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Jemena Electricity
Networks (Vic) Ltd
ABN 82 064 651 083

Level 16, 567 Collins Street
Melbourne, VIC 3000
PO Box 16182
Melbourne, VIC 3000

www.jemena.com.au

Energy Division
Essential Services Commission of Victoria
Level 27, 2 Lonsdale Street
MELBOURNE VIC 3001

Electricity Distribution Code Review - Issues Paper, 13 August 2019

Jemena Electricity Networks (Vic) Ltd. (**Jemena**) welcomes the opportunity to respond to the Essential Services Commission's (**Commission, ESC**) Issues Paper on the review of the Electricity Distribution Code (**Code**).

Generally, we support harmonisation of the Code with national standards; however, there are several circumstances unique to Victoria where departure is appropriate. Our detailed responses to the questions posed in the Issues Paper are set out in Attachment 1 to this letter which outlines the areas we believe the Code should be harmonised to the national standards and those areas where departure serves Victorian customers better.

After the Commission has made its decisions on the Code review, Jemena requests an opportunity to review the changes, as well being afforded an opportunity to comment on the drafting, to reduce the interpretation risk.

Our key considerations in relation to the topics of consultation include:

- Jemena supports adoption of the industry-recognised Australian Standard (**AS** 61000.3.100) for voltage management.
- We propose harmonisation of the exclusion criteria for GSL payment in the Code with that in the Service Target Performance Incentive Scheme (**STPIS**).
- In the Code, the Major Event Day (**MED**) threshold is set as a SAIFI measure, while the STPIS sets MED based on a SAIDI measure. Victoria is currently the only jurisdiction in Australia defining MED by frequency thresholds. We propose the Commission adopts the SAIDI measure for determining the MED for consistency across the National Electricity Market.
- Jemena proposes clause 5.5.1 of the Code, relating to planned interruptions, be modified to include Rule 90 of the National Energy Retail Rules (**NERR**) We believe adopting the whole Rule 90 in the Code would lead improvements to the timeliness of connection because it allows a distributor to obtain explicit

consent to the interruption occurring on any date within a date range of 5 business days or a specified date from the affected customer. It would avoid delays to connection services. Our detailed explanation is separately set out below.

- Currently, the Code specifies six types of exclusion that distributors can apply to the Commission to be excused from the payment of GSL payments. In the STPIS, the AER's specifies eight types of exclusion. We propose the Commission include all eight types of exclusion in the Victorian GSL scheme. The additional two outage scenarios are:
    - Exercise of legislative obligation, right or discretion; and
    - Emergency Services.
- Jemena considers the Commission's Electricity Industry Guideline 11 on voltage variation compensation, provides appropriate customer protections. The guideline references clause 4.2.7 of the Code, which requires a distributor to compensate any person whose property is damaged due to voltage variations outside the limits prescribed in the Code. There has not been an event to suggest any changes are necessary to the guideline.
- We believe the 'time for payment' provision in the Code for GSL payments is adequate, and no change is required.
- Jemena considers it is appropriate to include maintenance of system frequency at 50 Hz in the Code for the management of frequency in microgrids and stand-alone power systems.
- Given the Australian Energy Market Operator (**AEMO**) is required to establish a national register for Distributed Energy Resources (**DER**), we consider the obligation in the Code for distributors to maintain a register is no longer necessary.[1]
- We consider it would be pragmatic to expand the existing standards in the Code to cover inverter connected generators as many embedded generators are connected to the electricity network via inverters.

Why rule 90 of the NERR is preferable

Jemena proposes clause 5.5.1 of the Code on planned interruptions be modified to include rule 90 of the NERR in full as it would facilitate efficient processes for new basic connections, connection alterations and supply abolishment and avoid delays. It would also facilitate meter testing and replacement programs for meter family failures where we need to interrupt the electricity supply to premises for approximately 30 minutes for single-phase and less than 60 minutes for three-phase meters.

To install a basic connection from a service pit that is supplying one or more customers, all supplies emanating from the pit are interrupted for a short duration (usually for less than 60 minutes) for the safety of the work crew. In accordance with clause 5.5.1, we provide four business days' written notice of the planned interruption to neighbouring premises, which effectively takes up 4 of the 10 business days' timeframe for a basic connection under clause 2.3.1 of the Code.

