

# **Default price-quality paths for electricity distribution businesses from 1 April 2020 – Recording of successive interruptions for SAIFI**

**Consultation paper**

**Date of publication:** 7 October 2019

Commerce Commission  
Wellington, New Zealand



## Purpose of this paper

1. This paper describes an issue raised by an electricity distribution business (EDB) earlier this year relating to the system average interruption frequency index (SAIFI) of EDBs and our proposed response. We are seeking feedback from interested parties on our proposed approach to resolving the issue in the upcoming reset of default price-quality paths (DPPs).
2. The issue is the potentially inconsistent recognition and recording of successive interruptions in determining SAIFI values. SAIFI is used as an important measure of the reliability performance of EDBs in information disclosure and is used in setting quality standards. Our draft decision on the reset of DPPs beginning 1 April 2020 (DPP3) proposed using SAIFI as a measure in the planned and unplanned quality standards.<sup>1</sup>
3. This paper proposes a resolution of the issue in relation to setting quality standards for DPP3, while we expect to address the issue in relation to information disclosure requirements in 2020. Specifically, this paper:
  - 3.1 explains our understanding of the issue and summarises relevant correspondence which has occurred to date on the issue;
  - 3.2 outlines our understanding of EDBs' varying abilities to apply different recording approaches to their historic interruption and SAIFI datasets; and
  - 3.3 outlines our preferred approach, and an alternative approach, for defining SAIFI for quality standards in DPP3.

## How you can provide your views

### *Timeframe for submissions*

4. We would welcome your views on the matters at paragraphs 3.1 to 3.3 above in the following timeframes:
  - 4.1 Submissions are due by 5pm on **Friday 18 October 2019**.
  - 4.2 Cross-submissions are due by 5pm on **Friday 25 October 2019**.
5. Due to the time constraints for finalising the DPP3 reset, we will be reluctant to agree any extensions to these timeframes.

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<sup>1</sup> [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf)

*Matters outside the scope of this consultation*

6. This paper does not seek feedback on all aspects of our draft DPP3 decision. The paper only seeks feedback on our understanding of the issue relating to the recording of successive interruptions in the recognition of SAIFI values, and our proposed approach to resolving it for DPP3 quality standards.
7. We note this consultation is occurring alongside a consultation on the updated draft models and associated companion paper issued on 25 September 2019. We have had to de-couple these consultations because we have only recently become aware of the scope and scale of the SAIFI issue that is the focus of this paper.

*Address for submissions*

8. Responses should be addressed to:

Tim Hewitt (Chief Adviser)  
c/o [regulation.branch@comcom.govt.nz](mailto:regulation.branch@comcom.govt.nz)

9. Please include “EDB DPP3 reset – SAIFI consultation” in the subject line of your email. We prefer submissions in both a format suitable for word processing (such as a Microsoft Word document) as well as a ‘locked’ format (such as a PDF) for publication on our website.

*Confidential submissions*

10. While we discourage requests for non-disclosure of submissions so that all information can be tested in an open and transparent manner, we recognise that there may be cases where parties that make submissions wish to provide information in confidence.
11. We offer the following guidance:
  - 11.1 If it is necessary to include confidential material in a submission, the information should be clearly marked, with reasons why that information is confidential.
  - 11.2 Where commercial sensitivity is asserted, submitters must explain why publication of the information would be likely to unreasonably prejudice their commercial position or that of another person who is the subject of the information.
  - 11.3 Both confidential and public versions of the submission should be provided.

- 11.4 The responsibility for ensuring that confidential information is not included in a public version of a submission rests entirely with the party making the submission.<sup>2</sup>
- 11.5 We request that you provide multiple versions of your submission if it contains confidential information or if you wish for the published electronic copies to be 'locked'. This is because we intend to publish all submissions on our website. Where relevant, please provide both an 'unlocked' electronic copy of your submission, and a clearly labelled 'public version'.

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<sup>2</sup> Parties can also request that we make orders under section 100 of the Commerce Act 1986 (Act) in respect of information that should not be made public. Any request for a section 100 order must be made when the relevant information is supplied to us and must identify the reasons why the relevant information should not be made public. We will provide further information on section 100 orders if requested by parties. A key benefit of such orders is to enable confidential information to be shared with specified parties on a restricted basis for the purpose of making submissions. Any section 100 order will apply for a limited time only as specified in the order. Once an order expires, we will follow our usual process in response to any request for information under the Official Information Act 1982.

