on a more lenient basis than was set for DPP3. This was due to the greater uncertainty as to the reasonably achievable levels of quality as Aurora improves its network resilience and asset data management.

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231 Planned assessed values for SAIDI are calculated in accordance with the formula: SAID $_{\text{planned, assessed}}$ = SAIDI$_B$ + $SAIDI_N$/2. Planned SAIFI values is the sum of Class B interruptions.

232 Commerce Commission, "Decision on Aurora Energy's proposal for a price-quality path; Final decision" (31 March 2021); and Commerce Commission, "Aurora Energy Limited Electricity Distribution Customised Price-Quality Path Determination 2012", (31 March 2021). Note the latter includes Input Methodology variations.

F112 Additional information disclosure requirements also apply for Aurora, which include other measures that we expect to influence quality outcomes that Aurora's consumers value, including its management of planned interruptions.[233]

Specific feedback requested on reference periods, normalisation and step changes to historical reliability parameters

F113 Our initial view is to maintain a 10-year reference period updated for the most relevant information, with major events normalised on the same basis as DPP3.

F114 We are interested in stakeholder views on this and any particular step changes in performance which are expected, and how these may best be accommodated within the regime.

Setting the Quality Incentive Scheme

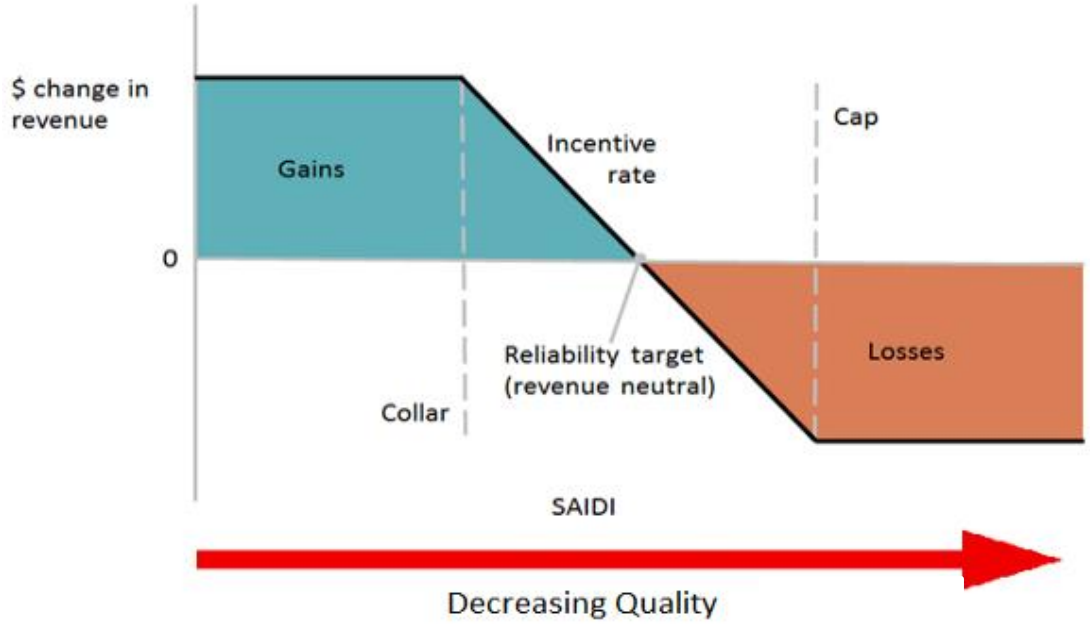
F115 We consider allowing distributors to make trade-offs about the level of reliability they deliver, and ensuring consumers share in the benefits of those trade-offs, is an important element of the DPP.

F116 This is implemented within the DPP through a QIS. The QIS defines the range within which distributors can make marginal trade-offs between the quality and price of the services they provide.

F117 If reliability is better than the target, then future allowed revenue will be increased. Likewise, if reliability is worse than the target, then future allowed revenue will be reduced. Figure F10 illustrates how the revenue-linked incentive scheme operates in practice and demonstrates the relationship between change in revenue, the SAIDI cap and collar, and the SAIDI incentive rate.

[233] Commerce Commission, "Electricity Distribution Information Disclosure (Aurora Energy Limited) Amendment Determination 2021", (31 August 2021).

Figure F10 Quality Incentive Scheme



F118 There are a number of decisions which need to be made in setting a quality incentive scheme, similar in form to that in place for DPP3, which are discussed in further detail below. Primarily:

F118.1 what quality measures should revenue-linked incentives apply to

F118.2 what is the 'target', ie, the point at which distributors are revenue-neutral

F118.3 what is the incentive rate which should apply

F118.4 what are the 'caps' (the limit on maximum losses) and the 'collars' (the limit on maximum gains)

F118.5 what the level of revenue exposure should be (revenue at risk).

What quality measures should revenue-linked incentives apply to

F119 In DPP3 we set the QIS based upon both planned and unplanned SAIDI and removed revenue-linked quality incentives for SAIFI.

F120 We propose to continue only applying the QIS to SAIDI as using both SAIDI and SAIFI risks double counting the SAIFI impact. This is because SAIDI, which reflects the average outage duration of the entire network for an assessment period, is a product of interruption frequency (SAIFI) and customer average interruption duration (CAIDI).

F121 To incentivise better notification to consumers of planned interruptions in DPP3 we reduced the revenue impact of the planned SAIDI incentive by a further 50% for interruptions which met notification criteria.

What is the 'target' point at which distributors are revenue-neutral

F122 We define quality target to mean the level of reliability performance at which the revenue impact of a distributor's performance is zero. Put another way, it is the point at which losses turn into gains and vice versa.

F123 Consistent with the no material deterioration principle in DPP3, we set the target at the 10-year historical average level of SAIDI.[234]

F124 This approach ensures that:

F124.1 where reliability improves or declines over time, the EDB faces a proportionate incentive

F124.2 where there is random variation in performance, over time these random variations can be expected to cancel out, leaving the EDB in a neutral position.

F125 We do not consider at this stage that we have sufficient information on consumer preferences to set the target higher or lower than historical levels and consider this an appropriate base to maintain for DPP4. Noting consideration of potential step changes will need to be factored in as outlined in the "Step change to historical reliability parameters" section above.

What is the incentive rate which should apply

F126 The incentive rates determine the level of financial exposure EDBs have to a marginal change in reliability.

F127 For DPP3, we set SAIDI incentives rates that were informed by a VOLL of $25,000 per megawatt hour (MWh), as proxy for consumers' cost-quality preferences, on average nationwide.

[234] Calculated on a normalised basis and limited to a 5% movement between regulatory periods for unplanned interruptions.

F128 The VOLL rate was discounted to reflect expenditure incentives, quality standard incentives, and the different impact of planned and unplanned interruptions on consumers:[235]

F128.1 For unplanned interruptions, the discount is to 21.2% of VOLL, to reflect an IRIS-like five-year retention of the value of improvements or declines in reliability.

F128.2 For planned interruptions, the discount is to 10.6% of VOLL (half the rate for unplanned interruptions), to reflect the lesser inconvenience planned interruptions cause consumers.

F128.3 For notified planned interruptions, the discount is to 5.3% of VOLL, to incentivise distributors to provide consumers with better notice of interruptions.

F129 We are interested in views on whether the incentive rate is driving appropriate outcomes with regards to consumer quality expectations.

What are the 'caps' (the limit on maximum losses) and the 'collars' (the limit on maximum gains)

F130 The reliability caps are the points at which no further incentive losses are applicable to the revenue-linked incentive scheme. Conversely, reliability collars are the point at which no further incentive gains are applicable.

F131 For DPP3, the planned and unplanned SAIDI caps were set equal to the applicable limit for compliance standards, being:

F131.1 two standard deviations above the historical average for unplanned interruptions

F131.2 triple the historical average for planned interruptions.

F132 In DPP3 the planned and unplanned SAIDI collars were set at zero. This means that financial incentives for reliability will always apply below the SAIDI limits.

[235] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision" (27 November 2019). The rationale for the discount percentages is outlined within paragraphs 7.51 – 7.54.

F133 As reliability improves, we expect the marginal cost of further improvements will increase. Rational distributors will look for the least-cost improvements in reliability before pursuing more expensive improvements. As SAIDI approaches zero, we anticipate that the cost of further improvement would far outweigh the incentive rates we have set, and so do not consider this will lead to improvements beyond what consumers expect.

What the level of revenue exposure should be (revenue at risk)

F134 Revenue at risk is the total pool of incentives a distributor may gain or lose based on its performance.

F135 The DPP3 approach explicitly set the incentive rate (based on using VoLL) rather than the revenue at risk. Consequently, the revenue exposure will vary between distributors.

F136 Notwithstanding that, to protect consumers and distributors against potential large inter-year revenue volatility, in DPP3 we capped total revenue at risk at ±2% of allowable revenue in any given year. Table M5 of the DPP3 Reasons paper outlines the implied maximum revenue at risk for each EDB subject to DPP3.[236]

F137 We note that even without a limit, we estimated at the time of the DPP3 reset that the highest possible revenue impact would be 3.84% of allowed revenue.

F138 Our initial view is to maintain a similar approach for DPP4.

Symmetry of the incentive scheme

F139 Our proposal is to retain the incentive scheme where the incentive rate is constant below the quality standard we have set.

F140 We generally accept the notion that consumers may be more willing to accept payment to have an interruption than to pay to avoid an interruption. However, it is unclear how this translates into a deterioration or improvement in overall reliability.

F141 With setting the reliability caps equal to the applicable SAIDI limit and the reliability collars at zero, at the extremes the revenue-linked quality incentive scheme is asymmetric. However, within a reasonable range we expect it is largely symmetric.[237]

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[236] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision" (27 November 2019), Table M5, p. 444.

