

# Western Power's Proposed Amendments to the Technical Rules Submitted November 2015

Draft Decision

May 2016

Economic Regulation Authority

WESTERN AUSTRALIA

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## Invitation to make submissions

On 6 November 2015, Western Power submitted proposed amendments to the Technical Rules for the South West Interconnected Network (**SWIN**) to the Economic Regulation Authority (**Authority**).

Western Power's proposal was made under section 12.50 of the *Electricity Networks Access Code 2004* (**the Code**).

The Authority published its [Issues Paper](#) on 10 Feb 2016, inviting interested parties to make submissions regarding the changes proposed by Western Power by 11 March 2016.

Six submissions were made by interested parties in relation to Western Power's proposed amendments to the Technical Rules and the Authority's Issues Paper.

Interested parties are invited to make submissions on this Draft Decision by **4.00 pm (WST) on Tuesday, 7 June 2016**. Submissions should be marked to the attention of the Assistant Director, Electricity Access.

Submissions should be made via the [portal](#) on the ERA website.

### CONFIDENTIALITY

In general, all submissions from interested parties will be treated as being in the public domain and placed on the Authority's website. Where an interested party wishes to make a submission in confidence, it should clearly indicate the parts of the submission for which confidentiality is claimed, and specify in reasonable detail the basis for the claim. Any claim of confidentiality will be considered in accordance with the provisions of *Electricity Networks Access Code 2004*, sections 14.12 to 14.15.

The publication of a submission on the Authority's website shall not be taken as indicating that the Authority has knowledge either actual or constructive of the contents of a particular submission and, in particular, whether the submission in whole or part contains information of a confidential nature and no duty of confidence will arise for the Authority.

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## Decision

1. On 6 November 2015, Western Power submitted to the Economic Regulation Authority (**Authority**) proposed amendments to the Technical Rules pertaining to the South West Interconnected Network (**SWIN**).
2. Western Power's proposed amendments include:
  - amending the limit for Direct Current (DC) injection from zero to 0.5 per cent of the connection point rating (per phase);
  - removing out-of-date references to Australian Safety Standard AS 4777 (2005);
  - amending the current definitions of a number of terms relating to connection points; and
  - the correction of a number of typographical errors in the current Technical Rules.
3. The Authority's Draft Decision is that some elements of the proposed revisions to Western Power's Technical Rules do not comply with chapter 12 of the Electricity Networks Access Code 2004 (the **Code**), and the Code objective. Accordingly, the Authority:
  - Does not approve Western Power's proposal to amend the limit for Direct Current (DC) injection from zero to 0.5 per cent of the connection point rating (per phase);
  - Approves Western Power's proposal to remove out-of-date references to Australian Safety Standard AS 4777 (2005);
  - Does not approve Western Power's proposed amendment to the definition of "connection point";
  - Approves Western Power's proposed amendment to the definition of "connection asset";
  - Approves the addition of the term "point of common coupling" to the Technical Rules glossary, but does not approve Western Power's proposed definition;
  - Approves the typographical corrections proposed by Western Power with the exception of the proposed change to the wording of clause A12.2 from "National Professional Engineers' Register Standing" to "National Professional Engineers Register (NPER) or equivalent standing".
4. The Authority's considerations in coming to the above Draft Decision are set out in the sections that follow.

## Reasons

### Background

5. Technical Rules consist of the standards, procedures and planning criteria governing the construction and operation of an electricity network. They set out the minimum standards for the facilities, loads and generators which connect to the network in order to ensure the safety of all network users.
6. Technical Rules are a requirement for all covered networks under the *Electricity Networks Access Code* (2004) (the **Code**).
7. The Authority first approved and published Western Power's Technical Rules on 26 April 2007 which became effective from 1 July 2007. As required by the Code, the Authority commenced a review of the Technical Rules in October 2008 which was completed in August 2011. Subsequent to this review, revisions to the Technical Rules were approved by the Authority on 10 November 2011 and took effect from 23 December 2011.
8. To enable the 2011 review to be completed, a number of issues raised by the Public Utilities Office (**PUO**), Verve (now Synergy) and by the Clean Energy Council (**CEC**) relatively late in the process were set aside to be dealt with at a future date.
9. On 6 November 2015, Western Power submitted proposed amendments to the Technical Rules to the Authority.
10. Western Power's proposed amendments include:
  - amending the limit for Direct Current (DC) injection from zero to 0.5 per cent of the connection point rating (per phase);
  - removing out-of-date references to Australian Safety Standard AS 4777 (2005);
  - amending the current definitions of a number of terms relating to connection points; and
  - the correction of a number of typographical errors in the current Technical Rules.
11. Western Power's proposal also included outstanding responses to a number of issues raised during public consultation with respect to the Authority's 2008 - 2011 review of the Technical Rules.
12. Western Power's proposal for the above amendments to the Technical Rules was made in order to accommodate emerging technologies, with particular regard to the facilitation of connecting embedded generation to the distribution network.<sup>1</sup> Western