## Chapter 1: Overview of the SAIFI issue

12. This chapter sets out our understanding of the SAIFI issue, including:
  - 12.1 what we understand the issue to be;
  - 12.2 what communications we have had to date with interested parties about the issue; and
  - 12.3 what EDBs have told us about their current recording practices and their varying abilities to change them.

### Issue with recording and recognising successive interruptions

13. We have become aware that EDBs have applied inconsistent approaches to recognising and recording successive interruptions in calculating SAIFI values following an initial interruption.
14. The current DPP definition of ‘interruption’ used for the calculation of SAIFI values under the DPP states:<sup>3</sup>

**Interruption** means, in relation to the conveyance of electricity to a Consumer by means of a Prescribed Voltage Electric Line, the cessation of conveyance of electricity to that Consumer for a period of 1 minute or longer, or disconnection of that Consumer, other than—

- (a) in accordance with any requirements in the Electricity Industry Participation Code 2010 relating to extended reserves; or
  - (b) as a result of an automatic under voltage, under frequency, or rolling outage scheme or similar arrangement required as part of the System Operator Services or other instruction from an authorised regulator; or
  - (c) for breach of the contract under which the electricity is conveyed; or
  - (d) as a result of a request from the Consumer; or
  - (e) as a result of a request by the Consumer’s electricity retailer; or
  - (f) for the purpose of isolating an unsafe installation
15. If an interruption to the supply of electricity distribution services is followed by restoration, and then by a successive interruption, some EDBs have been calculating the relevant SAIFI values based on a single interruption, rather than multiple interruptions. EDBs’ different approaches to recognising and recording interruptions will have led them to report different SAIFI values for comparable events.
  16. There are no definitions or provisions in the current DPP that specifically address how an EDB should record a successive interruption that relates to restoration procedures necessary for restoring supply. The current definition of ‘interruption’ may not appropriately capture some of the practical complexities of restoring electricity supply. This appears to have led EDBs to adopt and apply differing

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<sup>3</sup> [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0023/61358/2014-NZCC-33-Electricity-Distribution-Services-Default-Price-Quality-Path-Determination-2015-28-November-2014.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0023/61358/2014-NZCC-33-Electricity-Distribution-Services-Default-Price-Quality-Path-Determination-2015-28-November-2014.pdf)

interpretations of ‘interruption’. Some EDBs are recording successive interruptions and associated SAIFI values when the conveyance of electricity to consumers is restored for more than a minute and is then subsequently interrupted.

17. Other EDBs are only recognising successive interruptions after they complete certain operational practices. This is referred to as an ‘aggregation’ approach. From information provided by, and engagement with, EDBs to date, it appears the EDBs that are applying this approach are using different logic for distinguishing when a subsequent interruption is recognised and additional SAIFI values are incurred.
18. The Commission does not currently have clear information on the preferences of consumers in relation to successive interruptions. However, we are considering how we can improve our understanding of consumer preferences, in terms of successive interruptions and more generally. We anticipate that some submissions on this consultation paper may address the topic of consumer preference.
19. Below is a quote from the letter from the Electricity Networks Association (ENA) reflecting their views on how consumers consider successive interruptions:

Firstly, ENA Members recognised that the real question is what is an interruption that matters to consumers? For example, if a consumer experiences an outage, followed by a short period of restoration and then a subsequent outage during a staged restoration, at what point does the length of temporary restoration and subsequent additional interruption become a meaningful cost/inconvenience to a consumer.

ENA Members recognised that they do not have any quality data or research on what matters, except to recognise that:

1. For rural communities, there is often an understanding that following an initial outage there may be periods of on and off-supply as fault-finding and repair work is undertaken, such that multiple interruptions with brief periods of supply are an accepted part of rural life. There is not likely to be material cost/inconvenience associated with the fact of multiple interruptions – it is the overall duration of the outage that matters and the fact that an outage event has occurred. Multi-interruption outage events more frequently impact on rural communities, because there is less opportunity for back-feed.
2. For commercial/industrial customers, the initial interruption which disrupts a production process, is a costly interruption because the process will need to be reset. Such customers will get in touch with their network company to confirm likely time of permanent restoration. Accordingly, short periods of restoration and further periods of off-supply during fault-finding and repair work are irrelevant, or far less impactful than the initial outage to such commercial customers.

In short, for many customers, the costs associated with the initial interruption are greater than for subsequent interruptions during an outage event.<sup>4</sup>

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<sup>4</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path/edb-dpp-saifi-process/ENA-SAIFI-Position-Statement-30-August-2019.pdf> page 1.