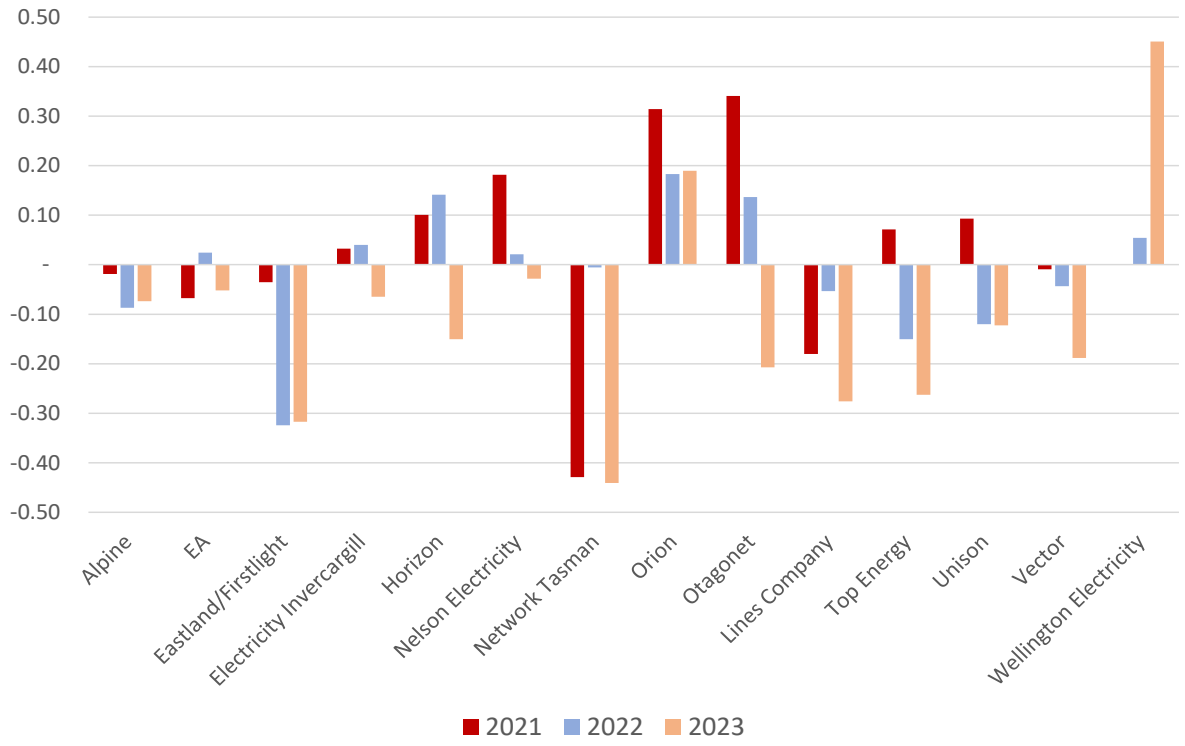
[237] We would expect it would be rare for unplanned interruptions to fall more than two standard deviations below the annual target.

Outcomes of quality incentive scheme so far under DPP3

F142 Figure F11 indicates the outcomes of the quality incentive scheme to date under DPP3. We are interested in understanding from EDBs whether the incentive which applies under DPP3 is influencing investment decisions and if so, in what ways.

F143 Positive percentages shown in Figure F11 indicate that the EDB's Quality Incentive Adjustment was positive for that given year, and vice versa for a negative percentage. Note the absence of a bar for Wellington Electricity in 2021; it has been omitted as they were subject to a CPP that year which was set on a different basis.

Figure F11 Quality incentive outcomes as a percentage of revenue at risk



Alternative quality incentive schemes previously implemented

F144 In the Wellington Electricity (WELL) CPP we utilised a different quality incentive focussed on resilience expenditure including resilience index target, resilience index collar, and resilience index cap.[238]

F145 Under the WELL CPP the revenue-linked quality incentive operated such that if WELL did not deliver the resilience improvements, as outlined in its proposal, its revenue would be proportionately reduced in the next regulatory period.

[238] Commerce Commission, "Wellington Electricity Lines Limited Electricity Distribution Customised Price-Quality Path Determination 2018", (Consolidated version at 20 May 2020).

F146 This mechanism is more applicable where we approve of targeted spending; and, while not ruled out, it is unlikely to be of significant relevance for DPP4 given this was undertaken within a CPP context.

F147 We note that the WELL CPP was introduced before DPP3, and similar measures were not introduced as part of that process.

Specific feedback requested on the quality incentive scheme

F148 Our initial view for DPP4 is to retain revenue-linked quality incentives for both planned and unplanned SAIDI, with targets, caps, collars, incentive rate, and revenue at risk set on a consistent basis with DPP3.

F149 We are interested in EDB feedback on whether they are considering the quality incentive scheme in their investment decisions and stakeholder feedback on appropriate settings for a QIS.

Compliance reporting obligations

F150 The DPP Determination for DPP3 requires disclosure of a range of information relating to quality standards and quality incentive compliance.

F151 Clause 11.6 of the DPP3 Determination identifies reporting requirements which includes actions taken to mitigate any non-compliance, reliability assessment and incentive calculation underlying values, policies and procedures for capturing and recording quality standard and QIS information, and information related to major events.

F152 These disclosures help to inform us if the quality standards are operating as intended and provides early insights on any potentially inadvertent incentives they may be creating.

Information related to major events

F153 Information related to major events is required to be disclosed per clauses 11.6 (g) and (h) of the DPP3 Determination. The disclosures provide transparency as to when and why the major event happened, and the impact of normalising the major event.

F154 The detailed normalisation information is important given the replacement of major events with a pro-rated boundary value means major events can have a value replaced lower than the full boundary value. The impact of this was identified earlier in Figures F6 and F7.

F155 We consider the other disclosures related to major events also provide value, and our initial view is to maintain these reporting requirements.

Quality standard contravention self-reporting

F156 Consistent with our overall intention to provide for greater accountability of distributors for their performance, and in order to increase predictability for suppliers following the contravention of any quality standard, the DPP Determination requires enhanced self-reporting requirements relating to quality standard contraventions. These are outlined at clause 12 of the DPP3 Determination.

Planned interruption standard reporting

F157 If an EDB is non-compliant with the planned interruption standard at the end of an assessment period, it must disclose to the Commission and publicly the information outlined in paragraph 12.2 of the DPP3 Determination.[239]

F158 As no EDB has, as yet, exceeded the planned interruption standard we have not had an opportunity to assess and consider whether the extent of information provided is appropriate, or identified any supporting information which may be beneficial to require.

F159 Accordingly, our initial view is it is appropriate to maintain the planned interruption standard reporting as drafted within DPP3, unless there are material changes to the standard itself.

Unplanned interruption standard reporting

F160 If an EDB is non-compliant with the unplanned interruption standard at the end of an assessment period, it must disclose to the Commission and publicly the information outlined in paragraph 12.4 of the DPP3 Determination.

F161 The additional reporting requirements within DPP3 that apply for any EDB that contravenes a quality standard are in line with information requests previously made for EDBs that contravened their quality standards. We are proposing to retain the reporting requirements for DPP4. We are interested if there are potential concerns on information which is required under the DPP3 Determination which may be appropriate to inform a compliance investigation, but which may not be appropriate to publicly disclose.

Specific feedback requested on compliance reporting obligations

F162 We consider the existing set of disclosures is broadly appropriate, but further refinements may be beneficial, due to inconsistencies in disclosures.

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[239] The planned interruption quality standard is assessed against the full DPP regulatory period. However, where an EDB exceeds the quality standard in an assessment period earlier than the fifth assessment period there are disclosure requirements.

F163 We are interested in stakeholder feedback on additional reporting obligations which may be beneficial to include, or revisions to improve our existing disclosure requirements.

Other quality of service measures

F164 There is merit in considering a wider range of measures of quality of service for inclusion in the quality regime, especially to the extent that such measures are important to consumers.

F165 We consider that quality standards should align with what consumers value, be measurable (including having a sufficiently robust dataset to establish a reporting standard) and have clarity on what an appropriate target would be such that EDBs can be influenced towards outcomes that represent value for consumers.

F166 Some aspects of network performance may be better addressed through our programme of information disclosure and performance analysis.

Other network reliability metrics

F167 The preceding paragraphs within this section have focused on network reliability metrics – SAIDI and SAIFI. We note these are 'after-the-fact' measures in that they measure deterioration in reliability once an interruption has occurred.

F168 We consider that while the introduction of 'leading' indicators of distributor network reliability performance may be preferable eg, asset health, these are likely to be challenging to identify and implement in a robust auditable manner. In particular, inconsistencies in EDBs' approaches to assessing and measuring such indicators may create complexities in designing the mechanism.

Other quality of service measures

F169 The quality of electricity distribution services has a number of dimensions in addition to reliability which are not included within the DPP3 Determination including, but not limited to:

F169.1 ordering and provisioning of a new connection

F169.2 service performance, reflecting technical characteristics of the service such as voltage stability

F169.3 customer service (such as the time taken to respond to customer complaints or enquiries).

Ordering and provisioning of a new connection

F170 We have recently revised the Information disclosure requirements to extend narrative requirements for "Time taken for new connections" and "Impact of new connections" as part of the TIDR Tranche 1.[240]

F171 Consistent with the above representation, consideration of a new connection quality standard or QIS may be better introduced at a future reset after we have a series of disclosures to base these on.

Service performance, reflecting technical characteristics of the service such as voltage stability

F172 We consider that monitoring and transparency of LV power quality can help EDBs identify issues, allowing them to better target their expenditure. In addition, greater visibility of the LV network will be increasingly important as it is likely to be the first part of the network impacted by some emerging technologies, such as electric vehicles or battery storage.

F173 However, we recognise that currently many EDBs have limited visibility of their LV network, and accordingly consider that it is unlikely to be an appropriate time to implement measures which require information about LV networks.

Customer service (such as the time taken to respond to customer complaints or enquiries)

F174 We consider customer service should be a continuing focus of EDBs, but we do not at this stage propose to introduce a quality standard or QIS related to customer service.

F175 We note customer complaints or enquiries can have unique characteristics which makes setting standard metrics more complicated. We also acknowledge the fact that retailers are interposed between the EDB and the majority of consumers.

