

Attachment E Setting quality standards and incentives

Purpose of the attachment

- E1 This attachment explains the rationale for the final decisions related to setting quality standards and incentives. It provides background analysis to those decisions and responds to stakeholder submissions on this topic area.
- E2 It covers these specific areas:
- E2.1 high level approach to quality;
 - E2.2 quality standards;
 - E2.3 quality incentives scheme (QIS);
 - E2.4 normalisation of reliability data for major events; and
 - E2.5 reference periods.

High level approach to quality

Reasons for setting quality standards

- E3 The Commerce Act (the Act) states that every default price-quality path (DPP) must specify “the quality standards that must be met by the regulated supplier”.¹ Additionally, we are permitted to include incentives for suppliers to maintain or improve quality of supply.²
- E4 The Act explains quality standards as follows:
- Quality standards may be prescribed in any way the Commission considers appropriate (such as targets, bands, or formulae) and may include (without limitation)—
- (a) responsiveness to consumers, and
 - (b) in relation to electricity lines services, reliability of supply, reduction in energy losses, and voltage stability or other technical requirements.³

¹ Commerce Act 1986, s 53M(1)(b).

² Ibid, s 53M(2).

³ Ibid, s 53M(3).

- E5 Quality standards promote outcomes consistent with competitive markets in terms of providing the level of quality that reflects consumer demand.⁴
- E6 Quality standards are required to counter any incentive to under-invest created by the price-path that incentivises electricity distribution businesses (EDBs) to minimise expenditure. If there was no countermeasure EDBs may be incentivised to reduce expenditure to a level where the quality of service expected by consumers is not being met.

Current quality settings

- E7 The principle underpinning our approach to quality standards is that EDBs should at least maintain the levels of quality in network performance that they have provided historically, all else being equal. We refer to this principle as ‘no material deterioration’.⁵
- E8 The quality standards and incentives focus on network reliability, as measured by the duration and number of outages experienced by the average customer, known as System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) respectively. SAIDI and SAIFI are internationally recognised and are the most common methods of measuring 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.
- E9 This approach is consistent with our relatively low-cost DPP forecasting principles, in that future revenues and quality are set with reference to historical levels of performance. At the same time, our incentive settings do allow for EDBs to target, within certain limits, a different level of reliability that reflects consumers preferences.
- E10 Significant revisions to the quality standards and incentives were made for DPP3, compared to DPP2.

⁴ Commerce Act 1986, s 52A(1)(b)

⁵ We note that climate change is being raised as a growing issue as it may be increasing the frequency and/or severity of storms. The principle of ‘no material deterioration’ is based on quality provided, not maintenance in the strength or integrity of the network. Accordingly, we recognise that stronger infrastructure may be required to maintain the same level of quality of service.

E11 We consider that the quality standards and incentives are working as they should, and that there is no need to take any major departure from the current quality settings for DPP4. Accordingly, this final decision retains most of the quality standard and quality incentive settings from DPP3 with a few targeted adjustments.

General support to broadly maintain DPP3 quality settings

E12 In submissions on our draft decision, there was general support to keep the principle of ‘no material deterioration’ and to broadly maintain the quality settings determined in DPP3. For example, Electricity Networks Aotearoa (ENA) stated:⁶

ENA believes that the existing DPP quality standards have delivered the level of quality sought by consumers. There is no evidence of a desire from consumers to alter the level of service delivered by EDBs. Therefore, ENA is of the view that the current regime comprising of planned and unplanned SAIDI and SAIFI is appropriate and supports the Commission’s decision to retain it.

ENA also believes the Commission’s decision to retain the principle of no material deterioration is appropriate, and the current approach to normalisation should be continued.

E13 There was also general support for retaining the revenue-linked quality incentive scheme. For example, ENA stated in its submission to the issues paper that it “believes the Commission's current framework for quality incentives is robust ... ENA views the QIS as an appropriate mechanism for delivering outcomes that align with consumer expectations.”⁷ In its submission on our draft decision, “ENA supports the continuation of the existing quality incentive scheme.”⁸

E14 In submissions on our draft decision, Top Energy, Aurora, Alpine, Powerco and Major Electricity Users Group (MEUG) also broadly supported maintaining the current quality settings.⁹

⁶ [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(11 July 2024\)](#), p. 14.

⁷ [Electricity Networks Aotearoa \(ENA\) “DPP4 Issues paper submission” \(19 December 2023\)](#), p.18, paras 8.1 and 20.

⁸ [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(11 July 2024\)](#), p. 23

⁹ [Top Energy “Submission on EDB DPP4 draft decisions” \(11 July 2024\)](#), p.1; [Aurora Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 6; [Alpine Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p.16; [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 20; [Major Electricity Users Group \(MEUG\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 2 and 7.

- E15 There were mixed views on implementation (for example, reference periods, adjustments to data, and normalisation) that we expand on in relevant sections of this attachment.
- E16 We noted in our issues paper that our quality standards only apply at an aggregate network level, but that we expected EDBs to consider the needs and expectations of different consumers and consumer groups when making trade-offs about quality on different parts of their networks and to reflect these in their asset management plans (AMPs).
- E17 Several submissions considered that we should have more granular quality standards (FlexForum, Fonterra, Powerco, and MEUG),¹⁰ with a number noting that these may not be appropriate to introduce for DPP4 but should be considered in future resets. For example, FlexForum stated:¹¹

The Commission can further strengthen incentives to invest in learning and so improve productivity and efficiency by committing now to introducing more granular, probabilistic, and risk-informed quality standards from 2030, and in the short term introduce complementary measures that identify and highlight productivity-enhancing activities over 2025 to 2030.

- E18 Further consideration of this point is contained in the section of this paper *Disaggregated measures of network reliability*.

General support to maintain the principle of ‘no material deterioration’

- E19 We previously based the reliability standards and incentives for planned and unplanned interruptions on EDBs’ historical performance as measured by the duration and frequency of interruptions (SAIDI and SAIFI) experienced by consumers. These are intended to give effect to the ‘no material deterioration’ principle.
- E20 Our final decision is to continue to base the standards and incentives on historical performance.

¹⁰ [FlexForum “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 3; [Fonterra “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#) p. 2; [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 20 and 30; [Major Electricity Users Group \(MEUG\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 2 and 7.

¹¹ [FlexForum “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 3.

- E21 The exception to this approach is the setting of the extreme event standard, which has been set at a fixed amount for all EDBs (see *decision QS7*).¹²
- E22 Our approach to setting the planned and unplanned quality standards is to base these on a historical average, with a buffer added to reduce the inherent risks due to random year-to-year volatility of SAIDI and SAIFI,¹³ and a cap on the movement between regulatory periods.

What we heard from stakeholders

- E23 In submissions on our draft decision, ENA and Powerco stated that we should maintain the principle of no material deterioration,¹⁴ reinforcing the view of several submitters on our issues paper.¹⁵

Some EDBs raised concerns that financial constraints affect the ability to maintain network quality

What we heard from stakeholders

- E24 A number of submissions on our issues paper raised concerns that potential financial constraints posed by DPP4 revenue/expenditure allowances would have a material impact on EDBs' ability to manage network quality.
- E25 For example, Unison stated: "Without adequate cashflows, there will be an impact on EDBs[sic] ability to make decisions on a least cost life-cycle basis implement [sic] (which will shorten the life of and make more expensive, assets over their lives, and steadily degrade quality outcomes)".¹⁶ It also considered the QIS should be agile to respond to the potential of EDBs not being adequately funded to deliver their AMPs, and where customised price-quality paths (CPPs) and reopener mechanisms cannot respond to impacts on EDB quality in a timely way.¹⁷

¹² 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.

¹³ "Buffer" refers to the uplift applied between the "target" which represents historical performance and the standard "limit".

¹⁴ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 14; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.20.

¹⁵ [Submissions](#) by Aurora, ENA, Transpower, Vector, and MEUG on Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Issues paper" (2 November 2023).

¹⁶ [Unison Networks Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 19.

¹⁷ [Unison Networks Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 21.

- E26 Wellington Electricity stated that a consequence of insufficient investment will “mean that quality will deteriorate as demand exceeds the network capacity. If EDBs do not keep pace with demand increases, customers will experience more power cuts as networks curtail electricity use to avoid electrical equipment overloading.”¹⁸
- E27 In response to our draft decision, Firstlight stated: “Our main challenge is to meet reliability expectations and regulatory quality standards within the expenditure allowances provided under the DPP.”¹⁹
- E28 Orion raised concerns about sufficient funding in its submissions on our issues paper,²⁰ and reiterated this point in response to our draft decision. It said:²¹
- ...continues to submit that EDBs must be provided with sufficient revenue/expenditure allowances to be able to achieve the continued principle of no material deterioration. Without them, EDBs will struggle to undertake the necessary investment required to maintain and harden their networks and to avoid any deterioration of quality standards.

Analysis

- E29 We note that DPP regulation is a relatively low-cost regime and does not always allow analysis of the specific linkages between expenditure allowances and potential quality impacts. This would be practically challenging to undertake based on the limited information we have available to make that assessment.
- E30 The capital expenditure (capex) allowances provided represent either the full extent of capex forecast under an EDBs AMP or a significant uplift in capex compared to recent periods. It is unclear that limiting expenditure uplifts will result in deterioration in reliability performance.
- E31 Where expenditure allowances are less than forecast, EDBs have a number of options available under the regime, as outlined in **Attachment B: Potential increased use of flexibility mechanisms**.

¹⁸ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 10, para 6.2.

¹⁹ [Firstlight Network "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 1.

²⁰ [Orion New Zealand Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 16.

²¹ [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p.15.

- E32 Where EDBs have reprioritised programmes in line with DPP allowances and consider that a variation is required to reflect the realistically achievable performance they may apply for a change to the quality standards through a quality standard variation (QSV) reopener or making a CPP application.
- E33 We note that some EDBs have reflected that a potentially increased use of reopeners during the DPP4 regulatory period may impact the quality standards and QIS.²² Whilst it is not clear that quality standards and quality incentives would be appropriate to be revisited for all reopener applications, clause 4.5.15(1) of the Act provides the ability for quality standards and quality incentive measures to be amended as part of reconsideration of a reopener.

Quality standards

High level approach to quality standards

- E34 Our final decision for setting quality standards for DPP4 is to retain the three quality standards set for DPP3. These are focussed on the reliability of supply. They are:
- E34.1 SAIDI and SAIFI limits for unplanned interruptions, assessed on an annual basis;
 - E34.2 SAIDI and SAIFI limits for planned interruptions, assessed across the full regulatory period; and
 - E34.3 an extreme event standard for high impact and low probability events, assessed as more within the EDB's control.
- E35 Submitters generally supported the continuation of the existing measures for quality standards, although MEUG and ENA members identified some concerns with the Commission's implementation proposed in our draft decision.²³ We address these as part of the analysis of the relevant decisions in this attachment.

²² [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 6; [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16.

²³ [Major Electricity Users Group \(MEUG\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 2; [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 4; [Horizon Networks "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 13.

E36 Table E1 presents the final decisions for quality standards:

Table E1 Quality standards for DPP4

EDB	Unplanned SAIDI	Unplanned SAIFI	Planned SAIDI	Planned SAIFI	Extreme outage limit
	(1-year)	(1-year)	(5-year)	(5-year)	(per event)^{24, 25}
Alpine Energy	118.47	1.1372	825.77	3.1437	120 SAIDI
Aurora Energy²⁶	128.36	1.9675	1,077.78	6.0924	6m CIM
EA Networks	87.38	1.2416	1,238.47	4.4045	120 SAIDI
Electricity Invercargill	27.15	0.6608	125.94	0.5702	120 SAIDI
Firstlight Network	230.43	3.3101	1,213.15	6.7271	120 SAIDI
Horizon Energy	184.80	2.2709	944.50	5.9856	120 SAIDI
Nelson Electricity	18.62	0.4063	162.10	2.1297	120 SAIDI
Network Tasman	98.33	1.1358	1,067.94	4.4119	120 SAIDI
Orion NZ	80.47	0.9819	218.24	0.7399	6m CIM
OtagoNet	168.37	2.3401	2,323.77	9.2088	120 SAIDI
Powerco	189.27	2.1550	849.75	3.8125	6m CIM
The Lines Company	190.55	3.2839	1,284.15	7.8774	120 SAIDI
Top Energy	399.25	4.8196	1,727.59	8.5279	120 SAIDI
Unison Networks	81.52	1.7244	688.37	4.9114	6m CIM
Vector Lines	110.07	1.4034	643.92	3.1661	6m CIM
Wellington Electricity	37.82	0.5829	76.66	0.6089	6m CIM

²⁴ The extreme event standard is specified in SAIDI minute and CIM terms. CIM means customer interruption minutes, which is the sum of the total duration in minutes accumulated for each installation control point (ICP) for each interruption, with “m” representing millions.

- E37 In this section, we also discuss our decisions to:
- E37.1 retain automatic reporting obligations where an EDB contravenes a quality standard;
 - E37.2 not to introduce any new quality measures;
 - E37.3 set interruptions quality standards and incentives for Aurora if it transitions from a CPP to the DPP in 2026 on the same basis as other EDBs on the DPP; and
 - E37.4 retain the requirement for reasonable reallocation of quality parameters following a transfer of more than 0.5% of ICPs of the smallest non-exempt EDB that is party to the transaction.

How the quality standards settings align to the decision-making framework for the DPP

- E38 In establishing DPP4 quality settings we have applied a combination of low-cost principles outlined in our decision-making framework including:
- E38.1 applying the same or substantially similar treatment to all EDBs on a DPP;
 - E38.2 setting starting prices and quality standards or incentives with reference to historical levels of expenditure and performance, where appropriate;
 - E38.3 using existing information disclosed under information disclosure (ID) regulation where possible; and
 - E38.4 limiting the circumstances in which we will reopen or amend a DPP during the regulatory period.
- E39 This is combined with our approach where any changes we apply to DPP4:
- E39.1 better promote the purpose of Part 4;

²⁵ These values are indicative only. We have determined these values based on the number of ICPs at 31 March 2024. However, the extreme event provision operates on whether either threshold is exceeded during the period so may change if the number of ICPs change.

²⁶ Aurora is currently on a CPP which ends on 31 March 2026. Under clauses 9.5 and 9.6 of the DPP determination, where an EDB transitions from a CPP to a DPP during the regulatory period, the planned SAIDI and SAIFI limits are adjusted in the assessment of compliance. For Aurora, this means that for assessment purposes, it will divide the planned SAIDI and SAIFI limits by five years (regulatory period), then multiply by four years (assessment periods on the DPP) to calculate the value of the planned SAIDI and SAIFI limits that apply.

- E39.2 better promote the purpose of default/customised price-quality path regulation;
 - E39.3 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); and
 - E39.4 reduce unnecessary complexity and compliance costs.
- E40 Our analysis and stakeholder views broadly support the position that the existing quality standard settings are fit for purpose and should largely be retained.
- E41 For example:
- E41.1 We have applied a consistent approach based on historical performance for setting quality standards and incentives, while allowing opt-in mechanisms for notifying of planned interruptions and recording interruptions related to innovative solutions.
 - E41.2 Our decision to retain the separation of planned and unplanned interruptions is more consistent with the purpose of Part 4 than the alternative because it avoids disincentivising investment at the most appropriate and efficient time.
 - E41.3 A planned standard, assessed once over the regulatory period, also gives EDBs flexibility to undertake work on the most appropriate timeframe rather than organising work to fit within annual limits. This will be to the long-term benefit of consumers.
 - E41.4 An annually assessed unplanned standard and self-reporting following contravention of any quality standard allows for more timely compliance investigations and enforcement action, which provides transparency of EDB performance and benefits consumers.
- E42 We provide more detail on each of our final decisions below. We consider these decisions together are likely to best give effect to the purpose of Part 4 and incentivise EDBs to provide services at a quality that reflects consumer demands.²⁷

²⁷ Commerce Act 1986, s 52A(1).

QS1: Maintain separate standards for planned and unplanned SAIDI and SAIFI

Problem definition

- E43 The integration of planned and unplanned interruptions into a single standard may create perverse incentives, especially where an EDB is nearing a potential compliance contravention.

Final decision

- E44 Our final decision is to maintain separate standards for planned and unplanned SAIDI and SAIFI.
- E45 This is unchanged from our draft decision.

What we heard from stakeholders

- E46 In submissions on our draft decision, Aurora, Powerco and Wellington Electricity supported maintaining separate standards for planned and unplanned SAIDI and SAIFI.²⁸

Analysis

- E47 We will continue treating planned interruptions differently because they are less inconvenient for consumers as they can plan accordingly. Planned interruptions are also generally required by the EDB to perform maintenance and investment that benefits consumers in the long run.
- E48 These different factors mean that separation is beneficial so that we can set the parameters of the standards differently (such as the annual limits for unplanned SAIDI and SAIFI in comparison to the five-year limit for planned SAIDI and SAIFI).

²⁸ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 14](#); [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 30](#); and [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 39](#).

Conclusion

E49 Separate standards for planned and unplanned interruptions avoids a potential perverse incentive for EDBs to defer network investment or maintenance needed to prevent unplanned outages. If these were combined, an EDB incurring higher unplanned outages than anticipated may defer planned investment (and anticipated outages) to stay within its overall cap in the short term, even when that investment helps maintain reliability in the longer term.

Annual unplanned interruption standards

Final decision

E50 Our final decision is to retain unplanned interruption standards. These are:

E50.1 assessed annually for unplanned SAIDI and SAIFI (QS2);

E50.2 set with limits for unplanned SAIDI and SAIFI at 2.0 standard deviations above the reference period average (QS3);

E50.3 based on a historical reference period of ten years from 2015 to 2024 (RP1);²⁹ and

E50.4 the movement between reference periods is capped at +/-5% for the SAIDI and SAIFI unplanned targets, and the SAIDI and SAIFI unplanned limits (RP3).

E51 Table E2 shows the final standards for unplanned SAIDI and SAIFI for each non-exempt EDB for DPP4.

²⁹ Decisions related to the reference period as signalled by “RP” are separately analysed in this **Attachment E** as they apply to both the quality standards and the quality incentive scheme.

Table E2 DPP4 annual unplanned interruptions reliability standards

EDB	Unplanned SAIDI	Unplanned SAIFI
Alpine Energy	118.47	1.1372
Aurora Energy	128.36	1.9675
EA Networks	87.38	1.2416
Electricity Invercargill	27.15	0.6608
Firstlight Network	230.43	3.3101
Horizon Energy	184.80	2.2709
Nelson Electricity	18.62	0.4063
Network Tasman	98.33	1.1358
Orion NZ	80.47	0.9819
OtagoNet	168.37	2.3401
Powerco	189.27	2.1550
The Lines Company	190.55	3.2839
Top Energy	399.25	4.8196
Unison Networks	81.52	1.7244
Vector Lines	110.07	1.4034
Wellington Electricity	37.82	0.5829

QS2: Retain annual unplanned interruptions reliability standards for SAIDI and SAIFI

Final decision

E52 Our final decision is to retain annual unplanned interruptions reliability standards for SAIDI and SAIFI.

E53 This is unchanged from our draft decision.

What we heard from stakeholders

E54 As we noted in the section *General support to broadly maintain DPP3 quality settings*, submissions on our issues paper and our draft decision generally supported broadly maintain the quality settings determined in DPP3.

E55 In its submission on our issues paper, Vector suggested that by not removing the annual assessment of quality standard breaches (and replacing it with the two-out-of-three-year rule used in DPP2),³⁰ there is a risk of false positives.³¹

Based on Vector’s experience, breach investigations are a material burden given the volume of information requested by investigations... This is warranted if there is a material issue to be worked through, but not if a breach was triggered by a false positive or if that breach is a continuation of circumstances that already have been investigated by the Commission and are actively being addressed through agreed remedial action.

E56 Vector retained the same view in its response to our draft decision and requested using the two-of-three-year rule as it would reduce the risk of false positives.³² In its cross submission, Vector also supported Aurora's submission that it considered the two-out-of-three-year rule to be "more appropriate as it allows for one-off poor performing years, which alone may not constitute an underlying material deterioration of reliability."³³

E57 Powerco supported retaining annual assessment in its response to our draft decision.³⁴ Wellington Electricity also supported this decision “subject to the 2.0 standard deviation limit (QS3) and major event day normalisation (N2) also being retained”,³⁵ both of which have been retained.

Analysis

E58 We consider that the removal of the two-out-of-three-year rule was appropriately assessed and considered in DPP3. The changes made in DPP3 were considered a more effective means of reducing the risk of false positives where contraventions were caused by random volatility.³⁶

³⁰ The ‘two-out-of-three-year rule’ is where a breach occurs when the unplanned reliability standard is exceeded in both the current year and one of the preceding two years (as opposed to only using the current year).

³¹ [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), pp. 41-42.

³² [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 29 and 42.

³³ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 6 and 14; [Vector "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 16.

³⁴ [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 20 and 30; [Major Electricity Users Group \(MEUG\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 2.

³⁵ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 39.

³⁶ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" \(27 November 2019\)](#), pp. 403–405. para L29–L37.

- E59 Whilst Vector have represented an issue with the annual review creating a risk of investigating a continuation of circumstances, this is no different than under the two-out-of-three-year rule. Under a two-out-of-three year rule this risk may be more likely to eventuate given the assessment of compliance does not reset and there is a lower buffer to the quality standard limit, compared to an annual limit.
- E60 We also note that reverting to a two-out-of-three-year rule would create complexity regarding an EDB's ability to be assessed as non-compliant in the first year of the regulatory period, regardless of network performance.

Conclusion

- E61 The two-out-of-three-year rule, in contrast with an annual standard, can mean that significantly high levels of unreliability over a year are not considered to be contraventions.
- E62 An annually assessed standard is simple and allows for more timely compliance investigations and enforcement action. In conjunction with our decision to set the limit at 2.0 standard deviations above the target, we consider there is limited prospect of false positives.

QS3: Retain the 2.0 standard deviation buffer for setting the unplanned interruptions reliability standards limit

Final decision

- E63 Our final decision is to retain annual unplanned reliability standards for SAIDI and SAIFI, with the standards set at 2.0 standard deviations above the ten-year reference period average.
- E64 This is unchanged from our draft decision.

Approach in our draft decision

- E65 Our analysis of EDBs' DPP3 reliability performance against the unplanned SAIDI and SAIFI limits indicated that the 2.0 standard deviation buffer was largely working and set at the right level, in that that the EDBs had performed better than the limit for the majority of assessment periods and the unplanned standard was appropriately identifying EDBs with declining performance.³⁷

³⁷ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper" \(29 May 2024\)](#), pp. 303-306, paras E56-E59.

What we heard from stakeholders

- E66 In submissions on our draft decision, Aurora, Powerco and Wellington Electricity supported retaining the 2.0 standard deviation buffer for setting the unplanned interruptions reliability standard.³⁸
- E67 Wellington Electricity "agree that it appears to help reduce the risk of false positive breaches being caused by the random variability in outages."

Analysis

- E68 In DPP3, we set the buffer (for the compliance limit) at 2.0 standard deviations above the historical average, which we considered together with reducing the impact of major events, provided a suitable level of protection against random volatility.
- E69 Tables E3 and E4 show the reliability performance of EDBs in the DPP3 period to date against the unplanned SAIDI/SAIFI limits which incorporate a 2.0 standard deviation buffer (capped at +/-5% movement from DPP2).

³⁸ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 14](#); [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\), pp. 30-31](#); [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 39](#).

**Table E3 EDB performance against unplanned SAIDI limits
DPP3 regulatory period to date³⁹**

EDB	2021 Unplanned SAIDI Assessed Value	2022 Unplanned SAIDI Assessed Value	2023 Unplanned SAIDI Assessed Value	2024 Unplanned SAIDI Assessed Value	Unplanned SAIDI Limit	Non- compliant years
Alpine Energy	77.48	89.32	92.94	86.40	124.71	-
EA Networks	75.07	61.31	63.41	50.57	91.98	-
Electricity Invercargill	9.67	15.38	17.80	11.24	25.86	-
Firstlight Network	180.86	214.72	295.44	314.65	219.46	2023, 2024
Horizon Energy	133.54	134.42	159.84	133.10	194.53	-
Nelson Electricity	0.00	8.53	6.21	3.57	19.60	-
Network Tasman	87.45	79.53	72.01	49.48	101.03	-
Orion NZ	29.70	52.95	43.37	39.57	84.71	-
OtagoNet	133.20	141.82	143.82	125.80	160.35	-
Powerco	CPP	CPP	CPP	139.38	180.25	-
The Lines Company	154.74	159.78	238.94	155.53	181.48	2023
Top Energy	300.83	342.68	513.96	292.29	380.24	2023
Unison Networks	44.64	69.40	75.99	70.19	82.34	-
Vector Lines	86.30	92.42	118.74	98.37	104.83	2023
Wellington Electricity	28.41	25.32	34.92	34.28	39.81	-

³⁹ Based on information sourced from EDBs' Annual Compliance Statements. Powerco was on a CPP 1 April 2018 – 31 March 2023. We have also excluded Aurora Energy as it was only under the DPP3 settings for the 2021 assessment period, which had a QSV applied.

**Table E4 EDB performance against unplanned SAIFI limits
DPP3 regulatory period to date⁴⁰**

EDB	2021 Unplanned SAIFI Assessed Value	2022 Unplanned SAIFI Assessed Value	2023 Unplanned SAIFI Assessed Value	2024 Unplanned SAIFI Assessed Value	Unplanned SAIFI Limit	Non- compliant years
Alpine Energy	0.6354	0.7110	0.8274	0.7935	1.1970	-
EA Networks	0.8856	0.9762	1.1852	0.8930	1.2826	-
Electricity Invercargill	0.3066	0.3231	0.2444	0.2975	0.6956	-
Firstlight Network	2.7184	2.7849	2.6402	2.7498	3.1525	-
Horizon Energy	1.2797	1.4814	2.0065	1.9297	2.3904	-
Nelson Electricity	0.00	0.1724	0.1082	0.0771	0.4277	-
Network Tasman	0.7834	0.7391	0.7351	0.5462	1.1956	-
Orion NZ	0.5026	0.6016	0.5059	0.6303	1.0336	-
OtagoNet	1.9435	2.3811	1.7704	1.5328	2.4172	-
Powerco	CPP	CPP	CPP	1.5729	2.2684	-
The Lines Company	2.5500	2.8047	3.4377	2.1574	3.2715	2023
Top Energy	3.1020	3.9480	5.5000	3.3100	5.0732	2023
Unison Networks	1.1259	1.4540	1.4327	1.5339	1.8152	-
Vector Lines	1.0700	1.0480	1.1940	1.1290	1.3366	-
Wellington Electricity	0.3733	0.3783	0.5024	0.4270	0.6135	-

⁴⁰ Based on information sourced from EDBs' Annual Compliance Statements. Powerco was on a CPP 1 April 2018 – 31 March 2023. We have also excluded Aurora Energy as it was only under the DPP3 settings for the 2021 assessment period, which had a QSV applied.