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1 ESC, *Electricity distribution code, Version 9A*, August 2018, Clause 7.9, Pg. 24.

If Rule 90 were adopted in full, it would allow distributors, with the explicit consent of the customer, to arrange for an interruption on any day within a date range of 5 business days or a specific date. It would improve timeliness of connection services.

In 2018, we provided the 4-days' notice of supply interruption to 201 customers out of approximately 9,000 new basic connection jobs and rescheduled those connections. This year we have already provided notices to 358 customers in relation to basic connections, alterations and abolishment services. In addition to the delays and complaints, we are incurring additional costs of rescheduling the connection jobs and wasted service truck visits to the job sites.

In March 2019, Jemena held a forum for registered electrical contractors and licensed electrical inspectors to discuss their concerns about our connection processes and possible improvements we could make to deliver better customer experience. The biggest source of complaint was the 4-days' notice of supply interruption we issued for basic connection activities where the service pit is shared with other customers. Registered electrical contractors were particularly concerned with the inflexibility of clause 5.5.1 of the Code, which does not allow for shortening the notification period with the consent of the affected customers. We believe the affected customers (usually the neighbours of the connection applicant) are likely to consent to their supply being interrupted for a short duration (generally less than one hour) to enable timely connection.

The Commission has already made a draft decision[2] to adopt 90(1))(c) of Rule 90 noting that this protection could be useful for life support customers who would like to bring forward a planned electricity interruption that affected them. Jemena proposes clause 90 of the NERR be adopted in full in place of clause 5.5.1 of the Code.

Jemena supports the proposal to align the Code with AS standards for harmonic voltages

Harmonics appear on electricity networks primarily due to the connection of non-linear loads (such as computers) by customers. These non-linear loads generate harmonics currents. The presence of these harmonic currents generates harmonic voltages on the network. There won't be any harmonic voltages on the network if there are no harmonic currents.

To maintain harmonics levels on the distribution network to an appropriate level, the current Code places an obligation on customers not to generate too much harmonics currents (Clause 4.4.3), and an obligation on distributors to maintain harmonic voltages below a threshold (Clause 4.4.1).

The issue with the current Code is the harmonic current obligation is taken from an American (**IEEE**) standard, but the harmonic voltage obligation is taken from a superseded Australian Standard. The "mix and match" approach means that it is difficult to manage the harmonic voltage to within the code requirement.

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2 ESC, *Draft decision - Strengthening protection for life support customers*, 15 August 2019, Pg. 21.

Jemena is not proposing a new clause to replace Code clause 4.4.3 as this clause relates to compliance obligations on customers, not the distributors. However, we seek that the harmonic voltage standard (that places an obligation on distributors) to be aligned with the National Electricity Rules (**NER, Rules**) and AS to reduce the burden of compliance.

Also, Distributors may experience compliance issues with Rapid Earth Fault Current Limiter (**REFCL**) in some zone substation sites due to harmonics voltages issue, which is in turn caused by harmonic currents generated by customer loads. The incompatibility between the bushfire mitigation regulation and the Code needs to be resolved. However, adopting the AS in the Code for harmonic voltages will not worsen the issue at REFCL substations as we are not proposing to change the harmonic currents obligation of customers.

If you require further information concerning the submission, please contact Siva Moorthy on [redacted] or at [redacted].

Yours sincerely

[signed]

Matthew Serpell
Manager, Electricity Regulation

Attachment 1 – Response to Commission's Issues Paper on the review of the Electricity Distribution Code

Question Number	Issue	JEN response
1	Should we set an obligation on distributors to proactively contact vulnerable (such as life support) customers before a potential unplanned outage?	We support an obligation on distributors to comply with the Victorian Energy Emergency Communications Protocol (**VEECP**) in the Code. To maintain currency of the protocol, there is a review process in the document. Following the power outages on 28 and 29 January 2018, Victorian electricity distributors have developed and agreed to a process for proactive communications to specific groups of customers and have developed and agreed to triggers for initiation of messaging ahead of extreme weather events. The process uses existing VEECP protocols as the mechanism to trigger proactive communications ahead of extreme weather events, including sending pre-summer notification to all life support customers via SMS and emails. But we need to be careful not to overuse communications.[3] At present, the Code requires a distributor to provide advice to customers relying on life support equipment on how to prepare a plan of action in case of unplanned interruptions. We believe it is important for the plan to include all types of interruption—such as those that may occur on stormy and extreme heat days, but also those unpredictable ones caused by vehicle collisions into power poles and third party damage to underground cables during excavation works. Currently, the Code requires a distributor to advise all customers in writing on an annual basis of our role concerning emergencies and supply restoration after unplanned interruptions and provide them with contact details and website address. Additionally, we send a letter to life support customers reminding them of the importance of having an action plan in place in the event of an unplanned interruption to their electricity supply due to bushfire, storms, vehicle accidents or other unexpected problems. We provide life support customers with our 24-hour Faults and Emergency Team and ask them to register their contact details on our Customer Portal so that we can notify them of any unplanned outages via text message.