Alternative options - Guaranteed service levels

F176 Guaranteed service level (GSL) schemes could be considered, where customers who receive a service below a minimum level would be entitled to a service level payment. This may allow appropriate transparent trade-offs to be made for improving service for customers experiencing service at levels below that specified by a GSL framework.

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[240] Commerce Commission, "Targeted Information Disclosure Review – Electricity Distribution Businesses – Final Decisions paper – Tranche 1", (25 November 2022).

F177 There are potential complexities in implementing a GSL scheme:

F177.1 A previous ENA Quality of Supply working group noted that a considerable amount of work would be required in designing such a scheme, but it would allow appropriate transparent trade-offs to be made for improving service for customers experiencing service at levels below that specified by the GSL framework.[241]

F177.2 How a GSL scheme would sit within a framework that already includes a quality incentive scheme.

F177.3 How such a scheme and its funding as part of the regulatory cost base would affect incentives for EDBs to offer a quality of service that reflects what consumers want.

F178 If we were sufficiently confident that implementing a GSL scheme would provide the right incentives, then we would see it as being complementary to quality standards, rather than a substitute.

F179 Our initial view is to not propose to introduce a GSL scheme as part of DPP4 due to the complexities identified in its implementation.

Specific feedback requested on other quality of service measures

F180 We are not proposing to introduce other quality of service measures beyond those required within DPP3. We consider these may be more appropriate to initially introduce within the Information Disclosure requirements.

F181 We are interested in stakeholder feedback on potential other quality standards which could be introduced.

Summary of our requests for information or responses to initial views

F182 We welcome your response to the items in the below list as well as any other feedback you would like to submit which is relevant to the DPP4 reset.

	Number	Request for comment or responses on initial views
Quality		**Our initial view is to maintain the principle of no material deterioration and set quality standards on a basis consistent with that established in DPP3.**
	12	Do you agree with our proposed approach of maintaining the principle of no material deterioration and setting the quality standards on a basis consistent with DPP3? What other approach could be used, and why is it better? With regard to the quality standards, are the existing reporting obligations appropriate?

[241] Electricity Networks Association (ENA), "ENA Working Group on Quality of Service Regulation: Interim Report to the Commerce Commission", (1 October 2018), p. 18 - 19.

	13	**Our initial view is to maintain the DPP3 settings of a 10-year reference period updated for the most relevant information and normalisation approach for major events.** Do you think that we should maintain a 10-year reference period updated for the most relevant information and normalise major events on the same basis as DPP3?
	14	**Our initial view is step changes in reliability, if appropriate, may be accommodated through setting of values or revisions to definitions.** Are there identifiable step changes to reliability parameters for quality standards to manage operational or situational changes outside the control of the distributor compared to historical periods? What value and challenges do you see with different approaches to addressing inconsistencies in the recording of interruptions, the 'multi-count' issue, using either a proxy allocation basis or requiring a recast dataset? Are there alternative approaches which may appropriately address the issue?
	15	**Our initial view is to not introduce new additional quality of service measures.** Are there any other quality of service measures beyond those currently required within DPP3 that we should consider introducing, and why?
	20	**Our initial view for DPP4 is to retain revenue-linked quality incentives for both planned and unplanned SAIDI, with targets, caps, collars, incentive rate and revenue at risk set on a consistent basis with DPP3.** Are EDBs considering the quality incentive scheme (QIS) in their investment decisions? Do you consider the proposed settings are appropriate for the QIS, including whether the incentive rate is driving appropriate outcomes with regards to consumer quality expectations?
	21	**Caution around treatment of non-performance of less proven solutions may create a reticence by EDBs to implement these types of solutions and result in a focus on more proven established technologies, typically, capex investments. Our intention is that the compliance with the quality standards and penalties under the quality incentive scheme do not act as a potential impediment to innovation.** How could we account for non-performance of non-network solutions (regulatory sandboxing)?

Attachment G Other issues

Purpose of this attachment

G1 This attachment describes four issues that we will be considering in the development of the DPP4 reset:

G1.1 the transition of Aurora Energy from its CPP back to the DPP in 2026

G1.2 the regulatory period length for default price-quality paths

G1.3 CPP application windows

G1.4 accelerated depreciation.

Aurora Energy's CPP/DPP transition

G2 Aurora's current CPP ends on 31 March 2026. If Aurora does not apply for a new CPP, it will transition onto the DPP from 1 April 2026.

G3 What happens when a CPP ends is governed by section 53X of the Act. Section 53X(2) of the Act gives the Commission two options for determining prices for the CPP-DPP transition:

G3.1 rolling over the starting prices which applied at the end of the CPP period

G3.2 with four months' notice to the supplier, determining different starting prices that will apply.

G4 Unlike starting prices, section 53X of the Act does not give us the power to determine quality standards when a business transitions off a CPP.

Setting Aurora's price path

G5 Our emerging view is that we should include Aurora within the DPP expenditure and revenue setting process. This would involve setting indicative opex, capex, and revenue forecasts in 2024 as part of the DPP4 process, then finalising Aurora's revenue path in 2025 prior to the transition, taking account of the most recent information available at the time (in particular, updated 'initial conditions' data used in the financial model).

G6 As with Wellington Electricity in DPP3, Aurora's CPP only overlaps the current DPP by a single year. This means that forecasting its revenue requirements for the DPP4 period poses only limited additional difficulty over and above other EDBs on the DPP.

G7 However, as with Powerco and Orion's CPPs, Aurora's CPP involved a substantial uplift in the level of opex and capex for the CPP period. In determining opex and capex allowance, we will need to consider the extent to which these increases were a temporary factor of the CPP or represent a permanent increase in base expenditure.

Setting Aurora's quality standards

G8 Unlike starting prices, we do not have the option of determining Aurora's quality standards at the time of the CPP to DPP transition. As such, we will have to determine quality standards and incentives for Aurora when setting the DPP. We have identified three options for how this could be done:

G8.1 setting quality standards as for all other EDBs when we set DPP4

G8.2 determine quality standards formulaically, allowing for additional information to inform how they are eventually set when the CPPs end

G8.3 retaining the CPP quality standards.

G9 As we do not yet have an established position on how we will determine quality standards for all EDBs, we do not have a view on which of these options is preferable. However, we note that improvements in reliability over the CPP period were a part of Aurora's CPP, so retaining the standards from the end of the CPP may be appropriate.

Regulatory period length for the DPP

G10 We acknowledge that there are forecasting difficulties in the DPP as a result of uncertainty, and these may be exacerbated by the potential need for increased decarbonisation investment for the upcoming period. To address this issue, we sought early views from stakeholders on whether we should consider reducing the length of the regulatory period early in the DPP4 reset, in the DPP4 Process paper.[242]

[242] Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 Proposed process", (25 May 2023), p. 49-50.

G11 The majority of responses from submitters were in favour of retaining the five-year regulatory period.[243] Among other things, reasons included concern around in-period adjustments. For instance, in its submission, Wellington Electricity noted that a four-year period may limit the ability to utilise reopeners:[244]

> "If the EDB cannot complete the project before the end of the regulatory period, they would have to delay the project until the next regulatory period, get the customer to directly fund more of the project (including any network growth that other future customers will benefit from) or start the project before allowances for the next regulatory period have been confirmed and hope the capex gates don't reduce allowances and leave the network with large IRIS penalties."

G12 We consulted on this issue during the DPP3 reset process with the same intention of potentially addressing uncertainty. The following issues for retaining the five-year regulatory periods were raised at that time:[245]

G12.1 Changing the regulatory period creates increased interest rate hedging risk which was a major concern for EDBs. A longer reset period provides more certainty for distributors in managing this risk as it is locked-in for longer. It would also require more resource to be allocated to this activity which will be conducted more frequently.

G12.2 Distributors would find it harder to secure capital for long-term capex projects because creditors would have less certainty as to what settings will be in four- and eight- or nine-years' time.

G12.3 There were major concerns on the implications of how IRIS adjustments would be calculated and applied.

G12.4 The WACC would need to be re-calculated, creating uncertainty.

G12.5 EDBs require the certainty of a longer price control period to fully consider investing in longer-term innovation projects during the period.

G12.6 More frequent DPP resets would increase compliance costs.

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243 Of the seven submissions we received on the DPP4 Process Paper that consulted on the regulatory period, six were in support of retaining the five-year period.

244 Wellington Electricity "DPP4 proposed process submission", (21 June 2023).

245 Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision Reasons paper", (29 May 2019), paragraph 4.49.

G13 We ultimately decided to remain at a five-year regulatory period. We decided that the combination of the reasons identified above were likely to result in more uncertainty for EDBs and the wider electricity sector and outweighed any benefits of reducing the period to four years.[246] We are interested to hear from stakeholders as to whether these, or other concerns still remain.

G14 We are giving some further consideration to this issue for DPP4, as the need for decarbonisation investment may increase, further adding to forecasting uncertainty. It is our view that there may be some merit in shortening the regulatory period to better address significant context changes impacting all EDBs during the regulatory period or weaknesses in EDB expenditure forecasts. Addressing these potential issues would be likely to provide benefit to consumers.

G15 For each of the previous three DPP resets, the Commission has not determined it necessary to reduce the regulatory period to four years, and as such, EDBs have likely become accustomed to a five-year period. However, we have adjusted the regulatory period of other price-quality regulated regimes, in gas and fibre which are both operating on a four-year period (albeit for different reasons).[247,248] Section 53M(4) of the Act states that the length of a DPP must be five years; however, section 53M(5) provides for the Commission to set a period of between four and five years if we consider it better meets the purposes of Part 4.[249]

G16 We do not currently hold a particular view towards this issue, and that is unlikely to change until we can form a more comprehensive conclusion on the accuracy of expenditure forecasts. We note that for the greater degree of uncertainty in forecasts, the greater the justification may be for a shorter regulatory period.

G17 A particular focus of the 2023 AMP review outlined within **Attachment E** relates to forecasts where there is significant uncertainty. We consider we might be better informed on this issue as we get conclusions from the 2023 AMP Review and responses to expenditure request information as part of the section 53ZD notices.

G18 We note that changing the length of the regulatory period between the draft to final decision is likely to be challenging to implement due to the changes that would be required in certain models.