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<sup>1</sup> Western Power, *Submission to the Economic Regulation Authority for amendments to the Technical Rules*, November, 2015, p. 5.

<https://www.erawa.com.au/cproot/13980/2/WP%20Submission%20for%20Technical%20Rules%20amendments%202015.PDF>

Please note an addendum was published on 18 December 2015.

<https://www.erawa.com.au/cproot/13996/2/WP%20Technical%20Rules%20Amendment%202015%20-%20Submission%20Addendum%20November%202015.pdf>

Power's proposal was made under section 12.50 of the *Electricity Networks Access Code 2004 (the Code)*.

13. On 14 December 2015, Western Power submitted an addendum to its proposal, which modified the wording to proposed clause 3.2.1(g)(2).
14. The Authority's Issues Paper on Western Power's proposal of November 2015, was published on the Authority's website on 10 February 2016, along with an invitation for public submissions from interested stakeholders.
15. Following the publication of the Authority's Issues Paper, Western Power submitted a letter to the Authority, advising that it had received feedback from stakeholders that some of the proposed wording in its proposal to amend DC injection limits was unclear. Western Power's letter to the Authority included further amendments to the wording of Clause 3.2.1(g)(2), and the addition of a text box containing an explanation for the proposed amendment to the clause.
16. The Authority has made its Draft Decision with respect to the changes proposed by Western Power, on the basis of the addendum to the original proposal submitted by Western Power in December 2015, and the modification to the wording of clause 3.2.1(g) submitted by Western Power to the Authority in February 2016.
17. Submissions from six stakeholders were received by the Authority by the submission deadline of 15 March 2016. One submission was received on 16 March 2016, from Engineers Australia. Copies of the submissions received are available on the ERA [website](#).
18. The Authority is not required under the Code to issue a detailed decision when approving revisions to the Technical Rules. However, the Authority is committed to a transparent decision making process and accordingly, releases this Draft Decision.
19. To assist it in making its decision, the Authority appointed a technical consultant, Geoff Brown and Associates (**GBA**) to provide advice on the proposed amendments. The matters raised in stakeholder submissions were also considered in the decision.

## Regulatory Requirements

20. Under Section 12.50 of the Code, a service provider may submit to the Authority a proposal to amend the Technical Rules at any time.
21. The objectives for Technical Rules as specified in section 12.1 of the Code are that they:
  - a) are reasonable;
  - b) do not impose inappropriate barriers to entry to a market;
  - c) are consistent with good electricity industry practice; and
  - d) are consistent with relevant written laws and statutory instruments.
22. The Authority must not approve technical rules for a network unless it determines that the technical rules:
  - a) if the *network* is part of an *interconnected system* - work in an integrated fashion with the *technical rules* governing all *interconnected networks*; and

- b) reasonably accommodate the interconnection of further *networks* in the future.
23. The Authority may reject the proposal if in its opinion, the proposal is misconceived or lacking in substance, or has been made on trivial or vexatious grounds.
24. As soon as practicable, the Authority must consider whether the proposed amendments are consistent with Chapter 12 of the Code and the Code objective, having regard to any exemptions granted under sections 12.34 and 12.41, and then either approve or not approve the proposed amendments by publishing a notice of its decision, and if the decision was to approve the proposed amendments, the date on which the amendments commence.
25. The objective of the Code is to promote the economically efficient:
- a) investment in: and
  - b) operation of and use of,
- networks and services of networks in Western Australia in order to promote competition in markets upstream and downstream of the networks.
26. Under section 12.54, the Authority must consult the public in accordance with Appendix 7 if it considers the proposed amendments to the Technical Rules to be substantial, and must approve the proposed amendment only if it considers that the amendment will not have a material adverse effect on the service provider or a user.

