Electricity Distribution Code Review —Issues Paper

CitiPower Powercor and United Energy

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Contents

1 Summary

CitiPower, Powercor and United Energy welcome the Essential Service Commission of Victoria's (**ESCV**) review of the Electricity Distribution Code (**EDC**) to ensure it continues to meet current and future stakeholder needs.

With respect to the consumer protections sections of the EDC, we support:

- **digitising customer engagement** to make electronic communication the primary/default communication channel for planned outage notifications and for other relevant written notifications from distributors to end-customers
- **improved customer experience** so that distributors have the option to reduce the planned outage notification window with customer's consent
- **improved access to customer information** so that distributors are able to obtain all relevant information (including telephone number and email) from retailers to allow information exchange with end customers, particularly following extended outages
- **focusing on life support customers**, rather than vulnerable customers, as the centre of necessary additional obligations as these are an identifiable cohort of customers flagged in our systems which can be appropriately managed and tracked
- **removing the 'appointment' category** from the guaranteed service standards (**GSL**s) scheme as it is no longer required
- **not penalising distributors** through the GSL scheme for extended outage durations that result from operating the network in line with our safety obligations on high fire risk days.

For technical currency of the EDC, we generally support aligning the requirements with the National Electricity Rules (**Rules**) or the current Australian Standards to move towards a nationally consistent approach. We support:

- **modernising the steady state low voltage standards** to align with current Australian Standards, consistent with the voltage standards that appliances in customer homes are manufactured to achieve
- **maintaining consumer protections for voltage excursions** such that customers have the ability to seek compensation from distributors if their assets are damaged from voltages that are inconsistent with the Australian Standards, using the measurement techniques also defined in the Australian Standards to confirm compliance
- **removing redundant or duplicative obligations** where the obligations are no longer required due to obsolescence or duplication of the Rules including harmonic, negative sequence and disturbing load voltage standards.

2 Outages

- Electronic communication should be the primary/default communication channel with customers for planned outages
- Hard-copy notifications for planned outages should only be provided in circumstances where customers have opted for this form of communication
- Distributors should be able to obtain affected customer's consent for an interruption to occur within a date range or on a specified date
- The penalty for non-compliance with planned outage notification obligations should be compensation payments to affected customers
- The focus of necessary EDC changes should be life support customers rather than vulnerable customers
- Proactively notifying customers of unplanned outages is not practical

2.1 Electronic communications should be default

Our customers increasingly prefer digital channels (i.e. online, email or SMS) as their preferred form of communication. This has been communicated to us though feedback from our customers as well as a literature review of energy customers' preferences which we recently commissioned (see appendix).[1] In contrast, many aspects of the EDC still require us to interact with customers via hardcopy written communication.

Electronic communication allows us to provide customers with up-to-date information in a convenient, efficient, and cost-effective manner. The EDC needs to be modernised to allow for electronic communication to be the default communication channel, and to be recognised as a form of "written communication." We also recognise that not all customers wish to receive digital notifications, and so support providing customers the option to continue to receive hard-copy written communications.

Over 80% of our customers are currently contactable via SMS and receive notifications prior to planned outages and quickly following an unplanned outage affecting their property.

Digital communication is much more effective at keeping our customers informed of relevant matters. For example, following the 2013 annual distributor notification (pursuant to clause 9.1.2A) a survey of CitiPower and Powercor customers[2] revealed that only 17% of customers recalled receiving the paper notification.

We seek the EDC to be amended such that we can notify customers digitally about planned interruptions in lieu of hard-copy posted notifications. The use of digital notification was broadly supported at the recent ESCV forum due to the speed and accuracy of information that can be provided as a result.

We also consider that the following clauses in the EDC should be modernised or removed to reflect the alternative use of electronic communications:

- providing the Customer Charter online, or if requested by a customer, via hard-copy (cl 9.1.2)
- removing the annual distributor notification requirement (cl 9.1.2A)

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1 Dr Robyn Stokes, Literature Review: Energy customer preferences, communication trends and regulatory requirements: proposed amendments to Victoria's Electricity Distribution Code (EDC), June 2018.

2 UMR Research, CitiPower-Powercor Consumer survey May 2013 Final.

- only requiring communication to small embedded generators at the time of connection. This communication may be digital (cl 9.1.3A).

2.1.1 Planned outages should be communicated by electronic means

Delivery times for hard-copy mail are increasing and vary depending on the destination. This creates operational and planning issues and longer lead times increase the likelihood of customers receiving out-dated information or late notice.

In contrast, electronic notifications provide greater transparency with customers receiving more accurate information in near real-time. This service would also complement reminder SMS and email processes already in place.