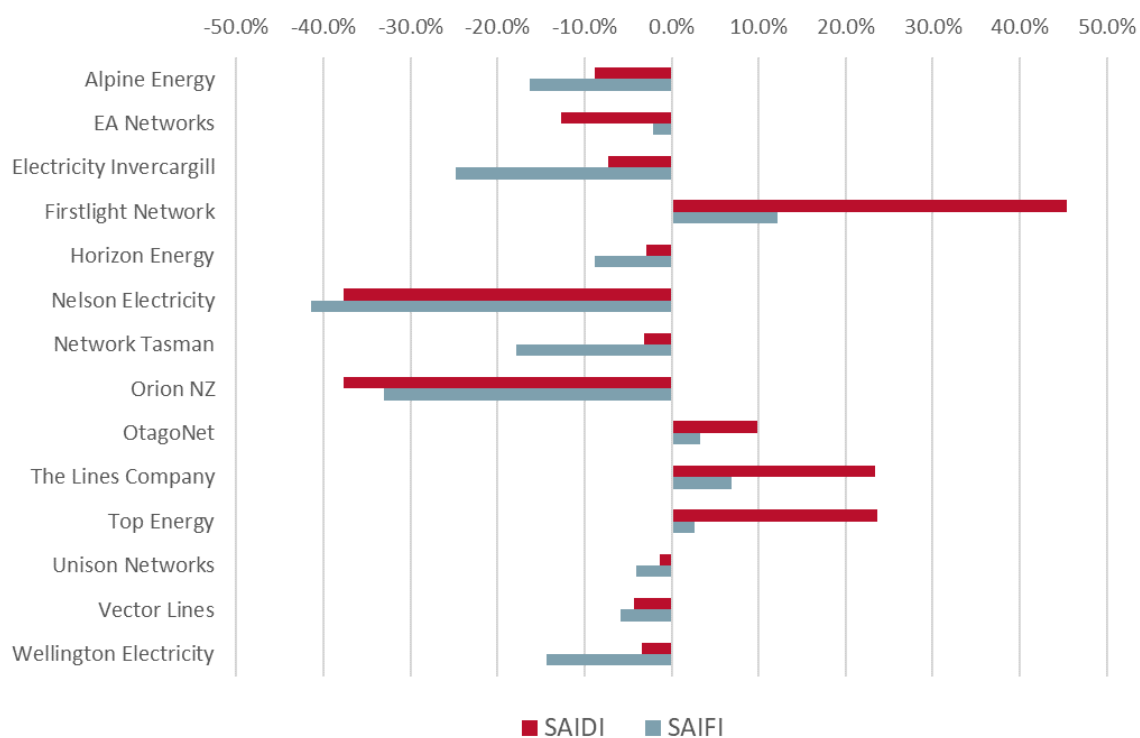
E70 The data contained in the tables above show that the 2.0 standard deviation buffer is largely functioning as intended and appears to be set at the right level. This is because:

E70.1 the vast majority of disclosure years for each EDB have seen the EDB perform better than the limit, and

E70.2 EDBs who have relatively high levels of interruptions compared to the historical average (represented as a positive number in Figure E1 below) have generally been identified as being non-compliant with the quality standard.

E71 The chart below shows the average percentage variance of each EDB’s unplanned performance, from the historical average.

Figure E1 Average variance of EDB unplanned performance from historical average DPP3 regulatory period to 2024^{41, 42}



⁴¹ Unplanned SAIDI and SAIFI assessed values sourced from EDBs’ Annual Compliance Statements compared to DPP3 SAIDI and SAIFI unplanned historical average (after normalisation).

⁴² We have excluded Powerco as it was on a CPP to 2023. We have also excluded Aurora Energy as it was only under the DPP3 settings for the 2021 assessment period, which had a QSV applied.

- E72 We consider that using the historical average with an additional buffer is working to capture material deterioration in reliability. The quality standards which have applied across multiple DPPs have resulted in contraventions that investigations have often shown to be, at least in part, caused by failure of those EDBs to act consistently with good industry practice. Conversely, we have not found contraventions of the quality standard in the previous regulatory period to be caused only by random volatility.⁴³
- E73 We note that the buffer and approach to normalisation of major event days (MED) apply together to mitigate the risk of false positives.

Conclusion

- E74 Our final decision is to maintain the annual unplanned interruptions reliability standards for SAIDI and SAIFI with a 2.0 standard deviation buffer for DPP4, as it helps reduce the risk of random volatility causing breaches and allows for more timely compliance investigations.

Planned interruptions reliability standard is assessed across the full regulatory period

Final decision

- E75 Our final decision is to retain planned interruption standards.
- E75.1 Compliance is assessed at the end of the five-year regulatory period for planned SAIDI and SAIFI (QS4), with notified planned interruptions for SAIDI de-weighted by 50% from planned (QS6).
- E75.2 Limits for planned SAIDI and SAIFI are set with a 100% uplift on the historical average, capped at a +/- 10% movement from the current limit (QS5).
- E75.3 We base planned targets and limits on a historical reference period of seven years, shortened from ten years in DPP3 (RP2).
- E76 Table E5 shows the final standards for planned SAIDI and SAIFI for each non-exempt EDB for DPP4.

⁴³ Note that we are yet to conclude our analysis of instances of non-compliance for the 2024 assessment period.

**Table E5 Regulatory period planned interruptions reliability standards
(5-year total)**

EDB	Planned SAIDI limit	Planned SAIFI limit
Alpine Energy	825.77	3.1437
Aurora Energy ⁴⁴	1,077.78	6.0924
EA Networks	1,238.47	4.4045
Electricity Invercargill	125.94	0.5702
Firstlight Network	1,213.15	6.7271
Horizon Energy	944.50	5.9856
Nelson Electricity	162.10	2.1297
Network Tasman	1,067.94	4.4119
Orion NZ	218.24	0.7399
OtagoNet	2,323.77	9.2088
Powerco	849.75	3.8125
The Lines Company	1,284.15	7.8774
Top Energy	1,727.59	8.5279
Unison Networks	688.37	4.9114
Vector Lines	643.92	3.1661
Wellington Electricity	76.66	0.6089

QS4: Maintain regulatory period length standard for planned SAIDI and SAIFI

Final decision

E77 Our final decision is to maintain the regulatory period length standard for planned SAIDI and SAIFI.

E78 This is unchanged from our draft decision.

⁴⁴ Aurora is on a CPP until 31 March 2026. If Aurora transitions to the DPP, under clauses 9.5 and 9.6 of the DPP determination, Aurora will divide the planned SAIDI and SAIFI limits by five years (regulatory period), then multiply by four years (assessment periods on the DPP) to calculate the value of the planned SAIDI and SAIFI limits that apply for assessment purposes.

What we heard from stakeholders

E79 Aurora and Powerco supported our draft decision to maintain the five-year regulatory period length for planned standards.⁴⁵ Aurora stated:

This was a positive introduction to DPP3 that we consider remains important in recognising the need for an EDB to have the flexibility to deliver its work programme across the 5-year period rather than be constrained by annual planned SAIDI and SAIFI limits.

E80 In its submission on our draft decision, Wellington Electricity gave its conditional support:⁴⁶

In the absence of the planned quality standard linked to the size of the EDB's work programme, we support the Draft Decision to retain the regulatory period length for the planned SAIDI and SAIFI standard. The Draft Decision gives EDBs flexibility to phase their planned quality 'budget' in whichever way best suits the efficient delivery of work, rather than the reverse of having the timing of work be influenced by compliance with the quality standard, with the potential for negative consequences on unplanned quality.

E81 Consideration of whether the standard could be set directly related to the size of an EDBs work programme is addressed in the section of this paper on *decision QIS5*.

Analysis

E82 Currently, the planned interruption standard is assessed once for the regulatory period for planned SAIDI and SAIFI standards, ie, assessment is against a five-year limit. In comparison, an annual assessment for planned interruptions may incentivise EDBs to defer or bring forward work in a way that may be less efficient.

E83 There are long-term benefits to consumers stemming from the network investment and maintenance that is associated with planned interruptions. Applying the planned quality standard over the full regulatory period allows EDBs to schedule planned work in the way that works best for their business and consumers, rather than for regulatory settings.

⁴⁵ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 20 and 30-31.

⁴⁶ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 39.

- E84 We note that assessment once every five years creates the potential for a long-time lag between when an EDB begins seeing significant levels of planned interruptions and when compliance and enforcement action can be taken. It also reduces the maximum pecuniary penalty that an EDB will face for having high levels of interruptions over several years.
- E85 However, the EDB will continue to face the incentives of the QIS each year, and continual years of high interruption frequency or duration would likely be taken into account in our enforcement response.
- E86 We also consider that only assessing compliance at the end of the regulatory period is justified given that planned interruptions:
- E86.1 are generally less harmful for consumers, as long as they are notified of planned work, as they can plan ahead and make alternative arrangements if required;
 - E86.2 are required for beneficial network maintenance and investment;
 - E86.3 are not an indicator of current under expenditure (although they may be required due to historical under expenditure);
 - E86.4 can be driven by operating policies, such as live lines practices; and
 - E86.5 are exposed to our revenue-linked quality incentives.

Conclusion

- E87 Given the above, our final decision is to retain assessment of planned interruption standards for SAIDI and SAIFI across the full regulatory period.

QS5: Set the buffer for the planned interruptions reliability standard to be a 100% uplift on the historical average, capped at a +/- 10% movement from the current limit

Final decision

- E88 Our final decision is to set the buffer for the planned interruptions reliability standard to be a 100% uplift on the historical average, capped at a +/- 10% movement from the current limit.
- E89 This is unchanged from our draft decision.

Our approach in draft decision

- E90 In our draft decision, we reduced the buffer (which is added to the historical average of planned interruptions) from 200% to 100% to reflect significantly increased annual average planned SAIDI and SAIFI arising from shortening the reference period for DPP4 (**decision RP2**). We also capped the movement of SAIDI and SAIFI between regulatory periods to reduce volatility.
- E91 In setting the planned standard limits we are trying to balance the intention that the planned standards do not inappropriately limit investment and maintenance, whilst not setting the limits so high that consumers receive a material deterioration in quality. We note the QIS is the primary means of providing an incentive for EDBs to manage planned interruptions.

What we heard from stakeholders

- E92 Powerco supported the decision to adjust the buffer for the planned interruptions reliability standard to a 100% uplift on the historical average, saying: “it’s reasonable given the decision to shorten the reference period for planned interruptions to better reflect current network practices.”⁴⁷
- E93 EA Networks, ENA (supported by Alpine), PowerNet and Top Energy (TEL) did not support a reduction of the planned reliability buffer from 200% to 100%, and considered a 150% uplift is more appropriate, if needed.⁴⁸ For example, ENA submitted that:⁴⁹

ENA is concerned with the Commission’s draft decision to halve the planned interruption buffer to 100% of historical levels. While the +/- 10% inter-period cap reduces the materiality of the impact of halving the buffer, ENA does not believe there is sufficient justification for a change of the magnitude proposed by the Commission.

If the Commission is of the view that a reduction in the buffer is necessary to reflect the introduction of the notified planned outage de-weightings, ENA believes the buffer should be set at 150% alongside the seven-year reference period and a +/-10% inter-period cap.

⁴⁷ [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 30.

⁴⁸ [EA Networks “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 4; [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#) pp. 14 and 22; [Alpine Energy “Cross-submission on EDB DPP4 draft decisions” \(2 August 2024\)](#), p. 16; [PowerNet “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 4; [Top Energy “Submission on EDB DPP4 draft decisions” \(11 July 2024\)](#), p. 4.

⁴⁹ [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p.14.

E94 There was general acceptance of an inter-period cap. However, Unison considered: “The 10% inter-period movement limit is incongruous with incentives to invest in more planned work and the QIS effectively being rolled over from DPP3. A 20% or higher movement limit is appropriate.”⁵⁰

E95 Wellington Electricity did not support our draft decision. It considered that planned outages have a direct relationship with a network’s capex programme and that these quality settings may not be sufficient for EDBs to deliver their capex programmes and thus may disincentivise investment. It stated:⁵¹

Setting the planned limit at a 100% increase on the historic [sic] average, with a maximum movement between periods of 10%, may not provide EDBs with the quality budgets needed to deliver their capex programmes... The expenditure allowances in DPP4 will include a significant quantity of work related to ensuring that networks have the capacity to support customers’ decarbonisation projects without increasing the risk of unplanned outages. A backwards-looking approach to setting the planned outage limits has no relationship to the investment required, and the risk of a breach that this creates will act as a disincentive that could potentially lead to an unfortunate situation of EDBs not being in a position to deliver customer-initiated work due to an unrealistic planned outage limit.

E96 Wellington Electricity suggested an alternative SAIDI forecasting method. It developed a planned SAIDI and SAIFI forecast for their 2024 AMP that was based on its historical planned outage efficiency (ie, planned SAIDI minutes per million dollars of capex and operational expenditure (opex)) across different work types. It considers that “basing the planned reliability limit on an uplift from a target set under such a scheme would provide a realistic baseline for EDBs to be measured on, that is explicitly linked to historical performance and the approved future allowances under the price path.”⁵²

Analysis

E97 Following submissions, we have further considered the appropriateness of increasing the buffer, increasing the inter-period cap and applying a different methodology for determining the standards.

⁵⁰ [Unison Networks “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 15-16.

⁵¹ [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 40.

⁵² This uses an inflation-adjusted baseline of the previous three years, and aligned with allowances and reopeners. [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#)

Setting the appropriate buffer

- E98 Our decision to shorten the reference period for planned interruptions results in a significantly higher historical average for most EDBs (see *decision RP2*). Were we to apply the 150% buffer suggested in submissions and then multiply by the five-year regulatory period length without any inter-periods cap, the increase in the planned interruption standard would be significant for most EDBs.
- E99 In our draft decision, we assessed that the current limit and decrease in weighting of notified interruptions has resulted in all EDBs tracking to compliance for DPP3, some by a significant margin.
- E100 We have updated this analysis for the 2024 assessment period, and the results generally indicate the existing limits provide significant buffer which could accommodate further increases in work programmes (see Table E6).

Table E6 Planned SAIDI and SAIFI values compared to DPP3 limits (to 2024)⁵³

EDB	Planned Accumulated SAIDI	Pro-rated Planned SAIDI Limit	% of Assessed SAIDI Value v Pro-rated Limit	Planned Accumulated SAIFI	Pro-rated Planned SAIFI Limit	% of Assessed SAIFI Value v Pro-rated Limit
Alpine Energy	340.91	659.90	52%	1.2308	2.7944	44%
EA Networks	440.22	1,100.86	40%	1.5436	3.9151	39%
Electricity Invercargill	58.00	91.59	63%	0.3547	0.4146	86%
Firstlight Network	393.15	1,032.54	38%	2.5176	5.9796	42%
Horizon Energy	245.61	686.90	36%	3.3342	4.3532	77%
Nelson Electricity	41.17	144.09	29%	0.5027	1.8930	27%
Network Tasman	439.91	903.31	49%	1.3953	3.9217	36%
Orion NZ	89.74	158.72	57%	0.3183	0.5985	53%
OtagoNet	650.48	1,691.54	38%	3.4822	7.6970	45%
The Lines Company	394.82	1,065.34	37%	2.1347	7.0022	30%
Top Energy	484.91	1,524.29	32%	3.6600	6.2021	59%
Unison Networks	265.07	500.63	53%	2.2376	3.5719	63%
Vector Lines	186.66	468.30	40%	1.1780	2.3026	51%
Wellington Electricity	27.72	55.76	50%	0.1982	0.4429	45%

E101 Submissions for a buffer to be set above 100%, ie, at 150%, would indicate a significant increase in either the volume of planned work or significant changes in the nature of the work. We consider a 150% increase in planned interruptions is not well aligned to the expenditure uplifts provided in DPP4. Our decision to shorten the reference period has also accounted for the material change in how planned work was undertaken in the reference period. Additionally, there were no submissions received on the nature of the work itself being a driver for significant increases in planned interruptions.

⁵³ Based on information sourced from EDBs Annual Compliance Statements. Powerco has been excluded from this analysis as was on a CPP to 2023. We have also excluded Aurora Energy as they were only under the DPP3 settings for the 2021 assessment period, which had a QSV applied.

- E102 We consider there is limited risk that EDBs would breach the SAIDI planned limit without a very significant increase in work programme. We hold this view because the standard provides a 100% increase on the historical average and in assessing performance against the standard, we provide a 50% de-weighting on notified interruptions which has had significant take-up (see Table E8).
- E103 We also consider there is limited risk that EDBs would breach the SAIFI planned limit; Table E6 shows that EDBs are operating between 27% and 86% under pro-rated SAIFI limits.
- E104 When comparing to how far under pro-rated SAIDI and SAIFI limits most EDBs are there is limited justification for a further significant uplift to the limits for any EDB, even with an expectation of an increased capex work programme.
- E105 We note that for the two EDBs who are comparatively close to the SAIFI limit in Table E6 (Electricity Invercargill and Horizon Energy), we have assessed that compared to the new SAIFI limit both EDBs could increase planned SAIFI levels by at least 60% from the average in the reference period. The values represented in Table E6 being closer to the pro-rated limit may reflect the cyclical nature of planned interruptions.
- E106 Were we to increase the buffer we would also need to adjust the inter-period cap given this applies to most EDBs. We do not consider this is appropriate.
- E107 We note that there is value in a cap and the QIS working together to ensure EDBs actively consider the impact of their planned interruptions. We note that EDBs may apply for a QSV reopener where a revised standard may better reflect realistically achievable performance or submit a CPP proposal where the investment is significant.

Impact of the +/- 10% cap in movement between regulatory periods

- E108 The cap will apply across regulatory periods as we consider there is value in reducing the extent of change in SAIDI and SAIFI limits across periods given long-term planning horizons employed by EDBs. In the absence of a cap there may be significant changes based on the nature of the EDB's work programme in the reference period, creating significant volatility in the limit.
- E109 Table E7 shows that the +/- 10% cap operates as a restriction in value for most EDBs. The cap impacts in both directions, it reduces some values which otherwise would have been higher had they not been capped and reduces others that in the absence of a cap may have had a greater reduction in value (indicated by the orange and teal cells respectively).

Table E7 DPP3 vs DPP4 10% cap applied to planned SAIDI and SAIFI limits

EDB	SAIDI				SAIFI			
	DPP3 SAIDI Limit	DPP4 SAIDI Unadj ⁵⁴	DPP3 to DPP4 Change	DPP4 SAIDI Limit	DPP3 SAIFI Limit	DPP4 SAIFI Unadj	DPP3 to DPP4 Change	DPP4 SAIFI Limit
Alpine Energy	824.87	825.77	0.1%	825.77	3.4930	2.5767	-26.2%	3.1437
Aurora Energy	979.80	1,817.01	85.4%	1,077.78	5.5385	8.4448	52.5%	6.0924
EA Networks	1,376.0	1,180.55	-14.2%	1,238.47	4.8939	3.9991	-18.3%	4.4045
Electricity Invercargill	114.49	180.49	57.6%	125.94	0.5183	0.6771	30.6%	0.5702
Firstlight Network	1,290.6	1,213.15	-6.0%	1,213.15	7.4745	4.9832	-33.3%	6.7271
Horizon Energy	858.63	1,100.30	28.1%	944.50	5.4415	7.3636	35.3%	5.9856
Nelson Electricity	180.11	157.00	-12.8%	162.10	2.3663	0.5393	-77.2%	2.1297
Network Tasman	1,129.1	1,067.94	-5.4%	1,067.94	4.9021	3.5324	-27.9%	4.4119
Orion NZ	198.40	238.28	20.1%	218.24	0.7481	0.7399	-1.1%	0.7399
OtagoNet	2,114.4	2,323.77	9.9%	2,323.77	9.6212	9.2088	-4.3%	9.2088
Powerco	772.50	864.97	12.0%	849.75	3.5113	3.8125	8.6%	3.8125
The Lines Company	1,331.6	1,284.15	-3.6%	1,284.15	8.7527	5.9131	-32.4%	7.8774
Top Energy	1,905.3	1,727.59	-9.3%	1,727.59	7.7526	8.7440	12.8%	8.5279
Unison Networks	625.79	867.84	38.7%	688.37	4.4649	5.3362	19.5%	4.9114
Vector Lines	585.38	863.44	47.5%	643.92	2.8783	3.4484	19.8%	3.1661
Wellington Electricity	69.70	109.53	57.2%	76.66	0.5536	0.6736	21.7%	0.6089

⁵⁴ “DPP4 SAIDI Unadj” and “DPP4 SAIFI Unadj” are the planned historical average x 2 (to calculate the 100% uplift) x 5-year regulatory period.

Alternative methodology for setting quality standards

- E110 We have separately considered and assessed Wellington Electricity’s submitted methodology to forecast an appropriate level of planned interruptions or an alternative basis for adjusting historical baselines to align with forecast capex increases in the section of this paper on *QIS5: Setting the SAIDI target for the QIS*.
- E111 We do not consider it is clear how either approach could be applied to other EDBs in a robust way based on data available, nor is it well aligned with the principle of no material deterioration.

Conclusion

- E112 Our final decision is to reduce the buffer to reflect significantly increased average planned SAIDI and SAIFI arising from the revised reference period. We note this maintains a conservative setting (ie, EDBs are unlikely to breach) particularly for SAIDI when applied in conjunction with the de-weighting of notified interruptions.
- E113 We have set planned limits with a significant buffer. We do not want to create incentives to defer planned work given the long-term benefits to consumers of the network investment and maintenance that is associated with planned interruptions.
- E114 The cap limits the scope of change between regulatory periods and acts to protect consumers from material deterioration, while some variability is accepted as normal.

QS6: De-weight the impact of notified planned interruptions by 50% in the assessment of compliance with the SAIDI planned interruption standard

Nature of the decision

- E115 A planned interruption requires 24-hours’ notice to be provided to consumers.
- E116 We introduced “notified” interruptions in DPP3, to strengthen EDBs’ incentives to give consumers greater notification of planned interruptions.

Final decision

- E117 Our final decision is to de-weight the impact of notified planned interruptions by 50% in the assessment of compliance with the SAIDI planned interruption standard.
- E118 This is unchanged from our draft decision.

What we heard from stakeholders

E119 Several submitters supported our draft decision.⁵⁵ For example, Vector stated:⁵⁶

We support the draft decision to maintain the de-weighting of notified interruptions only being applied to the assessment period and not the reference period dataset. EDBs have major upcoming capex programmes in DPP4 that will result in more planned outages, so it is critical there are appropriate incentives to notify customers.

E120 Aurora stated: "we continue to receive customer feedback that reinforces the value that is placed on receiving advance notice of interruptions. We believe that the de-weighting acknowledges this."⁵⁷

E121 Wellington Electricity questioned "the misalignment between the 50% weighting of notified interruptions under the quality standard, against the 38% weighting they are given under the incentive scheme. The weighting for notified interruptions should be consistent across the two measures."⁵⁸ For the final decision we have reverted to the 50% weighting under the incentive scheme employed in DPP3. This provides consistent weightings for notified interruptions between the quality standard and the quality incentive scheme (see **decision QIS3**).

Analysis

E122 In DPP3, we de-weighted notified planned interruptions by 50% in the assessment of compliance with planned interruption standards. We considered de-weighting notified planned interruptions was appropriate as they are less inconvenient for consumers than planned interruptions because they give better opportunity for consumers to plan accordingly.

⁵⁵ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 13; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 30-31; [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 32 and 42; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.42.

⁵⁶ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 32.

⁵⁷ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14.

⁵⁸ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.42.

- E123 The DPP3 reasons paper included considerable discussion on the value consumers place on notification of planned interruptions. This led to changes in the quality standards and QIS settings to strengthen EDBs' incentives to give greater notification of planned interruptions by further reducing the impact of the compliance assessment and the SAIDI incentive by 50%.⁵⁹
- E124 The majority of EDBs have responded positively to the incentive to apply notified interruptions, as reflected in submissions on our draft decision and EDB uptake.
- E125 Table E8 shows the variation in uptake of notified interruptions by EDBs, with the general trend towards a significant uptake by all but two EDBs.

⁵⁹ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper" \(27 November 2019\)](#), pp. 455-457 and 431-437.

Table E8 Proportion of planned assessed SAIDI attributable to notified planned interruptions⁶⁰

EDB	Notified SAIDI as a % of total			2024
	2021	2022	2023	
Alpine Energy	0%	17%	60%	59%
Aurora Energy	62%	90%	90%	89%
EA Networks	0%	0%	0%	0%
Electricity Invercargill	7%	100%	95%	97%
Firstlight Network	83%	84%	80%	81%
Horizon Energy	93%	100%	100%	100%
Nelson Electricity	100%	100%	100%	99%
Network Tasman	0%	0%	0%	0%
Orion NZ	70%	1%	60%	83%
OtagoNet	5%	91%	92%	93%
Powerco	CPP	CPP	CPP	70%
The Lines Company	30%	75%	93%	89%
Top Energy	61%	69%	62%	98%
Unison Networks	88%	86%	90%	90%
Vector Lines	90%	93%	90%	89%
Wellington Electricity	CPP	15%	71%	89%

Additional notice requirements.

E126 Aurora supported the retention of the additional notice framework but considered the additional notice requirements to be overly prescriptive and requested specific changes.⁶¹

⁶⁰ Based on information sourced from EDBs' Annual Compliance Statements.

⁶¹ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16.

Our preference is that the Commission remove the prescriptive requirements for “additional notice” as an EDB’s compliance with Electricity Authority’s Electricity Information Exchange Protocol EIEP5A should be sufficient.⁶²

- E127 In its cross submission on our draft decision, ENA supported the removal of the prescriptive requirements for additional notice reporting and the use of EIEP5A to monitor compliance, suggesting a change to a 24-hour time format.⁶³
- E128 We have considered EDB concerns around the prescriptive nature of the additional notice requirements.
- E128.1 We have amended the definition of “notified interruption window” under clause 4.2 of the DPP4 determination to provide EDBs flexibility to use either 12- or 24-hour time formats when providing additional notice of planned interruptions to customers.
- E128.2 We consider that EDBs must continue to record that an interruption is a “Class B notified interruption” in their internal systems as this allows for improved accountability and assurance.
- E128.3 We consider the requirements under Schedule 3.1(4)(1)(iv) of the DPP4 determination to provide information on where to access any further information or updates on the intended interruption is important and not overly burdensome.
- E129 Given a large number of EDBs have already established processes in their systems to meet the notification requirements under DPP3 we do not consider maintaining this requirement will represent an increased burden.

Conclusion

- E130 We have decided to de-weight the impact of notified planned interruptions by 50% in the assessment of compliance with the SAIDI planned interruption standard. We consider this provides an appropriate incentive to provide consumers with greater notification of planned interruptions.

⁶² [Electricity Authority “Electricity information exchange protocols”](#)

⁶³ [Electricity Networks Aotearoa \(ENA\) “Cross-submission on EDB DPP4 draft decisions” \(2 August 2024\)](#), p.3.