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246 *Ibid.,* paragraph 4.51.

247 Commerce Commission "Default price-quality paths for gas pipeline businesses from 1 October 2022", (31 May 2022), p. 223-225.

248 Commerce Commission "Duration of the second regulatory period for Chorus' price-quality path – Final decision Reasons paper" (28 February 2023).

249 Commerce Act, 1986, sections 52M(4),(5).

G19 We are interested to receive any further views from stakeholders for this issue not previously provided in response to the Process paper. In particular, identification of any challenges which you perceive may arise from shortening the regulatory period and potential benefits to consumers from maintaining or shortening the length of the regulatory period.

CPP application windows

G20 Determining the date each year by which EDBs must submit CPP applications is one of the statutory requirements for the DPP determination.[250]

G21 In DPP3 we set a final application date 190 working days prior to the start of the next pricing year for the first four years of the DPP period (prior to the 31 March year-end).[251] In the final year of the DPP period, we set a final application date of 29 March, as there is a statutory prohibition on CPP applications in the final year of the DPP period (1 April 2024 – 31 March 2025).[252]

G22 The 190-working day lead time was based on the CPP assessment timeframes set out in the Act:

G22.1 the Commission has 150-working days to assess a CPP and determine starting prices and quality standards[253]

G22.2 and by agreement with the distributor, may apply a 30-working day extension[254]

G22.3 process of preliminary assessment of a CPP proposal, as contemplated by s 53S of the Act. Which allows the Commission 40 working days to assess whether a CPP proposal complies with the relevant IMs.

G23 We note that where an EDB wishes to know its final CPP starting prices early enough to give notice of price changes to retailers, the CPP application would need to be made sooner than the 190 working day timeline.

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250 Commerce Act 1986, section 53O(e).

251 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision reasons paper", (27 November 2019), clause 7.

252 Commerce Act 1986, section 53Q(3).

253 Commerce Act 1986, section 53T(2).

254 Commerce Act 1986, section 53U. This option to extend remains available; however, may result in a final decision date after 1 April the following year.

G24 We have only received one CPP application during the DPP3 regulatory period, that submitted by Aurora Energy on 12 June 2020, the last day of application for a price path to apply from 1 April 2021. We note that Aurora's price-quality path was determined on 31 March 2021, meaning the first year of pricing was based off the draft decision with wash-ups applying for differences in value. An application period set further in advance would address this issue.

G25 We are interested in stakeholder views on whether we should implement a similar timeframe for CPP application windows as that which applied for DPP3.

Accelerated depreciation

G26 Increasing deployment of emerging technologies potentially changes the risk to EDBs' ability to fully recover their invested capital, under existing physical asset lives assumptions set out in the IMs.

G27 The IMs allow for assets to stay in the RAB even though they have ceased to be used (ie, become physically stranded). Therefore, physical asset stranding is not the risk under consideration. Rather, it is the risk that the network becomes economically stranded.

G28 The IMs provide a mechanism for EDBs to apply for a discretionary shortening of their remaining asset lives on a neutral net present value basis.

G29 In practice, although the intent is to address economic stranding, the key criterion is that an application is assessed against is simply whether accelerated depreciation would better promote the purpose of Part 4.

G30 No later than 13 months prior to the commencement of DPP4, EDBs may apply to us for 'an adjustment factor'.[255] We propose to include a draft response to any such applications received as part of our draft DPP4 decision, similar to the approach undertaken in DPP3.

G31 We will include the draft value of the 'adjustment factor' for each EDB, as relevant, in the inputs to the financial model released as part of the draft decision. The adjustment factor determines the level of acceleration allowed.

[255] Commerce Commission, "Electricity Distribution Services Input Methodologies Determination 2012", consolidated 20 May 2020, clause 4.2.2(5).

G32 Our response to an application by Vector for DPP3 is contained within Attachment D of the 2019 Draft Reasons paper which included our framework for assessing adjustment factor applications at paragraphs D8 and D9, and the outcome of that assessment.[256]

G33 We are interested in any feedback you have on the application of the same framework for DPP4.

Summary of our requests for information or responses to initial views

G34 We welcome your response to the items in the below list as well as any other feedback you would like to submit which is relevant to the DPP4 reset.

	Number	Request for comment or responses on initial views
Other issues	16	**Aurora Energy is scheduled to rejoin the DPP from 1 April 2026.** Do you agree with how we propose to transition Aurora Energy to the DPP in 2026?
	17	**Section 53M(5) allows us to reduce the regulatory period if this would better meet the purpose of Part 4 of the Act. We are considering whether we should reduce the regulatory period from five to four years.** What particular challenges do you perceive may arise from shortening the regulatory period? What are the potential benefits to consumers from maintaining or shortening the length of the regulatory period?
	18	**The DPP sets annual deadlines by which suppliers must make CPP applications to enter into effect the following year.** Do you support retaining a similar approach to setting CPP application windows as was undertaken for DPP3?
	19	**The current IMs provide for a discretionary shortening of asset lives.** What are your views on the existing framework for assessing accelerated depreciation applications?

[256] Commerce Commission, "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision Reasons paper" (29 May 2019), Attachment D.

Attachment H Determining rates of change

Purpose and scope of this attachment

H1 This attachment provides:

H1.1 an overview of the decisions we need to make on the rates of change; and

H1.2 our emerging views on how to approach these decisions.

H2 It is supported by **Attachment B**, which provides background information on our established building blocks approach to determining starting prices at the beginning of the regulatory period.

Relationship to the IM Review

H3 This attachment does not directly address matters covered (or proposed to be covered) by the specification of price IMs.[257] Instead, this attachment covers the revenue path decisions on rates of change we will have to make regardless of the form of the final IMs.

H4 The EDB IMs are currently being reviewed and we are considering submissions on our IM Review Draft decision. We will respond to these issues in our final IM decision in December 2023. This includes issues such as the treatment of inflation, the inclusion and specification of any secondary limit on revenue, and the scope and operation of any wash-up mechanism.

H5 Following the publication of the final IMs, we intend to issue a brief consultation paper explaining how we intend to apply the IMs as amended as part of setting DPP4.

H6 We are conscious that many submissions on draft amendments to the specification were concerned with the application of a 10% limit on the increase in forecast revenue from prices or an otherwise unduly-restrictive limit.[258] In our draft decision, as part of amending the way this 'secondary' control on revenue applies we were clear that under both the existing (pre-amendment) and proposed IMs this was a DPP decision, not an IMs one.

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257 Commerce Commission, "Report the Input Methodologies review 2023 – Draft Decision" (14 June 2023), page 61.

258 See for example: Frontier Economics (2023) "A review of the limit on EDB price increases: a review prepared for the Big 6", 13 July, pages 31-33; and Vector "Input Methodologies (IM) Review 2023 – Response to Draft Decision" (19 July 2023), paragraphs 153-154.

H7 Any decision about how (or even whether) to apply a smoothing limit is unavoidably context-specific, taking account of what best promotes the purpose of Part 4 given the circumstance of suppliers, their networks, and their customers at any given reset.

H8 We are not bound to specifying a 10% limit, nor under the proposed changes to the IMs would we be bound to specify the limit with reference to forecast revenue from prices.

Approach to determining the rate of change

H9 The rate of change in supplier revenue over the period has two components:

H9.1 CPI

H9.2 the real rate of change in the revenue path, or 'X-factor'.

H10 The exact specification of CPI and how it is incorporated into the revenue path is a matter determined by the IMs.[259] As such, the remainder of this attachment deals with the X-factor component, specifically:

H10.1 our emerging view that the default X-factor should be 0%

H10.2 our approach to considering alternative X-factors to minimise undue financial hardship or price shocks.

H11 We welcome views on both matters that we will take account of in coming to our draft decision on the DPP4 reset next year.

Default X-factor

Statutory framework for the default X-factor

H12 Under section 53P(1), (5), and (6) of the Act, we are required to determine:

H12.1 a single X-factor for all years and all suppliers (subject to subsection (8))

H12.2 to base that X-factor on the long-run average productivity improvement rate achieved by either or both of suppliers in New Zealand, and suppliers in other comparable countries, of the relevant goods or services, using whatever measures of productivity the Commission considers appropriate.

[259] Commerce Commission, "Report the Input Methodologies review 2023 – Draft Decision" (14 June 2023), paragraph 3.1.1(6).

Emerging view on the default X-factor

H13 Because we propose setting starting prices based on the current and projected profitability of each supplier using a building blocks model, the rate of change will not affect the present value of revenue a distributor can expect to recover over the regulatory period.

H14 This is because we use the rate of change when setting expected revenues equal to expected costs over the regulatory period. The rate of change will only affect the timing of revenue recovery over the period, or in other words the slope of the revenue path.

H15 Put another way, the forecast rate of change in long-run average productivity over and above the forecast productivity changes already incorporated in building blocks forecasts (see **Attachment D**) is 0%, and so our emerging view is that a default X-factor of 0% remains appropriate.

Alternate X-factors

H16 In addition to the default X-factor discussed above, section 53P(8) of the Act provides for us to apply alternative X-factors for a particular supplier in two situations:

H16.1 to minimise undue financial hardship for a supplier or price shocks for consumers

H16.2 as an incentive for a supplier to improve its quality of supply.

H17 As discussed in **Attachment F**, we consider the existing quality incentive mechanism already provides better (as they have a present-value impact, not just a cashflow timing impact) for incentives to improve quality of supply. We are not aware of any EDBs that would justify the application of a particular X-factor to incentivise quality and that we will keep that under review and make a final decision as part of the DPP determination as to whether any X-factor adjustment as a quality incentive.

H18 Our approach to considering undue financial hardship and price shocks is discussed below.

Alternate X-factors may be more relevant in DPP4 than in previous resets

H19 As noted in **Chapter 3** and discussed in more detail in **Attachment E**, some EDBs are forecasting a substantial increase in capex to meet growing electrification and resilience needs, on top of the existing need to grow and renew their networks.

H20 On the other hand, as noted in **Chapter 2** the heightened inflation environment has placed additional cost pressures on both suppliers (through input cost increases) and on consumers.