## Western Power's Proposal

27. The amendments to the Technical Rules proposed by Western Power include:
- amending the limit for Direct Current (**DC**) injection from zero to 0.5 per cent of the connection point rating (per phase);
  - removing out of date references to Australian Safety Standard AS 4777 (2005);
  - amending the current definitions of a number of terms relating to connection points; and
  - the correction of a number of typographical errors in the current Technical Rules.

## Public Submissions

28. Five stakeholder submissions were received by the Authority by the submission deadline of 15 March 2016. One submission was received on 16 March 2016, from Engineers Australia. Copies of the submissions received are available on the ERA website.
29. Five public submissions were received by the Authority with respect to Western Power's proposed amendments to DC injection limits in the Technical Rules. Submissions were made by the following parties:
- Wood and Grieve Engineers (**WGE**)
  - Engineers Australia
  - Infinite Energy

- Community Electricity.
30. The fifth public submission was made by a party who did not wish to be identified. This submission raised concerns that changes to DC injection limits might degrade the ability to protect people with Residual Current Devices (**RCD's**).<sup>2</sup> Engineers Australia also indicated that the use of RCD's for DC current leakage should be considered.<sup>3</sup>
  31. Community Electricity was supportive of Western Power's proposal to update its Technical Rules in order to adapt to emerging technologies, however, questioned the significance of the changes given the difficulty in measuring the amount of current in question.<sup>4</sup>
  32. Infinite Energy suggested that a cost benefit analysis on the appropriate level of DC injection tolerance should be conducted before such a limit is applied to the Technical Rules.<sup>5</sup>
  33. Infinite Energy considered that Western Power's proposed amendments to the limit for DC injection are targeted primarily at solar PV customers, and would cause unnecessary costs to be incurred by these customers.
  34. Infinite Energy and WGE both suggested that the DC injection limit should be removed from the Technical Rules entirely, given that it is already ignored, and has thus far created no adverse impact on the network. Infinite Energy and WGE also advised that other jurisdictions in Australia did not impose such limits.
  35. Infinite Energy proposed that Western Power could consider limiting new PV inverter installations to an approved hardware list, and publish a set of procedures to be used for the purposes of gaining approval, instead of imposing a DC injection limit. Infinite Energy considers that such a measure would eliminate discrimination between enforcing DC injection limits on new Solar PV connections, but not for new load connections.
  36. WGE suggested that if the limit is not removed entirely, it should instead be increased beyond the limit proposed by Western Power in order to avoid the creation of barriers to network access, and an interim exemption should be granted to the electrical industry if or until an appropriate limit is determined.<sup>6</sup>
  37. WGE also submitted that the DC injection limit of 0.5 per cent is impractical, and should be revised. WGE recommended that before a limit is determined, appropriate investigation into available and appropriate test equipment should be conducted, and further stakeholder engagement should be sought.<sup>7</sup>

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<sup>2</sup> Name Withheld, *Public Submission*, 15 March, 2016.

<sup>3</sup> Engineers Australia, *Engineers Australia WA Electrical Engineering Branch Comments on the "Proposed Amendments to the Technical Rules by Western Power"*, 15 March 2016.

<sup>4</sup> Community Electricity, *Submission in Response to ERA Public Consultation, Proposed Amendments to the Technical Rules Submitted by Western Power*, 15 March, 2016, p. 1.

<sup>5</sup> Infinite Energy, *Submission on proposed Technical Rules change – DC Injection*, 15 March 2016.

<sup>6</sup> Wood and Grieve Engineers, *Comment on the Proposed Amendments to Western Power's Technical Rules*, 15 March 2016, p. 3.

<sup>7</sup> Wood and Grieve Engineers, *Comment on the Proposed Amendments to Western Power's Technical Rules*, 15 March 2016, p. 3.