[3] The Department of Environment, Land, Water and Planning (**DELWP**) report made recommendation on proactive communications and triggers, noting "avoid over-use of communications to customers so as not to impact on messaging effectiveness".

Question Number	Issue	JEN response
		Noteworthy, within 30 minutes of an emergency or interruption, a distributor is required to make public, on their website, the nature of the interruptions and an estimate of the time supply will be restored, and the information is frequently updated until supply is restored to all customers.[4] We believe that the existing notification mechanisms in the Code and the proactive communications and triggers in the VEECP are adequate.
2	How should we update the current obligation on distributors informing government departments of unplanned long outages?	Currently, the Code requires distributors to notify relevant government departments immediately upon forming the view that an interruption at a location will persist for at least 24 hours. The VEECP includes a reporting protocol, which sets out processes for notifying the government of these events. We believe an obligation on distributors to comply with the VEECP in the Code would formalise the existing informal practices and processes.
3	What form of notification or engagement should be provided to customers by electricity distributors before a planned outage?	The Code requires a distributor must provide each affected customer with at least four business days written notice of planned interruptions. Jemena's notification process for residential customers is via a planned card drop to the affected premises. Life support customers are notified via a cards drop and personal contact and via door knock. If no one answers the door, a card is left under the door in addition to that left in the letterbox. Commercial/industrial/retail customers are advised of an upcoming interruption before receiving a card drop. We ensure the card is given to the customer personally where practical – otherwise a card is left at the premises. Jemena proposes the Code be amended to allow distributors to use digital communication and messaging options for notifications for planned outages. Our recent customer engagement has identified that the use of digital communication and messaging options for outage notifications is a customer expectation, particularly for large commercial and industrial customers.

[4] Code, clause 5.4.1(a)

Question Number	Issue	JEN response
4	Should we impose a new obligation to notify customers of a cancelled or rescheduled planned outage?	It is not always possible or practical to notify customers of a cancelled or rescheduled planned outage. Our current practice is to provide written notification of the customers if the cancellation occurs more than two days before planned interruption date. On this issue, we consider an improvement to the Code would be a requirement on distributors to publish on its website of cancelled or rescheduled planned outages, and the notice includes a link to the website so that customers can check on the status of the notice.
5	Should the purpose of the scheme be redirected to address poor service or something else altogether?	The Issues Paper notes, as part of the 2006-10 price reset process, the Commission reviewed and clarified that the GSL scheme was consistent with five principles relating to reliability.[5] We consider the principles are still appropriate and the design of the GSL scheme is still fit for purpose.
6	Are there other ways we should think about improving service levels for the worst parts of the network in the code?	We believe the design of the GSL payment scheme relating to poor reliability in clauses 6.3.1 and 6.3.2 adequately targets worst served customers and should remain. In the 2015 review of GSL, the Commission noted "While the broad architecture of the GSL payments scheme remains appropriate to provide an additional incentive for electricity distributors to improve the level of service for the *worst served customers*, several changes to the scheme have been made to strengthen the incentives.[6] The most significant changes are to reduce the level at which a GSL payment is made for the number of interruptions experienced in a year and to increase the nominal value of GSL payments that are made. The increase in the value of GSL payments ensures that the real value of the GSL payments is maintained, and reflects the latest information available on the value that customers place on reliability." [Emphasis added.] We suggest the Commission undertakes a similar review to ensure the real value of the GSL payments.

[5] ESC, *Electricity distribution Code review, Issues Paper*, 13 August 2019, Pg. 15.
[6] ESC, *Review of the Victorian electricity distributors' guaranteed service level, Final decision*, December 2015.