QS7: Retain SAIDI extreme event standard set at the lower of either 120 SAIDI minutes or 6,000,000 customer interruption minutes

Problem definition

E131 In the absence of a standard relating to extreme events, the unplanned interruptions reliability standards (with normalisation) may not appropriately reflect large interruption events that are caused by not applying good electricity industry practice or under-spending on network maintenance and investment.

Final decision

E132 Our final decision is to retain the SAIDI extreme event standard set at the lower of 120 SAIDI minutes or 6,000,000 customer interruption minutes.

E133 This is unchanged from our draft decision.

What we heard from stakeholders

E134 Powerco and Wellington Electricity supported retaining the extreme event standard.⁶⁴ Wellington Electricity considered:⁶⁵

The extreme event standard is an important companion to the major event normalisation methodology, to serve customer interests through the focus on assessing and mitigating the risk posed by high risk, low probability events, that would otherwise have their impact normalised out of the quality standard.

E135 Wellington Electricity also submitted that EDBs do not have clarity on which particular storms would be a breach of the standard, due to the absence of definitions relating to natural disasters:⁶⁶

We do note, however, that the terms “severe storms”, “severe wind”, and “severe rain”, which are used in the definition of natural disasters that are excluded from the extreme event standard, are themselves not defined, so EDBs do not have clarity about whether a particular storm would be considered by the Commission to be a breach of the standard.

⁶⁴ [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 30; [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 42.

⁶⁵ [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 42.

⁶⁶ [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 42.

Analysis

- E136 The extreme event standard deals with extreme one-off events, with the threshold being set at the lower of either 120 SAIDI minutes or 6 million customer interruption minutes. This standard does not apply to events caused by major external factors.
- E137 For the purposes of the extreme event standard, major external factors means one or more of the following:
- E137.1 natural disaster;
 - E137.2 third-party interference;
 - E137.3 a fire that does not originate on the non-exempt EDB's network; or
 - E137.4 wildlife.⁶⁷
- E138 We specified limits in DPP3, as we considered it was not possible to set a limit based on the reference period for each EDB under an expectation of no material deterioration, because of the infrequency of such events. We have maintained these limits in DPP4.
- E139 In DPP3 the standard was set at the lower of either:
- E139.1 a SAIDI value of 120 minutes, where the extreme event standard limit will be exceeded if, during any period of 24 hours (starting on the hour or half past the hour), the SAIDI value of all unplanned interruptions that start during that 24-hour period, in aggregate, is above 120 minutes; or
 - E139.2 a total of six million customer interruption minutes, where the extreme event standard limit will be exceeded if, during any period of 24 hours (starting on the hour or half past the hour), the total duration of customer interruption minutes resulting from all unplanned interruptions that start during that 24-hour period, in aggregate, is more than six million customer interruption minutes.

⁶⁷ Clause 4.2 of the DPP4 determination.

- E140 The extreme event standard is intended to incentivise an EDB to take practicable steps to minimise the likelihood of high impact, low probability events that are within its control as well as mitigating the extent of them. In the absence of a standard there may be little incentive from our regulatory settings to appropriately guard against such events, as most of the impact on reliability will be removed through normalisation.
- E141 We consider it would likely not be in the long-term interests of consumers for EDBs to upgrade their networks to a level of resilience against major external factors such that they would never exceed the extreme event threshold, because of the expense in doing so. Accordingly, we do not consider outages which exceed the limits but are considered associated with major external factors.
- E142 We note that there may well be instances of consumer harm from large interruption events triggered by external factors like a severe storm, but which could have been significantly mitigated had the EDB applied good industry practice resulting in greater network resilience. However, we do not consider that it is possible at this stage to create a quality standard that differentiates based on the practices of the EDB without a significant level of compliance burden.
- E143 Whilst there have been significant events during the DPP3 period, eg, Cyclone Gabrielle, these have not been identified as extreme events, as they were the result of major external factors. We have had one instance of non-compliance with the requirements during the period, with Vector reporting it had an extreme event in June 2023.
- E144 We acknowledge there may be some uncertainty about exclusions due to major external factors, because terms in the definition of natural disaster, “severe storms”, “severe wind”, and “severe rain”, are not defined in the determination.
- E145 We note that given the scale of the standard, the application of these provisions would apply only for infrequent, significant scale events.

- E146 The DPP is a legislative instrument and therefore must be interpreted according to its text, in light of its purpose and context.⁶⁸ The text must be sufficiently precise to apply to the context but also sufficiently broad to apply to individual circumstances as they arise. We have considered the DPP4 extreme event standard against the DPP3 standard and compared our drafting against ‘force majeure’ clauses seen in other contexts.⁶⁹
- E147 We consider that further defining these terms may be disproportionately complex and may act to restrict when exclusions may reasonably apply. Accordingly, we are not satisfied that a greater level of prescription in the drafting of the DPP would better promote the Part 4 purpose or achieve the policy aims of this measure.

Conclusion

- E148 Our decision is to retain the SAIDI extreme event standard set at 120 SAIDI minutes or 6,000,000 customer interruption minutes, as we consider it is in the long-term benefit of consumers. Such a standard is intended to incentivise EDBs to take practicable steps to minimise the likelihood of high impact, low probability events that are within their control, as well as mitigating the extent of them.

QS8: Retain enhanced automatic reporting following a breach of a quality standard

Nature of the decision

- E149 In DPP3 we implemented two enhanced reporting requirements relating to:
- E149.1 quality standard contravention self-reporting; and
 - E149.2 major event reporting.

Final decision

- E150 Our final decision is to retain enhanced automatic reporting following a breach of a quality standard.
- E151 This is unchanged from our draft decision.

⁶⁸ Legislation Act 2019, ss 10 and 11.

⁶⁹ Force majeure clauses are expressed in similar terms to the extreme event standard and the related definitions. They are regularly applied in other contexts such as insurance and contracts.

What we heard from stakeholders

- E152 In our issues paper, we invited views on additional quality reporting obligations which may be beneficial to include, or revisions to improve our existing disclosure requirements.⁷⁰
- E153 There were no submissions on our issues paper specifically on the contravention reporting and two submissions on compliance reporting in general. Aurora considered that the quality standard reporting obligations included in the annual compliance statement are appropriate.⁷¹ Wellington Electricity agreed in its submission on our issues paper that the current reporting obligations are generally appropriate, and it reiterated this position in its submission on our draft decision.^{72,}
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- E154 Powerco also supported this decision in its submission on our draft decision.⁷⁴
- E155 Vector's submission on our draft decision, supported by Unison in its cross submission, requested we publish enforcement guidelines "to better promote regulatory certainty".⁷⁵ ENA also considers we must provide this information "without delay", particularly "if the Commission is to rely on CPP and reopeners to deliver a regulatory framework that meets the needs of EDBs and the consumers that rely upon them."⁷⁶

Analysis

- E156 During DPP3, If an EDB is non-compliant with a quality standard at the end of the assessment period, it must disclose this to the Commission and publicly disclose the information outlined in the appropriate clause of the DPP3 Determination:⁷⁷

⁷⁰ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Issues paper" \(2 November 2023\)](#), pp. 193-195, paras. F150-F163.

⁷¹ [Aurora Energy "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 13, para 51.

⁷² Wellington Electricity noted in its response to our issues paper that, in their view, the exception is to planned works reporting which it suggested should change with a new quality standard (linked to future capex spend) – which we are not proposing to do. [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 58, section 9.7.

⁷³ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 42.

⁷⁴ [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 30-31.

⁷⁵ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 32; [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 4.

⁷⁶ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), pp. 7-8.

⁷⁷ [Commerce Commission "EDP DPP3 final determination" \(27 November 2019\)](#), clause 12.

E156.1 planned interruption standard reporting under clause 12.2;

E156.2 unplanned interruption standard reporting under clause 12.4; and

E156.3 extreme event standard reporting under clause 12.6.

E157 The information required under clause 12 on unplanned interruptions is in line with initial information requests we made for EDBs that contravened previous quality standards, and there was wide stakeholder support in submissions for the proposal in DPP3.⁷⁸

E158 We note that Vector exceeded the extreme event standard in June 2023, and it disclosed a compliance report in accordance with clause 12.6 of the DPP3 determination in August 2024.⁷⁹

E159 We have recently updated and published enforcement response guidelines, which are available on the Commerce Commission website.⁸⁰

Conclusion

E160 We consider that self-reporting when a quality standard is contravened remains appropriate. Such disclosures provide greater transparency and accountability of EDBs' performance and appropriately incentivises EDBs to invest and provide services at a quality that reflects consumer demands.

QS9: No new quality measures are introduced as part of the quality standards applying in DPP4

Problem definition

E161 There is a wide range of quality-of-service measures which could be considered for inclusion in the regime beyond aggregate-level SAIDI and SAIFI measures. In our issues paper, we noted these include leading reliability indicators such as asset health, and consumer-centric measures such as voltage quality, customer service and the time taken for new connections.

⁷⁸ Orion "Submission on EDB DPP3 Reset issues paper" (20 December 2018), para 54; Meridian "2020-2025 Distribution default price-quality path – Issues paper – Meridian submission" (20 December 2018), p. 4.

⁷⁹ Vector, "Electricity Distribution Service, Vector, Extreme event report for the assessment period 1 April 2023 - 31 March 2024".

⁸⁰ Available on our website at: <https://comcom.govt.nz/about-us/our-policies-and-guidelines/investigations-and-enforcement/enforcement-response-guidelines>.

Final decision

E162 Our final decision is that no new quality measures are introduced as part of the quality standards applying in DPP4.

E163 This is unchanged from our draft decision.

Role of other tools with the regulatory regime

E164 We consider that quality standards should align with what consumers value, be measurable, and have clarity on what an appropriate target would be, such that EDBs can be influenced towards outcomes that represent value for consumers. In the absence of these conditions, new quality measures would add complexity and cost to the regime without necessarily benefiting the consumer.

E165 We consider that further development of some aspects of network performance may be better addressed through our programme of information disclosure and performance analysis, which also helps ensure transparency and EDB accountability for its performance.

What we heard from stakeholders

E166 There was significant engagement and a wide range of views on the appropriateness of the current quality measures in submissions on our issues paper.⁸¹

E166.1 Submissions largely supported not introducing new quality standards in DPP4, although some considered there is a need and an expectation that new quality standards will be introduced in future resets;

E166.2 Several submissions considered that we should have more granular quality standards; and

E166.3 SolarZero and Drive Electric considered that new measures are necessary in DPP4.⁸²

⁸¹ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper" \(29 May 2024\)](#), p. 325.

⁸² [Solar Zero "DPP4 Issues paper submission" \(15 December 2023\)](#), p 9; [Drive Electric "DPP4 Issues paper submission" \(19 December 2023\)](#), p 11.

- E167 Reasons submitters gave for not introducing more granular or new quality standards in DPP4 included that it was not prudent, too early without the ability to calculate robust targets, and not realistically achievable or unnecessary.⁸³
- E168 Responses to our draft decision broadly supported not introducing new quality standards in DPP4, with some submitters stating new measures should be introduced in DPP5.
- E168.1 Submissions from EDBs supported not introducing new quality standards in DPP4 (Horizon, Aurora, Powerco, Vector).⁸⁴ The Big Six EDBs supported not introducing new quality standards in cross submissions.⁸⁵
- E168.2 Some submitters considered there is a need and an expectation that new quality standards and/or more granular quality standards will be introduced in future DPP resets.
- E168.3 Wellington Electricity considered that "There are a number of aspects of quality beyond SAIDI and SAIFI that matter to customers (for example low voltage reliability), however, at this time there is insufficient data to allow reasonable quality measures to be set."⁸⁶
- E168.4 Aurora considered that "if new quality measures are to be introduced to the compliance framework, they should be signalled well in advance and should be introduced through information disclosure first, to give EDBs sufficient time to make and embed any necessary process changes."⁸⁷

Analysis

- E169 We considered the following additional measures of quality:
- E169.1 disaggregated measures of network reliability (as opposed to retaining our aggregate whole-EDB approach to standards); and

⁸³ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper" \(29 May 2024\)](#), p. 325.

⁸⁴ [Horizon Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 13; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14 and [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#) p. 31; [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 4.

⁸⁵ [Big Six EDBs "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 4.

⁸⁶ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 42.

⁸⁷ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14.

E169.2 additional new quality measures beyond SAIDI and SAIFI, and guaranteed service levels.

Disaggregated measures of network reliability

Problem Definition

E170 The aggregate nature of our quality standards may not adequately capture quality and customer experience across different parts of an EDB's network.⁸⁸

What we heard from stakeholders

E171 A number of submissions on our issues paper considered that the aggregate nature of our standards does not adequately capture quality and customer experience across different parts of a network. Some considered that this inhibits effective management of network performance and investment, and risks delivery of the quality that consumers demand:⁸⁹

E171.1 Manawa, SolarZero and Vector advocated for a more granular level of quality metrics such as by geography, network characteristics, and customer grouping;⁹⁰ and

E171.2 FlexForum suggested measuring sub-transmission assets,⁹¹ IEGA suggested measuring at singular asset level, although ENA stated in its cross submission that this was not “practical or suitable”, given the “DPP is intended to be a low cost, light touch regime”.⁹²

E172 In its submission on our draft decision, ENA supported the decision to retain the current level of disaggregation for EDB quality standards.⁹³

⁸⁸ We note the quality standards do not cover low voltage networks as interruptions, as the “prescribed voltage electric line” is defined as those conveying electricity at a voltage equal to or greater than 3.3 kilovolts.

⁸⁹ [Commerce Commission “Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper” \(29 May 2024\)](#), pp. 326-327.

⁹⁰ [Manawa Energy “DPP4 Issues paper submission” \(19 December 2023\)](#), p. 2; [SolarZero “DPP4 Issues paper submission” \(15 December 2023\)](#), p. 8; [Vector “DPP4 Issues paper submission” \(19 December 2023\)](#), p.5.

⁹¹ [FlexForum “DPP4 Issues paper submission” \(19 December 2023\)](#), p. 10.

⁹² [Independent Electricity Generators Association \(IEGA\) NZ “DPP4 Issues paper submission” \(19 December 2023\)](#), p. 4, [Electricity Networks Aotearoa \(ENA\) “Cross-submission on the DPP4 Issues Paper” \(26 January 2024\)](#), p. 4.

⁹³ [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 14.

E173 Powerco and FlexForum considered that the aggregate nature of SAIDI and SAIFI means the quality standards do not adequately capture aspects of performance which are important to consumers. However, they accepted that introducing more granular standards in DPP4 is not feasible.

E174 For example, Powerco stated:⁹⁴

We appreciate that major changes to the quality standards will take time, effort, and investment which is not feasible for DPP4, however we remain of the view that the current quality standards require change as they are limited in how well they capture the experience of our customers and fall short in driving appropriate incentives for network performance. SAIDI and SAIFI as currently applied (broad averages) do not reflect variances in service quality across different parts of the networks and impact our ability to effectively manage or target investment for service quality reasons.

With electricity becoming increasingly important as a primary energy source, quality standard shortcomings will become acute in low voltage networks but are excluded from quality measures. There is justification to move towards more granular reliability reporting and load-at-risk measures.

E175 FlexForum similarly submitted:⁹⁵

The Commission's draft decision to not apply more granular quality standards for this DPP due to lack of data is reasonable. However, this does not mean the current approach is fit-for-purpose. It is not and people are worse off because the lack of proper scrutiny materially reduces incentives for distributors to manage LV reliability.

The current SAIDI/SAIFI measures have little regard to the economic value of reliability...This discourages a more probabilistic, risk-informed approach to reliability investment, and has potentially adverse consequences for affordability because much network investment is driven by meeting security standard requirements, not direct capacity needs. The way reliability is measured and regulated therefore directly impacts on the appetite for using lower cost options such as flexibility.

E176 Both Powerco and FlexForum considered that there needs to be a commitment to preparing for this work now.

⁹⁴ [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 20.

⁹⁵ [FlexForum "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 6.

E176.1 Powerco submitted: “Given the extensive work required to update the approach to quality standards, we recommend that the Commission prioritises this effort well in advance, ensuring implementation by DPP5.”⁹⁶

E176.2 FlexForum stated:⁹⁷

Committing now will mean distributors start getting ready and will make sure distributors are actively thinking about how to manage LV reliability as part of a ‘smart’ system. This commitment also gives distributors a clear reason, scope and incentive to accelerate investment in LV monitoring and network orchestration capabilities.

Analysis

E177 While we see value in understanding network performance at a disaggregated level under increased electrification, we consider analysis of additional disclosures required under the Targeted Information Disclosure Review (TIDR) will improve our understanding.

E178 Quality information disclosures introduced as part of TIDR (2024) will require EDBs to disclose more granular information on SAIDI and SAIFI. This includes:⁹⁸

E178.1 annual raw interruption data that will allow stakeholders to better assess whether EDBs are providing services at a quality that reflects consumer demands; and

E178.2 worst-performing feeder information which will make readily available information on areas of an EDB’s network that are receiving a relatively poor quality of service.

E179 These disclosures will allow stakeholders to better understand EDBs' performance and may form the basis of a robust dataset in the future on which more granular quality standards could be based.

⁹⁶ [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 30.

⁹⁷ [FlexForum “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 6.

⁹⁸ [Commerce Commission “Targeted Information Disclosure Review 2024 - Electricity Distribution Businesses - Final decision- Reasons-paper” \(29 February 2024\)](#), pp 83-93; [Commerce Commission “Electricity Distribution Information Disclosure \(Targeted Review 2024\) Amendment Determination 2024 \[2024\] NZCC2” \(29 February 2024\)](#), clause 2.1(g), Schedule 10(vi) and Schedule 10a.

- E180 We consider significant work would likely be required to establish and set historical standards for customer segmentation (residential/commercial/industrial) or other geographic measures (rural/urban). Data has not previously been requested to be recorded in this way and it is not clear how assets which potentially support multiple regions could be accommodated or how clearly customer segmentation could be defined on a consistent basis.
- E181 Increased granularity would also reduce the impact of averaging which occurs by assessing assets on an aggregate basis and may be more exposed to random fluctuations in performance which may be difficult to account for in our normalisation processes.
- E182 We agree that the monitoring and transparency of low voltage (LV) power quality and reliability can help EDBs identify issues, allowing better targeting of expenditure and will be important with increased expectations regarding DER. However, it is our understanding that many EDBs do not yet have sufficient visibility over their networks to be able to collect and assess this information in a robust and consistent way. We understand this should improve with access to smart meter data, but we do not currently have a dataset on which a quality standard could be set for LV networks.

Conclusion

- E183 Our final decision is not to apply reliability measures at a disaggregated level, eg, geographical region or customer segmentation. We consider this would add complexity and there would likely be significant work required by EDBs to establish a historical basis for such quality standards. We consider that newly introduced information disclosures will help provide sufficient information to improve stakeholder understanding of performance and provide a base for considering whether to introduce more granular standards in future.
- E184 We have not introduced LV-based quality standards for DPP4 because our understanding is that EDBs do not currently have sufficient information on the performance of their LV networks for us to be able to set a robust quality standard.

Do not introduce additional new quality measures (beyond SAIDI and SAIFI) or guaranteed service levels

What we heard from stakeholders

- E185 In submissions on our issues paper, SolarZero and Drive Electric considered new measures are necessary in DPP4. Drive Electric considered connection, installation and service levels are important, with the desire for these measures to be regulated and used to incentivise EDBs to respond to market demand.⁹⁹
- E186 Utilities Disputes saw “significant value” in collecting and sharing information on these other measures of quality, as well as introducing leading indicators.¹⁰⁰ It considered “expanding the service measures would appear to aid in meeting the objective of providing more leading indicators and lead to better outcomes. It would also assist generally in determining the appropriate standards for consumers.”
- E187 In its submission on our draft decision, MEUG requested the Commission “look at introducing a quality standard or reporting requirement around network capacity. It is important that EDBs are incentivised to optimise use of the existing network, ahead of new investments... Enhanced reporting on network capacity (at a level digestible for consumers) would be a positive step, ahead of investigating capacity standards for future regulatory periods.”¹⁰¹
- E188 In response to MEUG's submission, Unison noted that “The ID requirements for EDBs, however, are already a significant administrative and resourcing burden and ultimately come at a cost to the consumer (including because of the assurance requirements).”¹⁰²

Analysis

- E189 A key aspect of introducing any new quality measures under the DPP is the clear definition and quantification of the new measures. Definitions used as part of any new quality measure need to be specified in a way that can be consistently applied across all EDBs to an auditable standard.

⁹⁹ [Drive Electric "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 11.

¹⁰⁰ [Utilities Disputes “DPP4 Issues paper submission” \(19 December 2023\)](#), p. 1.

¹⁰¹ [Major Electricity Users Group \(MEUG\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 2 and 7.

¹⁰² [Unison Networks "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 4.

- E190 Leading indicators of EDB network reliability performance, eg, asset health, 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 a quality standard which can be audited and enforced.
- E191 New connections: A quality measure related to the timing of new connections could be defined in relation to the time the EDB takes to provide a quote for a new connection or the time to physically provision the new connection. A well-defined measure for new connections would need to take account of variations in the size and complexity of customer connections, as well as the involvement of third parties in installation. We consider the information required to set compliance standards for new connections is yet to be developed.¹⁰³ Also, the EA has a planned programme of work to consider making code requirements for new connection processes.¹⁰⁴
- E192 Low voltage networks power quality: It is increasingly important to understand power quality measures, such as voltage stability, as networks become platforms for two-way electricity flows. Basic visibility over the LV system is a prerequisite to reporting accurately and dynamically on power quality measures, and targeted investment by EDBs in the LV system is required to enable this type of reporting. Collecting extensive information about voltage fluctuations, particularly on an LV network, would also involve significant investment in monitoring, information systems and communications.¹⁰⁵

¹⁰³ We expanded requirements to capture different dimensions of quality as part of the Targeted ID Review (Tranche 1) to better reflect consumers' overall experience of quality. Quality information disclosures introduced include narrative disclosures on for "Time taken for new connections" and "Impact of new connections". [Commerce Commission "Electricity Distribution Information Disclosure \(Targeted Review Tranche 1\) Amendment Determination 2022\[2022\] NZCC 36" \(25 November 2022\)](#).

¹⁰⁴ [Electricity Authority, "Network Connections"](#). The Authority is proposing to add load application processes to the Electricity Industry Participation Code 2010 (Code) as part of its Network Connection Project. There are already Code processes for distributed generation. Part 6 of the Code sets rules for applications (eg, information disclosure by EDB and applicant, timeframes for EDBs to approve/decline applications, regulated terms if a contract is not signed, disputes resolution and maximum fees). Part 6 requires EDBs to keep records for each application (e.g. how long to process, number of extensions sought, approved/declined). The Authority has proposed reporting requirements for EDBs to publish a network connections pipeline and increase record keeping requirements so the Authority can better monitor performance.

¹⁰⁵ Quality information disclosures introduced as part of TIDR (Tranche 1) included power quality (Q2), ie, narrative disclosures on practices the consumer's experience of for monitoring voltage (including any plans

E193 Network capacity: We agree that efficient use of a network will be important during the energy transition to manage cost impacts to consumers. However, we consider an efficiency metric would not be appropriate to include as a quality standard, or as part of an incentive scheme at this stage. It is not clear that a decline in a capacity metric would represent a material deterioration in performance of the network. Instead, it could well be driven by changes in demand, including specific requirements of new connecting parties. It also may disincentivise timely increases to network capacity when it may be able to be more cost effectively completed as part of a wider programme of work. We do agree with the importance of efficient utilisation of the network, and accordingly we have recently introduced enhanced reporting under our ID requirements for EDBs to disclose information regarding network capacity and constraints.¹⁰⁶

Guaranteed service levels

E194 In our issues paper, we noted that the quality regime could include a guaranteed service level (GSL) scheme, where consumers who receive service below a minimum level would be entitled to a service level payment.¹⁰⁷ An effective GSL scheme could enhance the incentives facing EDBs to recognise and respond to poor service levels at a more granular level.

E195 Our final decision is not to introduce a GSL scheme.

What we heard from stakeholders

E196 Vector has submitted guaranteed standards in the past which it considered would help to better measure quality with a greater focus on consumers.¹⁰⁸

E197 In submissions on our issues paper, Wellington Electricity stated:

We agree with the Commission's concerns about the implementation of guaranteed service levels, especially difficulties including the scheme into the cost base and how it would work with existing incentives. We agree with not including it in the DPP4 for the reasons provided.

for improvements). [Commerce Commission "Targeted Information Disclosure Review - Electricity Distribution Businesses - Final decision paper – Tranche 1" \(25 November 2022\)](#), pp. 22 and 51-54.

¹⁰⁶ [Commerce Commission "Targeted Information Disclosure Review \(2024\) - Electricity Distribution Businesses – Summary of Final decisions" \(29 February 2024\)](#), pp. 8-11.

¹⁰⁷ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Issues paper" \(2 November 2023\)](#), paras F176-F179.

¹⁰⁸ [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 40.

E198 There were no submissions on a GSL scheme in response to our draft decision.

Analysis

E199 In our issues paper, we identified potential complexities in implementing such a scheme, which included the considerable amount of work involved, how a GSL scheme would sit in a framework that includes a QIS, and how such a scheme would affect incentives for EDBs to offer a quality of service that consumers want.

E200 We note that EDBs have been required to publish their customer charters and any information about customer compensation schemes (guaranteed service levels) since 2023.¹⁰⁹ This provides information to stakeholders to understand how EDBs are considering consumer feedback to improve their service quality.

Conclusion

E201 Our final decision is not to introduce any additional new quality measures or a GSL scheme.

E202 Taking the above into account, we do not consider we have a robust data series on which to set new quality standards which reflect current performance, nor consumer expectations. We also are not introducing a GSL scheme into the quality regime due to the complexities involved, consistent with the relatively low-cost principle of the DPP.

E203 We note that recent amendments we have made to ID requirements will provide greater transparency and help to improve stakeholder understanding of EDB performance in advance of future DPP resets.

QS10: Set interruptions quality standards and incentives for Aurora transitioning from a CPP to the DPP on the same basis as for other EDBs on the DPP

Nature of the decision

E204 Unlike starting prices, s 53X of the Act does not give us the power to determine quality standards when an EDB transitions off a CPP.

¹⁰⁹ [Commerce Commission "Targeted Information Disclosure Review - Electricity Distribution Businesses - Final decision paper – Tranche 1" \(25 November 2022\)](#), pp. 25 and 65-67.

E205 Aurora is on a CPP for the five-year period over 2022-2026. It will transition to DPP4 when its current CPP ends in 2026.

Final decision

E206 Our final decision is to set interruptions quality standards and incentives for Aurora's transition from its CPP to the DPP on the same basis as for other EDBs on the DPP.

E207 This is unchanged from our draft decision.