## Considerations of the Authority

38. Each of Western Power's proposed amendments are considered separately below.

### Clause 3.2.1 - DC Injection

39. Western Power has proposed to amend the limit for the amount of direct current that can be injected into the distribution system by low voltage connections from zero to 0.5 per cent of the connection point rating (per phase).
40. The clause most impacted by Western Power's proposed change to the Technical Rules is clause 3.2.1 (c)(3) Power System Performance Standards, Harmonics: A User must not inject into the transmission or distribution system any DC component of current produced by its own equipment."
41. Also impacted by this proposed amendment are Attachments 9 and 12, and the Glossary for the Technical Rules. These sections will require minor amendments if Western Power's proposed amendments are approved.
42. Excessive levels of DC injected into the network may result in corrosion, increased harmonic distortion, and reduced efficiency in the operation of devices reliant on magnetic cores. For these reasons, the current limit for the injection of DC current into the distribution network is zero.
43. However, Western Power has detected that there are presently many types of loads at connection points which inject various levels of direct current into the distribution network.
44. Applicants seeking to connect solar PV inverters at ratings greater than 30 kVA are currently restricted from connecting to the network due to the existing provisions in the Technical Rules, which specify that the limit for the amount of direct current that can be injected into the distribution system is zero. Western Power considers that this zero-limit imposes additional expenses on customers who wish to connect to the low voltage network because it requires modifications to inverters and connection points in order to make them compliant with the Technical Rules.
45. By updating clause 3.2.1 to allow for the injection of a small amount of direct current into the network, Western Power hopes to remove barriers to entry for the increasing number of customers with photovoltaic systems who wish to connect to its network.
46. In its technical report to the Authority, GBA recommended that Western Power's proposed amendment to Clause 3.2.1(c)(3) not be accepted. Instead, GBA recommended that the requirement for zero DC injection be deleted from the Technical Rules, in keeping with other jurisdictions in Australia and in New Zealand<sup>8</sup>
47. GBA also recommended that Western Power's proposed addition of Clause 3.2.1(g) to the Technical Rules not be approved, because this addition may impose unnecessary compliance costs on some users, given Western Power's

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<sup>8</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 7.

acknowledgement that the requirement may be removed in future on the basis of further investigation.<sup>9</sup>

48. Currently, there is no requirement in the Technical Rules requiring users who wish to connect to the low voltage network to do so via an isolating transformer. GBA's opinion is that Western Power's proposal has been made with the intent of eliminating the requirement for users to invest in cost prohibitive transformers in order to comply with the existing DC injection limit of zero.
49. GBA agrees with Western Power that high levels of DC current in an electrical network can have an adverse impact; however, GBA also notes that the severity of this impact is not well established.<sup>10</sup> GBA also notes that there are other methods available, besides limiting the amount of DC injection, which can be employed to mitigate the risks associated with the injection of DC into the low voltage network.<sup>11</sup>
50. GBA also concurs with WGE and Infinite Energy that Western Power's current limit for zero DC injection is largely ignored, with no apparent negative consequences on the network.<sup>12</sup>
51. GBA states that;

"Western Power has not provided [the Authority with] any evidence to show that the present levels of DC injection into its network are creating issues of sufficient magnitude to require mitigation or control."
52. GBA considers that Western Power's proposed amendment to the limit for DC injection into the low voltage network is focussed on inverter coupled generators, but that under the proposed changes, this limit would also apply to other loads which have been shown to also cause DC injection into the network, but do not have inverter coupled generators.<sup>13</sup>
53. Under the proposed changes, such loads would be subject to monitoring for DC injection, and as a result may also be subject to the additional costs associated with compliance to Western Power's proposed limit.<sup>14</sup>
54. GBA considers that given Western Power's advice that the need for any limit on DC injection into the low voltage network at all may be reconsidered as a result of the Electricity Market Review (**EMR**) and transition into the National Electricity Rules

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<sup>9</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 7.

<sup>10</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 6.

<sup>11</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 6.

<sup>12</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 6.

<sup>13</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 5.

<sup>14</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 5.