## Summary of relevant correspondence with the Commission on the SAIFI issue

20. The list below summarises the key correspondence relating to the SAIFI issue that has occurred to date:
- 20.1 *14 August 2019:* An email titled “Commerce Commission - Disclosure issues related to SAIFI” was sent to non-exempt EDBs from the address “regulation.branch@comcom.govt.nz” advising of the identification of an issue regarding recording and disclosure of SAIFI data. The email introduced the issue and provided advice on how non-exempt EDBs should respond to the section 53ZD notice issued 28 June 2019, and provided some information regarding the Information Disclosure schedules which were required to be disclosed by 2 September 2019.
- 20.2 *16 August 2019:* A targeted workshop for the DPP3 reset titled “Quality of Service” was held. The agenda states: “Please note, we do not intend to use this meeting to discuss the recently identified issues with SAIFI reporting. We will consult with EDBs on a resolution to this issue in the near future.”<sup>5</sup>
- 20.3 *22 August 2019:* We issued an exemption letter to all EDBs regarding quality performance disclosures and associated assurance requirements for disclosure year 2019 under the Electricity Distribution Information Disclosure Determination 2012.<sup>6</sup>
- 20.4 *4 September 2019:* A letter from the ENA providing an agreed position statement regarding SAIFI recording on:
- 20.4.1 EDBs’ existing practices regarding SAIFI recording; and
- 20.4.2 EDBs’ abilities to back-cast historic information using a different methodology.<sup>7</sup>
21. In addition to the above correspondence, we have separately engaged with the ENA, a number of exempt and non-exempt EDBs, the Office of the Auditor-General (OAG), auditors and other select industry stakeholders to better understand the issue and consider its implications for the DPP reset.

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<sup>5</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path?target=documents&root=165132>

<sup>6</sup> [https://comcom.govt.nz/\\_data/assets/pdf\\_file/0029/168932/ID-Exemption-All-EDBs-Disclosure-of-reliability-information-within-Schedule-10-22-August-2019.pdf](https://comcom.govt.nz/_data/assets/pdf_file/0029/168932/ID-Exemption-All-EDBs-Disclosure-of-reliability-information-within-Schedule-10-22-August-2019.pdf)

<sup>7</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path/edb-dpp-saifi-process/ENA-SAIFI-Position-Statement-30-August-2019.pdf/>

## **EDBs' abilities to apply different recording approaches**

22. Information provided by the ENA and confirmed through discussion with EDBs shows that:
- 22.1 EDBs are applying different practices for recognising and recording interruptions, and accordingly, for calculating SAIFI values; and
  - 22.2 EDBs have been doing this over the reference period proposed for DPP3 quality standards (1 April 2009 to 31 March 2019).
23. Our understanding of the situation of EDBs, based on their annual compliance statements and a position statement from the ENA is that most EDBs are currently applying an aggregation method, while a small number are applying a multi-count method.<sup>8</sup> Also, the consistency of methods over time through the proposed reference period may not be known.
24. Back-casting may not be possible for some EDBs and may be very difficult for other EDBs. In addition, EDBs have advised that they have varying levels of ability to back-cast historic information—ie, change historic values to values based on a different recording method—under to a multi-count methodology basis.<sup>9</sup> Consistent with the information provided by the ENA, these varying levels could be characterised as:<sup>8</sup>
- 24.1 Some EDBs do not have any data to recalculate SAIFI on a multi-count methodology;
  - 24.2 Some EDBs do not have data to recalculate SAIFI on a multi-count methodology for part of the historical period and/or cannot provide separate interruption records for each stage of an interruption;
  - 24.3 Some EDBs can, in principle, count SAIFI on a multi-count basis, but this requires a manual process to document the interruption count from paper-based records, which could be a lengthy process with associated costs; and
  - 24.4 Some EDBs can recalculate SAIFI for part of the period based on a one-minute restoration period with relative ease because the information is contained in electronic databases that contain all the information necessary to calculate SAIFI on an interruption-by-interruption basis. However, this calculation may not be available for the full reference period.

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<sup>8</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path/edb-dpp-saifi-process/ENA-SAIFI-Position-Statement-30-August-2019.pdf> Note that EDBs were queried on their ability to back-cast on a multi-count methodology, as it is believed that EDBs who have been recording on a more detailed multi-count methodology would have the information available to aggregate if required.

<sup>9</sup> Under a multi-count methodology, EDBs count successive interruptions toward their SAIFI, either in circumstances in which all successive interruptions are counted, or in which only interruptions for which power has been restored for a certain amount of time are counted.