At the ESCV's public forum on 27 August 2019, attendees supported receiving electronic notification relating to a planned outage that may impact them. Attendees noted that consumers often make alternative arrangements around planned outages, and electronic notification together with electronic updates relating to that outage would assist in their planning of alternative arrangements, if required.

Market studies in Australia and New Zealand provide strong evidence that customer acceptance of electricity outages is directly linked to the immediacy of information sharing.[3] The preferred communication channels include telephone calls, SMS, websites, apps, and email i.e. the everyday points of reference for many Australian households.

Therefore, for clause 5.5.1 of the EDC, we believe electronic communications should be the preferred form of written notice. Where digital contact information is available, electronic communication should be the primary/default communication channel for communications with customers.

2.1.2 Digital communication allows customers to be notified of rescheduled or cancelled works

Feedback we have received from our customers indicates they want to be notified of rescheduled or cancelled works. We already digitally notify customers of a rescheduled or cancelled outage, where possible. Legitimising digital notifications will allow us to continue to notify customers digitally in a convenient and timely manner.

Notification of rescheduled or cancelled works in advance is not always possible, for example if the a work-around solution is found on the day, if not all customers are ultimately impacted or if it is not otherwise certain that the works will be able to be rescheduled or cancelled in advance.

As we already digitally notify customers, where practicable, of rescheduled or cancelled outages, we do not consider that an explicit obligation is appropriate to require us to notify customers. We note the following reasons:

- digital communication is not currently recognised as a valid form of written communication in the EDC, however it is the only way in which such notification can be provided to customers within the four day planned outage notification window
- some customers may wish to opt-out of receiving communications via digital means, such that traditional mail is the only method to communicate with the customer and any notification may not reach the customer prior to the planned start to the outage

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[3] Newgate Research, Consumer research for the Australian Energy Market Commission's 2017 Retail Competition Review: Final Report, report to the AEMC, April 2017.

- increased costs to customers if we are required to print and post updated notifications to customers
- many planned outages are cancelled during the scheduled outage time, for example if the weather is extreme or our trucks get bogged while attempting to start the works.

2.1.3 Retailers need to provide distributors with digital contact details for customers

Retailers must be required to provide us with all contact details, including email addresses, for their customer. Our ability to digitally notify customers of outages relies on those digital contact details being provided to us by retailers. Retailers currently provide us with limited customer details. For example, we may receive the customer name, fixed and/or mobile phone number and postal address for the purposes of providing outage notifications.

Email communication would enable a greater amount of information to be shared by the distributor with the customer relating to an outage, including links to relevant webpages where additional information may also be provided.

Retailers collect both mobile numbers and email addresses from their customers. Under the B2B Procedure,[4] retailers are obliged to share customers' mobile phone numbers with us, but emails are optional. We consider that retailers should be obliged under the B2B Procedure, under the Energy Retail Code and other relevant instruments to provide us with all digital contacts details they have, including customers' emails. Formalising this as an obligation on retailers would also give retailers additional comfort that they are clearly permitted to provide us with such information under relevant privacy and confidentiality laws and obligations.

2.1.4 Digital communications are the standard in other jurisdictions

In other jurisdictions, the use of digital communication is increasing and paper based communication decreasing. Offshore regulators have concluded that there is limited readership of written communication and little to no cost efficiency of mailing discrete information to distribution customers.[5] For example, the United Kingdom Office of Gas and Electricity Markets (**Ofgem**) has removed the annual obligation for distributors to advise on their complaint handling procedures noting that this delivers 'best value for money for customers while companies still retain the obligation to take all reasonable steps to inform customers e.g. by electronic communication'.[6]

In Western Australia, Western Power use email as the default to communicate with customers about planned outages. If email is unavailable, Western Power notifies customers by SMS. Mail is the last option. Customers all have the ability to opt in to mail notifications if they so choose.

Various government departments and agencies are acknowledging the shift to digital communications. The Victorian Department of Environment, Land, Water and Planning (**DELWP**), in its recommendations following the 2018 Australia Day outages, required that distributors communicate with certain customers ahead of potential events.[7] The communication channels specified in those recommendations were telephony, social media, websites and other community messaging channels. The recommendations did not include paper notifications as an option, in recognition of its limitations in terms of speed and flexibility as well as customer preference for digital notifications.

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4 Australia Energy Market Operator, BRB Procedure: Customer and Site Details Notification Process, 1 February 2019.

5 Revealing Reality, Ofgem Consumer First Panel, Year 9, Wave 1 - Understanding information needs, December 2017.

6 Ofgem, Decision on changes to The Gas and Electricity (Consumer Complaints Handling Standards) Regulations 2008, 21 March 2017, p. 3.