What we heard from stakeholders

E208 Both Powerco and Aurora supported our draft decision to set quality standards and incentives for Aurora on the same basis as for other EDBs on the DPP.¹¹⁰ Aurora stated "We do not think that there is any justification for applying a different approach."¹¹¹

Analysis

E209 Aurora's CPP application primarily focussed on improving asset health to deliver safety improvements, rather than improving reliability.

E210 Aurora's CPP differs from DPP3 in the following ways:

E210.1 A four-year reference period from 2017-2020 was used to inform the target for unplanned SAIDI and SAIFI. The annual unplanned interruption limit was set above the limit Aurora faced under DPP3 to make it realistically achievable.

E210.2 We included a relatively large buffer between the targets and limits (deviating from DPP3). This was considered to reflect the greater range of SAIDI and SAIFI outcomes that could be expected from Aurora given its relatively low understanding of the health of its network assets.

E210.3 We set the limit for planned outages the same as that under DPP3, with a higher target for the duration of planned interruptions due to the large amount of asset replacement intended.

¹¹⁰ [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14.

¹¹¹ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14.

- E211 The revenue-linked QIS was retained for both unplanned and planned interruptions.
- E212 In submissions on our issues paper, Aurora considered a ten-year reference period to be inappropriate, given that it does not reflect its current performance. It also supported a continuation of the Aurora CPP period limits and targets.¹¹²
- E213 In coming to our draft decision, we considered alternative reference periods in setting Aurora's QIS targets and limits.
- E213.1 For unplanned standards, after applying the 5% cap, we found that the draft DPP targets would be the same using the ten-year DPP4 draft reference period or a shorter seven-year reference period, due to the application of the cap. We found that the draft unplanned SAIDI target and limits for Aurora were higher than those set under the CPP using a four-year reference period.¹¹³
- E213.2 When following the DPP4 approach for planned standards, we found that the draft targets and limits for Aurora were higher than those under the CPP, which reflected the scale of work undertaken on its network under the CPP.
- E214 Aurora's CPP involved a substantial uplift in the level of opex and capex for the CPP period. In determining quality standards, we need to consider the extent to which these increases were related to improving quality.
- E215 In its proposal for a CPP, Aurora suggested that slight reliability improvements may arise as a by-product of its safety-related investments after 2024, while it forecasted considerably worse reliability over the CPP period (2022-2026).¹¹⁴
- E216 Our decision on reliability measures under the CPP would mean that Aurora's consumers could expect the reliability and quality of their electricity supply to stabilise, before gradually improving over time.¹¹⁵

¹¹² [Aurora Energy "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 13.

¹¹³ See analysis: [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper" \(29 May 2024\)](#), Comparison of draft DPP4 and CPP SAIDI SAIFI, pp. 335-339.

¹¹⁴ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 Final decision - Reasons paper" \(27 November 2019\)](#), p. 164.

¹¹⁵ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 Final decision - Reasons paper" \(27 November 2019\)](#), p. 161.

E217 As such, we consider it is appropriate to set standards for unplanned SAIDI and SAIFI for Aurora on the same basis as for other EDBs under DPP4

E218 We note nearly all non-exempt EDBs present significant increases in planned SAIDI since 2017.

Conclusion

E219 We do not consider that Aurora is such an outlier that it requires a different reference period to be consistent with our principle of 'no material deterioration'. Additionally, transitioning Aurora to the DPP4 with the same settings as apply for other EDBs avoids unnecessary complexity and meets the relatively low-cost principle of the DPP.

QS11: Retain the requirement for reasonable reallocation of quality parameters following a transfer of more than 0.5% of ICPs of the smallest non-exempt EDB that is party to the transaction

Final decision

E220 Our final decision is to retain the requirement for reasonable reallocation of quality parameters following a transfer of more than 0.5% of ICPs of the smallest non-exempt EDB that is party to the transaction. This is discussed in **Attachment H Final decision for Asset Transfers**.

Setting the quality incentive scheme

Approach to the quality incentive scheme

E221 The revenue-linked incentive scheme for reliability is designed to provide EDBs with incentives to consider cost-quality trade-offs in their decision-making. In the absence of other adequate incentives, EDBs may be incentivised to reduce expenditure, at the expense of quality, to increase profitability.

Economic principles underpinning incentives

E222 We consider that revenue-linked incentives on reliability provide incentives to manage the price-quality relationship. With appropriate settings profit-maximising EDBs will be:

E222.1 encouraged to find solutions where there are net benefits, ie, $\text{Marginal Benefit (MB)} > \text{Marginal Cost (MC)}$;

E222.2 neither encouraged nor discouraged to find cost-neutral solutions to improve reliability – $MB=MC$ for EDBs and $MB \geq MC$ for consumers; and

E222.3 discouraged to find relatively expensive solutions to improve reliability – $MB < MC$ for EDBs and $MB < MC$ for consumers.

E223 However, if the revenue-linked incentives are too strong, then EDBs may be encouraged to find solutions where the costs to consumers can exceed the benefit to consumers – $MB > MC$ for EDBs and $MB < MC$ for consumers.

E224 There was broad support for retaining the revenue-linked QIS in submissions on our issues paper and draft decisions.

E225 The QIS settings include the following decisions:

Incentive Rate

E226 QIS2: Unplanned incentive rates are informed by the value of lost load (VoLL), discounted by $(1 - \text{IRIS retention factor})$ to reflect expenditure incentives, and a further 10% to reflect quality standard incentives, with VoLL set at \$35,305 per megawatt hour (MWh).

Weighting of the incentive to reflect consumer preferences

E227 QIS3: Planned incentive rates are reduced by 50% relative to the unplanned incentive rate (reverted back from 35% in our draft decision).

E228 QIS4: Planned ‘notified’ interruptions are reduced by 75% relative to unplanned in calculating the incentive, to reflect less inconvenience to consumers.

E229 QIS10: Do not make an explicit adjustment to match the duration of retention benefits between EDBs and consumers.

Incentive scheme model parameters

E230 QIS5: Incentives are broadly revenue-neutral at the average of the reference period, also known as the target.

E231 QIS6: The SAIDI caps (which determine maximum losses) are set equal to the SAIDI limits for planned and unplanned SAIDI.

E232 QIS7: The SAIDI collars (which determine maximum gains) are set at 0 for planned and unplanned SAIDI.

E233 QIS8: Cap revenue at risk at 2% of actual net allowable revenue.

New incentive schemes

E234 QIS9: Do not implement any new incentive schemes.

Changes from our draft decision

E235 Our final decisions on the QIS are unchanged from our draft decisions but for incentive rates and the de-weighting of notified interruptions.

E235.1 We have changed the de-weighting of planned incentive rates to be 50% of the unplanned incentive rate, consistent with DPP3, to address the misalignment between the de-weighting of notified interruptions in assessment of the quality standard and the incentive scheme in our draft decision (QIS3).

E235.2 We have updated the incentive rate calculation with changes in VoLL and WACC (QIS2).

E236 We have also corrected an error in the DPP3 determination regarding the calculation of the quality incentive adjustment, which did not cap incentive penalties at the revenue at risk (related to decision QIS8).

E237 Our draft decision QIS5 was to set the QIS target at the average of the historical reference period. We have retained our draft decision for our final decision after consideration of EDBs' views that the QIS target for planned interruptions should be lifted above the historical average to reflect increases in work programmes.

E238 We discuss each of the final decisions below.

QIS1: Retain the revenue-linked quality incentive scheme for planned and unplanned SAIDI. SAIFI is excluded.

Problem definition

E239 EDBs are not exposed to a consistent cost-quality trade-off of the decisions they make regarding reliability during the year, but rather focus more on the expenditure impact in addressing reliability when quality standard contravention risk is low.

E240 Reliability standards provide an incentive on EDBs to maintain network quality. However, they are likely most effective where EDBs are at risk of contravening the limits.

Final Decision

E241 Our final decision is to retain the revenue-linked quality incentive scheme for planned and unplanned SAIDI. SAIFI is excluded.

E242 This is unchanged from our draft decision.

What we heard from stakeholders

E243 EDBs have previously stated they take the QIS into account in various ways, eg, in making investment decisions, planning works and preparing for unplanned outages (Aurora, Horizon, Powerco, ENA, Orion and The Lines Company).¹¹⁶

E244 There was broad agreement to retain a revenue-linked incentive scheme in submissions on our issues paper. For example, Vector submitted its desire to “retain revenue-linked incentives for both planned and unplanned SAIDI,” and for “targets, caps, collars, incentive rate and revenue at risk [to be] set on a consistent basis with DPP3.”¹¹⁷

E245 Several submitters broadly supported retaining the QIS in submissions on our draft decision.¹¹⁸ For example: Wellington Electricity stated:¹¹⁹

We support the draft decision to retain a QIS for planned and unplanned SAIDI. Excluding SAIFI from the QIS favours quality improvements that reduce outage duration, as opposed to minimisation of customers affected. This means that some reliability improvements that have a greater impact on SAIFI than on SAIDI (for example those that reduce the risk of short duration 33kV outages) are not rewarded under the QIS. However, we agree that SAIDI and SAIFI are generally aligned, that a 50/50 weighting of SAIDI and SAIFI under the QIS would over-incentivise SAIFI, and a SAIDI-only incentive scheme will largely capture changes in both frequency and duration.

¹¹⁶ [Aurora Energy "DPP4 Issues paper submission" \(19 December 2023\), p.15](#); [Horizons Networks "DPP4 Issues paper submission" \(19 December 2023\), p. 17](#); [Powerco "DPP4 Issues paper submission" \(19 December 2023\), p. 27](#); [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\), p. 18](#); [Orion New Zealand Ltd "DPP4 Issues paper submission" \(19 December 2023\), p. 18](#); [The Lines Company Ltd "DPP4 Issues paper submission" \(19 December 2023\), p. 13](#).

¹¹⁷ [Vector "DPP4 Issues paper submission" \(19 December 2023\), p.40](#).

¹¹⁸ [Submissions](#) by Alpine Energy, Vector, Powerco, WELL and MEUG on Commerce Commission “Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper” (29 May 2024).

¹¹⁹ [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\), p. 43](#).

Analysis

- E246 The revenue-linked incentive scheme for reliability is designed to provide EDBs with incentives to consider cost-quality trade-offs in their decision making. In the absence of other adequate incentives, EDBs may be incentivised to reduce expenditure, at the expense of quality, to increase profitability.
- E247 We consider allowing EDBs 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.
- E248 SAIDI is a function of interruption frequency (SAIFI) and interruption length (CAIDI).¹²⁰ Put another way, SAIDI is the product of SAIFI and CAIDI. We therefore consider that retaining the removal of SAIFI from incentives is appropriate.

Conclusion

- E249 Our decision to retain the removal of SAIFI from the incentive scheme is driven by the following considerations:
- E249.1 SAIFI will still be subject to compliance standards;
 - E249.2 SAIFI, as well as CAIDI, is indirectly captured through SAIDI incentives; and
 - E249.3 SAIFI incentives may place undue priority on short-term mitigations rather than preventing long-term deterioration.
- E250 We consider the QIS provides an appropriate incentive for EDBs to deliver quality outcomes that reflect consumer demands and applying only to SAIDI reduces potential duplication.

QIS2: unplanned incentive rates are informed by the value of lost load (VoLL), discounted by (1-IRIS retention factor) to reflect expenditure incentives, and a further 10% to reflect quality standard incentives, with VoLL set at \$35,305/MWh

- E251 The incentive rates determine the level of financial exposure of EDBs to a marginal change in reliability.

¹²⁰ Customer Average Interruption Duration Index (CAIDI) is the average time required to restore service. It is calculated as total minutes of customer interruption divided by the total number of interruptions.

Final decision

E252 We have updated our final decision after adjusting VoLL for a change in forecast inflation rates.

E253 Table E9 shows the final incentive rates compared to DPP3.

Table E9 Incentive rates for DPP4 compared to DPP3

EDB	DPP3 Incentive rate	DPP4 Incentive rate
Alpine Energy	7,879	16,052
Aurora Energy¹²¹	14,279	26,481
EA Networks	5,394	11,364
Electricity Invercargill	2,544	4,909
Firstlight Network	2,797	5,620
Horizon Energy	5,397	10,284
Nelson Electricity	1,417	2,634
Network Tasman	6,260	12,673
Orion NZ	31,686	65,697
OtagoNet	4,339	9,015
Powerco	47,908	96,938
The Lines Company	3,827	7,143
Top Energy	3,283	6,434
Unison Networks	16,185	32,406
Vector Lines	84,519	165,847
Wellington Electricity	23,215	44,507

¹²¹ From Aurora's CPP that is in effect from 1 April 2021 – 31 March 2026.

Approach in our draft decision

E254 Our draft decision applied the same approach to establishing the incentive rate as was applied in DPP3. However, incentive rates have increased, reflecting both recent inflation that has resulted in a higher VoLL, and increases in the WACC that has impacted the IRIS retention factor.

What we heard from stakeholders

E255 In submissions on our issues paper, there was a range of views on the appropriateness of the DPP3 incentive rate in the QIS scheme. However, the dominant view was that the rate was too low to incentivise desirable behaviours. For example:

E255.1 ENA noted that “the fall in the incentive rate between DPP2 and DPP3 lessened the prominence of the incentive in EDBs decision-making and planning, including a reduction in the use of portable generation to shorten planned outages.”¹²²

E255.2 Orion questioned whether the incentive rates are providing a strong enough incentive. It suggests that “a stronger signal might drive some improvements if this was consistent with customer preferences.”¹²³

E255.3 Wellington Electricity considered that the VoLL-based quality incentive calculation introduced in DPP3 provides incentives that are immaterial for EDBs with low SAIDI/SAIFI.¹²⁴

E256 In submissions on our draft decision, there was general support for the QIS but few EDBs specifically engaged on this decision. Wellington Electricity stated: “We support the method of inflating the 2004 VoLL to establish a baseline for the value of a SAIDI minute under the QIS.”¹²⁵

E257 Wellington Electricity also stated: “The additional 10% reduction in incentive rates due to the effect of the quality standards appears to be arbitrary, as we have not seen any analysis that justifies this figure.”¹²⁶

¹²² [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 18.

¹²³ [Orion New Zealand Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 18.

¹²⁴ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 56, section 9.6.

¹²⁵ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 43-44.

¹²⁶ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 43-44.

Analysis

E258 This section:

E258.1 identifies the rationale for VoLL and our adjustment to account for inflation;

E258.2 outlines why, in calculating the incentive rate, we reduce VoLL by the IRIS retention factor to reflect expenditure incentives;

E258.3 outlines why we reduce the incentive rate to account for quality standard incentives; and

E258.4 explains how we calculate the incentive rate for each EDB.

Rationale for application of VoLL and accounting for inflation

E259 VoLL is an estimate of the economic value, in dollars per MWh, that a consumer places on electricity they plan to consume but do not receive because of an interruption, noting this reflects an average across customer type, location, outage duration and timing.^{127,128}

E260 It is important to note that VoLL is not used as a way to profile the difference in customer preferences – it is an average that ultimately smooths over the differences between customers, and also over individual customer preferences (eg, sensitivity to interruptions at different times of the day).

E261 The rationale for introducing a VoLL-based incentive in DPP3 was that previously some EDBs had been responding to the signal provided in the DPP2 Determination which provided an incentive rate that was potentially greater than the value which consumers placed on improved reliability.

E262 The wide difference in historical performance of EDBs leads to a wide variation in quality standards and the range over which the incentives apply for individual EDBs. If a consistent revenue-at-risk percentage is used, the value of the incentive varies widely and there is a potential mismatch between the cost to consumers of incentive driven changes in reliability and the value consumers attach to the change in reliability.

¹²⁷ [PwC “Estimating the Value of Lost Load in New Zealand” \(March 2018\)](#)

¹²⁸ We note this value is lower than comparative VoLL rates used by the Australian Energy Regulator (AER) and the Office of Gas and Electricity Markets (Ofgem).

E263 We consider that it would be appropriate to increase VoLL to more accurately represent a current value for consumers for the DPP4 period. We consider:

E263.1 the VoLL figure used for DPP3 is outdated, due to inflation;

E263.2 if we do not update VoLL in line with the treatment of revenue allowances, then we are potentially diluting incentive strength; and

E263.3 estimating VoLL at the midpoint of the regulatory period is a reasonable proxy for the period.

E264 For the DPP4 final decision, we have inflated the VoLL figure up until the midpoint of the DPP4 regulatory period (30 September 2027).

Accounting for inflation in calculating VoLL

E265 By adjusting for historical inflation (as measured by changes in the CPI) as at Q4 of each preceding year, we have estimated VoLL to be \$32,521/MWh as at Q4 2023 and used this to forecast VoLL across the DPP4 period.

E266 The formula applied is:

$$VoLL_{Present \$ / MWh} = VoLL_{2004 \$ / MWh} \times \frac{CPI_{Q4 PY}}{CPI_{Q4 2004}}$$

where:

E266.1 $VoLL_{2004 \$ / MWh}$ is the default figure for VoLL in 2004 dollars, being \$20,000/MWh at December 2004;¹²⁹

E266.2 $CPI_{Q4 PY}$ is the CPI figure as at quarter 4 of the prior year;

E266.3 $CPI_{Q4 2004}$ is the CPI figure as at quarter 4 of 2004 (774.2669); and

E266.4 $VoLL_{Present \$ / MWh}$ is the VoLL figure derived for the present (the output), in present year \$/MWh.

E267 Historical CPI figures have been retrieved from Stats NZ (and inform the annual inflation rates at Q4 used in the calculations above).

¹²⁹ [Electricity Authority "New Zealand's Electricity Industry Code 2010"](#), Schedule 12.2 clause 4 includes a value of VoLL of dated December 2004 of \$20,000/MWh (called "Value of expected unserved energy").

- E268 For 2024, we used forecasted annual CPI inflation of 2.3%.¹³⁰ This is for the December quarter of 2024.
- E269 For 2025, 2026 and 2027, we have used a forecasted annual CPI inflation of 2.0%,¹³¹ the forecast at the midpoint of the DPP4 regulatory period (30 September 2027).
- E270 Table E10 shows VoLL up until Q4 2023 calculated using historical CPI inflation, and forecast CPI inflation to project VoLL up until the regulatory period midpoint.

Table E10 Calculation of VoLL

Assessment year	CPI (at Q4 previous calendar year)	Actual annual inflation rate at Q4 for calculation (%)	Forecasted annual inflation rate at Q4 for calculation (%)	Inflated VoLL (\$/MWh)
2023	1,259	4.7%	-	32,521
2024	1,288	-	2.3%	33,269
2025	1,314	-	2.0%	33,934
2026	1,340	-	2.0%	34,613
2027	1,367	-	2.0%	35,305

Reducing VoLL by the IRIS retention factor to reflect expenditure incentives

- E271 To ensure that consumers are not overpaying for quality driven expenditure, we factor in the expenditure incentives that consumers are also sharing. Taking account of expenditure incentives, we scale back the VoLL, or the incentive rate, by (1 – the IRIS retention factor).
- E272 Under the IRIS, EDBs keep the value of improvements in efficiency for five years before sharing them with consumers. Under our approach, EDBs will keep the value of quality improvements or declines (VoLL) at least until the end of the regulatory period.

¹³⁰ [Reserve Bank of New Zealand "Monetary Policy Statement" \(August 2024\)](#), p. 51, Table 7.1.

¹³¹ [Reserve Bank of New Zealand "Monetary Policy Statement" \(August 2024\)](#), p. 51, Table 7.1.

E273 Also, without an adjustment, consumers may pay more for investments than the value they place upon them, through the combination of IRIS and QIS payments. Consumers may have more aversion to a deterioration in reliability than they have a desire for improvements in reliability. In other words, consumers are willing to accept a higher level of payment for lower reliability than they are willing to pay for higher reliability.

Reducing the incentive rate to account for quality standard incentives

E274 In DPP3 we also considered that recognition of incentives associated with not contravening the quality standard should be factored in and set a further discount of 10%. We are retaining this discount for DPP4, as we consider it is appropriate to maintain a comparatively conservative approach.

Calculating the incentive rate

E275 Applying this decision results in an implied value of VoLL of \$10,219/MWh, being an estimated value of incentives per MWh of electricity forgone. This is calculated as follows:

E275.1 We start with VoLL of \$35,305/MWh (factoring in inflation to 30 September 2027, the midpoint of the DPP4 regulatory period);

E275.2 reduce the incentive rates by 67.84% to account for EDBs retaining expenditure benefits for five years; and

E275.3 reduce the incentive rate by a further 10% to account for the existing incentives created by quality standards.

E275.4 $\$35,305/\text{MWh} \times (1-67.84\%) \times (1-10\%) = \$10,219/\text{MWh}$

E276 To derive the unplanned SAIDI incentive rate for each EDB, we have then multiplied the implied VoLL of \$10,219/MWh by the EDB's average annual MWh of energy delivered over 2022-2024, and divided by the total number of minutes in a year.

Conclusion

E277 Whilst we have retained the approach to setting incentives from DPP3, the strength of the incentive has significantly increased for EDBs with the increase in the IRIS incentive rate and inflation adjustment for VoLL.

QIS3 and QIS4, De-weighting of planned interruptions

Final Decision

- E278 Our final decision is that the planned “notified” interruptions are reduced by 75% relative to the unplanned in calculating the incentive, to reflect less inconvenience to customers (QIS4). This is unchanged from our draft decision.
- E279 The planned interruption incentive rate provides for a 50% discount from unplanned interruption incentive rate (QIS3), and the “notified” interruptions are reduced a further 50% from the planned rate (so the “notified” rate has a 75% discount from the unplanned rate). The relative weightings to planned interruptions have changed from our draft decision.

Approach in our draft decision

- E280 Our draft decision was to reduce the discount of the planned incentive rate relative to the unplanned incentive rate from 50% in DPP3 to 35%. This was intended to reflect that consumers may not have sufficient time to adequately plan for and mitigate impacts of a planned interruption which only require 24 hours’ notice.
- E281 We maintained the notified rate discount to the unplanned rate at 75%, consistent with DPP3 settings.
- E282 This resulted in an increase in the comparative discount between the notified interruption incentive rate and the planned incentive rate, set at 61.538% in the draft compared to 50% which applies in DPP3.
- E283 We did not adjust the discount for notified interruptions compared to planned for assessment against the quality standard, which was maintained at a 50% discount. This meant there were different strengths of discounting of notified interruptions compared to planned interruptions between the quality standard and QIS.

QIS3: Planned incentive rates are reduced by 50% relative to the unplanned incentive rate

What we heard from stakeholders

E284 While there was some support for setting the planned incentive rate at a 35% reduction relative to the unplanned incentive rate,¹³² submitters explained that there may be a risk of perverse outcomes if the discount for notified interruptions compared to planned interruptions is not mirrored between the quality standards and incentives.¹³³

E285 ENA submitted that:

The Commission has proposed weightings for both notified and non-notified planned outages that differ between its assessment of quality standards and quality incentives. As a result, there can be a situation where an EDB is above the planned SAIDI target in the quality standard assessment but below the planned SAIDI target in the quality incentive (and hence gets a reward despite being above the standard).

However, there cannot realistically be a situation where this occurs, due to the scale of the weighting differences, and the impact of the buffer.

Nonetheless, ENA recommended [sic] that the Commission review the de-weightings for planned outages to remove the potential for this scenario to occur.¹³⁴

Analysis

E286 We agree with ENA that it is possible for circumstances to arise where an EDB is below the planned QIS cap despite being above the planned interruption standard, due to significant uptake of notified interruptions. Given the scale of the buffer for setting the quality standard limit and the EDBs ability to directly control the level of work, it is unlikely that EDBs will breach their planned quality standard.

E287 To match the quality standard and the QIS, the incentive for notifying an outage would have to be lowered.

¹³² For example: [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16 and Wellington Electricity, who noted that the ratio is consistent with the relative value to customers of planned and unplanned outages as identified in a 2012 VOLL study for Ofgem - [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 44.

¹³³ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 23; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 44; supported in cross submissions by [Alpine Energy "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 17.

¹³⁴ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 14-15.

E288 It is not clear that the change in incentive rate in our draft decision is likely to materially drive behaviour for increased uptake of notified interruptions. Most EDBs have already moved to predominantly utilising the notification mechanism (see Table E8), so a further incentive to notify interruptions may not have a material effect on behaviour.

E289 Accordingly, our final decision is to revert to the planned incentive rates being reduced by 50% relative to the unplanned incentive rate.

QIS4: Planned notified interruptions are reduced by 75% relative to the unplanned in calculating the incentive, to reflect less inconvenience to consumers

E290 In DPP3 we introduced notified planned interruptions and reduced it by 75% relative to the unplanned in calculating the incentive. Our final decision, unchanged from our draft decision, is to retain this decision.

What we heard from stakeholders

E291 We received limited submissions on our issues paper on the mechanism for de-weighting notified planned interruptions. Orion stated that “The planned notification incentive was complex to implement, and it is still too early to gauge whether the benefits have outweighed the costs.”¹³⁵

E292 In its submission on our draft decision, ENA stated that “the plan and ‘notified’ plan reduction proportions are appropriate and supported by ENA”.¹³⁶ Horizon, Orion and Aurora also supported this decision.¹³⁷

Analysis

E293 We consider the notification mechanism incentivises transparency and provides adequate preparation time to affected consumers ahead of necessary network maintenance and investment that will result in a planned interruption.

E294 We consider that this mechanism is balanced, in that it provides both a sufficient financial benefit to EDBs for good practice, and adequate notice and time to consumers to prepare for a disruption to the electricity supply.

¹³⁵ [Orion New Zealand Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 18.

¹³⁶ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 23.

¹³⁷ [Horizon Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Orion "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 15; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16.

- E295 In Table E8, we have detailed the proportion of planned assessed SAIDI that can be attributed to notified planned interruptions in the DPP3 regulatory period to date.¹³⁸ We note that for almost all EDBs, there has been significant uptake and usage of the notified planned interruption mechanism. Only two EDBs have not used the mechanism in the regulatory period to date.
- E296 If we do not de-weight planned interruptions, there may be a perverse incentive for EDBs to defer necessary network maintenance and investment. We consider it is important that EDBs are incentivised to undertake its planned interruptions efficiently and consumers are compensated accordingly.
- E297 We are not changing the criteria or definition of ‘Class B notified interruption’. We understand that EDB systems were complex to set up and we do not want to introduce costs to change systems to meet any changes in requirements. We are making a minor change to the definition of “notified interruption window” to allow flexibility in the data format as requested by submitters (see QS6) to better align with EIEP5A which will reduce compliance costs.

Conclusion

- E298 We consider de-weighting planned interruptions is appropriate as they are less inconvenient for customers. If customers are notified, they can plan accordingly. Planned interruptions are also generally required by EDBs to perform maintenance and investment that benefits consumers in the long run.
- E299 We believe that reverting to the DPP3 de-weighting of notified interruptions to 50% of planned interruptions appropriately addresses EDBs concerns about differences between the QIS and the quality standard. The 50% de-weighting reflects that planned interruptions remain a cost to consumers, and the significant uptake in the notified planned interruption scheme suggests a stronger incentive may not be required for this.