## Chapter 2: Proposed approaches for the DPP3 reset

25. This chapter sets out our analysis of two options for addressing the issue identified above.

### **Preferred approach: adopting EDBs' current practices for recording successive interruptions**

26. In setting the SAIFI quality standard for the DPP3 reset, we propose to adopt EDBs' current interpretations and practices for recording successive interruptions. We would do this by requiring that each EDB record successive interruptions on the same basis they employed as at 31 March 2019.
27. This would be implemented under the 2020 DPP determination by:
- 27.1 changing the current definition of 'SAIFI Value' to a definition in the manner of "SAIFI value means the number of interrupted customers for each interruption divided by the total number of customers, where "Number of interrupted customers for each interruption" and successive interruptions are recorded on a basis consistent with that applied by the EDB as at 31 March 2019",<sup>10</sup> and
- 27.2 adding a definition of 'successive interruption': "successive interruption means an interruption that follows an initial interruption but which, as at 31 March 2019, an EDB does not record as an additional SAIFI value because the interruption relates directly to the initial interruption or it occurs as part of the process of restoring supply following the initial interruption".
28. This approach would lock in EDBs' practices as at 31 March 2019 for recognising and recording interruptions, and assesses EDBs consistently against these practices for the next five years.
29. In their letter of 4 September 2019, the ENA outlined their members' preferences for setting the approach for recording successive interruptions for the DPP reset on this basis:<sup>11</sup>

We recommend the following approach to setting SAIFI limits for DPP3:

- 1) For those EDBs that can readily move to the multi-count approach DPP3 targets are set based on that data, because it can be extracted and audited from existing databases (there may be some limitations on the data (e.g., ability to provide each stage of an outage separately)); and

<sup>10</sup> The current definition is "SAIFI Value means the system average interruption frequency index values".

<sup>11</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path/edb-dpp-saifi-process/ENA-SAIFI-Position-Statement-30-August-2019.pdf/>, above n 5.

- 2) For those EDBs that either are unable to calculate historical datasets based on a multi-count methodology or could only calculate revised information (in full or in part) at considerable cost and time due to records being paper-based, the Commission sets targets for DPP3 based on their historical SAIFI measurement approach. DPP compliance assessments are based on the historical methodology, but these EDBs must provide information disclosures on the multi-count approach.
30. A clear advantage of this approach is that it would be relatively straightforward for EDBs to apply because it reflects their existing operational practices. We consider that this is in the long-term interests of consumers by reducing the costs for EDBs, which are shared with consumers.
31. It will also support us to set a limit for the quality standards that relates to past performance because the historic data will generally be recorded on the same basis. However, we note that this is still an approximation because practices may have changed over the reference period within individual EDBs.
32. We seek to be able to set standards in relation to historic performance because we consider that doing so can align well with the low-cost nature of DPPs and be a reasonable estimate of the level of quality demanded by consumers, in line with the purpose of Part 4:
- “The purpose of this Part is to promote the long-term benefit of consumers in markets referred to in section 52 by promoting outcomes that are consistent with outcomes produced in competitive markets such that suppliers of regulated goods or services—...have incentives to improve efficiency and provide services at a quality that reflects consumer demands; and...”<sup>12</sup>
33. From our initial discussions with some EDBs, we have not formed a clear view of the processes that EDBs who have not applied a time-based reference for successive interruptions are applying. It appears EDBs are applying a variety of operational practices and terms (for example, “event closed” or “permanent restoration completed”) for aggregating successive interruptions. The approach for aggregating successive interruptions will need to be clearly established and defined to ensure the recognition and recording process can be consistently applied.
34. Accordingly, we will require EDBs to document clearly their operational practices for recording successive interruptions.
35. Under the proposed approach, we would expect to incorporate the method applied by each EDB for recognising successive interruptions into the DPP determination. We would not intend to list all EDB practices within the DPP determination, as this may be practically difficult to achieve before we finalise the DPP determination. Instead, the DPP would require all EDBs to document and submit their practices for aggregating successive interruptions, or time-bound recognition practices, to us before 31 March 2020. The DPP will also require EDBs to submit certification as to

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<sup>12</sup> Section 52A of the Commerce Act 1986.

the accuracy of the documentation of these practices, to ensure they are consistently applied across the regulatory period.