7 Department of Environment, Land, Water and Planning, Post Event Review – Power Outages 28 & 29 January 2018.

At the 23 July 2019 meeting of the Electric Line Clearance Consultative Commission of Energy Safe Victoria (**ESV**), it was resolved that digital notifications were the most appropriate way to notify the public of scheduled line clearing.[8]

2.1.5 Other EDC notification obligations

The various obligations under clause 9.1 of the EDC require distributors to interact with customers via written communications, restricting our ability to communicate with customers in their preferred channel.

While we consider providing customers with a charter (clause 9.1.2) remains important, our research has shown that customers choose to access general service information, when they need it, via digital channels as opposed to paper-based communications.

When clause 9.1.2A was added to the EDC in 2010, written notification was considered the appropriate channel. This clause was added following the ESCV's 2009 review of Electricity Distributors' Communications in Extreme Supply Events, with the objective of providing customers with timely and useful information just before the summer and high risk bushfire season.

The requirements under clause 9.1.3A were appropriate when the small embedded generator industry was still in its infancy. However, the industry has now matured and customers are more aware about how they should maintain their solar installations and after sales maintenance services are available from installers. In addition, Clean Energy Council accredited contractors have been established and ESV has put in place solar compliance officers. Finally, our model standing offer contains a number of obligations the owners of micro embedded generators must satisfy in order to remain connected. This includes ensuring regular inspections in accordance with the manufacturer's instructions or within three years in lieu of available instructions. As a consequence, there no longer appears a need for clause 9.1.3A.

2.2 Planned outages with customer consent

The ESCV proposes in its draft decision relating to Life Support Customers to adopt part of Rule 90 of the National Energy Retail Rules (**NERR**) relating to planned distributor interruptions. The draft decision proposes to allow life support customers to provide consent to a distributor to bring forward a planned interruption that would affect them to a time that was less than four business days from the receipt of the notification. We consider that the intent and drafting of Rule 90 should be adopted such that all customers can benefit.

Such a provision may provide a better experience for customers who, instead of having to make alternative arrangements during a possible long planned outage, could experience a shorter outage. For example, a customer may experience a short interruption at a specified time when the work crews arrive on site. This would be of great benefit to customers who have made special arrangements in order for the planned outage to proceed, particularly commercial customers who often are required to either close their business or hire generators in order to continue trading.

If the distributor can obtain affected customers consent to an interruption occurring within a date range or on a specified date, there may be broader benefits to the public. For example, if there are nearby works then we will already have co-ordinated traffic management and other site-specific requirements to ensure the safety of our workforce and the general public. If the works are conducted concurrently then this will result in a lower impact on the public as crews would not need to return to site to re-establish traffic management and limit the number of times we would need to park heavy vehicles, plant and equipment in neighbourhoods.

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[8] Energy Safety Victoria, Electric Line Clearance Consultative Committee: ESV Policy Decisions, p.1.

This could be achieved by adopting Rule 90 of the NERR, as written, in its entirety. Customers may benefit by clearer expectations about the outage window as well as lowering our costs in undertaking planned outages which will ultimately lower network tariffs. Additionally, it would facilitate efficient processes for new basic connections, connection alterations and supply abolishment and avoid delays.

Taking customers off-supply with their agreement is likely to be advantageous for customers when service line and metering changes are required. These types of jobs have interruptions of smaller durations of around 15 minutes to an hour. Distributors would also benefit from the flexibility this approach would provide. For example, to address localised maintenance works, taking customers off-supply with their agreement would allow us to resolve issues quicker, providing customers with clearer expectations about the outage window.

This approach is in line with other jurisdictions. For example, the Energy and Water Ombudsman in New South Wales believes shorter notice periods may be accepted if it is agreed between the customer and the distributor. In Queensland's Electricity Distribution Network Code (clause 2.3.8, shown in box below), when referencing where guaranteed service level payment eligibility, it states that notice periods can be agreed between customers and distributors.

Queensland's Electricity Distribution Network Code

2.3.8 "Planned interruptions (a) Except in the case of emergencies, if a distribution entity does not give a small customer the notice provided for, or agreed between the distribution entity and the small customer, under electricity legislation, the small customer is eligible for a GSL payment (applying on the date of the planned interruption) from the distribution entity".[1]

Source: Queensland Electricity Distribution Network Code, made under the Electricity Act 1994, 5 Jan 2018, 2.3.8. p 10

2.3 Penalties for failure to provide 4 day planned outage notification

We are subject to penalties if we fail to comply with the obligation to provide each affected customer with at least four business days written notice of a planned interruption. The penalties, under s 54I of the Essential Services Commission Act 2001 (Vic)[9] and regulation 9 of the Essential Services Commission (Energy Industry Penalty Regime) Regulations 2016 (Vic)[10], are $10,000 or $20,000 where the customer is a life support customer.