¹³⁸ Note that we do not have ‘notified’ data available for Horizon, as they have not disclosed their notified SAIDI in their compliance statements for 2021-2023. We do not have ‘notified’ data for Wellington Electricity as they were on a CPP in 2021, and Powerco who was on a CPP from 2021-2023).

QIS5: Incentives are broadly revenue-neutral at the average of the reference period, also known as the target

Nature of the Decision

E300 The quality target is the level of reliability performance at which the revenue impact of an EDB's performance is zero. Put another way, it is the point at which losses turn into gains and vice versa.

Final Decision

E301 Consistent with the 'no material deterioration' principle, we will retain setting the target based broadly on the historical average. Without better information about the level of reliability consumers demand, we consider a basis on historical reliability provides an appropriate outcome for a default path.

E302 This approach ensures that:

E302.1 where reliability improves or declines over time, the EDB faces a proportionate incentive; and

E302.2 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.

E303 We note that we will use two separate reference periods for planned and unplanned interruptions to establish the historical average – the QIS includes both planned and unplanned interruptions in its calculation.

Approach in our draft decision

E304 In submissions on our issues paper, Powerco and Wellington Electricity suggested the target should be lifted above the historical average to align with the expectation of increased investment increasing outages.¹³⁹ Our analysis of 2023 ID data found that generally there was not a clear correlation between capex programmes and planned interruptions. Whilst some EDBs have forecasted increases in planned SAIDI the extent of change did not appear to necessarily correlate to the capex programme at a detailed level.

¹³⁹ [Powerco "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 27; [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p.56, section 9.6.1.

E305 We considered alternative approaches to estimate what forecast changes to make to planned interruptions but considered that without better information about the level of reliability consumers demand, historical reliability provides an appropriate outcome for a default path; noting that many EDBs' AMPs state that customers are requesting no deterioration of service and no increase in cost.

What we heard from stakeholders

E306 Wellington Electricity, supported by Powerco in cross submissions, considered that setting the target at the historical average fails to take into account work programmes, penalising EDBs with substantial work programmes and failing to reward performance improvement.

E307 Wellington Electricity considered:¹⁴⁰

An increase in planned SAIDI and SAIFI that is the direct result of work programmes that deliver customer decarbonisation projects is not 'material deterioration'. Planned work in this context is ensuring that new capacity is built to supply the increased demand, without an erosion of security of supply which would lead to an increase in unplanned outages.

We agree that it is essential for an incentive scheme to value planned SAIDI, as this drives the EDB to be efficient in its use of planned outages. However, setting the revenue-neutral point based on historical work programmes instead of relating it to the work that customers expect us to deliver over the next five years in order to maintain sufficient network capacity and therefore unplanned quality standards, results in a permanent penalty. It also increases the risk of a planned quality standard breach potentially leading EDBs to trade off planned SAIDI with the risk of a future increase in unplanned outages.

We developed a planned SAIDI and SAIFI forecast for our 2024 AMP that was based on our historical planned outage efficiency across different work types (described in section 9.1.5.1). Setting the planned outage targets based on such a scheme would provide a realistic baseline for EDBs to be measured on, that is explicitly linked to historical performance and the approved future allowances under the price path, retaining an incentive to deliver improved outage efficiency through the QIS.

¹⁴⁰ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p 44.

- E308 Wellington Electricity submitted an alternative forecasting approach which calculates SAIDI efficiency levels in minutes per million dollars for opex and capex. It then identifies the cost categories that impact planned SAIDI and using information disclosure establishes a baseline of SAIDI minutes per million dollars of relevant expenditure.¹⁴¹
- E309 Powerco stated “The Commission should consider implementing a mechanism, such as a trend or step adjustment, to accurately reflect the evolving nature of EDB work programs.”¹⁴²

Analysis

- E310 In Table E11, we have outlined the forecasted planned SAIDI by EDBs from their 2024 ID disclosures. Our analysis of 2024 AMP updates found that generally there was not a clear correlation between increases in capex programmes and planned interruptions.

¹⁴¹ [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p 40.

¹⁴² [Powerco “Cross-submission on EDB 8DPP4 draft decisions” \(2 August 2024\)](#), p. 2.

Table E11 Forecasted planned interruptions SAIDI, by EDB and year¹⁴³

EDB	2024	2025	2026	2027	2028	2029
Alpine Energy	89.50	100.00	100.00	100.00	100.00	100.00
Aurora Energy	174.15	177.30	142.30	143.70	135.40	153.90
EA Networks	121.45	117.50	275.00	275.00	275.00	275.00
Electricity Invercargill	27.75	32.00	32.00	32.00	32.00	32.00
Firstlight Network	133.47	101.10	101.10	101.10	101.10	101.10
Horizon Energy	95.60	63.00	57.20	57.20	57.20	57.20
Nelson Electricity	42.14	4.00	15.00	15.00	15.00	15.00
Network Tasman	154.01	107.00	100.00	100.00	100.00	100.00
Orion NZ	25.93	13.20	13.20	17.10	17.10	17.10
OtagoNet	251.42	329.50	267.40	267.40	267.40	267.40
Powerco	94.40	108.90	105.20	106.30	105.00	103.40
The Lines Company	192.26	88.00	113.60	113.60	113.60	113.60
Top Energy	126.36	245.90	245.90	245.90	245.90	245.90
Unison Networks	93.52	115.10	74.60	74.60	74.60	74.60
Vector Lines	74.10	117.10	117.10	117.10	117.10	117.10
Wellington Electricity	11.30	12.20	17.10	17.00	16.40	15.90

E311 In coming to our draft decision, we considered a number of different factors on how to establish the appropriate value for the target for planned interruptions. This included alternative approaches, the impact of adjusting the reference period and the impact of de-weighting notified interruptions.

E312 Alternative approaches to setting the target could involve developing a methodology to link changes in capital expenditure to changes in SAIDI, relative to historical performance.

¹⁴³ From EDBs' 2024 Asset Management Plans.

- E313 Any proxy uplift to the historical average would be indicative at best, with the value significantly impacted by an EDBs individual work practices and the underlying programme of work undertaken in the reference period and forecast to be undertaken. As some EDBs are subject to capped expenditure allowances it is also unclear how an adjustment for this factor would be taken into account.
- E314 Although Wellington Electricity has suggested an alternative, there was no engagement with this approach in cross submissions and accordingly it is unclear if other EDBs consider it reasonably approximates changes to the level of planned interruptions or not.
- E315 As there are no accepted methodologies for forecasting future levels of interruptions as a function of work programmes or capex, we have retained the approach used for DPP3.

Other factors which impact on the mid-point

- E316 Reducing the length of the reference period for planned interruptions (from the current ten years) to seven years will reflect the more recent step change in planned interruptions which mitigates some of the concern on the relevance of the historical data series. See the section on *decision RP2*.
- E317 Most significantly, de-weighting notified interruptions in the assessment period but not the reference period has a significant impact on where the revenue-neutral point applies for the quality incentive, with regard to planned interruptions.
- E318 The impact of this will vary depending on the level of notified interruptions. We have estimated that with a 90% uptake of notified SAIDI discounted at 50%,¹⁴⁴ the equivalent uplift to the historical average of planned SAIDI in the reference period dataset compared to assessed SAIDI is 82%.¹⁴⁵

¹⁴⁴ We consider a 90% weighting of notified interruptions as a proportion of total planned interruptions is reasonably representative of the level of notified interruptions taken up by those EDBs who are applying the notified interruptions mechanism (see Table E8).

¹⁴⁵ As an example: for 100 minutes planned SAIDI, 90% uptake of notified SAIDI at 50% discount and 10% undiscounted SAIDI, the assessed SAIDI is 100 minutes $\times ((90\% \times 50\%) + (10\% \times 100\%)) = 55$ minutes. This is equivalent to assessing the 100 minutes against 182 minutes of planned SAIDI, as $182/100 = 1.82$, implying an equivalent uplift in planned SAIDI of 82%.

E319 Given the significant uptake of notified interruptions by most EDBs to date, this will likely more than offset any increase in planned interruptions associated with an increase in planned work programmes (see Table E8) and result in a higher likelihood of receiving an incentive payment for most EDBs, noting that all but two EDBs currently apply notified interruptions.

Conclusion

E320 Our final decision is to retain setting the target based on the historical average level used for setting SAIDI standards as we consider this is consistent with the 'no material deterioration' principle.

E321 We consider that the impact of not increasing planned interruptions to take account of increased work programmes will likely be more than offset by not de-weighting notified interruptions in the reference period dataset.

QIS6, QIS7: SAIDI caps and collars

Context

E322 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.

Final decision

E323 Our final decisions are that:

E323.1 QIS6: The SAIDI caps (which determine maximum losses) are to be set equal to the SAIDI limits for planned and unplanned SAIDI.

E323.2 QIS7: Set the SAIDI collars (which determine maximum gains) at zero for planned and unplanned SAIDI.

E324 This is unchanged from the draft decision.

What we heard from stakeholders

E325 We had limited submissions on this issue; those who submitted supported our draft decision.¹⁴⁶

Reliability Caps

E326 We consider that it is not consistent with maintaining quality at a level that reflects consumer demands to allow EDBs to continue to make trade-offs beyond the minimum level of reliability determined by the quality standards, so a cap above the limit is inappropriate.

E327 On the other hand, we consider that it is consistent with maintaining quality at a level that reflects consumer demands for EDBs to consider trade-offs all the way up to the limit, as this preserves the marginal incentive to improve reliability (or avoid further declines) regardless of their performance up to that point in the assessment period.

Reliability Collars

E328 We have previously set planned and unplanned SAIDI collars at zero, subject to a specified maximum revenue exposure. In other words, we have removed the collars in our incentive scheme. This means that financial incentives for reliability will always apply below the SAIDI limits.

E329 As reliability improves, we expect the marginal cost of further improvements will increase. Rational EDBs 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 conservative incentive rates we have set, and so do not consider this will lead to improvements beyond what consumers expect.

¹⁴⁶ [Aurora Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 16; [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 31; [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 45.

QIS8: Cap revenue at risk at 2% of actual net allowable revenue

Nature of the Decision

- E330 Revenue at risk is the total pool of incentives an EDB may gain or lose based on its performance. It can be expressed in both dollar terms and as a percentage of EDBs' total revenue.
- E331 If we retain the setting of SAIDI incentive rates and the SAIDI bounds for which incentives apply explicitly, the revenue exposure to the QIS may create an excessive level of exposure. To mitigate this in DPP3, EDBs total exposure was capped across planned and unplanned interruptions at 2% of net allowable revenue each year.

Final Decision

- E332 Our final decision for DPP4 is to cap revenue at risk at 2% of actual net allowable revenue.
- E333 This is unchanged from our draft decision.

What we heard from stakeholders

- E334 We received limited submissions related to capping revenue at risk, though Orion's submission noted on our issues paper that it "[does] actively monitor [its] progress against targets, caps, collars and revenue at risk and report at Board level."¹⁴⁷
- E335 Several EDBs supported our draft decision.¹⁴⁸
- E336 EA Networks raised an error in the implementation of revenue at risk in its submission on our draft decision. It stated about the calculation of the quality incentive scheme at Schedule 4, paragraph 5 of the draft determination:¹⁴⁹

In relation to this formula, applying the lessor of the calculated incentive or the revenue at risk (which is always a positive number) does not cap the incentive when it is a negative value. This creates a non-symmetrical incentive, where the penalty can significantly exceed the intended 2% revenue at risk intended by the Commission.

¹⁴⁷ [Orion "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 18.

¹⁴⁸ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 23; [Horizon Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Orion "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 15; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 45.

¹⁴⁹ [EA Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.4.

We support the decision to cap the revenue at risk at 2%, and to apply the incentive symmetrically above and below the SAIDI target. We request that the mechanism in the determination be adjusted to reflect this intention.

Analysis

E337 Table E12 illustrates the implied revenue at risk for each EDB as a percentage of total revenue in DPP4, with those that hit or exceed the 2% cap being highlighted.

Table E12 DPP4 Implied Maximum Revenue at Risk

EDB ¹⁵⁰	Maximum loss			Maximum gain		
	Unplanned	Planned	Total	Unplanned	Planned	Total
Alpine Energy	0.7%	0.9%	1.5%	1.8%	0.9%	2.0%
EA Networks	0.4%	1.3%	1.7%	1.4%	1.2%	2.0%
Electricity Invercargill	0.3%	0.1%	0.3%	0.4%	0.2%	0.6%
Firstlight Network	0.6%	0.8%	1.4%	2.3%	0.8%	2.0%
Horizon Energy	1.3%	1.1%	2.0%	3.8%	1.5%	2.0%
Nelson Electricity	0.3%	0.3%	0.5%	0.3%	0.2%	0.5%
Network Tasman	0.7%	1.5%	2.0%	2.0%	1.5%	2.0%
Orion NZ	0.4%	0.2%	0.6%	1.4%	0.3%	1.7%
OtagoNet	0.8%	2.3%	2.0%	2.5%	2.3%	2.0%
Powerco	0.6%	0.8%	1.4%	3.1%	0.8%	2.0%
The Lines Company	0.5%	0.8%	1.3%	1.9%	0.8%	2.0%
Top Energy	0.7%	0.8%	1.5%	2.9%	0.8%	2.0%
Unison Networks	0.3%	0.5%	0.7%	1.2%	0.8%	2.0%
Vector Lines	0.4%	0.5%	0.9%	2.2%	1.0%	2.0%
Wellington Electricity	0.2%	0.1%	0.3%	0.9%	0.2%	1.0%

¹⁵⁰ Excludes Aurora - on a CPP until 31 March 2026.

- E338 The number of EDBs hitting or exceeding the 2% cap is broadly consistent with the outcome in DPP3.¹⁵¹
- E339 This decision does not affect all EDBs, as the 2% cap does not bite for EDBs that have more reliable networks – whereas it bites for EDBs with generally less reliable networks. Less reliable EDBs will generally be exposed to a higher revenue at risk than more reliable EDBs. However, we consider it appropriate that the least reliable EDBs are subject to more revenue exposure, as they have the largest scope for improvements in reliability.
- E340 We note that, for example, an EDB can only achieve maximum gains as their SAIDI minutes approach zero; in practicality, this is highly unlikely.
- E341 We have amended Schedule 4 of the DPP4 determination to reflect the policy and cap of the incentive both above and below the SAIDI target.

Conclusion

- E342 We consider maintaining a cap of revenue at risk at 2% of actual net allowable revenue is appropriate for the QIS, as this provides incentives to improve performance which reflects consumer demands while limiting EDBs exposure to revenue fluctuations.

QIS9 Do not implement any new incentive schemes

Nature of the decision

- E343 Under s 53M(2) of the Act, we may include incentives for a supplier to maintain or improve its quality of supply, with standards being required in a price-quality path in order to have incentive schemes.

Final decision

- E344 Our final decision is not to introduce any new quality incentive schemes.
- E345 This is unchanged from our draft decision.

¹⁵¹ [Commerce Commission “Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision – Reasons paper” \(27 November 2019\)](#), p. 440.

What we heard from stakeholders

- E346 We received limited submissions on this issue in response to our issues paper, with the general consensus being that the QIS is fit for purpose at present. For example, ENA considered the current QIS settings to be appropriate and that no other incentive schemes are necessary.¹⁵²
- E347 SolarZero’s submission on our issues paper considered a QIS on energy efficiency is important. “A key quality indicator needs to be [included] around the efficient use of capital... One simple measure is the difference between peak and off-peak demand... This measure needs to become a central part of the quality incentives framework.”¹⁵³
- E348 Several submitters supported our draft decision.¹⁵⁴ For example, Aurora stated “We support not implementing any new incentive schemes. We consider that the changes made during DPP3 are sufficient to incentivise EDB performance”.¹⁵⁵

Analysis

- E349 Whilst we agree that efficient use of the network will be important during the energy transition to manage cost impacts to consumers, we consider an efficiency metric would not be appropriate to include as part of an incentive scheme. It is not clear that a decline in performance would represent a material deterioration in performance of the network. Instead, it could well be driven by a range of other incentives provided by entities other than the EDB, or disincentivise timely increases to network capacity. This could instead reasonably be a focus of our summary and analysis.

¹⁵² [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 18.

¹⁵³ [SolarZero "DPP4 Issues paper submission" \(15 December 2023\)](#), pp. 9-10.

¹⁵⁴ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 17; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16; [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 23; [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 15; [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 43; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 45.

¹⁵⁵ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16.

QIS10: Not make an explicit adjustment to match the duration of retention of benefits between EDBs and consumers

Problem definition

E350 Due to the design of the QIS, the duration of the benefit to an EDB is a function of the reference period used to set the SAIDI target. This may not align with the period for which consumers benefit from improved performance from investments.

Final decision

E351 Our final decision is to not make an explicit adjustment to match the duration of retention of benefits between EDBs and consumers.

E352 This is unchanged from our draft decision.

What we heard from stakeholders

E353 Aurora and Powerco supported our draft decision in their submissions.¹⁵⁶

E354 In its submission on the draft decision, Wellington Electricity agreed that there is a mismatch but acknowledged that there is little value in making an adjustment for this. It stated:¹⁵⁷

We agree that there is a mismatch in the duration of benefits for increased SAIDI efficiency. The EDB benefits from increased headroom to the SAIDI limit, which endures until the next reset if it reduces planned SAIDI or is an intervention that provides ongoing unplanned SAIDI reductions ...In all cases, customers benefit from a reduction in minutes without supply, and these benefits endure beyond the next reset as they are baked into the reference period.

We also agree with the Draft Decision that the value of adjusting the QIS retention rate to reflect these differences in duration is not worth the complexity of doing so.

The current approach of applying the same retention rate as expenditure is a pure approach that allows the EDB to undertake a direct cost-quality trade-off assessment, that ensures customers are not over-paying relative to the value to them of reliability improvements, while also keeping the EDB whole for that investment.

¹⁵⁶ [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 16; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31.

¹⁵⁷ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 45-46.

Analysis

- E355 In setting the QIS, we make an adjustment to VoLL, reflecting the fact that, with the IRIS scheme in place, an EDB only bears a proportion of the costs (32.16% in DPP4) to better ensure that we align EDB's incentives to the interests of consumers in higher levels of quality.
- E356 However, we do not make a similar adjustment reflecting the fact that EDBs only retain the benefits of the quality incentive payment until the quality improvement is reflected in the reference period dataset.
- E357 The benefit of an investment which improves quality is retained for different periods of time between EDBs and consumers:
- E357.1 EDBs hold on to the benefit of a SAIDI improvement for 7.5 years if we maintain the 10-year reference period for unplanned interruptions, regardless of when the investment occurs during the regulatory period. This is based on the EDB receiving, all else being equal, an incentive payment for the remainder of the regulatory period, and then for a proportional part of the next two regulatory periods depending on when the investment occurred; and
- E357.2 the length of time that consumers maintain the benefit will depend on the nature of the investment, with capex investments having different life spans depending on the nature of the asset and opex based solutions may be employed which may have shorter life spans.
- E358 In principle, making an adjustment to retention of benefits as we do for retention of costs would better align EDBs incentives with the interests of consumers in avoiding outages.
- E359 We have not made an adjustment to account for differences in the retention of benefits because:
- E359.1 significant assumptions would need to be made on how long consumers may hold benefits, including around the nature of investments which EDBs might make to improve quality; and
- E359.2 we are concerned that there are limitations in the calculation of VoLL and that an overly strong QIS may cause specific investments in quality improvements that exceed what affected consumers are willing to pay.

Conclusion

- E360 Our final decision is not to raise the quality incentive rate to account for the potential mismatch in the length of retention of benefits as we are not clear the extent to which increasing the existing QIS incentive will align with the reliability that consumers demand and their willingness to pay.

Normalisation of reliability data for major events

Nature of the decision

- E361 SAIDI and SAIFI are highly variable, particularly for unplanned interruptions, and are strongly influenced by major individual events. In our final decision, we have applied a normalisation process to historical reliability and to the way reliability performance will be assessed during the DPP4 period. This applies to both the unplanned interruptions reliability standards and to the incentive scheme for unplanned SAIDI.
- E362 Events beyond a certain statistical boundary are identified as major events and the underlying SAIDI is replaced with a pro-rated boundary value.
- E363 Normalisation may not address all the unusual effects of large events. We consider the specific context of any breaches and the actions taken by EDBs when exercising our enforcement discretion.

Summary of approach

- E364 In DPP4 we are retaining the approach which applied under DPP3 to normalise reliability data for major events. We provide further detail on our final decisions and analysis relating to the normalisation approach and associated reporting requirements below (N1-N5).
- E365 The purpose of identifying and normalising major events is to limit the impact of such events on the assessment of compliance with the quality standard and QIS. Reducing the volatility of these measures allows a focus on material deterioration, avoiding false positives where significant weather events drive non-compliance, not deterioration, in the overall performance of the network.
- E366 Our approach is to retain the settings from DPP3, as we consider the current settings appropriately provide incentives to provide services at a quality that reflects consumer demands.

N1: Normalisation only applies to unplanned interruptions, which are the only initiators of a major event day

Final decision

E367 Normalisation only applies to unplanned interruptions, which are the only initiators of a major event day.

E368 This is unchanged from our draft decision.

What we heard from stakeholders

E369 All submitters on this issue supported retaining normalisation only for unplanned interruptions.¹⁵⁸

Analysis

E370 Previous analysis indicated that of the largest periods of interruptions, around 93% of SAIDI and 95% of SAIFI were attributable to unplanned interruptions.¹⁵⁹

E371 We note that in some instances significant planned interruptions may be required subsequent to a MED. We consider the separation of planned and unplanned quality standards and the ability for EDBs to reduce the impact on quality incentives by providing greater notification to consumers appropriately addresses this issue. In addition, the reference period dataset will include planned outages that have followed past major events, and it would be very difficult to remove such planned outages from the dataset.

E372 We consider that the DPP3 rationale still holds and that it is practically unlikely that planned outages will come close to meeting the MED threshold.

Conclusion

E373 Our final decision is to retain the approach that normalisation only applies to unplanned interruptions, which are the only initiators of a MED. This decision is supported by submissions on our draft decision.

¹⁵⁸ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 18](#); [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 17](#); [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p.31](#); [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 46](#).

¹⁵⁹ [Commerce Commission "Default price-quality paths for electricity distribution businesses from 1 April 2020 – Final decision Reasons paper" \(27 November 2019\), paras K14-K.17](#).

N2: Retain the normalisation approach used in DPP3

Final decision

E374 Our final decision is to retain the following normalisation approach, consistent with DPP3:

E374.1 define a major event as any period of 24 hours (assessed in 30-minute blocks) where the sum of SAIDI or SAIFI values exceeds the unplanned boundary value;

E374.2 the boundary value for major events has been set as the 1104th highest rolling 24-hour period for SAIDI and SAIFI over the 10-year reference period for most EDBs;

E374.3 normalisation is applied on half-hour blocks, within a major event, where the SAIDI or SAIFI figure exceeds 1/48th of the boundary value; and

E374.4 for major events, replace any half-hour that is greater than 1/48th of the boundary value with 1/48th of the boundary value if that half-hour is part of the major event (can exceed 24 hours in duration).

E375 This is unchanged from our draft decision.

What we heard from stakeholders

E376 In submissions on our draft decision, several EDBs supported retaining the DPP3 normalisation approach.¹⁶⁰ For example, "ENA supports the proposed approach to normalisation and recognises that it aligns with internal practice as promulgated by the IEEE" (Institute of Electrical and Electronics Engineers).¹⁶¹

E377 Orion considered that the expectation of MEDs in our draft decision is too low given the impact of climate change,¹⁶² and Vector considered that the long tail (ongoing effects) of major events should be normalised.¹⁶³

¹⁶⁰ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 17; [Horizon Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 46.

¹⁶¹ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.24.

¹⁶² [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), pp. 16-17.

¹⁶³ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 29-30.

Analysis

E378 We consider that maintaining the replacement of identified major events with a reduced value is appropriate, given that:

E378.1 enhanced major event reporting requirements can provide more transparency and incentives around the main cause of events;

E378.2 reducing a large source of volatility may provide a clearer indication of the underlying reliability of the network;

E378.3 the extreme event standard places further onus on EDBs to take practicable steps to minimise the likelihood of high impact, low probability events that are within its control as well as mitigating the extent of them; and

E378.4 there are other incentives to manage the risk of significant outages associated with a major event such as customer complaints and reputational risk.

E379 Table E13 below shows the impact of how this normalisation has applied in DPP3.

Table E13 Impact of major event day normalisation on SAIDI value¹⁶⁴

EDB	Unplanned SAIDI boundary value	2021		2022		2023		2024	
		Pre-normalised (total all MEDs)	Normalised (MEDs only)	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	132.33	3.16
EA Networks	6.25	0.00	0.00	72.59	4.80	56.38	3.54	9.88	1.17
Electricity Invercargill	4.13	26.78	0.56	62.48	0.81	18.14	0.17	5.96	0.11
Firstlight Network	13.10	18.29	3.27	158.34	11.37	1195.81	20.30	173.42	17.19
Horizon Energy	14.69	14.78	1.34	163.31	4.41	79.32	3.96	16.80	0.61
Nelson Electricity	8.68	0.00	0.00	24.15	0.36	14.33	0.18	0	0
Network Tasman	7.22	0.00	0.00	32.41	1.87	51.32	2.22	84.92	1.34
Orion NZ	7.60	0.00	0.00	11.87	1.81	0.00	0.00	24.02	2.73
OtagoNet	11.81	0.00	0.00	80.31	8.86	120.59	8.04	112.67	7.56
The Lines Company	11.17	62.29	2.51	66.29	11.14	436.95	19.87	43.44	2.72
Top Energy	27.92	0.00	0.00	420.09	21.26	1330.21	52.52	162.52	17.85
Unison Networks	4.48	37.52	2.56	21.57	3.66	1749.61	4.68	18.00	2.54
Vector Lines	4.83	0.00	0.00	67.43	7.71	312.09	19.78	16.43	2.30
Wellington Electricity	2.16	0.00-	0.00	6.40	0.68	5.97	0.71	8.97	0.51

¹⁶⁴ From EDBs' Annual Compliance Statements. Powerco is not included as it was on a CPP to 2023. We have also excluded Aurora Energy as prior to being on its CPP, it was only under the DPP3 settings for the 2021 assessment period, which had a QSV applied.