H21 Because of these contextual factors, it is possible that both undue financial hardship and prices shocks are more likely than at past DPP resets.

General approach to considering alternative X-factors

H22 The default X-factor will apply to each EDB unless we consider that it is necessary or desirable to set alternative rates of change, either to minimise any undue financial hardship to the distributor or to minimise price shocks to consumers.

H23 The discretion under section 53P(8)(a) is framed broadly, in terms of whether "in the Commission's opinion, [an alternative X-factor] is necessary or desirable to minimise any undue financial hardship to the supplier or to minimise price shock to consumer".

H24 We see the analysis contemplated by section 53P(8)(a) in three steps:

H24.1 first, an assessment of whether a price shock or undue financial hardship (or in some cases both) would occur (and to what extent) based on our decisions on starting prices applying the generally applicable rate of change

H24.2 second, an assessment of whether it is necessary or desirable to minimise these outcomes

H24.3 third, a decision about the specific alternative X-Factor that would best minimise them.

H25 Each of these steps requires judgment in the exercise of this discretion. In doing so, our decision will be based on what best promotes the purpose of Part 4 having regard to:

H25.1 promoting the section 53K purpose of DPP/CPP regulation

H25.2 the circumstances of the EDB and its consumers

H25.3 any requirements or limitation in the EDB IMs.

H26 This approach is consistent with our overall decision-making framework as set out in **Attachment A**.

Price shocks for consumers

H27 Our starting point for identifying price shocks for consumers (and the extent of them) is to examine the real change in aggregate distribution revenue from one year to the next.

H28 This is most relevant in assessing the change from the final year of the regulatory period and the first year of the new regulatory period – as changes to building block parameters like WACC or opex may lead to significant changes in revenue allowances. However, it is also relevant over the course of the regulatory period, as we need to consider whether the use of an alternative rate of change will itself give rise to price shocks.

H29 Our reasons for proposing this approach are set out below, however we are interested in your views on other approaches we could take or other factors we should take into account.

Real change in prices

H30 In a context of higher-than-average inflation, we currently consider assessing the change in revenue over and above inflation is the right approach (ie, in real terms). This is consistent with the section 53P(5) CPI minus-X approach to determining the revenue path.

Aggregate revenue

H31 While aggregate revenue (the total amount EDBs are able to recover from their customers as a whole) is only one determinant the electricity distribution prices face (along with changes in quantities, changes in pricing methodologies, and the extent to which retailers pass through line charge changes), we consider it is the most reliable basis to assess price shocks on because:

H31.1 the influence of total revenue on price is still substantial

H31.2 the discretion in section 53P(8) is concerned with all consumers as a class, rather than with individual consumers

H31.3 under Part 4 and the current specification of price IMs, the Commission regulates total revenues not pricing methodologies [260, 261]

[260] In our draft IM Review decision, we proposed retaining a revenue cap as the form of control for EDBs, see Commerce Commission "Report on the Input Methodologies Review 2023 – Draft decision" (14 June 2023), p. 201.

[261] Section 52T(1)(b) requires the Commission to determine pricing methodology IMs, except where another regulator has the power to set pricing methodologies, as is the case with the EA for EDB pricing.

H31.4 the analysis and assumptions required to assess the impact of revenue changes on price changes in more detail goes beyond what is reasonable to undertake within the relatively low-cost framework of the DPP, and would be subject to significant uncertainties.

H32 However, we are also considering whether a per-consumer or per-unit of supply (eg, kilowatt hours, kilowatts of peak demand) average approach would be better suited to analysing price changes in the current context. Given many of the investments that suppliers are proposing are driven by expected higher levels of customer or demand growth, this may have the effect of lessening the price change on a per consumer or per-unit basis.

H33 We are interested in your view on whether this kind of an approach would promote the objective of setting alternative rates of change to minimise price shocks to consumers and the Part 4 purpose, and also whether it would be practical to apply in practice.

Distribution revenue

H34 We propose to consider the change in revenue including any recoverable costs that can be forecast (such as quality incentives and IRIS penalties and rewards) but excluding any pass-through costs (such as transmission charges).

H35 Including forecastable recoverable costs in our assessment gives the most realistic approximation of the distribution charge changes consumers are likely to experience, so we consider it would be appropriate to do so.

H36 However, with pass-through costs – the vast bulk of which will be transmission charges from Transpower regulated separately under the IPP – we consider any price shocks adjustment or smoothing should be considered as part of Transpower's IPP or based on the previsions of Transpower's Transmission Pricing Methodology.[262]

Level of price shock

H37 The threshold for what constitutes a price shock – what percentage change in real distribution revenue to allow before we would exercise our discretion to set an alternative rate of change – is ultimately a matter of judgment, having regard to the policy and objects of Part 4.[263]

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[262] Note, this assumes the current proposal to treat transmission charges as a pass-through cost in the draft IMs remains in place for the final. Even if this changes, we would still exclude transmission costs from our analysis on the same basis.

[263] For DPP2, we used a 5% real increase between periods, see: Commerce Commission "Main Policy Paper – EDB DPP 2015-2020" (28 November 2014), paragraph C12. For DPP3, we used a 10% real increase measured including the impact of IRIS incentive recoverable costs, see Commerce Commission "Default

H38 In applying this judgment, we will consider:

H38.1 the impact any deferral of cash flows would have on incentives to invest under s 52A(1)(a) and to improve efficiency under s 52A(1)(b)

H38.2 balancing the minimisation of price shocks against the possibility that the delayed cash flows under an alternative X-factor may itself give rise to undue financial hardship as discussed below.

H39 An additional factor we might consider (and are interested in your views on) is the extent to which we analyse different EDBs' consumer bases' ability to absorb price increases – in effect applying a different threshold depending on customers' circumstances (such as forecast growth, deprivation or energy hardship measures, lines charges as a percentage of total electricity bills, or some other factors).

Undue financial hardship for suppliers

H40 As with price shocks for consumers, undue financial hardship is not further defined in the Act. It may also be of greater importance in the DPP4 reset than previous resets given increases in proposed capex over the DPP4 period.

H41 Our view remains that the threshold is a high one. The reference in section 53P(8)(a) is specifically to 'undue' financial hardship – contemplating that not all financial difficulties a supplier faces would warrant accelerated revenue. Our view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers. This may be the case where, for example, the price path is set such that it would not be feasible for any prudent supplier to deliver services under it.

H42 We consider that the question of whether a supplier would experience undue financial hardship threshold is more than simply a matter of a supplier facing constrained cash flows that may require additional capital raising (either through debt or equity) or reprioritisation of capex plans.

H43 We will also consider any decision in light of the available alternatives for mitigating financial hardship within the regime, including:

H43.1 the ability of suppliers to reprioritise discretionary capex within the revenue allowance we determine

price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" (27 November 2019), paragraph 6.10.

H43.2 the ability for suppliers to raise additional capital to fund investment (through retained earnings or debt/equity issuance)

H43.3 the ability to reallocate costs where specific consumer demands are driving the need to invest, such as through capital contributions

H43.4 the availability of a CPP where an EDB faces financial hardship that is specific to its particular circumstances and may require longer-term revenue adjustments such as alternative depreciation.

Summary of our requests for information or responses to initial views

H44 We welcome your response to the items in the below list as well as any other feedback you would like to submit which is relevant to the DPP4 reset.

	Number	Request for comment or responses on initial views
Setting revenue allowances	26	**We are proposing to retain our approach of setting a 'default' X-factor of 0% (before considering price shocks or supplier financial hardship).** We are interested in your views on whether this approach (where long-run changes in sector productivity are accounted for in our building blocks analysis) remains appropriate.
	27	**Our emerging view is to assess price shocks for consumers using the real change in aggregate distribution revenue from year-to-year, with a particular focus on the change between regulatory periods.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a price change amounts to a price shock?
	28	**Our emerging view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a supplier faces undue financial hardship?

Attachment I Other incentives, including innovation

Purpose of this attachment

I1 The purpose of this attachment is to:

I1.1 outline our approach to incentivising innovation in previous DPP resets

I1.2 set out our preliminary thinking for a potential innovation and/or non-traditional solutions scheme ahead of DPP4

I1.3 outline our consideration of incentives for energy efficiency, demand-side management, and reduction of losses (section 54Q).

I2 While this attachment references the IM Review Draft decision, it is yet to be finalised and as such, it would be inappropriate to presuppose the outcome of the IM Review Final decision. We acknowledge the INTSA provisions in the Draft decision, but we cannot provide substantive analysis of options for an INTSA while the IM Review is still underway. We instead provide broad considerations for the design of any scheme to incentivise innovation and/or non-traditional solutions. Please note that we are not consulting on any of the decisions in the IM Review.

Context for innovation at previous DPP resets

Our approach to innovation in DPP resets 1 and 2

I3 Under the Part 4 purpose, the role of innovation is important for promoting the long-term benefit of consumers.[264] However, this must be managed with the risk that inefficient or over investment on innovation may burden consumers with excessive prices.

I4 Innovation typically requires expenditure by the distributor, which is ultimately paid for by consumers. When this is done successfully, it can result in lower consumer prices and/or a quality of service over time, that better meets their demands. Additionally, there may be secondary benefits where success and/or learning is shared across the industry, where other consumers can benefit. Over time, we have evolved our approach to assessing and setting innovation incentives, as we have undertaken analysis and engaged with stakeholders to aid our decision-making processes.

I5 For instance, in DPP1 and DPP2, we reset the price path recognising that EDBs would have incentives to innovate:

[264] Commerce Act 1986, s52A1(a).

I5.1 In DPP1, EDBs faced the ex-ante 'natural' incentive created by the price path

I5.2 for DPP2, EDBs could retain cost savings from innovation through IRIS

I5.3 EDBs had flexibility to reprioritise expenditure across projects to enable spend on projects as they were developed.

I6 These incentives were, at the time, considered sufficient to meet the requirements stated in the section 52A(1) purpose of the Act.