These penalty payments are not paid to affected customers. Rather, the penalties are paid by distributors to the ESCV. A more appropriate penalty for failure to notify of planned outages would be akin to a GSL payment to the affected customer which would seek to compensate for poor service and any inconvenience caused.

2.4 Notifying unplanned outages

2.4.1 Unplanned outages cannot be anticipated

Unplanned outages occur on our networks. There are different drivers for these outages, such as failure of an electricity asset, or as a result of vegetation or animals coming into contact with our assets. Outages on our networks may also be caused by third parties, such as vehicle impact, dug-up cables or transmission outages. Should we be able to anticipate an increased risk of an unplanned outage, the location and extent of an outage is almost impossible to predict.

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9 *Essential Services Commission Act 2001*. No. 62 of 2001. Authorised Version incorporating amendments as at 7 June 2016, section 54I, p 63.

10 *Essential Services Commission (Energy Industry Penalty Regime) Regulations 2016* S.R. No. 48/2016, regulation 9 p 4.

In contrast, we may be able to anticipate outages associated with extreme weather events. However, the correlation between severe weather and impact to our network can be difficult to predict. Where bad weather is forecast, we are more often seeing smaller cells of particularly severe weather within a larger weather system which can cause unpredictable damage to our network.

With the exception of certain arrangements relating to extreme weather events (further discussed below), we consider it is impractical to notify customers on our network of potential unplanned outages. This is because the nature, location and duration of the outage is almost impossible to predict. Therefore, notification of potential unplanned outages would be unlikely to be beneficial to customers.

2.4.2 There is already a existing framework for extreme weather events

The Bureau of Meteorology releases weather warnings for potential pending extreme weather events. There is a framework in place associated with advising customers of potential pending extreme weather events. The Victorian Energy Emergency Communications Protocol (**VEECP**)[11] was developed by the Australian Energy Market Operator (**AEMO**) and the energy industry to facilitate timely sharing of information between industry, government agencies and emergency services in preparedness for a potential emergency event and when responding to an actual emergency event. The VEECP includes a number of triggers which, if activated, lead to industry and government collaboration and information sharing with relevant stakeholders through media statements, alerts or direct communication. In this situation we believe the community would be better served with greater reach and recognition by a single spokesperson (e.g. Emergency Management Victoria) supported by protocols already established by industry participants.

2.4.3 Empowering customers to make plans for an unplanned outage

We take proactive steps to help our life support customers prepare for the possibility of an unplanned outage. During planned or unplanned outages customers with life support equipment may need to make alternative arrangements depending on their individual circumstances. Customers are advised to have an action plan in place that they can follow in these circumstances. We provide customers with assistance to create an action plan and an emergency phone number to call.

Existing EDC obligation (clause 5.6.1) require customers to be provided with assistance to establish an action plan for unplanned interruptions. Establishing an action plan is the most effective method of safeguarding customer welfare in the event of a power interruption or any other event impacting health of safety. Life support customers are also provided with a dedicated emergency phone number. Calls to this number are prioritised above all other calls.

2.4.4 Vulnerable customers are not identifiable cohort

The ESCV discusses distributors being required to notify vulnerable customers of an outage or a potential outage. Life support customers are clearly identified in our systems. We consider that we should focus our attention on communicating with this highest risk segment of customers. Our systems do not contain information relating to other potential types of vulnerable customers (such as low socio-economic, non-English speaking, disabled etc.) to flag them as such and notify in the event of a known outage.

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[11] AEMO, Victorian Energy Emergency Communications Protocol, December 2018.

3 Guaranteed Service Levels

- The GSL scheme is generally currently fit-for-purpose
- The customer appointments GSL should be deleted as it is no longer required
- GSL exclusion definitions should be aligned with the AER definitions under the Service Target Performance Incentive Scheme (STPIS)
- A new exclusion category for the operation of the Rapid Earth Fault Current Limiter (**REFCL**) should be added
- Distributors should be compensated for an efficient level of GSLs through the revenue allowance

The purpose of a GSL payments scheme is to notionally compensate worst served customers who receive a level of service that is worse than a specified threshold or level. It is compensation for the inconvenience caused to the customer, in circumstances where it may not be economic to upgrade network supply. It is not a scheme to incentivise distributors to improve service to the worst served.