- E380 Normalisation of major events is intended to limit the impact of the most substantial interruptions on underlying reliability data.
- E381 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. For example, the engineering advice we have received with respect to contraventions suggests that there were operational decisions EDBs could have made to minimise the impact of external events.
- E382 However, we recognise that to some extent the effects of extreme external events may be beyond the control of EDBs, and this can cause some variability in reliability performance which EDBs will not be able to eliminate. Replacing major events with the full boundary value may make the frequency of major events too large a driver of underlying reliability performance.
- E383 Consistent with our position in DPP3, we do not consider it appropriate to completely remove the major event impact for assessment purposes, or replace it with a half-hourly average, as this would completely remove variation caused by major events, regardless of the extent to which the event was outside the EDB's control.
- E384 Consistent with our DPP3 decision, major events that are identified will be replaced with a pro-rated boundary value. However, only those half-hour SAIDI raw values that exceed 1/48th of the respective boundary value will be replaced.
- E385 By identifying major events on a 24-hour basis and replacing major events with a pro-rated boundary value, the impact of major events will generally be much lower than replacement with the full boundary value. However, given that a pro-rated boundary value is still relatively large compared to a normal half-hour, EDBs would still face some exposure to the frequency of major events.

Normalisation applies to 24-hour rolling periods

- E386 Consistent with DPP3, we consider that a major event should not be arbitrarily constrained to a fixed period; major events often do not fit neatly within a calendar day. For example, if a major storm hits an EDB at 11:00pm and results in several interruptions stretching into the following day, it would be reasonable to treat the same as a storm hitting at 12:00am. Applying a rolling window means that all interruptions are treated equally regardless of the time of day they occurred.

E387 This means that it is possible for half-hours to be normalised which are, by definition, part of the major event but some time from the initial cause of the major event, or the cause is not directly related to other drivers of the major event. While we consider that this is not ideal, we have implemented this for practical reasons; namely, to capture major events of different profiles without adding increased complexity. However, only those half-hours that exceed 1/48th of the boundary value are normalised down. The major event boundary value has been identified as the 1104th highest rolling 24-hour period for SAIDI and SAIFI over the 10-year reference period.

The boundary value for major events has been set as the 1104th highest rolling 24-hour period for SAIDI and SAIFI over the 10-year reference period for most EDBs

E388 Our final decision is to retain an expectation of 2.3 MEDs per year in the calculation of boundary values.

Assessment of the expectation of 2.3 major event days

E389 For DPP2, we adapted the IEEE's methodology for normalisation. This methodology was based on the expectation of 2.3 MEDs per year. Over a 10-year period, this implied the 23rd highest day represented a reasonable boundary for a major event. This methodology is known as the "2.5 β method", as the 2.3 expectation is derived from a multiplier of 2.5, and a β is the standard deviation of the logarithms of SAIDI data used in the study.

E390 In DPP3, we retained the use of an expectation of 2.3 MEDs per year in the calculation of boundary values for EDBs.

E391 In our draft decision, we indicated we would retain the normalisation methodology from DPP3 after considering submissions and review of key information on climate change and the IEEE.

What we heard from stakeholders

E392 In submissions and cross submissions on our issues paper, several EDBs suggested that the expectation of 2.3 MEDs per year may no longer hold, given the increase in extreme weather events. Submissions suggested we should look forward, rather than backward and to check advice from the National Institute of Water and Atmospheric Research (NIWA) and other experts, as well as that we align with IEEE's approach to normalisation.^{165,166}

E393 After our review of the expectation of MEDs per year in our draft decision, Orion submitted that 2.3 MEDs are too low and with weather patterns already changing, we can expect there will be more extreme events. It also noted the increasing frequency of smaller weather events which in aggregate could have an increasingly significant impact.¹⁶⁷

These storms, floods and cyclones all impact on the assets of EDBs and, even when the events are not big enough to be deemed a MED, will impact on the ability of EDBs to meet their quality standards, in aggregate. As climate change causes the number of events to increase, it will become increasingly important for the impact of the changing weather patterns to be considered.

E394 In its submission on our draft decision, Vector requested we "adjust the approach to normalisation to ensure outages attributable to the 'tail' of major events are normalised."¹⁶⁸ This 'tail' comprises the residual impact of extreme weather events that result in higher outages and longer restoration times; for example: due to access issues (damage or emergency service requests) and the compounding effects of multiple severe weather events resulting in ground saturation and instability.

¹⁶⁵ [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 17; [Orion New Zealand Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 16; [Powerco "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 24; [The Lines Company Ltd "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 10; [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 3. [Orion "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), pp. 13-14; [Unison "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), p. 10.

¹⁶⁶ Institute of Electrical and Electronics Engineers "IEEE 1366 Guide for Electric Power Distribution Reliability Indices"(22 November 2022).

¹⁶⁷ [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), pp. 16-17.

¹⁶⁸ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 29-30.

- E395 Vector illustrated how outages outside of the major event window for the Auckland Anniversary floods and Cyclone Gabrielle can cause significant SAIDI without triggering another major event.¹⁶⁹
- E396 Vector considered that: "Failing to account for 'tail' events will result in EDBs being penalised for severe weather events that do not reflect any material deterioration of the network. This would undermine the purpose of the quality standards and could lead to perverse incentives around restoring outages."¹⁷⁰

Analysis

- E397 We undertook a review of key information the Ministry for the Environment and NIWA have made available with regards to the impact of climate change on future weather events in New Zealand.^{171, 172}
- E398 While NIWA has indicated that climate change will have an aggravating impact on the extreme wind speeds, it noted that this effect will not be uniform across different parts of the country.
- E399 The Ministry for the Environment, in mid-2024, released its updated climate change projections, highlighting that change in high wind speed frequency will not be observed uniformly across the country (with much of the North Island projected to experience fewer windy days and most of the South Island to experience more windy days per year on average by 2090).¹⁷³
- E400 Given the projected scale of change in windy day frequency being relatively small, in comparison to the timeframe up to 2090, we believe that it is inappropriate to make amendments to our MED framework on that basis.
- E401 We also believe that the geographical non-uniformity of the change in windy day frequency renders a blanket policy change inappropriate, given that the change would affect all non-exempt EDB's across the country.
- E402 NIWA also acknowledged that more analysis is needed to determine the extent to which climate change will affect the frequency and severity of storms.

¹⁶⁹ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 30, para. 154.

¹⁷⁰ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 29-30.

¹⁷¹ [NIWA "Climate change scenarios for New Zealand"](#).

¹⁷² [Ministry for the Environment "Aotearoa New Zealand climate projections"](#).

¹⁷³ [Ministry for the Environment "Aotearoa New Zealand climate projections"](#).

E403 The statistical expectation of 2.3 MEDs per year was published by the IEEE in 2012. The IEEE published an updated study in 2022. In the updated study, the IEEE reaffirmed the preference of its 2012 methodology and addressed the concern regarding an increased frequency of major events:

The β multiplier of 2.5 was chosen because, in theory, it would classify 2.3 days per year as major events. If significantly more days than this are identified, they represent events that have occurred outside the random process that is assumed to control distribution system reliability. The process and the multiplier value were evaluated by a number of utilities with different sized systems from different parts of the United States and found to correlate reasonably well to current major event identification results for those utilities. A number of alternative approaches were considered. None was found to be clearly superior to the 2.5β method.¹⁷⁴

As companies have used this method, a certain number of them have experienced large-scale events (such as hurricanes or ice storms) that result in unusually sizable daily SAIDI values. The events that give rise to these particular days, considered “catastrophic events”, have a low probability of occurring. However, the extremely large daily SAIDI values may tend to skew the distribution of performance toward the right, causing a shift of the average of the data set and an increase in its standard deviation. Large daily SAIDI values caused by catastrophic events will exist in the data set for five years and could cause a relatively minor upward shift in the resulting reliability metric trends.¹⁷⁵

E404 We agree with the preceding statement. Weather events like Cyclone Gabrielle are one-off events with a low probability of occurring; yet they push the distribution of SAIDI to the right.

While significant study was undertaken to develop objective methods for identifying and processing catastrophic events (to eliminate the noted effect on the reliability trend), the methods that were developed, in order to be universally applied, caused for many utilities, catastrophic events to occur far too often to accept as being reasonable.¹⁷⁶

¹⁷⁴ Institute of Electrical and Electronics Engineers “IEEE 1366 Guide for Electric Power Distribution Reliability Indices” 2022, p. 31.

¹⁷⁵ Ibid, p. 29.

¹⁷⁶ Ibid, p. 29.

E405 We interpret this statement as a statistical issue; the implication here is that it is nearly impossible to adjust the distribution of SAIDI to account for low-probability-severe-impact events, without (in turn) falsely ascribing a higher probability of those rare events occurring.

In addition, the elimination of catastrophic events from the calculation of major event threshold caused, in some utilities, a rather large increase of days identified as MEDs in the following five years.¹⁷⁷

It is recommended that the identification and processing of catastrophic events for reliability purposes should be determined on an individual company basis by regulators and utilities since no objective method has been devised that can be applied universally to achieve acceptable results.¹⁷⁸

E406 The IEEE considered that setting the statistical expectation of MEDs per year at 2.3 remains appropriate at present. While the updated study retains the 2.3 annual MEDs expectation, it broadly accounts for developments in climate change and other factors that may affect the frequency and severity of extreme weather events.

E407 We acknowledge Vector's point that major events may result in higher unplanned interruptions for some time after the event. There was broad support in submissions for maintaining the current normalisation approach which works on a statistical basis, and it is unclear how we could identify and normalise such interruptions in a robust way.

E408 A normalisation approach to account for a long tail would need to establish that the reason for the interruption directly related to the original major event. The existing approach does not directly tie events to establish a MED and is based on time proximity. Our understanding is the underlying reason for the interruption is not necessarily recorded in an EDB's interruption dataset. The addition of an offset for linked long-tail events would require significant judgement and complexity to the normalisation process for EDBs, auditors and the Commission.

¹⁷⁷ Ibid, p.28.

¹⁷⁸ Institute of Electrical and Electronics Engineers "IEEE 1366 Guide for Electric Power Distribution Reliability Indices" 2022, p. 29.

- E409 Given we cannot identify related events in the reference period dataset to apply this approach to the historical dataset, we consider it is appropriate to maintain consistency between the assessment period and the reference period, noting that major events with long tails may have also occurred in the reference period and resulted in a higher standard, as would be the case for Vector.
- E410 To the extent that long tails associated with major events drive non-compliance this can be accounted for in the Commission’s enforcement response to non-compliance, if required. Where an EDB breaches quality standards we consider the context and actions taken by the EDB when exercising our enforcement discretion.
- E411 We note impacts of expected volatility in underlying performance, including those attributable to climate change, are considered by multiple parts of the quality regime including the length of the reference period, MED normalisation and the setting of the boundary value for quality standard non-compliance.

Application of the expectation of 2.3 major event days

- E412 To identify the trigger for what is considered a major event, we need to establish the major event boundary value. This is based on analysis of the reference period dataset for unplanned interruptions only.
- E413 To determine the boundary value, we:
- E413.1 use the IEEE expectation of 2.3 MEDs per year as a base;
 - E413.2 multiply the 2.3 by 48 (half-hours per day) to reflect a rolling half-hourly assessment—which gives 110.4 half-hours per year; and
 - E413.3 multiply by 10 (years) to account for the length of the reference period—1104th highest half-hourly rolled 24-hour SAIDI and SAIFI over the reference period.
- E414 From a practical application perspective this means we will:
- E414.1 aggregate the raw SAIDI and SAIFI values from each unplanned interruption into half-hour blocks (rounding each interruption down to the nearest half-hour);
 - E414.2 sum 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); and

E414.3 separately identify the 1104th highest rolled half-hour values for SAIDI and SAIFI to determine the respective SAIDI and SAIFI boundary values for all EDBs.

E415 There are exceptions where there is a comparatively limited data series due to limited circuit length size. This applies for the following networks:

E415.1 Electricity Invercargill, where the 734th highest rolled 24-hour SAIDI and SAIFI values are used; and

E415.2 Nelson Electricity, where the 328th highest rolled 24-hour SAIDI and SAIFI values are used.

E416 We note these values were determined based on the EDB's circuit length size compared to 1,000km, with values pro-rated down (see *decision N4*).

Normalisation is applied on half-hour blocks, within a major event, where the SAIDI or SAIFI figure exceeds 1/48th of the boundary value

E417 To normalise the dataset over the reference period, and for each assessment period, for unplanned interruptions only, we replace each half-hour with 1/48th of the boundary value if:

E417.1 that half-hour is part of any 24-hour rolled period that exceeds the applicable SAIDI or SAIFI major event boundary value; and

E417.2 that half-hour exceeds 1/48th of the applicable SAIDI or SAIFI boundary value.

Conclusion

E418 Our final decision is to retain the normalisation approach that was used under DPP3. There was general support on this point in submissions on our draft decision.

E419 We received no quantitative evidence from EDBs that would support a statistical change. Accordingly, our final decision is to retain the IEEE statistical expectation of 2.3 MEDs per year, per the IEEE's 2022 guidance.¹⁷⁹

¹⁷⁹ We have separately considered the relevance of the application of the IEEE standard with regards to potential impacts of climate change within the section *RP4: Make no explicit step changes to reliability targets or incentives*

N3: SAIDI and SAIFI major events are triggered independently

Final decision

E420 Our final decision is that SAIDI and SAIFI major events are triggered independently.

E421 This is unchanged from our draft decision.

What we heard from stakeholders

E422 All of the submitters on this draft decision supported retaining this decision.¹⁸⁰

Analysis

E423 We consider the logic which applied in DPP2 and DPP3 for SAIDI and SAIFI major events being triggered independently still holds.

E424 Major events may affect a large number of consumers in an urban area for a relatively short period of time, therefore triggering SAIFI but not SAIDI. Alternatively, a relatively small number of consumers may be affected for a significant length of time, therefore triggering SAIDI but not SAIFI, eg, a severe storm in a less-populated area.

N4: Use a higher ranked rolling 24-hour period to identify the boundary value for small EDBs

Nature of the decision

E425 Smaller networks, all else being equal, can expect to have fewer interruptions relative to larger networks. This is because there is less equipment that can fail at any given time, and consequently less equipment at risk of experiencing a major event.

E426 We identify these small EDBs as those with networks of less than 1,000 km in circuit length and make a proportional adjustment to identify the appropriate 24-hour period.¹⁸¹

¹⁸⁰ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 17; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 46.

¹⁸¹ Under Schedule 16 of the ID determination, Circuit length means all lines and cables with the exception of services, street lighting, and private lines (and, when a pole or tower carries multiple circuits, the length of each of the circuits is to be calculated individually)".

Final decision

E427 Our final decision is to reduce the expected frequency of major events if an EDB has less than 1,000 kilometres of circuit length, thereby setting a higher boundary value for small EDBs.

E428 This is unchanged from our draft decision.

What we heard from stakeholders

E429 In submissions on our draft decision, a number of EDBs supported retaining this decision.¹⁸²

Analysis

E430 If an EDB experiences fewer interruptions than the number of major events we allow then this would result in a major event threshold of 0 for SAIDI and SAIFI, ie, every interruption would be considered a major event. We do not consider that this would incentivise reliability reflecting consumer demand, especially if we were to replace major events with a daily average (also 0).

E431 Electricity Invercargill and Nelson Electricity have significantly fewer interruptions than any other non-exempt EDB. This is largely because they are much smaller networks, with a comparatively higher level of underground cables compared to overhead lines. Consequently, without modification:

E431.1 a high proportion of the interruptions that take place would be considered a major event, and

E431.2 a significant proportion of unplanned interruptions (particularly SAIDI) would be normalised out.

E432 Our final decision reduces the expected frequency of major events if an EDB has less than 1,000 kilometres of circuit length. As outlined in Table E14, this impacts only Electricity Invercargill (665km) and Nelson Electricity (297km).

¹⁸² [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31.

Table E14 Reduced frequency of major events

EDB	2024 Circuit length (km)	Major events (compared to 23)	'Major half hours' (compared to 1104)
Electricity Invercargill	665	15.3	734
Nelson Electricity	297	6.8	328

N5: Retain additional reporting by EDBs for each unplanned major event in its compliance statement

Nature of the decision

E433 We consider that when a major event is identified, there should be full transparency as to when and why the major event happened, and the impact of normalising the major event. This is important given our final decision to replace major events with a pro-rated boundary value, rather than the full boundary value.

Final decision

E434 Our final decision is that an EDB must report for each major event in its annual compliance statement:

E434.1 the start date and time;

E434.2 the end date and time;

E434.3 the raw SAIDI and SAIFI values;

E434.4 the normalised SAIDI and SAIFI values;

E434.5 the location and equipment involved;

E434.6 the event cause and response to the event; and

E434.7 any mitigating factors that may have prevented or minimised the major event.

What we heard from stakeholders

- E435 In submissions on our draft decision, several EDBs supported our draft decision.¹⁸³ For example, Wellington Electricity considered: "The current reporting obligations are generally appropriate and reflect a summary of the analysis of major events that EDBs should already be undertaking as good industry practice."¹⁸⁴

Analysis

- E436 We consider that increased transparency of major events is helpful to mitigate against the risk that EDB may be encouraged to trigger a major event given our decision to replace major events that are identified with a lower SAIDI and/or SAIFI value. Furthermore, increased reporting will allow us and other stakeholders to better understand network performance.

Reference periods and inter-period data adjustment

- E437 Any quality standards and incentives we set need to be specific to individual suppliers.
- E438 To set reliability parameters for DPP4, we require a baseline that informs those parameters. Without reliable external evidence about consumers' preferred level of quality and without the ability to use benchmarking to identify a more 'optimal' level of reliability we use the EDBs' historical performance to provide that baseline, consistent with the principle of 'no material deterioration'.
- E439 We need to determine the reference periods for unplanned and planned interruptions, to apply to all non-exempt EDBs that will be subject to DPP4.
- E440 Given changes in EDBs operating environment, network performance and maintenance practices, the choice of reference period can have a significant impact on the parameters we set.

¹⁸³ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18. [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 17; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 46.

¹⁸⁴ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 46.

RP1: Use a 10-year reference period of 2015-2024 to inform the parameters for unplanned interruptions reliability standards and incentives

Final decision

E441 Our final decision is to use a 10-year reference period from 2015-2024 to inform the parameters for unplanned reliability standards and incentives.

E442 This is unchanged from our draft decision.

What we heard from stakeholders

E443 In response to our issues paper, where we considered alternative regulatory periods, Orion submitted: "A shorter period may risk omitting periods of frequent clustered events and not take into account differing regional patterns/timings."¹⁸⁵

E444 Flick stated: "It is well understood that network assets are aging. Quality performance is likely to deteriorate at a faster rate as assets get towards their end of life. We suggest a 10-year reference period will hide this deterioration."¹⁸⁶

E445 In response to our draft decision, several submitters supported retaining a 10-year reference period for unplanned interruptions. For example, Wellington Electricity submitted that "this provides a stable baseline of historical performance against which to measure material deterioration."¹⁸⁷

Analysis

E446 We consider that setting the reference period at ten years for unplanned interruptions is appropriate, as the period is:

E446.1 long enough to account for longer term weather cycles;

E446.2 long enough to mitigate year-on-year variation due to circumstances outside the EDBs' control;

¹⁸⁵ [Orion "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 16.

¹⁸⁶ [Flick Electric "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 2.

¹⁸⁷ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14; [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 32; [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 46.

E446.3 long enough that it better reflects the operating environment of EDBs and evens out changes; and

E446.4 best reflects the current underlying level of reliability performance, given the availability of reliable and consistent data.

Alternatives considered

E447 We considered setting reliability parameters, where EDBs would need to adjust SAIDI and SAIFI parameters each year to reflect the latest year's performance, would add a level of complexity for little added value, given the volatile nature of SAIDI and SAIFI. For this reason, we considered that fixing reliability parameters for the regulatory period using data from the most recent ten years to be a simpler approach and is more consistent with a principle of no material deterioration than a standard which frequently changes.

E448 In considering extending the reference period dataset for unplanned interruptions to cover a longer period of time, for instance 15 years, 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. We consider the 10-year period appropriately balances this trade-off.

E449 We consider the current approach for setting quality standards should detect asset deterioration, given it is an annual test compared to the 10-year reference period. We consider extending the reference period may include historical data which is not necessarily reflective of the current network and in some instances may be less reliable. A 10-year reference period will identify asset deterioration to the extent these result in increasing failures. Given standards are set with regard to the no material deterioration principle they inherently are consistent with the historical data series. We note as DPP4 progresses the reference period will progressively move to be greater than ten years old.

Conclusion

E450 Our final decision for DPP4 is to apply a 10-year reference period for establishing the unplanned interruption settings, updated for the most recent information.

RP2: Use a 7-year reference period of 2018-2024 to inform the parameters for planned interruptions reliability standards and incentives

Final decision

E451 Our final decision is to use a 7-year reference period of 2018-2024 to inform the parameters for planned interruptions reliability standards and incentives.

Approach in our draft decision

E452 Our draft decision was to apply a reference period for planned interruptions of seven years (2017 – 2023) for our draft decision, extended to eight years (2017 – 2024) for our final decision. The reference period was shorter than the unplanned interruption reference period to reflect the step change which occurred in the level of planned interruptions due to changes in operational practices.

What we heard from stakeholders

E453 In response to our draft decision, several submitters supported shortening the planned reference period. For example, ENA stated that the shorter reference period “better captures EDBs' increased use of notified planned outages to facilitate more proactive risk-based asset management practices”.¹⁸⁸

E454 Aurora, Powerco, Unison, and Wellington Electricity considered the reference period should be seven years (2018 – 2024).¹⁸⁹ Powerco stated: “The 2017 data does not accurately reflect planned interruption practices employed by EDBs, which coincides with safety led (WorkSafe) move away from live line work.”¹⁹⁰

E455 Powerco, Unison and Wellington Electricity favoured further shortening to a five-year reference period to align with the capex reference period. Powerco considered:¹⁹¹

¹⁸⁸ [Electricity Networks Aotearoa \(ENA\) “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 6 and 18

¹⁸⁹ [Aurora Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 17; [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#); [Unison Networks “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#); [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#)

¹⁹⁰ [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#);

¹⁹¹ [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 20-21, [Unison Networks “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), pp. 15-16, and [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 46.

A five-year reference period aligns it to the reference period for capex to better account for the growth in volume of planned work that is expected, in which the corresponding planned SAIDI will also follow this upward trend.

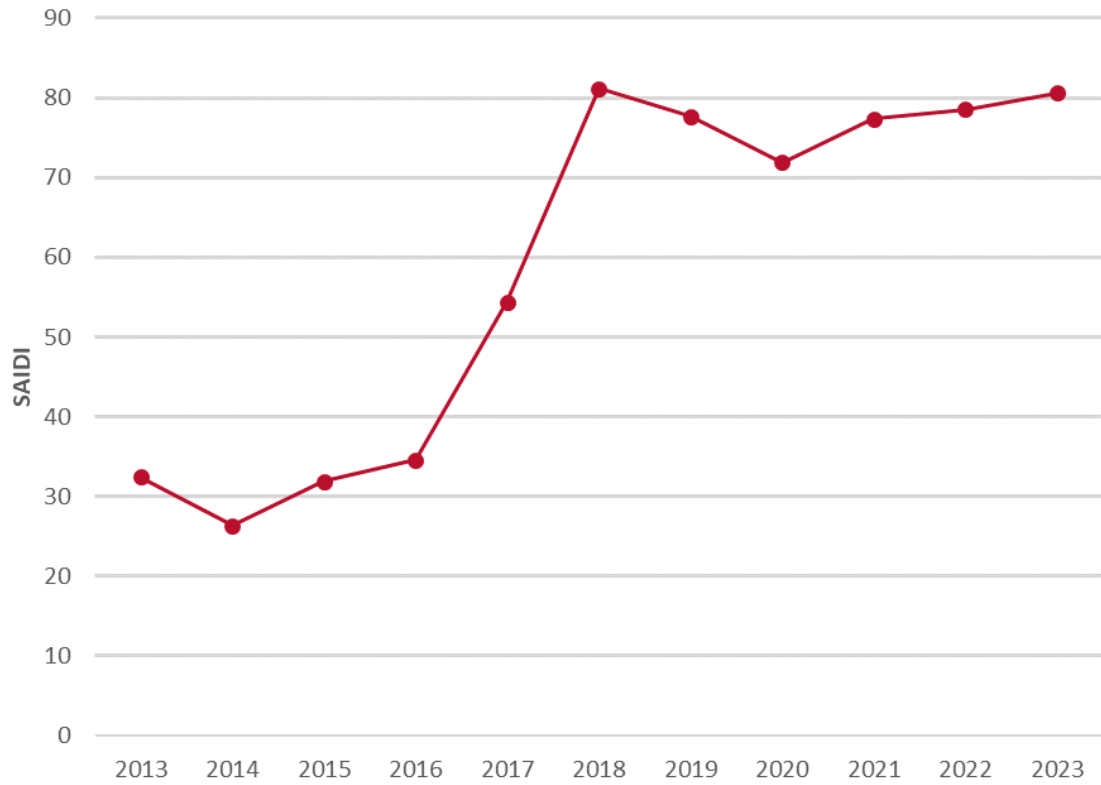
- E456 Wellington Electricity stated it “would also support reducing the period to five years in line with the [IEEE] recommended method.”¹⁹² The IEEE 1366 standard recommends a five-year window as the most relevant period for referencing future reliability performance of the network.

Analysis

- E457 The period 2017 to 2018 included a step change where planned interruptions increased significantly across nearly all non-exempt EDBs compared to previous periods (see Figures E2 and E3). This implied a shortening of the 10-year reference period is appropriate to more accurately reflect current network practices.
- E458 We agree with submitters that shortening the reference period for the final decision to seven years (2018-2024) is appropriate. It appears from our analysis that 2017 may have been a transitional year when compared to the new steady state level.
- E459 The significant increase on average in planned interruptions started occurring in DPP2 (2017–2020) before the separation of the planned and unplanned quality standard, so we do not consider there is a direct relationship between the planned interruptions settings in DPP3 and the significant increase in planned interruptions.
- E460 We have not analysed the detailed underlying datasets to understand potential drivers, as this is likely to be an extensive piece of work. We consider the changes are likely to be a combination of increased planned work programmes reflecting increased investment, associated with network renewals of assets reaching end of physical lives and changes in operational procedures (eg, live lines).