(NER)<sup>15</sup>, the proposed changes and the possible additional expenses they signify are not in the best interests of users.<sup>16</sup>

55. GBA advises that it was unable to assess whether Western Power's focus on loads with inverter coupled generators was justified on the basis of the proposal submitted by Western Power to the Authority.<sup>17</sup>
56. GBA also notes that Western Power's handling of DC injection, whereby inverter coupled generators rated under 10kVA single phase and 30kVA three phase are able to connect to the network without monitoring provided that they comply with AS 4777 and other requirements of Clause 3.7 of the Technical Rules, is not compliant with Clause 3.2.1(c)(3), which the rules state apply to all users.<sup>18</sup>
57. Taking account of GBA's advice, the Authority considers Western Power's proposed amendments to Clause 3.2.1 impose unnecessary investment by users which is contrary to Section 12.53 of the Code.
58. The Authority agrees with Western Power that changes to the Clauses in the Technical Rules dealing with the limit of DC injection into the network need to be made.
59. The Authority also notes that advice from the Authority's technical consultant, GBA, and submissions from stakeholders suggest that setting any type of limit for DC injection creates more issues for users of the Western Power network.
60. The Authority also notes the advice from GBA, and the submissions from Infinite Energy and WGE, which state that no limit for DC injection is currently set in other jurisdictions in Australia or in New Zealand, and that there has thus far been no apparent detrimental impact of DC injection in these jurisdictions.
61. The Authority therefore questions why it would not be appropriate to remove a limit to the injection of DC into the low voltage network altogether.
62. The Authority notes that currently, standard exemptions to the Technical Rules are enabling the connection of users with PV systems to the low voltage network.<sup>19</sup>
63. The Authority therefore does not approve Western Power's proposed changes to Clause 3.2.1(c), or the addition to the Technical Rules of Clause 3.2.1(g). Instead, the Authority recommends that further consideration needs to be given to how the matter of DC injection is dealt with in the Technical Rules.

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<sup>15</sup> Western Power, *Email to the Authority, Summary of Public Comments to Part A and Western Power's Responses*, 29 March, 2016.

<sup>16</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 6.

<sup>17</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 6.

<sup>18</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 7.

<sup>19</sup> Western Power's list of exemption from the Technical Rules shows that there are currently 28 exemptions from the Clause dealing with DC injection limits, which have been approved by Western Power. Western Power, *List of exemptions from compliance with the Technical Rules granted by Western Power after 1 July 2007*, 16 January 2016, p. 6. <https://www.erawa.com.au/cproot/14034/2/WP-%20Updated%20list%20of%20ExemptionsTech%20Rules-%20December%202015.PDF>

## AS 4777 Date Amendments

64. Western Power proposes to remove references to the applicable year of Australian Safety Standard AS 4777 (2005 in the current Technical Rules), and replace them simply with references to AS 4777 in order to avoid the requirement to update the Technical Rules each time the standard is amended.
65. Western Power states that if this amendment is not made, then only those inverters certified under AS 4777 2005 will be compliant under clause 3.7 and Attachment 12 of the Technical rules.
66. Western Power submits that while there is a low risk that changes to AS 4777 may be made that are unacceptable to the Western Power network, it is within Western Power's power to not approve connections until any identifiable issues are resolved.
67. Western Power notes that it has consulted with Technical Rules stakeholders who are also involved in the periodic amendments to AS 4777, who have confirmed that the adoption of updates to the standard should be made automatically rather than require a separate update to the Technical Rules.

## Public Submissions

68. Submissions from Engineers Australia, Community Electricity, and Wood and Grieve Engineers (**WGE**) were all in support of Western Power's proposal to remove references to the applicable year of Australian Safety Standard AS 4777 (2005 in the current Technical Rules), and replace them simply with references to AS 4777.

## Considerations of the Authority

69. The Authority's technical consultant, GBA, considers that Western Power's proposed amendment is prudent, and recommends that Western Power consider making similar amendments to clauses which refer to other references and standards.<sup>20</sup>
70. Taking account of GBA's advice and the submissions from Engineers Australia, Community Electricity, and WGE, the Authority considers that Western Power's proposed amendment is prudent.
71. The Authority therefore approves Western Power's proposal to remove references to the applicable year of Australian Safety Standard AS 4777 (2005 in the current Technical Rules), and replace them simply with references to AS 4777.

## Clarification of Definitions

72. Western Power proposes to amend the definition of a number of terms used throughout the Technical rules. The terms to which the amendment of definitions has been proposed are:
  - Connection Point;
  - Connection Assets; and
  - Point of Common Coupling.

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<sup>20</sup> Geoff Brown and Associates, *Review of Western Power's Application for Technical Rule Amendments*, 24 April, 2016, p. 8.