Introduction of the Innovation Project allowance in DPP3

I7 During the DPP3 reset we considered whether we should provide additional incentives for innovation. We found that the existing funding already available to distributors for innovation might be insufficient. For example, the potential benefits of the investment may go to third parties or be uncertain. Additionally, we found that IRIS is unable to reward all the potential benefits of innovation investment (such as innovation projects covering multiple or future regulatory periods).[265]

I8 In response, we provided for an additional recoverable cost in the IMs – the Innovation Project Allowance (IPA), to take effect when DPP3 began on 1 April 2020. The IPA was introduced so that we could further incentivise innovation that might not necessarily be captured by the regime's baseline tools – using a relatively low-cost mechanism. We considered that on balance, more expenditure on innovative practices by EDBs would likely be in the long-term interests of consumers.[266]

I9 The IPA was implemented in the DPP3 determination as a recoverable cost with the following criteria:[267]

I9.1 is targeted for expenditure on innovative projects[268]

I9.2 requires at least 50% contribution from the distributor[269]

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265 Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision reasons paper", (27 November 2019), p. 84.

266 *Ibid.*, paragraph 4.56.

267 *Ibid.*, paragraph F3.

268 Innovation project means a project that is focussed on the creation, development or application of a new or improved technology, process, or approach in respect of the provision of electricity lines services in New Zealand.

269 The contribution from the EDB should be treated as capital or operating expenditure of the contributing EDB, while any capital expenditure treated under this mechanism as a recoverable cost would not enter the regulated asset base.

I9.3 is limited to the amounts calculated as the higher of 0.1% of our forecast of allowable revenue (excluding pass-through and recoverable costs) or $150,000 over DPP3;

I9.4 requires a report from an independent engineer or other suitable specialist that the planned expenditure on the project meets the set of criteria for it to be considered an innovation project and potentially benefits consumers.

I10 We have received two formal applications for the IPA in the DPP3 period so far. One is recent and has yet to be reviewed and the other was not approved.[270] We have also undertaken a number of informal discussions with potential IPA applicants.

I11 We acknowledge that the IPA has not been utilised as we expected, and in the context of this Issues paper, consider it appropriate to:

I11.1 signal our intention to have some form of a scheme to better incentivise innovation and/or non-traditional solutions

I11.2 seek feedback on ide principles and characteristics for how a potential scheme might be designed.

Considerations for incentivising innovation and/or non-traditional solutions at DPP4

I12 In the context of DPP4, the need to consider innovative and non-network (ie, non-traditional) solutions may be stronger given the need for EDBs to:

I12.1 Seek opportunities to defer or remove the need for traditional capex investments

I12.2 test and/or employ new technologies and business practices, potentially changing the ways networks could operate.

I13 Many EDBs are already undertaking activities that can be considered innovative or non-traditional.[271] Our recent change to information disclosure requirements is intended to make information about EDBs innovative practices more accessible to interested sector stakeholders.[272]

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270 Commerce Commission '2020-2025 electricity default price-quality path" webpage. See "Correspondence on Orion's June 2021 Innovation Allowance Application."

271 For example, see Orion and Wellington Electricity "Resi-flex, unlocking the value of residential flexibility" (July 2023).

272 For example, see "Orion Innovation Strategy", (June 2023).

Summary of the IM Review Draft decision

I14 In the IM Review Draft decision, the Commission proposed expanding the IPA into the 'innovation and non-traditional solutions allowance' (INTSA). This proposal included removing the definition of 'innovation project' from the IMs entirely (rather than further refining the definition). This was proposed to provide for more scope and flexibility for the Commission to set a wider range of schemes to provide better incentives for innovation and non-traditional solutions at DPP resets or when setting a CPP.[273]

I15 The current IMs allow us to alter most of the current IPA characteristics.[274] Under the proposed changes of the IM Review Draft decision, we could have the ability to:

I15.1 add to, or alter, all IPA criteria

I15.2 consider the possibility of multiple allowances (including a targeted allowance)

I15.3 consider the option to set rewards and penalties within those schemes.

I16 The IM Review Draft decision proposes to give us significant flexibility to design a scheme to implement one or more INTSAs. If confirmed, the IM Final Decision would leave discretion for how to do so to the DPP (or CPP) decision.

I17 However, as the IM Review is only at the Draft decisions stage, in this paper it would be inappropriate to contain a detailed discussion of potential options for designing an INTSA.

I18 Subject to the Final decision of the IM Review, we may have a workshop targeted at incentivising innovation and/or non-traditional solutions in early 2024. This will be dependent on the quantity and nature of the submissions we receive for this paper, and whether we need further information from interested parties before progressing to our DPP4 Draft decision.

Early thinking about potential scheme design to incentivise innovation and/or non-traditional solutions at DPP4

I19 As the IM Review is underway and the INTSA provisions are unconfirmed, we have given initial thought to the key principles that would guide the development of any scheme to incentivise innovation and/or non-traditional solutions.

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273 Commerce Commission, "Financing and incentivising efficient expenditure during the energy transition topic paper", (14 June 2023), paragraph 6.40.

274 Under the current IMs, the only criteria to be of issue is changing approval method to ex-ante. This is a grey area because of wording, although the IM Review Draft decision proposes to amend this.

I20 The proposed key principles are:

I20.1 **Additionality principle.** This principle assumes that an innovation and/or non-traditional solutions project would not occur without additional regulatory support and that projects being applied for are not already provided for or incentivised**.** Incentives might be commercial (eg, there is sufficient upside reward from potential unregulated revenue such that additional regulatory support is not needed), or through other funding sources such as the GIDI fund or Callaghan Innovation. Furthermore, this principle typically assumes that the project is riskier than the BAU solution. So, while there might not be a funding constraint, the risk profile of the project means that in the absence of the innovation funding, the suppliers would likely have an incentive to pursue a safer, but potentially higher cost, BAU solution instead of an innovative or non-traditional one.

I20.2 **Risk allocation (and compensation).** The appropriate allocation of risk is one of our key economic principles and states that risks should be allocated to suppliers or consumers based on who is best placed to manage them. The balance of risk and reward is important to provide adequate incentives to innovate.[275]

I20.3 **Proportionate scrutiny.** We typically apply the principle of proportionate scrutiny to our evaluation of spend proposals, in that changes in expenditure that would lead to material increases in price and/or a material change in quality of service should attract greater scrutiny. In this context, scrutiny applied to a scheme should be consistent with the relatively low-cost purpose of DPP regulation and be proportionate to the potential project's scale and significance (eg, cost and potential benefits).

I20.4 **Incentives for efficient expenditure (where appropriate).** Any funding within a potential scheme should ideally face incentives to be used efficiently, to increase potential benefits to consumers.

I20.5 **Fits within the relatively low-cost DPP settings.** The DPP is designed to be a relatively low-cost regime. A CPP is likely to be more appropriate when the design and implementation of a scheme involves relatively high complexity and cost, which might be the case if the scheme involves penalties and rewards associated with project delivery or outcomes.

[275] By facing some (or all) of the costs of failed innovations, we sharpen the incentive for EDBs to deliver and so increase the chances of successful innovation. On the other hand, the higher the risk faced, the higher the rewards of successful innovation should be, and vice versa.

I21 In addition, we have given some thought to potential design characteristics of a scheme that might incentivise innovation and/or non-traditional solutions. These are:

I21.1 **What the project is for:** ie, what are the type and/or characteristics of expenditure. We could consider specific criteria for what sorts of projects could be eligible (including a definition for 'innovative and non-traditional solutions' if deemed necessary).

I21.2 **Approval timing:** whether the allowance is approved before or after a project starts (ex-post or ex-ante). This may influence the incentives for a project to occur at all.

I21.3 **Expenditure approved:** the expenditure approved for a project could be its forecast cost or its actual cost. This choice affects the incentives to deliver the project efficiently.

I21.4 **Share of expenditure approved (%):** adjusting the percentage of potential project costs that would be recoverable can be used to manage risk allocation between the EDB and its consumers.

I21.5 **When and on what conditions (if any) approved expenditure is received:** we may consider conditions and timing for when approved expenditure is received (different from approval timing). This can also influence risk allocation, as it can ensure that consumers do not pay for an approved project that does not actually proceed, or that fails to deliver intended outcomes. For instance, conditions could be that a project must be (a) completed and (b) have met its objectives before costs can be recovered.

I21.6 **Maximum expenditure permissible ($ and/or %):** this characteristic is linked with the principle of proportionate scrutiny where funding available should be proportionate to costs. For instance, there might be a cap on the cost of an individual project eligible for funding, or on the cost of all projects proposed during the DPP regulatory period.

I21.7 **Supporting evidence:** what (if any) supporting evidence that would be potentially required should be consistent with the principle of proportionate scrutiny.

I21.8 **Penalty/reward mechanism:** such a mechanism could be used to increase or reduce incentive strength to match the potential rewards to the risks faced.

I22 We consider that the design principles broadly influence how we would employ scheme characteristics when considering any scheme to incentivise innovation and/or non-traditional solutions. To demonstrate this thinking further, the table below (I1) contrasts these potential scheme design characteristics against the current IPA.

I23 We do not currently hold a view as to which combination of these characteristics would be best suited for any scheme that incentivises innovation and/or non-traditional solutions. Regardless, it is our view that any scheme that is implemented should adhere to the additionality principle:

I23.1 that the regime does not already provide for or incentivise via its baseline tools

I23.2 where existing risk allocation and compensation is not appropriate. This is illustrated by Wellington Electricity's submission on the IM Review Draft decision, which illustrates the importance of effective substitution of opex and capex.[276]

Table I1 Potential DPP4 scheme design characteristics as they relate to key principles

Design characteristics	Current IPA	Potential DPP4 scheme considerations
What the project is for: type and characteristics of expenditure	Project that is focussed on the creation, development or application of a new or improved technology, process, or approach in respect of the provision of electricity lines services in New Zealand	Innovative or non-traditional solution projects not otherwise provided for or incentivised. For example, trialling solutions that have the potential to deliver net benefits to consumers, but are riskier than BAU, or projects where the benefits are not likely to be received until many years in future
Approval timing: eg, before or after project starts	Ex-post	Ex-ante approval may positively influence incentives for a project to occur
Expenditure approved: forecast and/or actual	Actual	Forecast approval should provide stronger incentives for efficient spend
Share of expenditure approved (%)	50%	Share below 100% allows for more risk to be allocated to EDBs

[276] Wellington Electricity, "Submission on IM Review 2023 Draft Decisions", (19 July 2023), p. 20.