Question Number	Issue	JEN response
7	Is each payment category still fit-for-purpose in meeting the overall purpose of the guaranteed service level scheme?	Yes. The payment categories in the Code adequately address poor service levels, which include keeping to an appointment, making connections and supply restorations and low reliability—all of which we believe are still fit-for-purpose.
8	Should customers receive a low reliability payment and a restoration payment?	The Code currently requires a distributor to make *supply restoration* payments under clause 6.3.1 and *low-reliability* payment under 6.3.2. If a customer qualifies for both payments, then both payments are made to the customer. We support the current design of the GSL payment scheme. To clarify, if a customer has received a supply restoration payment (outages in a year accumulating more than 20 hours) under clauses 6.3.1 (a) to (c), then they will not receive the supply restoration payment (single unplanned outages between 12 and 20 hours) under clauses 6.3.1 (d) to (e).
9	Are there new categories that we should consider including in the guaranteed service level scheme?	None that we are aware of.
10	Should we change our principle of worst served customer to capture systemic poor performance?	No. We consider the Commission's guiding principle of one per cent of customers experiencing the worst supply performance per annum adequately captures systemic poor performance. Also refer to our response to Q5.
11	Are there any outage scenarios we should include or exclude from the guaranteed service level scheme?	Currently, the Code specifies six types of exclusion that distributors can apply to the Commission to be excused from the payment of GSL payments. In the STPIS, the AER's specifies eight types of exclusion, which are reproduced in Appendix H of the Issues Paper. We propose the Commission include all eight types of exclusion in the Victorian GSL scheme. The additional two outage scenarios are: • Exercise of legislative obligation, right or discretion; and • Emergency Services A MED is one of the exclusions specified in the Code and STPIS. However, in the Code, the MED threshold is set as a SAIFI measure, while the STPIS sets a SAIDI measure. Jemena proposes the

Question Number	Issue	JEN response
		Commission adopts the SAIDI measure for determining MEDs to be consistent across the National Electricity Market. If the ESC were to adopt the SAIDI measure defining a MED, there is no need to set the SAIDI thresholds as they will be set by the AER in the electricity price reset process. For the current regulatory period, Currently, the MED SAIDI threshold is calculated using the 2.5 beta method in accordance with appendix D of the STPIS for the purposes of calculating the S-factor.[7]
12	Should we impose timeframes for the guaranteed service level payments?	We consider the 'time for payment' provisions in the Code for GSL payments is adequate.
13	Should the commission review the distributor's voltage standards in the way distributors should manage voltage? In particular, we are seeking stakeholder feedback on the potential options for reviewing voltage standards, such as considering a 'best endeavours' approach or adapting the industry-recognised Australian Standard (AS 61000.3.100) for voltage management?	Jemena supports the adoption of the industry-recognised Australian Standard (AS 61000.3.100) for voltage management as it is based on a statistical approach for voltage management also adopted in other AS/IEC power quality standards (such as harmonics).
14	What are the appropriate customer protections relating to voltage management that we should consider?	Jemena considers the Electricity Industry Guideline 11 – Voltage variation compensation provides appropriate customer protections. We do not believe there is any need to modify the guideline. The guideline references clause 4.2.7 of the Code, which requires a distributor to compensate any person whose property is damaged due to voltage variations outside the limits prescribed by Table 1 and Table 1A.

[7] AER, *STPIS*, November 2018, Version 2.0, Appendix D, pp. 39–41.

Question Number	Issue	JEN response
	In particular, we welcome stakeholder feedback on how any changes to voltage standards might interact with Electricity Industry Guideline 11 – Voltage variation compensation.	
15	Is there a need to consider the management of frequency in micro-grids and stand-alone power systems? Is it appropriate for these standards to be included in the Electricity Distribution Code?	The AEMO is responsible for the management of frequency across the entire National Electricity Market. Jemena considers it is appropriate to retain the requirement to maintain system frequency at 50 Hz in the Code for the management of frequency in microgrids and stand-alone power systems that are not connected to the national grid and are under the operational management of distributors.
16	Should we consider expanding the existing standards to capture all embedded generation technology?	Many embedded generators are connected to the electricity network via inverters, so it is sensible to expand the existing standards to cover inverter connected generators. Additionally, where a generator can behave both as a generator and a load (e.g. a battery energy storage system), the standards should explicitly cover both operations.
17	Aggregation is a new and evolving model in the energy landscape. What matters should we be taking into consideration? Are there other matters we should be taking into consideration for this topic?	The NER has the framework for Small Generation Aggregator to participate in the National Electricity Market (**NEM**). The Rules provide the owners of small generators to aggregate and sell their generation output to the NEM. The small generation aggregator market is evolving, and we suggest the NER should govern this service. We suggest the Code does not refer to matters on aggregation.
18	Should we retire our register and harmonise by requiring distributors to comply with the national register only?	Changes to the NER require electricity distributors to provide DER register information to AEMO.[8] On these topics, we support harmonisation with the national register. The obligation in the Code requiring distributors to register embedded generators should be retired, to avoid duplication.