73. The amended definition for the term Connection Point has been proposed to accommodate the dual nature of the term with respect to its contractual meaning and its physical nature. Western Power also considers that the term “connection point” is currently used in the electrical industry.
74. Western Power has also proposed to include a number of new terms to the Technical Rules Glossary, in order to further improve the clarity of the term “connection point”.
75. Western Power notes that its consultation with users of the Technical Rules identified numerous cases in which there was uncertainty regarding the location of their connection point.
76. Western Power submits that it has identified the requirement to amend the definition of the term “connection assets” through the assessment of recent requests for exemptions from the Technical Rules. Western Power considers that the current definition is confusing and is inconsistent with the definition in the Access Code.

### Public Submissions

77. Community Electricity’s submission was largely supportive of the proposed amendments, however, recommendation was made in its submission that the meaning of the phrase “expected to be” with respect to Entry and Exit points, should be clarified.
78. Community Electricity also suggested that it would be prudent to modify the wording for the proposed definition of “point of common coupling”, so that the obligation of “reasonableness” will fall on the exercise of Western Power’s discretion, rather than on the technical matters at hand.<sup>21</sup>

### Considerations of the Authority

79. The Authority’s consultant, GBA, has reviewed Western Power’s proposed amendments and additions to the Technical Rules Glossary. Concerns raised by GBA, and the Authority’s consideration of them, as well as the public submissions, in relation to each of the proposed changes to definitions are outlined in the sections below.

### Connection Point

80. GBA advised that Western Power’s revised definition of the term ‘connection point’ appears to be more ambiguous than the current definition. In particular, GBA considered that the term “connection point” would refer to a physical location, even when it is used in a contract document.<sup>22</sup>
81. GBA also considers that the use of the term “another person”, in the proposed definition with respect to a physical location, is ambiguous. For instance, GBA considers that it would exclude circumstances under which Western Power hired measuring equipment which was then connected to the network. GBA suggested that

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<sup>21</sup> Engineers Australia, *Engineers Australia WA Electrical Engineering Branch Comments on the “Proposed Amendments to the Technical Rules by Western Power”*, 15 March 2016.

<sup>22</sup> Geoff Brown and Associates, *Review of Western Power’s Application for Technical Rule Amendments*, 24 April, 2016, p. 9.

the term “user” was more appropriate, and would be consistent with terminology used throughout the Technical Rules.<sup>23</sup>

82. GBA also noted that the term “primary assets” is not defined in the Glossary, however, the term “primary equipment” is defined as follows:
- “Refers to apparatus which conducts power system load or conveys power system voltage.
83. GBA suggested that the following definition for the term “connection point” was more appropriate than Western Power’s proposed dual definition:
- ‘A point on the network where the Network Service Provider’s primary equipment is connected to primary equipment owned by a user’
84. The Authority has taken into consideration the advice from GBA that the term “connection point” would appear to apply to a physical location, both in the context of a contract document, and with reference to a physical connection point. The Authority also agrees with GBA’s reasoning for the replacement of the term “primary assets” with the term “primary equipment”.
85. The Authority therefore does not approve Western Power’s proposed amendments to the term “connection point”.
86. The Authority also does not approve the addition of the terms “bi-directional point”, “entry point”, and “exit point” to the Glossary of the Technical Rules.
87. The Authority considers that the alternative wording recommended by GBA would be a more appropriate definition for the term “connection point”.

### Connection Assets

88. GBA considered Western Power’s proposed amendment to the definition of the term “connection assets” improves its clarity of meaning, and agreed that it was more consistent with the definition in the Code. GBA recommended that the Authority accept this amendment to the Technical Rules.
89. The Authority therefore accepts Western Power’s proposed amendment to the definition of the term “connection assets”.

### Point of Common Coupling

90. GBA advised that the general understanding of the meaning of the term “point of common coupling” is
- “The point on the network where the connection assets for a connection point are connected to assets that are shared with other network assets”.
91. GBA also advised that while the point of common coupling would normally be a point that is electrically quite close to the connection point, this is not always the case.
92. GBA also considered that the definition proposed by Western Power would provide Western Power with the opportunity to exercise its monopoly power over a user.

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<sup>23</sup> Geoff Brown and Associates, *Review of Western Power’s Application for Technical Rule Amendments*, 24 April, 2016, p. 9.