When and on what conditions (if any) approved expenditure is received	Ex-post after expenditure incurred	Can be used to ensure suppliers are not compensated for projects that do not proceed or meet goals
Maximum expenditure permissible ($ and/or %) across the period	Capped at 0.1% of allowable revenue or $150,000	Proportionate scrutiny might suggest that large projects would be more appropriate as part of a CPP application.
Supporting evidence	Independent specialist report	Proportionate scrutiny suggests a specialist report might not be necessary for small projects or projects that have already received scrutiny (eg, by other agencies)
Penalty/reward mechanism	Not provided for	Relatively low-cost DPP settings suggests such a mechanism is more appropriate for CPP

I24 As noted in the summary of our requests for information at the end of this attachment, we are interested to receive views from stakeholders on:

I24.1 the effectiveness of the design principles as the basis for guiding the development of a scheme to incentivise innovation and/or non-traditional solutions

I24.2 the potential design characteristics themselves, including any others not listed above that might be suitable for designing a scheme to incentivise innovation and/or non-traditional solutions[277]

I24.3 how these (and/or other) potential design characteristics might be best applied in a potential scheme to incentivise innovation and/or non-traditional solutions.

Energy efficiency, demand-side management, and reduction of losses (s54Q)

I25 Section 54Q of the Act relates to incentives for energy efficiency, demand-side management, and reduction of energy losses:[278]

> The Commission must promote incentives, and must avoid imposing disincentives, for suppliers of electricity lines services to invest in energy efficiency and demand-side management, and to reduce energy losses, when applying this Part in relation to electricity lines services.

[277] We do not consider that this list of design characteristics described are exhaustive. We welcome submissions for other characteristics that stakeholders consider might be appropriate for a potential scheme.

[278] Commerce Act 1986, section 54Q.

I26 Demand-side management and energy efficiency initiatives involve influencing consumer demand, for example by reducing energy consumption or by shifting demand away from peak periods (sometimes referred to as load-shifting). Such initiatives can defer or avoid investment that would otherwise be required to meet periods of peak demand.

I27 Energy losses generally refer to the extent to which electricity is lost during transmission and distribution. Distribution line losses are measured as the difference between the volume of electricity entering the distribution system for supply to consumer connection points and the total delivered to those connection points. Such losses are reported under Information Disclosures.[279]

Energy efficiency and demand-side management

I28 Our initial view is that a specific demand-side management and energy efficiency scheme is not required for DPP4.

I29 As EDBs operate under a revenue cap there are fewer disincentives for EDBs to undertake demand-side management and energy efficiency initiatives than would exist under a weighted average price-cap form of control.

I30 An example of a potential demand-side management initiative which EDBs could employ is load-shifting, where demand is shifted away from peak periods. Such initiatives can defer or avoid network investment that would otherwise be required to meet periods of peak demand.

I31 Load-shifting may be implemented through the pricing structure set by the EDBs, using different prices for peak and off-peak periods. The revenue cap provides flexibility for an EDB to set prices that may incentivise load-shifting and an EDB is incentivised to shift load where this may reduce costs.

I32 Demand-side management initiatives are progressively expected to involve the procurement of services from flexibility providers (opex) to efficiently defer investments to increase network capacity planned for future regulatory periods (capex).

I33 We consider that providing incentives for opex/capex trade-offs during and across regulatory periods may encourage suppliers to increase their use of demand-side management (including by using non-traditional solutions).

[279] Electricity Distribution Information Disclosure Determination [2012] NZCC 22 (consolidated 6 July 2023), Schedule 9e: Report on Network Demand (9e(ii): System Demand (electricity volumes carried)).

I34 This is being considered within the IM Review, in particular:

I34.1 current scope for opex/capex trade-offs and any capex bias due to regulatory financial considerations

I34.2 scope for efficient opex/capex trade-offs across regulatory periods

I34.3 scope of reopener coverage, with consideration of provision for inclusion of opex based reopeners, or reopeners with an opex component

I34.4 innovation and non-traditional solutions allowance (INTSA).

I35 We note that the AER has a Demand Management Incentive Scheme (DMIS) which provides financial incentives to undertake efficient expenditure on non-network solutions to manage peak electricity demand.[280] The DMIS applies to distribution business' eligible projects as set out in the AER's distribution determination for each distribution business. Our view is that this type of mechanism which requires assessment of projects as part of a Determination would be more appropriate in a CPP as compared to a DPP.

Reduction of energy losses

I36 According to information disclosure data, electricity losses (loss ratio) for non-exempt EDBs have been relatively steady over the period 2013 to 2022 ranging from 4.5% to 4.9% with the latest three years all reporting at 4.7%.[281]

I37 However, there is significant variation in losses reported by individual EDBs, ranging from 3.4% to 9.6%.

I38 Energy is principally lost in distribution networks as a result of resistance in conductors and iron losses in transformers. There may also be other non-technical factors that contribute to line losses, such as losses due to metering errors.

I39 Given consumers ultimately pay for energy losses, reductions in energy losses in distribution networks would provide a benefit to consumers.

I40 We note that distribution transformers are under the MEPS scheme administered by EECA and any improved performance in these assets would reduce energy losses.[282]

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280 Australian Energy Regulator, "Demand management incentive scheme (DMIS) assessment 2020-21 and 2021-22" webpage.

281 Loss ratio is calculated as the amount of electricity losses (GWh) / Electricity entering system for supply to consumers' connection points (GWh).

282 Energy Efficiency and Conservation Authority, "Distribution transformers" webpage.

I41 We believe that improved visibility of the LV network will assist EDBs in identifying areas where investment may reduce losses and consumers who may not be appropriately recording and paying for their consumption.

I42 An option to further incentivise EDBs to factor energy losses into their decisions could be the introduction of a QIS, where EDBs are rewarded for reducing line losses. Under an incentive scheme, consumers would pay a financial 'reward' to EDBs who reduce line losses below the target level (in the form of a revenue uplift). Consumers would also pay for EDB investments in loss reduction activities when the assets entered the RAB.

I43 We are not proposing to implement a QIS for line losses. We believe EDBs improved visibility of LV performance and improvements to the energy efficiency of distribution transformers should drive improvements in DPP4 without additional explicit incentives.

Summary of our requests for information or responses to initial views

I44 We welcome your response to the items in the below list as well as any other feedback you would like to submit which is relevant to the DPP4 reset.

	Number	Request for comment or responses on initial views
Innovation		**The regime's baseline incentives may be insufficient to support innovation, such that it is appropriate to have an innovation (and/or non-traditional solutions) incentive scheme.**
	22	Do you agree with our understanding of the regime's baseline incentives to support innovation, and the need for an innovation and/or non-traditional solutions scheme? Would you be interested in participating in a targeted workshop, and if so, are there any topics you consider should be covered?
		We are interested in feedback on our initial thinking about how to design an incentive scheme to encourage innovation and/or non-traditional solutions in DPP4.
	23	What are your views on the key principles (see Attachment I)? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? What are your views on the potential scheme design characteristics? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? How could these principles and characteristics be best applied in designing a potential scheme? We would also welcome submissions with examples of overseas schemes/characteristics that you consider appropriate for a DPP.

Energy efficiency, demand-side management and energy losses	24	**Our initial view is that a specific incentive for demand-side management and energy efficiency is not required for DPP4.** Is there a basis for strengthening the incentives for energy efficiency and demand-side management initiatives? How could this best be done in the context of the DPP?
	25	**We are not proposing to implement a quality incentive scheme for line losses. We believe EDBs improved visibility of low voltage performance and improvements to the energy efficiency of distribution transformers should drive improvements in DPP4 without additional explicit incentives.** Do you agree with our approach to not introduce a specific quality incentive scheme related to reducing energy losses?

Attachment J Summary of consultation questions

Purpose of this attachment

J1 The purpose of this attachment is to provide all the consultation questions located in this Issues paper in one place. This attachment is also published alongside this issues paper as a Word document. This is so interested submitters can download this table in a format that allows them to include their responses to the consultation questions that interest them.

Number	Request for comment or responses on initial views	Page
Chapter 2 – Context and challenges		
1	**We are interested in your views on whether we have properly understood the changing industry context as it relates to the DPP4 reset.** Have we properly understood and represented the changing industry context and are there other implications for the DPP4 you believe we should consider?	18
Chapter 3 – Forecasting capital expenditure		
2	**We are proposing to adapt our approach to capex for DPP4 based on feedback from EDBs, that past expenditure is not a good starting point for considering future spend.** Do you have any particular concerns or issues with our proposed approach? If so, how could these concerns or issues be resolved? What alternative data and external sources should we use to support our consideration of capex forecasts, beyond the information in 2023 Asset Management Plans (AMPs), responses to section 53ZD notices and 2024 AMPs and why should these be used?	27
3	**We are proposing to apply the capital goods price index to forecast capex allocations.** Is there a more appropriate index which could be applied; and, if so, why	27
4	**We have concerns about the challenges in delivering increased programmes of work given current labour market, supply chain and economic challenges in New Zealand.** How should our capex forecast take into account potential sector-wide deliverability constraints?	27
5	**We will be using a s 53ZD notice to collect information about how EDBs have reflected resilience in their expenditure forecasts.** What engagement have EDBs had with consumers about resilience expectations, especially as it relates to significant step changes in forecast expenditure? What other considerations should we factor into our analysis of the resilience expenditure information collected from the s 53ZD notice and/or what is unlikely to be visible in the forecasts that we should consider?	27