*Approach for setting the limit for 2020 DPP reset*

36. In light of the approach proposed above, we consider we can use the updated section 53ZD data (disclosed on 15 August 2019) with a few minor adjustments.
37. Our proposed approach for setting quality standards and defining major events for the DPP3 are reflected in the:
  - 37.1 Default price-quality paths for electricity distribution businesses from 1 April 2020 – Draft decision; Reasons paper;<sup>13</sup> and
  - 37.2 Default price-quality paths for electricity distribution businesses from 1 April 2020 – Updated draft models; Companion Paper.<sup>14</sup>

**Alternative approach: require recording of successive interruptions if restoration of supply occurs for longer than a certain amount of time (multi-count)**

38. An alternative approach we considered is requiring recording of all successive interruptions as an additional SAIFI value if restoration of supply occurs for longer than a certain amount of time (for example, 1 minute). We refer to this approach as a ‘multi-count’ approach.
39. This approach has value in that it is a uniform assessment approach, which can be assessed consistently across all EDBs during the regulatory period.
40. Although not insurmountable, this approach would reduce our ability to set quality standards based on historic reliability performance because of the inconsistency between the measure of the standard and the available historic data.
41. We seek to be able to set standards in relation to historic performance because we consider that doing so can align well with the low-cost nature of DPPs and provides a reasonable estimate of the level of quality demanded by consumers, in line with the purpose of Part 4.<sup>15</sup>
42. Some non-exempt EDBs are presently recording SAIFI in this way, so this approach would result in no change to operational recording practices for these businesses.
43. However, most EDBs presently use an aggregation method for recording and recognising successive interruptions, so adopting this approach would require them

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<sup>13</sup> [https://comcom.govt.nz/data/assets/pdf\\_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf](https://comcom.govt.nz/data/assets/pdf_file/0023/149801/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Draft-Reasons-paper-29-May-2019.pdf)

<sup>14</sup> [https://comcom.govt.nz/data/assets/pdf\\_file/0028/177076/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Companion-paper-to-updated-draft-models-25-September-2019.pdf](https://comcom.govt.nz/data/assets/pdf_file/0028/177076/Default-price-quality-paths-for-electricity-distribution-businesses-from-1-April-2020-Companion-paper-to-updated-draft-models-25-September-2019.pdf)

<sup>15</sup> Section 52A of the Commerce Act 1986.

to change their recording practices. Information provided by the ENA indicates that all EDBs could apply this practice within the required timeframe:

All ENA Members identified that from 1 April 2020 they could begin collecting SAIFI information on a multi-count basis with a one-minute standard for restoration<sup>16</sup>

*Considerations concerning the implementation of the alternative approach*

44. The biggest challenge under this approach is setting appropriate SAIFI limits and associated normalisation requirements that reflect EDBs' historic performance when the reference dataset is not available on the same basis.
45. Some EDBs have advised us that they may not be able to provide a reference dataset based on a multi-count basis. Accordingly, an uplift, established by identifying an appropriate proxy, would need to be applied to better reflect the SAIFI values the EDB may have recorded if they had recorded SAIFI on this basis.
46. Given EDBs have advised they have varying abilities to back-cast information, we would need to employ different approaches for different EDBs to establish their SAIFI baselines. We recognise it will be challenging to robustly define a proxy/methodology to apply to an EDB's reference dataset to reflect the increased SAIFI recognised by moving from an aggregation basis to a multi-count basis.
47. While some EDBs have provided indicative values of the potential uplift that could apply, this appears to vary between EDBs and vary across different time periods for individual EDBs. We do not have sufficient detail from EDBs who are able to back-cast to understand how we might best apply a proxy, and we consider it unlikely that we could request sufficient information and implement an appropriately robust approach in time for the DPP3 reset.
48. It is unlikely that we would be able to establish a statistically based measure that would target no material deterioration in reliability performance based on our understanding of information available to be created on a multi-count basis across all EDBs' reference datasets. It is likely that we would need to consider a buffer in the uplift of the baseline for those EDBs who do not have back-cast information on a multi-count approach to allow for the uncertainty of the uplift estimate and reduce the risk of causing contraventions that did not reflect actual deterioration in reliability performance.
49. We note that while we do not favour implementing a time-bound multi-count approach for successive interruptions for DPP3, we may consider it further when considering changes to the information disclosure requirements that apply to EDBs.

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<sup>16</sup> <https://comcom.govt.nz/regulated-industries/electricity-lines/electricity-lines-price-quality-paths/electricity-lines-default-price-quality-path/2020-2025-default-price-quality-path/edb-dpp-saifi-process/ENA-SAIFI-Position-Statement-30-August-2019.pdf> page 3.