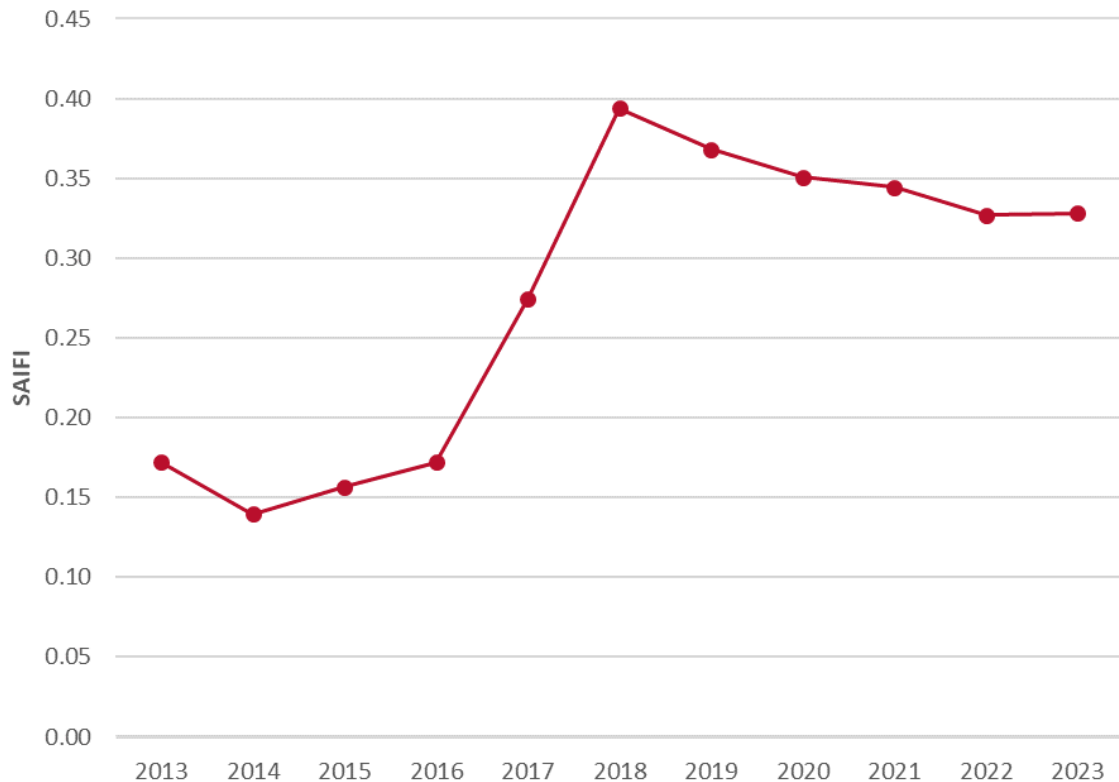
¹⁹² [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 46. At paragraph 9.4.2, Wellington Electricity refer to the “EEA recommended method” but have advised us that this was in error and the reference is to the IEEE 1366 standard.

Figure E2 Average planned SAIDI for non-exempt EDBs¹⁹³



¹⁹³ Based on Schedule 10(i) planned interruptions data required under information disclosure regulation. We note that the Information Disclosure rules have different calculations to those required under the DPP Determination, but the data represents a consistent data series.

Figure E3 Average planned SAIFI for non-exempt EDBs¹⁹⁴



E461 We consider shortening the reference period to five years to match the capex reference period is inconsistent with the no material deterioration principle, and use of a longer time period, to the extent the data is representative of achievable performance, is preferable. There is no clear logic why the reference period for setting the planned interruption standard for DPP4 should align with the reference period used for setting capex allowances, as they have inherently different considerations.

E462 We note that Wellington Electricity has stated the reference period should align with the IEEE 1366 recommended five-year period. We use the IEEE 1366 approach to apply normalisation to unplanned interruptions and consider that this approach is therefore less relevant to the cyclical nature of planned work programmes. We note submitters generally supported using the longer reference period for unplanned interruptions.

¹⁹⁴ Based on Schedule 10(i) planned interruptions data required under information disclosure regulation. We note that the Information Disclosure rules have different calculations to those required under the DPP Determination, but the data represents a consistent data series.

- E463 We also note that EDBs have stated an increased expectation of planned interruptions, which means the reference period may not be as relevant for setting the standards and targets.
- E464 Shortening the reference period results in a higher average, and therefore target and limit for most EDBs (except where the EDBs target and limit was already constrained by the inter-period cap).

Alternatives considered

- E465 We considered adjusting historical baselines to align with forecast capex increases, but do not have a robust dataset on which to determine an appropriate adjustment.

Conclusion

- E466 We consider a 7-year reference period for planned interruptions, from 2018-2024 better reflects planned interruption practices employed by EDBs, particularly the impact of changes in work practices.

RP3: Cap inter-period movement, +/-5% for the SAIDI and SAIFI unplanned targets, and the SAIDI and SAIFI unplanned limits

Nature of the decision

- E467 Aside from acceptable movements within the cap-collar range where EDBs already receive rewards and penalties, we need to consider that deteriorating performance may result in more lenient standards for the next regulatory period, and improved performance may lead to stricter standards.

Final decision

- E468 Our final decision is to retain the cap on inter-period change in unplanned interruptions and apply the cap to both the targets and limits.
- E469 This is unchanged from our draft decision.

What we heard from stakeholders

- E470 Powerco reiterated its support in response to our draft decision.¹⁹⁵

¹⁹⁵ [Powerco "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 24; [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 32.

E471 Wellington Electricity stated:¹⁹⁶

We agree with retaining a $\pm 5\%$ cap on movement in unplanned targets and limits as a means of preventing a deterioration in network performance leading to looser targets, and conversely preventing a period of better than average performance producing an unreasonably low sinking lid on the reliability limits.

Analysis

E472 We note that as five years (1 April 2014 to 31 March 2019) are common to both DPP3 and DPP4 reference periods, we have effectively allowed a maximum change of around 10% from changing the reference period.

E473 Table E15 shows the results of applying a 5% cap to unplanned SAIDI targets for DPP4. Teal cells in the table identify reductions greater than 5% from DPP3. Orange cells identify uplifts greater than 5% from DPP3.

¹⁹⁶ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 47

Table E15 DPP3 vs DPP4 5% cap applied to unplanned SAIDI targets

EDB	DPP3 SAIDI Target	DPP4 SAIDI Average Unadjusted ¹⁹⁷	DPP3 to DPP4 Movement	DPP4 SAIDI Target (capped)
Alpine Energy	91.88	81.60	-11.2%	87.29
Aurora Energy	88.08	102.96	16.9%	92.48
EA Networks	71.65	65.71	-8.3%	68.07
Electricity Invercargill	15.39	17.69	14.9%	16.16
Firstlight Network	173.85	210.34	21.0%	182.54
Horizon Energy	144.35	137.71	-4.6%	137.71
Nelson Electricity	9.53	5.48	-42.5%	9.06
Network Tasman	74.49	72.70	-2.4%	72.70
Orion NZ	66.47	43.91	-33.9%	63.14
OtagoNet	120.02	132.95	10.8%	126.02
Powerco	151.96	163.31	7.5%	159.56
The Lines Company	143.04	179.10	25.2%	150.19
Top Energy	302.16	321.29	6.3%	317.27
Unison Networks	67.81	67.28	-0.8%	67.28
Vector Lines	89.28	119.40	33.7%	93.74
Wellington Electricity	31.20	28.62	-8.3%	29.64

E474 We consider deteriorating performance should not be rewarded with relaxed standards, consistent with the no material deterioration principle.

E475 Table E16 shows the results of applying the 5% cap to determine the unplanned interruption reliability limits, which reflects that the cap will impact the setting of the limits for a number of EDBs with more recent volatility in SAIDI and SAIFI performance.

¹⁹⁷ "DPP4 SAIDI Average Unadjusted" is the normalised unplanned historical average.

Table E16 DPP3 vs DPP4 5% cap applied to unplanned SAIDI and SAIFI limits

EDB	SAIDI				SAIFI			
	DPP3 SAIDI Limit	DPP4 SAIDI Unadj ¹⁹⁸	DPP3 to DPP4 Change	DPP4 SAIDI Limit (capped)	DPP3 SAIFI Limit	DPP4 SAIFI Unadj	DPP3 to DPP4 Change	DPP4 SAIFI Limit (capped)
Alpine Energy	124.71	110.25	-11.6%	118.47	1.197	0.9409	-21.4%	1.1372
Aurora Energy	124.94	128.36	2.7%	128.36	2.071	1.9418	-6.2%	1.9675
EA Networks	91.98	83.59	-9.1%	87.38	1.282	1.2416	-3.2%	1.2416
Electricity Invercargill	25.86	30.37	17.5%	27.15	0.695	0.6302	-9.4%	0.6608
Firstlight Network	219.46	264.24	20.4%	230.43	3.152	3.3839	7.3%	3.3101
Horizon Energy	194.53	180.76	-7.1%	184.80	2.390	2.0390	-14.7%	2.2709
Nelson Electricity	19.60	14.22	-27.4%	18.62	0.427	0.2886	-32.5%	0.4063
Network Tasman	101.03	98.33	-2.7%	98.33	1.195	1.0126	-15.3%	1.1358
Orion NZ	84.71	53.32	-37.1%	80.47	1.033	0.7114	-31.2%	0.9819
OtagoNet	160.35	173.30	8.1%	168.37	2.417	2.3401	-3.2%	2.3401
Powerco	180.25	190.56	5.7%	189.27	2.268	2.0646	-9.0%	2.1550
The Lines Company	181.48	227.00	25.1%	190.55	3.271	3.2839	0.4%	3.2839
Top Energy	380.24	403.15	6.0%	399.25	5.073	4.3062	-15.1%	4.8196
Unison Networks	82.34	81.52	-1.0%	81.52	1.815	1.6900	-6.9%	1.7244
Vector Lines	104.83	138.27	31.9%	110.07	1.336	1.4449	8.1%	1.4034
Wellington Electricity	39.81	35.91	-9.8%	37.82	0.613	0.5369	-12.5%	0.5829

Conclusion

E476 Our final decision is to retain the 5% cap on inter-period movement for unplanned interruptions and apply it to both the targets and limits for unplanned reliability.

¹⁹⁸ “DPP4 SAIDI Unadj” and “DPP4 SAIFI Unadj” is the normalised unplanned historical average + 2.0 standard deviations.

E477 This setting will help to reduce the potential for significant changes in the reliability parameters without further scrutiny of whether the potential changes are consistent with consumers' long-term interests.

RP4: Make no explicit step changes to reliability targets or incentives

Nature of the decision

E478 We consider the principle of no material deterioration to continue to be the starting point for quality standards and the QIS. However, we recognise that certain factors may create a requirement to include a forecast step change to reliability parameters for quality standards and incentives when compared to the reference period, or an ability to exclude certain interruptions.

E479 For DPP4, the factors for assessing step changes in reliability are that any changes:

E479.1 be significant;

E479.2 be robustly verifiable;

E479.3 be largely outside the control of the EDB;

E479.4 in principle, affect the reliability of most, if not all, EDBs; and

E479.5 not be captured in the other components of our reliability parameters (eg, reference period, normalisation methodology).

E480 We note that where reliability step changes are specific to an EDB, they may more appropriately be the subject of a QSV reopener or, where the investment is significant, a CPP proposal.

E481 We have considered the following potential step changes elsewhere in this paper, so those are not explicitly covered in the section below:

E481.1 expectations of increases in planned interruptions where there is increasing capex spend (see decision *QIS5*); and

E481.2 change in recording approaches, including inconsistency of SAIFI outage recording (see decision *RP6*).

Final decision

E482 Our final decision is to not make explicit step changes to the interruption data series or to exclude additional causes of interruptions.

E483 This is unchanged from our draft decision.

Analysis of possible step changes

E484 In submissions on our draft decision, Alpine and Aurora supported not to make any explicit step changes in DPP4.¹⁹⁹

E485 Below, we summarise our analysis of individual step changes requested by EDBs. These would be for:

E485.1 changes in tree regulations;

E485.2 bush fire risk;

E485.3 emergency services prohibiting access to outage sites;

E485.4 climate change; and

E485.5 third party requests to reconfigure networks.

Step changes due to changes in tree regulations

What we heard from stakeholders

E486 In its submission on our draft decision, Powerco noted that MBIE's amendments to the tree regulations: "will likely necessitate increased work to ensure compliance with the new standards, impacting EDBs' planned interruptions and opex expenditures. The Commission must closely monitor these regulatory changes to ensure appropriate adjustments to EDBs' planned interruption standards and opex allowances".²⁰⁰

E487 In its submission on our issues paper, Wellington Electricity noted that if the tree regulations were to be finalised in time to include in the draft price path, then it would support a step change to reflect any quality impact. If not finalised in time, then it agreed with using a price-quality path reopener.²⁰¹

¹⁹⁹ [Alpine Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18 and [Aurora Energy "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.18.

²⁰⁰ [Powerco "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 21.

²⁰¹ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 54, para. 9.5.3.

E488 In its submission on our issues paper, The Lines Company considered that lines through forestry blocks and an increase in carbon farming blocks are major concerns and an “outside the control” issue for The Lines Company.²⁰²

Analysis

E489 Certain step changes may arise from changes in maintenance and issue resolution processes, which may result in the future context being different to the context from the reference period dataset which is used to set the standards.

E490 MBIE has made two amendments to the Electricity (Hazards from Trees) Regulations 2003 related to trees within, and encroaching on, the Growth Limit Zone (GLZ). The amendments were gazetted in September 2024 and came into force on 17 October 2024. Work is ongoing to consider submissions on proposed ‘Phase 2’ amendments to the Regulations, to better address risks posed by trees outside of the GLZ falling onto lines.

E491 We are not aware that the amendments for trees within and encroaching on the GLZ are likely to result in a significant change in likely quality standard performance. However, this may be appropriate to be considered as part of a change event reopener if the impact on EDBs is significant.

E492 We do monitor regulatory changes but are unclear what the outcome of the further proposed amendments for trees outside of the GLZ may be and the timing of when any changes might apply. We consider this is best dealt with via a price-quality path reopener, subject to the appropriate criteria being met once further clarity on the potential impact on EDBs is available.

E493 We consider the above issues raised by The Lines Company (related to lines through forestry blocks and carbon farming blocks) may be considered as part of this later series of potential reform of tree regulations, and any adjustment is better considered following that decision.

²⁰² [The Lines Company "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 11.

Conclusion

E494 We are not making an explicit step change in quality standards for changes in tree regulations, as we are not aware that the changes recently released related to trees within the GLZ are significant, nor do we have any information on what adjustment may be appropriate. We do not yet know the significance of other changes related to trees outside of the GLZ so we cannot establish the impact on EDBs or have an approach to adjusting the dataset which is verifiable.

Bush Fire risk

What we heard from stakeholders

E495 Vector's submission on our issues paper, supported by Unison in cross submissions, suggested carving out or normalising SAIDI and SAIFI minutes for bush fire risk.²⁰³

E496 In response to our draft decision, ENA and Vector, supported by Unison in cross submissions, considered there is an increased risk of bush fires due to the effect of climate change.²⁰⁴ Vector reiterated that outages that result from a direction or advice from Fire and Emergency New Zealand (FENZ) and NIWA should be excluded. It considered:²⁰⁵

Outages to reduce fire risk do not reflect any underlying network performance and are only implemented by the EDB on advice from FENZ and NIWA. Accordingly, we consider it would be appropriate to exclude these outages from the calculation of SAIDI and SAIFI. This would be consistent with the treatment of other outages not initiated by the EDB and could otherwise lead to perverse outcomes where EDBs are penalised for following direction to protect public safety.

E497 Vector supported Unison's suggested approach to implementation:²⁰⁶

"excluding interruptions in the Compliance Statement where there is an evidenced link to FENZ's high fire-risk rating during the time of the outage, procedures or an instruction – as we understand is consistent with what is proposed for INTSA projects; and/or

²⁰³ [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), pp. 3 and 41, paras 155-156; [Unison "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), p. 10.

²⁰⁴ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 14; [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31; [Unison Networks "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p.2.

²⁰⁵ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 31.

²⁰⁶ [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 18; [Vector "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), pp. 16-17.

providing a distinct class of outage to attribute to FENZ procedures or instructions and excluding that class from calculations for breach."

E498 Unison submitted that "safety first is not the outcome currently incentivised by the DPP. The risk increases as adverse weather conditions worsen that are out of EDBs' control...the existing regulation risks creating an unnecessary risk of harm (for example, incentivising EDBs not to turn off auto-reclose in high fire risk conditions which includes high wind)".²⁰⁷

E499 Vector and Orion provided feedback on how they are handling fire-risk:

"Vector has a protocol to de-energise parts of the network for public safety during periods of high fire risk. This is initiated based on advice from FENZ on fire risk and NIWA on windspeeds... Vector has not yet had to implement this protocol, so no minutes attributed to fire risk advice are included in our reference period.

We expect we will incur outages attributed to proactive shutdown for fire risk going forward given changing weather patterns. Higher average temperatures and windspeeds will result in more periods of fire risk so the likelihood of Vector (and other EDBs) incurring outages to reduce bushfire risk has greatly increased in DPP4. This risk will continue to grow as the impact of climate change continues."

²⁰⁸

E500 Orion stated that it "has implemented targeted automation of recloser settings during fire season informed by weather and fire condition information."²⁰⁹

Analysis

E501 We understand that it is good industry practice to turn off "auto-reclosers" in times where high fire risk is identified for EDBs. The reason for these turning off is to reduce the risk of a feeder fault igniting dry vegetation.

E502 We also understand that where there is an active fire, EDBs isolate power when requested by emergency services, so this does not create an additional risk for emergency service personnel.

²⁰⁷ [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 17-18.

²⁰⁸ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p.31

²⁰⁹ [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 14.

- E503 We are aware that in certain conditions, such as high winds and extreme fire risk conditions, faults on feeders may increase the risk of vegetation fires. We understand that under these conditions EDBs consider turning off feeders, interrupting supply to consumers, to reduce the fire risk to communities. This is also current practice in Australian high fire risk zones.
- E504 Current practice is to turn off “auto-reclosers” in high fire risk conditions - so we would be removing these interruptions from assessed values. We do not have robust verifiable data to reflect how much of this type of interruption is already in the reference period dataset.
- E505 Vector is correct in its representation that other interruptions requested by external parties are not included in the calculation of SAIDI, in particular: requests from the system operator, regulator, consumer or electricity retailer. However, in this instance this is not a specific request from FENZ but a FENZ setting applied against Vector’s operational framework. Were we to exclude interruptions in this case, we would in effect codify into the interruption definition Vector’s practice – which may indirectly direct industry to take this approach.

Conclusion

- E506 We are not making an explicit step change for bush fire risk.
- E507 It is not clear that bush fire risk is likely to represent a significant change between the assessed period and reference period information given our understanding that most EDBs are currently managing fire risk on the network by turning off auto-reclosers. Accordingly, we consider it is already largely captured by the reliability parameters used for setting standards.
- E508 We note the quality standard and quality incentive are relatively blunt measures and there are a number of operational procedure changes which we expect EDBs apply during a period which result in different SAIDI and SAIFI outcomes compared with historical periods.

Emergency Services prohibiting access to outage sites

What we heard from stakeholders

E509 In its submission on our issues paper, Vector considered that we should carve out or normalise SAIDI and SAIFI minutes attributable to the prohibition of access to an outage site by emergency services.²¹⁰ Unison supported this in cross submissions.

E510 In response to our draft decision, ENA stated that:²¹¹

Without change, complying with these emergency procedures and requests could result in EDBs facing sanctions under the quality standards and incentive regime. ENA recommends that the Commission exclude all interruptions that result from an EDB complying with requests and procedures issued by FENZ, or another emergency service from all DPP quality standards and incentives assessments.

Analysis

E511 While these circumstances are “largely outside the control of the EDB”, and affect most EDBs in principle, we are not making any adjustments at this time, for two reasons:

E511.1 we are not aware of any significant changes in emergency services practices that would deviate from those reflected in the current reference period, and accordingly is already captured by a component of our reliability parameters; and

E511.2 adjustment would be practically difficult, given most EDBs will not have this distinction recorded in their systems, so we would not have robustly verifiable data, making it a one-way adjustment.

E512 Our final decision is not to make adjustments for interruptions associated with emergency services preventing access to outage sites.

²¹⁰ [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), pp. 3 and 41, paras 155-156; [Unison "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), p. 10.

²¹¹ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 14.

Climate Change

What we heard from stakeholders

- E513 In submissions on our issues paper, several EDBs raised the concern that extreme weather events could increase in frequency and severity moving forward, due to the effects of climate change. This comes after a previous year of significant one-off weather events, where some EDBs were extensively affected (as reflected by their non-compliance with the unplanned interruptions reliability standards).
- E514 As such, they submitted that the unplanned interruptions reliability targets and normalisation method needed adjustment to account for this in DPP4.²¹²
- E515 Several submitters on our issues paper suggested we should look forward, rather than backward and to check advice from NIWA and other experts, including the IEEE.²¹³ Vector considered that "history will not be a good predictor in this case as climate change will result in a level of major events not seen in past years."²¹⁴

Analysis

- E516 In the sections of this attachment relating to *Normalisation* and *Reference Period*, we noted that impacts of expected volatility in underlying performance, including those attributable to climate change, are considered in multiple parts of the quality regime, including the length of the reference period, MED normalisation and the setting of the boundary value for quality standard non-compliance.
- E517 Whilst broadly the risk of climate change will be significant on EDBs, the time period under which we are likely to see significant change compared to historical averages is uncertain. We note that the IEEE did not change its statistical expectation of 2.3 MEDs per year in its 2022 reassessment.

²¹² For DPP2 and DPP3, we adapted the IEEE's methodology for normalisation. This methodology was based on the expectation of 2.3 major event days per year.

²¹³ [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 17; [Orion "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 16; [Powerco "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 24; [The Lines Company "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 10; and [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#) p. 3; [Orion "Cross-Submission on EDB DPP4 Issues paper" \(26 January 2024\)](#), pp. 13-14; [Unison "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), p. 10.

²¹⁴ [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 3.

- E518 We consider that the impacts of climate change are outside of the control of the EDBs and will affect all EDBs, though that impact is likely to be uneven based on network configuration and geographic location.
- E519 We do not have a robust approach for implementing a step change due to climate change and volatility is better accounted for within the buffer which applies for unplanned interruptions, with normalisation reducing the impact of an increased frequency of severe events.
- E520 While the effects of climate change may prove to be significant, our final decision is that no step change is applied at this time because:
- E520.1 impacts of expected volatility in underlying performance, including those attributable to climate change, are considered by multiple parts of the quality regime;
 - E520.2 climate change risk assessment and management is an evolving space. The material impact of climate change as compared to the recent historical average, in the forthcoming DPP4 period, is uncertain. Noting that as the historical reference period has been rolled forward for this reset, the upcoming five-year assessment period will be compared directly against recent years up to and including 2024;
 - E520.3 the IEEE considered the effects of climate change, yet in 2022 maintained the expectation of 2.3 MEDs per year;
 - E520.4 the impact of climate change on EDBs will be uneven based on network configuration (ie, underground vs overground) and geographic location - so making a robustly verifiable adjustment would be difficult; and
 - E520.5 the buffer mechanism and normalisation of MEDs both provide protection against the inherent volatility presented by weather.

Third party requests to reconfigure networks

What we heard from stakeholders

- E521 Vector requested that all interruptions that occur solely due to network configuration changes implemented in response to a third-party request should be excluded from the reference period dataset.²¹⁵

²¹⁵ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 31, 42-43.

We have experienced outages where third parties (for example, Transpower) have asked us to reconfigure our network in certain ways to enable them to carry out maintenance. These configurations have left the network more vulnerable (for example, due to reduced security) leading to outages... Currently, EDBs face the risk for network configurations requested by third parties. This could lead to perverse incentives, as EDBs could be disincentivised from co-operating with third parties on maintenance.

Analysis

E522 If we were to make a change to exclude this, we would want to make sure that we:

E522.1 were only excluding something which we did not think was included in the reference period, otherwise it is a one-sided offset (not captured in the other components of our reliability parameters criteria);

E522.2 were excluding based on something definitive externally (robustly verifiable criteria); and

E522.3 have a view as to the potential materiality (significance criteria).

E523 It is not clear that this is likely to represent a material change between the assessed period and reference period information. If we do not expect a change compared to the historical reference period, then there is no need to exclude this type of interruption from the dataset.

E524 We note the compliance burden in making such an adjustment, as well as the inherent complexity in defining and applying such an exclusion given this is not a request for an interruption, but the need to draw a causal link between the asset failure and network configuration combined indicating this does not represent network deterioration.

E525 Given the relatively high-level and aggregate nature of the quality regime, and the fact this risk could at least in part be mitigated by EDB engagement on network configuration and timing, we have not adjusted for this factor.

Conclusion

E526 Our final decision is to not make explicit step changes to the interruption dataset, following our analysis on each of the possible step changes and response to submissions.

RP5: Make no explicit adjustments for instances of non-compliance contained in the unplanned interruptions reference period dataset

Final decision

E527 Our final decision is to make no explicit adjustments for instances of non-compliance contained in the unplanned interruptions reference period dataset.

E528 This is unchanged from our draft decision.

What we heard from stakeholders

E529 Alpine, Horizon, Powerco and Wellington Electricity supported this draft decision.²¹⁶ Wellington Electricity considered, consistent with our view:

The interlinked nature of the limits and major event normalisation methodology would make the adjustment of the dataset unnecessarily complex, compared to the alternative of relying on the averaging of 10 years of data to balance out the impact of the non-compliance, with the 10% [sic] inter-period cap kicking in as a last resort. Excluding years of poor performance from the dataset would be likely to lower the boundary values as well as the limit, resulting in a greater than expected number of days being normalised in future, which could mask a deterioration in performance.

Analysis

E530 We note there are instances of non-compliance contained in the unplanned interruption reference period dataset.

E531 We consider that the 5% cap, which applies to both the unplanned interruptions reliability targets and limits, appropriately addresses the unintended consequences that deteriorating performance results in more lenient standards for the next regulatory period. This is consistent with the ‘no material deterioration’ principle.

E532 We considered an alternative approach of removing specific years from the reference period but note this was not appropriate as DPP2 applied a two-out-of-three-year rule, with an associated lower standard deviation (1.0) and a different normalisation approach for MEDs.

²¹⁶ [Alpine Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\), p.18](#); [Horizon Networks “Submission on EDB DPP4 draft decisions” \(12 July 2024\), p.15](#); [Powerco “Submission on EDB DPP4 draft decisions” \(12 July 2024\), p. 32](#) and [Wellington Electricity “Submission on EDB DPP4 draft decisions” \(12 July 2024\), p. 47](#).

RP6: EDBs must record successive interruptions on the same basis they employ in responding to the s 53ZD notice.

Nature of the decision

- E533 A successive interruption means an interruption that follows an initial interruption that either:
- E533.1 relates directly to that initial interruption; or
 - E533.2 occurs as part of the process of restoring supply of electricity lines services following that initial interruption.²¹⁷
- E534 In setting DPP3 we identified that EDBs were applying different recording practices to successive interruptions, which resulted in different SAIFI values.
- E535 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. Other EDBs were only recognising successive interruptions after they completed certain operational practices. We refer to these practices as an ‘aggregation’ approach.
- E536 A ‘multi-count’ approach involves recording all successive interruptions as an additional SAIFI value if restoration of supply occurs for a certain period of time (for example, one minute).
- E537 EDBs are required to disclose SAIDI and SAIFI values using the multi-count approach in their information disclosures for the first time in 2024. EDBs that did not previously use the multi-count approach are required to disclose additional values using their “transitional” approach for 2024 to 2026 regulatory years.²¹⁸
- E538 As part of the DPP4 final decision we need to establish the basis (or bases) acceptable for EDBs to recognise successive interruptions in their calculation of SAIDI and SAIFI values.