Number	Request for comment or responses on initial views	Page
6	**We intend to consider how potential changes in capital contributions policies could be accommodated in DPP4.** How could changes to capital contributions policies, either in advance of or within the regulatory period, be accommodated within our capex forecasts for DPP4?	27
7	**We are interested to understand if EDBs are assessing investments driven by expected pace of change which may not be consistent with choices otherwise made under a least-cost lifecycle basis.** Are there specific investment decisions being considered due to concerns on delivering increased scale of investment in limited time which are not consistent with a least-cost lifecycle basis assessment; for example, areas where EDBs are intending to build well in advance of forecast need or for demand or generation that are only speculative? On what basis are these investments being assessed?	27
Chapter 3 – Forecasting operating expenditure		
8	**We are considering amending our approach to forecasting opex input price escalation to better reflect the mix of inputs EDBs face.** Do you have a view on another index, or weighted mix of indices, which would improve the quality of opex forecasting compared to our current approach? (Using a 60/40 mix of percent changes in Labour Cost Index (LCI) all-industries and Producers Price Index (PPI) input indices.) If so, what evidence supports this view?	34
9	**We are considering revising our approach to scale growth trend factors, to better reflect EDBs increasing focus on investing to meet growth and renewal needs.** Do you support our emerging view that including forecast capex as a driver of non-network opex could improve opex forecasts, and that this conclusion makes sense in terms of the way EDBs run their businesses? Are there alternative drivers that we should consider, and what evidence is there that they can meaningfully predict EDB scale growth?	34
10	**EDBs have identified that insurance costs have been increasing at a greater rate than other costs they face.** What evidence do you have about how these costs are likely to evolve over time? Is the option of trending insurance opex forward using a separate cost escalator workable? How could incentives on EDBs to make efficient risk management decisions be maintained?	34
11	**Given the possibility of a greater need for step-changes in opex in a context of industry transition, we have clarified further how we are thinking of applying the step-change criteria and the supporting evidence we expect.** Do you consider the expanded descriptions of the step-change criteria provide sufficient clarity about the types of step-changes we consider meet the Part 4 purpose?	34

Number	Request for comment or responses on initial views	Page
Chapter 3 – Quality standards		
12	**Our initial view is to maintain the principle of no material deterioration and set quality standards on a basis consistent with that established in DPP3.** Do you agree with our proposed approach of maintaining the principle of no material deterioration and setting the quality standards on a basis consistent with DPP3? What other approach could be used, and why is it better? With regard to the quality standards, are the existing reporting obligations appropriate?	38
13	**Our initial view is to maintain the DPP3 settings of a 10-year reference period updated for the most relevant information and normalisation approach for major events.** Do you think that we should maintain a 10-year reference period updated for the most relevant information and normalise major events on the same basis as DPP3?	38
14	**Our initial view is step changes in reliability, if appropriate, may be accommodated through setting of values or revisions to definitions.** Are there identifiable step changes to reliability parameters for quality standards to manage operational or situational changes outside the control of the distributor compared to historical periods? What value and challenges do you see with different approaches to addressing inconsistencies in the recording of interruptions, the 'multi-count' issue, using either a proxy allocation basis or requiring a recast dataset? Are there alternative approaches which may appropriately address the issue?	38
15	**Our initial view is to not introduce new additional quality of service measures.** Are there any other quality of service measures beyond those currently required within DPP3 that we should consider introducing, and why?	38
Chapter 3 – Other issues		
16	**Aurora Energy is scheduled to rejoin the DPP from 1 April 2026.** Do you agree with how we propose to transition Aurora Energy to the DPP in 2026?	40
17	**Section 53M(5) allows us to reduce the regulatory period if this would better meet the purpose of Part 4 of the Act. We are considering whether we should reduce the regulatory period from five to four years.** What particular challenges do you perceive may arise from shortening the regulatory period? What are the potential benefits to consumers from maintaining or shortening the length of the regulatory period?	40
18	**The DPP sets annual deadlines by which suppliers must make CPP applications to enter into effect the following year.** Do you support retaining a similar approach to setting CPP application windows as was undertaken for DPP3?	41

Number	Request for comment or responses on initial views	Page
19	**The current IMs provide for a discretionary shortening of asset lives.** What are your views on the existing framework for assessing accelerated depreciation applications?	41
Chapter 4 – Quality incentives		
20	**Our initial view for DPP4 is to retain revenue-linked quality incentives for both planned and unplanned SAIDI, with targets, caps, collars, incentive rate and revenue at risk set on a consistent basis with DPP3.** Are EDBs considering the quality incentive scheme (QIS) in their investment decisions? Do you consider the proposed settings are appropriate for the QIS, including whether the incentive rate is driving appropriate outcomes with regards to consumer quality expectations?	45
21	**Caution around treatment of non-performance of less proven solutions may create a reticence by EDBs to implement these types of solutions and result in a focus on more proven established technologies, typically, capex investments. Our intention is that the compliance with the quality standards and penalties under the quality incentive scheme do not act as a potential impediment to innovation.** How could we account for non-performance of non-network solutions (regulatory sandboxing)?	46
Chapter 4 Innovation		
22	**The regime's baseline incentives may be insufficient to support innovation, such that we consider it is appropriate to have an innovation (and/or non-traditional solutions) incentive scheme.** Do you agree with our understanding of the regime's baseline incentives to support innovation, and the need for an innovation and/or non-traditional solutions scheme? Would you be interested in participating in a targeted workshop, and if so, are there any topics you consider should be covered?	47
23	**We are interested in feedback on our initial thinking about how to design an incentive scheme to encourage innovation and/or non-traditional solutions in DPP4.** What are your views on the key principles (see **Attachment I**)? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? What are your views on the potential scheme design characteristics? Are they effective as the basis of an innovation and/or non-traditional solutions scheme? Are there others you think may be suitable? How could these principles and characteristics be best applied in designing a potential scheme? We would also welcome submissions with examples of overseas schemes/characteristics that you consider appropriate for a DPP.	47

Number	Request for comment or responses on initial views	Page
Chapter 4 - Energy efficiency, demand-side management and reduction of energy losses		
24	**Our initial view is that a specific incentive for demand-side management and energy efficiency is not required for DPP4.** Is there a basis for strengthening the incentives for energy efficiency and demand-side management initiatives? How could this best be done in the context of the DPP?	48
25	**We are not proposing to implement a quality incentive scheme for line losses. We believe EDBs improved visibility of low voltage performance and improvements to the energy efficiency of distribution transformers should drive improvements in DPP4 without additional explicit incentives.** Do you agree with our approach to not introduce a specific quality incentive scheme related to reducing energy losses?	48
Chapter 5 – Setting revenue allowances		
26	**We are proposing to retain our approach of setting a 'default' X-factor of 0% (before considering price shocks or supplier financial hardship).** We are interested in your views on whether this approach (where long-run changes in sector productivity are accounted for in our building blocks analysis) remains appropriate.	54
27	**Our emerging view is to assess price shocks for consumers using the real change in aggregate distribution revenue from year-to-year, with a particular focus on the change between regulatory periods.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a price change amounts to a price shock?	54
28	**Our emerging view is that financial hardship will be 'undue' only where it is to such an extent that it is inconsistent with the long-term benefit of consumers.** Do you agree with this approach? If not, are there other alternatives we should consider? When applying this (or any other) analysis, what factors should we consider in determining whether a supplier faces undue financial hardship?	54
Chapter 5 – Consumer bill impacts		
29	**Previously we have forecasted indicative consumer bill impacts from information disclosed by EDBs. We are interested in understanding what other information may help refine our approach.** What models or data inputs could be provided by EDBs which would improve our approach to modelling consumer bill impact?	57

Attachment K Glossary of terms

Acronyms and abbreviations	
ACOD	Avoided cost of distribution
Act	Commerce Act 1986
AER	Australian Energy Regulator
AMP	Asset management plans
ARR	Asset replacement and renewals
BBAR	Building blocks allowable revenue
CAIDI	Customer Average Interruption Duration
Capex	Capex
CGPI	Capital Goods Price Index
CPI	Consumer price index
CPP	Customised price-quality path
DER	Distributed electricity resources
DFFITS	Difference in fit(s)
DMIS	Demand Management Incentive Scheme
DPMC	Department of the Prime Minister and Cabinet
DPP	Default price-quality path
DPP2	DPP that applied from 1 April 2015 to 31 March 2020
DPP3	DPP that applies from 1 April 2020 to 31 March 2025
DPP4	DPP that will apply for the next four to five years from 1 April 2025
DSO	Distribution system operations
EDB	Electricity distribution business
EEA	Electrical Engineers' Association
EECA	Energy Efficiency and Conservation Authority
ENA	Energy Networks Aotearoa
EGWW	Electricity, Gas, Water, and Waste
ERP	Emission Reduction Plan
EV	Electric vehicle
FCM	Financial capital maintenance
GIDI	Government Investment in Decarbonising Industry Fund
GPB	Gas Pipeline Business
GSL	Guaranteed service level
GTP	Gas Transition Plan

HILP	High impact low probability
IAEngg	Innovative Assets Engineering
ICP	Installation control points
IEEE	Institute of Electrical and Electronics Engineers
IFRS	IFRS Foundation
IM	Input Methodologies
INTS	Innovation and non-traditional solutions
INTSA	Innovation and non-traditional solutions allowance
IPA	Innovation Project Allowance
IPAG	Innovation and Participation Advisory Group
IPP	Individual price-quality path
IRIS	Incremental Rolling Incentive Scheme
IT	Information technology
LCC	Large connection contract
LCI	Labour Cost Index
LV	Low voltage
MAE	Mean absolute error
MAR	Maximum allowable revenue
MBIE	Ministry of Business, Innovation and Employment
MED	Major event day
MEPS	Minimum Efficiency Performance Standards
MSE	Mean square error
NEMA	National Emergency Management Agency
NPV	Net Present Value
OLS	Ordinary Least Squares
Opex	Operational expenditure
Part 4	Part 4 of the Commerce Act 1986
PPI	Producers Price Index
PPF	Partial productivity factor
PQ	Price-quality
PV	Present Value
QIS	Quality Incentive Scheme
RAB	Regulatory asset base
RPE	Real price effects

RS&E	Reliability, safety and environment
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
TAMRP	Tax adjusted market risk premium
TIDR	Targeted Information Disclosure Review
VOLL	Value of Lost Load
WACC	Weighted Average Cost of Capital
WELL	Wellington Electricity