93. GBA suggested that Western Power’s proposal for the definition of “point of common coupling” was made with the intention to allow assets owned by Western Power to subsequently be used to supply new customers”. GBA suggests that the point of common coupling can be negotiated with a user if Western Power sees a potential for a connection asset to supply other users. Any costs to the original user can then be offset by a discount from Western Power.<sup>24</sup>
94. The Authority has considered GBA’s advice with respect to the proposed definition of the term “point of common coupling”, as well as the points raised in the submission made by Community Electricity.
95. The Authority considers that it is prudent to provide users and stakeholders with a clearly set out definition for a term that is commonly used, however, the Authority is concerned that the definition proposed by Western Power provides for the possibility of the use of Western Power’s monopoly power in a way may be detrimental to users of the network.
96. The Authority therefore does not accept Western Power’s proposed definition of the term “point of common coupling”. The Authority considers that Western Power should adopt the definition suggested by GBA, or some variant of this suggested definition.

### Typographical Errors

97. Western Power has identified a number of typographical errors in the Technical Rules document since its publication in 2011. Western Power proposes the following amendments to resolve these errors:
  - Section 2.2.11 Long Term Voltage Stability (b) – correct the spelling of the word “contingency”.
  - Section 3.3.1 General (e)(5) – correct the spelling of the word “rectify”
  - Section 3.3.3.1 Detailed Technical Requirements Requiring Ongoing Verification –
    - (b) – correct the spelling of the word “requirements”
    - (f) – correct the spelling of the word “facility”
    - (g) – correct the spelling of the word “compliance”
  - 3.6.1 Overview –
    - the addition of 10kVA single phase energy systems to energy systems which are not covered by clause 3.6.1, which addresses small generation units connected to the low voltage system via inverters;
    - specification that 30 kVA three phase energy systems are not subject to clause 3.6.1; and
    - the addition of the word “concerns” to the end of the second point in the list of issues addressed by clause 3.6, so that the sentence now says, “resulting in safety and security of supply concerns”.
  - 3.6.10.3 Islanding Protection (c) – correct the spelling of the word “physically”

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<sup>24</sup> Geoff Brown and Associates, *Review of Western Power’s Application for Technical Rule Amendments*, 24 April, 2016, p. 10.

- 3.6.12 Failure of Generator’s Protection equipment – remove the second consecutive instance of the word “the” from a sentence.
- 5.7.1 User’s Advice (a)-
  - correct the spelling of the word “operation”
  - correct the spelling of the word “affect”
- Attachment 5 Submission Requirements for Electrical Plant Protection, pg 164
  - correct the spelling of the word “diagrammatic”
- Attachment 12 Testing and Commissioning of Small Power Stations Connected to the Distribution System
  - (A12.1) – replace the word “specifies” with the word “lists”.
  - (A12.2) – the specification that certification by a chartered professional engineer must be by the National Professional Engineers’ Register or equivalent.

### *Public Submissions*

98. Engineers Australia’s submission addressed the need to replace references in the Technical Rules to the National Professional Engineers Register (**NPER**) with references to the National Engineering Register (**NER**). Engineers Australia also suggested that some clarity needs to be provided in the wording of the Technical Rules with regards to appropriate certifications of engineers registered with the NER.

### *Considerations of the Authority*

99. The Authority considers it prudent that typographical errors currently in the Technical Rules should be corrected.
100. The Authority has also taken into consideration the submission from Engineers Australia, which states that the NPER no longer exists, and has been superseded by the NER.
101. The Authority has also considered the submission from Engineers Australia and the advice from its technical consultant, GBA, that the addition of the phrase “or equivalent standing” introduces ambiguity to the requirements of Clause A12.2, as it is unclear whether the required equivalence is in relation to the Register or to the qualifications of the certifier. GBA also raised the concern that with the inclusion of the term “or equivalent”, a direction as to which entity was to determine equivalence was not provided.
102. The Authority therefore accepts Western Power’s proposed amendments to the typographical errors outlined in its proposal, except for the proposed amendment to Clause A12.2.
103. The Authority instead considers that Western Power should make the following amendments to Clause A12.2:
- replace current references to the National Professional Engineers Register (**NPER**), with references to the National Engineering Register (**NER**); and
  - remove the term “or equivalent” from the end of Clause A12.2, or qualify how and by whom equivalence is to be determined.