²¹⁷ Clause 4.2 of the DPP determination.

²¹⁸ [Commerce Commission “Targeted Information Disclosure Review – Electricity Distribution Businesses – Final decision paper – Tranche 1” \(25 November 2022\)](#), pp. 25, 69-75.

Final decision

E539 EDBs must record successive interruptions using the approach they applied for the third assessment period of DPP3, as represented in the data provided to us in response to our 3 July 2024 s 53ZD notice.

What we heard from stakeholders

E540 Submissions on our issues paper highlighted the different approaches EDBs were following and challenges in moving EDBs to a consistent approach. Submissions also engaged with an alternative approach we proposed of using a proxy to approximate the impact of changing from an 'aggregation approach' to a 'multi-count' approach. For example:

E540.1 Unison noted that a consistent approach to reporting multi-count data will require system changes and EDBs need adequate understanding of the approach to build that reporting capability;²¹⁹

E540.2 some submissions, including ENA's, considered some EDBs would not have or be able to approximate a robust multi-count dataset to inform DPP4 given that for some, the adoption of the multicount approach occurred in 2023;²²⁰

E540.3 Wellington Electricity stated it would not support using a proxy dataset to move to a multi-count method, noting that approximating historical data would further degrade the operating of the quality standards by adding forecast risks into the quality targets;²²¹ and

E540.4 a number of EDBs suggested each EDB be able to take a different approach to their recording of successive interruptions.²²² Wellington Electricity disagreed with the need for a consistent approach to measuring SAIFI as it considered comparison across different networks to be meaningless, given other factors like network density, asset age, and network design, drive the majority of differences in SAIDI/SAIFI measures.²²³

²¹⁹ [Unison Networks "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 19.

²²⁰ [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#), p.16.

²²¹ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 53, section 9.5.2.

²²² [Submissions](#) by Wellington Electricity, ENA and Horizon on Commerce Commission "DPP4 Issues paper" (19 December 2023).

²²³ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 53, section 9.5.2.

E541 Submissions on our draft decision gave support for EDBs to continue recording successive interruptions on a basis consistent with the way they have historically been recorded. For example, ENA considered this approach would ensure comparability of EDB performance throughout time.²²⁴

E542 Wellington Electricity considered that:²²⁵

As is highlighted in the Draft Decision, we think the best solution is to allow EDBs to choose which method best incentivises the level of quality that customers on their networks want. On the Wellington network that is to record successive outages as a single outage as it incentivises restoring power as quickly as possible by sectionalising the network following a fault.

E543 There was comparatively little engagement and mixed views on the use of a proxy adjustment. For example:

E543.1 Wellington Electricity considered: "Since EDB SAIFI quality paths are set based on the EDBs own historical performance, with no reference to the performance of other EDBs, there is no benefit in manipulating the historical dataset to align the approach between EDBs.";²²⁶

E543.2 Vector was neutral on the method adopted;²²⁷ and

E543.3 The Lines Company considered that EDBs could move to a multi-count approach with an appropriate adjustment to SAIFI limits.²²⁸

Analysis

E544 EDBs have historically employed different approaches in calculating SAIFI values, with a number of EDBs applying an aggregate count approach rather than multi-count.

E545 Engagement with EDBs during the DPP4 process has identified the inability of EDBs to adjust the historical data series to apply a consistent approach across all EDBs, ie, some EDBs have indicated they are unable to back-cast information to establish what SAIFI values would have been reported for the 10-year reference period under a multi-count approach.

²²⁴ [Electricity Networks Aotearoa \(ENA\) "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 24.

²²⁵ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 47.

²²⁶ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 47.

²²⁷ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 45.

²²⁸ [The Lines Company \(TLC\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 3.

- E546 Allowing EDBs to retain different approaches to calculate SAIFI maintains internal consistency of assessment. Whilst SAIFI values are determined on a different basis across EDBs and therefore are not directly comparable, they are consistent across an EDB's reference period and therefore are better indicators of whether there is a material deterioration in performance.
- E547 As Wellington Electricity identified, there are a number of other factors that drive different SAIFI outcomes across EDBs – network configuration, topography, etc so standardisation is of limited value.
- E548 In our draft decision we indicated that we would consider whether a proxy adjustment could be made to uplift the aggregate approach value to an approximate multi-count value. This would allow all reporting to be against a multi-count value and remove the requirement for EDBs to maintain multiple recording practices until all ID requirements have transitioned to a multi-count basis in 2027.
- E549 Our analysis shows that we do not have a robust basis for applying a proxy adjustment.
- E550 In Table E17, we compare 2024 aggregate and multi-count SAIFI for EDBs currently using the aggregate approach. Our analysis, based on non-normalised s 53ZD data, shows that there is wide variation in the reported impact of changing to the multi-count approach, with a range of -4% to 32% across planned and unplanned.

Table E17 Comparison of 2024 SAIFI using aggregate vs multi-count approaches²²⁹

EDB	Aggregate		Multi-count		Change		% Change	
	Planned	Un-planned	Planned	Un-planned	Planned	Un-planned	Planned	Un-planned
EA Networks	0.405	1.113	0.405	1.166	0.000	0.053	0%	5%
Electricity Invercargill	0.089	0.297	0.093	0.328	0.004	0.031	5%	10%
Firstlight Network	0.511	3.432	0.511	3.827	0.000	0.394	0%	11%
Horizon Energy	1.214	2.125	1.167	2.327	-0.047	0.202	-4%	10%
Network Tasman	0.302	1.236	0.306	1.528	0.004	0.292	1%	24%
OtagoNet	1.117	1.972	1.117	2.343	0.000	0.371	0%	19%
The Lines Company	0.509	2.154	0.515	2.294	0.007	0.140	1%	6%
Top Energy	1.174	3.301	1.290	4.374	0.116	1.073	10%	32%
Unison Networks	0.595	1.534	0.689	1.811	0.094	0.278	16%	18%
Vector Lines	0.298	1.174	0.315	1.305	0.017	0.131	6%	11%
Wellington Electricity	0.405	1.113	0.405	1.166	0.000	0.053	0%	5%

E551 There is significant variation across EDBs, and we do not know whether the variation would be relatively consistent across years, so we are unable to determine an appropriate proxy.

E552 Not applying a proxy means EDBs will need to maintain both recording practices through to the end of DPP4, where they are not currently applying a multi-count approach.

²²⁹ Analysis is limited to a subset of EDBs. Under the s 53ZD notice issued 3 July 2024, non-exempt EDBs that did not apply the multi-count approach for DPP compliance as at 31 March 2023 were required to provide datasets under both aggregate and multi-count bases for the 2024 assessment period.

Other considerations

- E553 We consider it is important that EDBs maintain a consistent approach to recording successive interruptions. While different EDBs may employ their own practices, by ensuring that each EDB maintains a consistent approach over time we can set standards and assess their reliability consistently. This upholds the principle of no material deterioration, which underpins our quality regime.
- E554 We acknowledge that our decision to retain the approach used in the third DPP3 assessment will require some EDBs to maintain two recording practices at greater cost. However, this approach aligns with EDB preferences, and they will have already established systems for recording using multiple approaches to align with the ID requirements.
- E555 We considered allowing EDBs to “opt-in” to change to the multi-count approach, which would address the issue of duplicate recording systems. However, we considered this would add complexity when EDBs had not requested this option and therefore may not opt-in.

Conclusion

- E556 Our final decision is to maintain the current approach under DPP3. EDBs must record successive interruptions using the approach they applied for the third assessment period of DPP3 as represented in the data provided to us in response to our 3 July 2024 s 53ZD notice.

RP7: Interruptions directly associated with approved INTSA projects or programmes are excluded from assessed SAIDI and SAIFI up to an aggregate cap of 1% of the respective SAIDI and SAIFI limits

Nature of the decision

- E557 We consider that a limited exclusion of interruptions from the quality standards and QIS to account for non-performance of innovative solutions will help to address concerns that the quality standards and incentives may discourage innovation.

Final decision

- E558 Our final decision is to exclude outages directly associated with approved Innovation and non-traditional solutions allowance (INTSA) projects or programmes from the calculation of SAIDI and SAIFI assessed values, up to an aggregate cap of 1% of the respective SAIDI and SAIFI limits, with the cap applying before normalisation is applied for unplanned interruptions.

E559 We have increased the cap from our draft decision to 1% from 0.5% of the respective SAIDI and SAIFI limits.

What we heard from stakeholders

E560 Submissions and cross submissions on our issues paper supported removing barriers to innovation and provided their views on how to adjust for the non-performance of non-traditional and innovative solutions, including further exclusions from the definition of an “interruption”.²³⁰

E561 In coming to our draft decision, we considered submitters' views, including that:²³¹

E561.1 we revisit the IM decision to not introduce regulatory sandboxing;

E561.2 we introduce a new outage category for non-network solutions that is excluded from quality compliance assessments and the QIS; and

E561.3 any adjustments should be temporary and linked to specific trial activities.

E562 EDBs considered that exclusions should include interruptions relating to investment in energy efficiency and demand side management, eg, flexibility, DER and virtual power plant technologies.^{232, 233} Vector, supported by Unison in cross submissions, considered that this should include when a network operator has issued a dynamic operating envelope (DOE) and third parties have failed to comply.

E563 In submissions on our draft decision, there was broad support to exclude INTSA approved projects or programmes from assessed SAIDI and SAIFI. However, some submitters expressed concerns with its application.

E564 Alpine, Aurora and the Energy Efficiency and Conservation Authority (EECA) supported our draft decision.²³⁴

²³⁰ [Commerce Commission “Electricity Distribution Services Default Price-Quality Path Determination 2020 \[2019\] NZCC 21” \(27 November 2019\)](#), defines the term ‘interruption’ under clause 4.2.

²³¹ For a more detailed analysis of the draft decision RP7, see [Commerce Commission “Default price-quality paths for electricity distribution businesses from 1 April 2025 – Draft Reasons paper” \(29 May 2024\)](#), pp. 394-401.

²³² [Unison Networks “DPP4 Issues paper submission” \(19 December 2023\)](#), p. 22.

²³³ [SolarZero “DPP4 Issues paper submission” \(15 December 2023\)](#), p. 9.

²³⁴ [Alpine Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 18; [Aurora Energy “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 18 and [EECA “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#), p. 5.

E565 ENA, Unison and Vector all considered the cap should be removed, ie, these interruptions should be excluded entirely.²³⁵ In its cross submission, The Big Six EDBs supported carving out, rather than capping, SAIDI and SAIFI for INTSA projects.²³⁶

E565.1 Unison submitted:²³⁷

The purpose of INTSA is to promote investment in innovation and efficiency, including energy efficiency and demand side management (under s 54Q). A 0.5% exclusion on SAIDI and SAIFI is insufficient and will create a disincentive to invest in technology that comes with risk...

A minimal 0.5% cap could lead to approved funding but a very likely adverse quality impact (potentially breach) which may undermine the incentive to invest.

E566 Wellington Electricity submitted that the cap is too low and should be determined as part of the INTSA application.²³⁸

... the cap of 0.5% of the limits is too low (e.g. less than 0.19 unplanned SAIDI minutes for Wellington Electricity) to be significant in providing EDBs assurance that their participation in innovation projects will not lead to an adverse quality path outcome. We prefer an alternative approach of the SAIDI and SAIFI risk being assessed as part of the INTSA application process and, on that basis, approving caps that reflect the scope of the project and the risk it carries.

E567 Powerco and Orion cross-submitted in support of removing the cap entirely. However, they supported Wellington Electricity's alternative approach if there was to be a cap imposed.²³⁹ For example, Powerco stated:

Several EDBs have requested the removal of the 0.5% cap, arguing that it is too low and works against incentivising innovative and non-traditional solutions. We agree with this view. We support carving out rather than capping SAIDI/SAIFI for INTSA projects. However, if the Commission opts to implement a cap, we recommend adopting Wellington Electricity's proposal. This approach involves setting an appropriate cap for each project by evaluating the associated SAIDI and SAIFI risk during the INTSA application process.

²³⁵ [Electricity Networks Aotearoa \(ENA\) "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 14](#); [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 19](#); [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\), pp. 27, 42 and 45](#)

²³⁶ [Big Six EDBs - Cross-submission on EDB DPP4 draft decisions \(2 August 2024\), p. 4.](#)

²³⁷ [Unison Networks "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 19.](#)

²³⁸ [Wellington Electricity "Submission on EDB DPP4 draft decisions" \(12 July 2024\), p. 48.](#)

²³⁹ [Powerco "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\), p 3](#) and [Orion "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\), p. 11.](#)

E568 In addition, Orion sought clarity on application where it considered the draft reasons document to be unclear:²⁴⁰

E568.1 it considered that exclusion of the interruptions associated with an approved INTSA project should be optional, rather than compulsory, and that it is "most appropriate for EDBs to have choice over whether to seek an exclusion or not".

There may be some projects where EDBs consider that it is preferable not to seek an exclusion to the SAIDI and SAIFI limits. For example, this could include projects where it is difficult to identify which interruptions are related to an approved INTSA project, or where the likely impact on the SAIDI and SAIFI limits are expected to be minor...In fact, requiring EDBs to identify the interruptions associated with an INTSA project may actually discourage EDBs from undertaking the project if, for example, recording the interruptions associated the project was costly and/or complex.

E568.2 Orion submitted that "all affected ICPs should be able to be excluded, regardless of whether they are directly participating in the INTSA projects or not."

E569 Submitting on the broadening of the application to all flexibility service providers and not just INTSA projects, Vector stated:²⁴¹

... it is our view that SAIDI and SAIFI related to flexibility service providers should be entirely carved out, rather than capped. This would otherwise this could act as a disincentive to engage with third parties on innovative projects and services.

E570 Vector reiterated from its submission on our that there should be a carve out where a third party fails to comply with a DOE. This was supported by Unison in its cross submission.²⁴² Vector stated:²⁴³

The Commission states that it has not created a specific carve-out where a third-party fails to comply with a DOE as they consider this should be able to be accommodated within contractual terms. We believe that the regulatory regime should provide safeguards that encourages innovation, as it is unrealistic in developing markets to expect contractual terms to provide all of those safeguards. For example, the potential costs to an EDB of breaching quality standards is very high. If these potential liabilities are part of contractual terms for third parties

²⁴⁰ [Orion "Submission on EDB DPP4 draft decisions" \(11 July 2024\)](#), p. 18.

²⁴¹ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), pp. 27, 42 and 45

²⁴² [Vector "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 22; [Unison "Cross-submission on DPP4 Issues paper" \(26 January 2024\)](#), p. 10.

²⁴³ [Vector "Submission on EDB DPP4 draft decisions" \(12 July 2024\)](#), p. 27.

providing innovative solutions, then we can see these terms detracting from a provider providing such solutions.

E571 In its submission on our draft decision, SolarZero considered that the benefit of DER should be recognised for its role in keeping the power on:²⁴⁴

New technologies such as solar and batteries provide a new approach to resilience, as SolarZero proved during Cyclone Gabrielle. INTSA should be used to provide funding for EDB to identify new ways to increase resilience via the deployment of distributed energy resources. SAIDI and SAIFI need to be changed to recognise the benefits of distributed energy resources in “keeping the lights on.

E572 In its cross submission, Powerco noted the relevance of SolarZero’s submission but reflected implementation challenges on how this would be practically achieved would need to be further considered.²⁴⁵ Unison also supported SolarZero’s submission.²⁴⁶

Analysis

E573 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.

E574 We understand that non-exempt EDBs have concerns regarding less proven solutions including:

E574.1 an external flexibility solution provider may not deliver a contracted service;

E574.2 an internal non-network solution may not respond in an anticipated way; and

E574.3 operational difficulties may arise with implementation of non-network solutions in practice, eg, a system established to recognise where the DER are established but the system fails to identify or forecast that it is required.

²⁴⁴ [SolarZero “Submission on EDB DPP4 draft decisions” \(12 July 2024\)](#) , p. 3.

²⁴⁵ [Powerco “Cross-submission on EDB DPP4 draft decisions” \(2 August 2024\)](#), p. 3.

²⁴⁶ [Unison Networks “Cross-submission on EDB DPP4 draft decisions” \(2 August 2024\)](#), p. 4.

- E575 In the absence of an adjustment, 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.
- E576 We do not consider that excluding all interruptions associated with flexibility service providers would be appropriate. We consider that non-performance of non-network solutions should be part of normal contractual agreements. Accordingly, we would expect that risks may be allocated to the external provider where they are better placed to manage those risks. EDBs should also be reasonably aware of expected performance and taking appropriate decisions between poles and wires where they do not have confidence in solution performance.
- E577 We note that carving out non-performance of flexibility solutions from assessment may not be a desirable approach in the long-term. We expect an increase in prevalence of these activities meaning in the future a lot of interruptions could be excluded.
- E578 Wellington Electricity had earlier not supported permanently expanding the definition of an interruption to exclude interruptions relating to the non-performance of flexibility services, ie, a carve out.²⁴⁷ It stated:
- We believe that interruptions caused by the non-delivery of flexibility services should be excluded from the quality measures while flexibility services are being developed. We believe this should only be a temporary adjustment to support the development process
- E579 We consider that accommodating a carve-out from the quality standard and QIS is appropriate where it is related to something more genuinely innovative than BAU processes. We have implemented this by linking the carve-out mechanism to approved INTSA decisions subject to a cap of 1% of the SAIDI or SAIFI limit.
- E580 We do not consider that full removal of SAIDI and SAIFI associated with INTSA projects would be appropriate, as it would remove the incentive to appropriately manage outage risk associated with these projects.

²⁴⁷ [Wellington Electricity "DPP4 Issues paper submission" \(19 December 2023\)](#), p. 54, section 9.5.5.

- E581 We consider setting a cap or limit in advance is preferable to a process which provides for ex post approval for excluding interruptions during the regulatory period. Ex post approval would not necessarily reduce the perceived risk by EDBs and would increase the regulatory burden on both EDBs and the Commission.
- E582 Setting the cap in advance means that regardless of the number of INTSA approved projects, an EDB will have a set limit on the extent of interruptions it is able to exclude, and the value is not directly linked to the nature of the INTSA project.
- E583 We have previously considered Wellington Electricity's alternative approach where each INTSA approved project has a specific carve-out associated with it, which is established at the time of application.
- E584 This approach would more directly link the exclusion to the size and associated risks related to the INTSA project and mean the INTSA carve-out is not directly linked to an EDB's past performance, which is quite variable across EDBs. It would also mean a specific cap on SAIDI and SAIFI values which are able to be excluded would not be required to be set in advance of assessing the individual projects.
- E585 However, our view is this approach, unlike where a quality standard exclusion that is set in advance, would be more akin to a re-opening of the quality standard without having a specific legislative mechanism under which that is undertaken, ie, reconsideration provisions in the IMs. We are able to adjust quality standards and the QIS in response to a reopener, but this is limited by the provisions under which this can be undertaken in the IMs, the same does not exist for INTSA applications.
- E586 It is not necessarily in consumers interests to have significant flexibility in the extent of interruptions which may be excluded under quality standards and the QIS in relation to an INTSA application. Having flexibility may require increased consultation with stakeholders on the acceptable impact of INTSA carve-outs provided for. The likely approach to restrict this potential subjectivity, increased consultation requirements and increased cost would be to apply a cap. Accordingly, it is not clear this approach would actually be beneficial for EDBs.
- E587 We intend to set the INTSA exclusion cap in advance and in aggregate, we consider:
- E587.1 this should result in lower transaction costs for EDBs and the Commission in engaging on a reasonable limit of exclusions for each INTSA application. In practice it may be challenging for an EDB to scope what a reasonable cap for disruptions may be, and for the Commission to assess the reasonableness of what is submitted;

- E587.2 it may encourage uptake of the INTSA mechanism as EDBs will have increased certainty on the outcome of an approved application;
- E587.3 setting the cap in advance establishes the size of potential exclusions and allows greater stakeholder engagement;
- E587.4 it will make the INTSA more simple, user-friendly, and practical for EDBs and us to implement; and
- E587.5 this approach is more consistent with a relatively low-cost DPP.

E588 Whilst we have not set specific project level exclusions, we will require information as part of an INTSA application which sets out potential quality risks associated with the project. This will ensure that EDBs have given adequate thought to the potential risks to consumers of the project. These requirements are set out in the *INTSA characteristics* section in **Attachment D**.

Setting the value of the cap

- E589 For our draft decision we set the exclusion cap to 0.5% of the SAIDI and SAIFI limit with the cap applying before normalisation is applied for unplanned interruptions. Without knowledge of the types of INTSA applications we may receive, we did not try to estimate a value but set the value with reference to the fact the INTSA was capped at 0.6% of maximum allowable revenue (MAR) in our draft decision.
- E590 For the final decision, the INTSA cap has been increased to 0.8% of MAR. We have considered EDBs' feedback and increased the exclusion cap for quality to 1% of the SAIDI and SAIFI limits to encourage innovation in a way that limits impact on the operation of the standards or incentives scheme.
- E591 Given the current SAIDI and SAIFI limits already include buffer amounts from the historical average, this approach is more generous than if the exclusion cap were to be set based on the SAIDI and SAIFI target. We note that the exclusion cap is applied pre-normalisation due to the complexity involved in removing interruptions associated with INTSA projects or programmes from a normalised dataset.

Identifying SAIDI and SAIFI value to be excluded

- E592 Our approach is to include additional terms "SAIDI INTSA value" and "SAIFI INTSA value" which reflect values which are removed in the calculation of compliance with the quality standard and in determining QIS values.

- E593 Whilst the existing definition of interruption already has a number of exclusions, we consider it more appropriate to specifically include exclusions in the assessment of quality standard compliance and quality incentive values.
- E594 This approach means EDBs will continue to record interruptions and will provide better visibility on the scale of interruptions being removed in assessment calculations.
- E595 We have included requirements for reporting in an EDB's compliance statement information outlining interruptions excluded as SAIDI INTSA value or SAIFI INTSA value. In particular:
- E595.1 the SAIDI value of planned interruptions excluded;
 - E595.2 the SAIDI value of unplanned interruptions excluded;
 - E595.3 the SAIFI value of planned interruptions excluded; and
 - E595.4 the SAIFI value of unplanned interruptions excluded.
- E596 We have not introduced any requirement to evidence why interruptions have been assessed as being directly associated with the INTSA project in the compliance statement. Our view is this may significantly increase the compliance burden where some interruptions may have quite minimal SAIDI or SAIFI impact. However, we note that this will need to be considered as part of the audit process.
- E597 Whilst not requiring disclosures by default as with any other outage amount, we will have the ability to check and challenge the validity of the reported quantum if we have concerns. The burden of proof will be on the EDB to support how the outage minutes they have excluded are directly associated with that project.
- E598 In response to Orion's submission, we note that exclusion of the interruptions associated with an approved INTSA project is optional and not compulsory. EDBs can choose whether they want to establish the required process which would link the interruption with the INTSA project.
- E599 The SAIDI value to be excluded is based on whether the cause of the interruption is directly associated with an INTSA project or programme. This means there may be instances where SAIDI values are removed not only for ICPs directly involved in the project, but other ICPs which are directly impacted by interruptions associated with the project.

- E600 As part of INTSA project close-out reporting, EDBs will be required to outline:
- E600.1 any SAIDI INTSA values and SAIFI INTSA values excluded relating to the project or programme;
 - E600.2 the cause or causes of the interruptions for any SAIDI INTSA values and SAIFI INTSA values excluded relating to the project or programme; and
 - E600.3 any steps that the non-exempt EDB took to reduce the likelihood or impact on consumers of the interruptions under subparagraph.

Accounting for distributed energy resources

- E601 SolarZero submitted in response to our draft decision that:²⁴⁸

SAIDI and SAIFI need to be changed to reflect the benefits of distributed generation. For example, if a lines company works with a community and a provider such as SolarZero to install solar and batteries for resilience when the network fails and the lights stay on in that community the SAIDI and SAIFI figures should be adjusted to reflect the benefits to households and businesses of the installed generation

- E602 Powerco acknowledged this point in its cross submission but noted the potential complexity with implementing such an approach: ²⁴⁹

SolarZero's submission suggests that EDBs' SAIDI and SAIFI figures should be adjusted for installed distributed generation, which can maintain electricity supply for households and businesses during network failures. We support this concept and would happily collaborate with SolarZero to determine the necessary reporting adjustments. For example, EDBs will require data from providers like SolarZero, such as the duration of the supply provided by the distributed generation. Additionally, EDBs must develop a method to incorporate this data into their SAIDI and SAIFI calculations. This adjustment might be more efficiently handled at an aggregate SAIDI SAIFI level for the entire network, rather than on an individual interruption basis.

²⁴⁸ [Powerco "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 3.

²⁴⁹ [Powerco "Cross-submission on EDB DPP4 draft decisions" \(2 August 2024\)](#), p. 3.

E603 We have not amended the calculation of SAIDI and SAIFI assessed values to account for distributed generation given the limited information available, increased compliance costs and complexity involved in application. We consider at this time the associated cost with excluding these interruptions may not be consistent with a relatively low-cost regime and may not provide appropriate incentives for an EDB to appropriately maintain its network. Further consideration may be better undertaken in future resets when there is greater visibility of LV networks and of the operation of DER services.

Third party failure to comply with a dynamic operating envelope (DOE)

E604 We have not created a specific carve-out where a third-party fails to comply with a DOE as we consider this should be able to be accommodated within contractual terms. At this stage there is potential risk in creating an exclusion of this nature due to the unclear size and risk profile related to potential uptake of DOE.

E605 Vector's submission raised a concern that it was unrealistic to expect contractual terms to provide all of those safeguards given the potential costs to an EDB of breaching quality standards is very high.

E606 We note that interruptions are currently only recorded on prescribed voltage electric lines which are lines that are capable of conveying electricity at a voltage equal to or greater than 3.3 kilovolts, so interruptions associated with DOE below that voltage would not be recorded.

E607 Carving out further sets of interruptions, including where a third party does not comply with a DOE does not necessarily reflect the underlying performance which a consumer experiences. In addition, removing all interruptions of this type is not sustainable in the long term in areas where we think these types of solutions i.e. increased use of DOE are expected to have increasing prevalence.

E608 Removing these interruptions entirely may not provide appropriate incentives for these types of interruptions to be managed, by contracts or other means. Noting where the application of DOE is comparatively novel and may present risks this may be appropriate to be applied for under an INTSA application.

Conclusion

E609 In conclusion, our final decision is to exclude all interruptions directly associated with an approved INTSA project in the calculation of SAIDI and SAIFI assessed values up to a cap of 1% of the respective SAIDI and SAIFI limit.

E610 We consider removing interruptions associated with INTSA projects will reduce barriers to undertake innovative projects.

E611 Setting a cap in advance will also provide EDBs greater assurance regarding the value of interruptions which may be able to be excluded and reduce transaction costs for both EDBs and the Commission in setting individual project exclusions.