[8] National electricity Rules, clause 3.7E, which comes in force immediately after 1 December 2019.

Question Number	Issue	JEN response
	What may be the potential benefits or issues with retiring our register?	
19	Should we review the power factor range and consider alignment with the industry?	We support the alignment of the power factor range with the industry.
20	Should we consider harmonising with the National Electricity Rule and adapt the Australian Standard (AS 61000.3.6) for harmonics? What may be the potential benefits and or issues with harmonising?	The harmonic voltage limits specified in the current Code appear to be taken from AS2279.2 which was made obsolete by Standards Australia in 2001. The IEC approach to the management of voltage harmonics, including compatibility limits and planning levels, has been adopted by Standards Australia and is applied in the NER and most of other jurisdictions in Australia. We recommend the adoption of AS TR IEC 61000.3.14-2013 for harmonics for low voltage electrical installations and AS 61000.3.6-2012 at medium and high voltage installations. The difference between the current Code limits and the IEC limits for harmonics are that the Code limits are larger at low frequency, and smaller at high frequency. The statistical (percentile) approach used in the recommended standards for compliance is likely to result in the better economic development of electricity networks.
21	Should the negative sequence limits of the code be harmonised with the national limits? What may be the potential benefits and or issues with harmonising?	The 1% limit for negative-sequence voltage at low voltage specified in the current Code is significantly lower than limits applied in other jurisdictions in Australia (and internationally) and the Rules. Further, there is no variation in the limits across different nominal voltage levels. Application of the same limit to all voltage levels either makes compliance at lower voltage levels very difficult or requires very low levels of voltage unbalance at higher voltage levels to allow for the effect of propagation. We recommend that the Code adopts standards as called up in the Rules, i.e. AS 61000.2.2-2003 and TR IEC 61000.3.13-2012. The current 1% limit is not achievable in many low voltage sites, and strict compliance will require Distributors to invest significantly in the low voltage networks for no obvious customer benefits.

Question Number	Issue	JEN response
22	Are there any defined terms that you think are no longer correct or relevant that we need to address?	None that we are aware of.
23	Should we align as much as possible and adopt national definitions set out in Appendix I? What may be the potential benefits or issues to align with the national definitions?	Jemena supports harmonisation of the definitions in the Code with the national definitions only where appropriate. We propose: • the term 'momentary interruption' be aligned with the national definitions – i.e. change duration of interruption from 'less than one minute' to 'three minutes or less'. For the Victorian distributors, the 'three minutes or less' definition would apply from the commencement of the next regulatory period.[9] To achieve harmonisation with the national definition, we suggest the MAIFIe definition in the STPIS be referenced to in the Code. • the duration of interruption in the term 'sustained interruption' be changed from 'longer than one minute" to 'longer than three minutes' so that it aligns with the national definition of MIAIFe. • the definition of 'urban feeder' be also aligned with the national definition. We consider there is no need to define 'worst serviced customer' or 'inadequately served customer' in the Code as the definition would have no purpose as these terms are not currently referred in the Code.
24	Are there particular clauses that stakeholders think need to be made clearer?	Jemena receives customer voltage complaints due to their misinterpretation of *+50%-100%* in Tables 1 and 1A of the Code (column 'less than 10 seconds') being the range of +50% to +100%. It would be clearer if a 'comma' is inserted in for specified voltage ranges resembling *+50%, -100%*.

[9] AER, *STPIS*, November 2018, Version 2.0, clause 3.1 (a), notes "*MAIFIe* is the preferred momentary interruption measurement parameter. However, if a DNSP is unable to measure momentary interruptions under the *MAIFIe* method, *MAIFI* measurement method will apply"