3.1 Changes to the GSL scheme

Generally we believe the current GSL payments scheme is fit-for-purpose and appropriately compensates customers for poor service. The changes that we seek include:

- removal of the 'appointments' category as it is no longer required
- alignment of the Victorian GSL scheme with the national scheme under the **STPIS** for exclusions
- inclusion of a new exclusion category for the operation of REFCL in fire risk mode.

These are discussed in turn below.

3.1.1 Removal of the customer appointments GSL

We consider the customer appointment GSL should be deleted, as it is no longer required.

The original clause was introduced when there were a wide range of instances where distributors would make appointments with customers. The key interactions the clause targeted were for special meter reading activities related to energisation of sites, specifically fuse inserts/re-inserts. Since then distributors have deployed smart meters to most customers and utilise a remote re/de-energisation process incorporating a final read.

3.1.2 Alignment of GSL exclusions to STPIS

The current GSL exclusions should be aligned with the exclusion categories contained in the STPIS, as per the Distribution Reliability Measures Guideline. This would mean the addition of the following categories:

Exclusion Criterion	Event
Exercise of legislative obligation, right or discretion	Load interruptions caused by the exercise of any obligation, right or discretion imposed upon or provided for under jurisdictional electricity legislation or national electricity legislation applying to a Distribution Network Service Provider.
Emergency services	Load interruptions caused or extended by direction from state or federal emergency services, provided that a fault in, or the operation of, the network did not cause, in whole or part, the event giving rise to the direction.
Major Event Day	An event may also be excluded where daily unplanned SAIDI for the DNSP's distribution network exceeds the major event day boundary, as set out in appendix D, when the event has not been excluded under clause 3.3(a).

Inclusion of the three criteria would align Victoria with the national exclusion categories, which already apply to distributors under the STPIS scheme. This would also reduce confusion in the industry and allow all distributors to apply for exclusions at the same level.

3.1.3 Additional GSL exclusion

The current GSL exclusions should be extended to exclude REFCL program.

Exclusion criterion	Event
REFCL	NEW: Load interruptions caused from the implementation and operation of the REFCL.

Following the Black Saturday bushfires in 2009, the Victorian Government established the Victorian Bushfire Royal Commission (**VBRC**) to consider how bushfires can be better prevented and managed in the future. In July 2010, the VBRC's final report was provided to the Victorian Government. The Powerline Bushfire Safety Taskforce (**PBST**) subsequently identified REFCLs installed in zone substations as an efficient and effective technology to address one of the VBRC's recommendations.

Under the Electricity Safety (Bushfire Mitigation) Regulation 2013, Powercor is required to install REFCLs in 22 zone substations. A REFCL is a network protection device, normally installed in a zone substation that can reduce the risk of a fallen powerline igniting a bushfire. It is capable of detecting when a power line has fallen to the ground and almost instantaneously shuts off power on the fallen line.

Our bushfire mitigation plans (**BMP**) sets out the three operating modes of the REFCLs**.** The operation of REFCLs in fire risk mode is expected to have substantial negative impacts on our reliability performance in terms of sustained outages. Fire risk mode requires that when a fault is detected, the REFCL immediately works to identify whether or not the fault is temporary or permanent. Should the fault be permanent, the faulted feeder is tripped at the circuit breaker at the zone substation resulting in all customers served from that feeder experiencing an outage. Powercor will then visually inspect the entire length of the feeder to identify, and remedy, the cause of the fault. Once the fault is rectified, the feeder is re-energised. Customers may experience a lengthy outage.

On total fire ban days, there is a heightened focus on safety, and the preservation of human life and assets. The community expects distributors to ensure safety is prioritised on these days. Distributors should not be penalised for extended outage durations that result from operating the network in line with our safety obligations on high fire risk days.

3.2 Distributors should be compensated for efficient level of GSLs

The **STPIS**, administered by the Australian Energy Regulator (**AER**), provides incentives for distributors to maintain and improve service performance as set out in clause 6.6.2(a) of the Rules. GSL payments compensate customers for which it is uneconomic to make investments to improve reliability i.e. where the costs are higher than the value of customer reliability.

It is not efficient to remove GSL payment costs from distributor's revenue allowances set by the AER. Distributors should be compensated for the efficient costs consistent with the Rules. GSL payments are efficient costs because it would be uneconomic to improve reliability for our worst served customers to avoid the GSL payment.

Further, if we were required to make investments to improve reliability for worst served customers, we would need to seek additional capital expenditure funding. As an example, an internal study was commissioned in 2018 investigating the cost of various solutions in worst served areas to improve reliability to that experienced on the average across the network. It was found the costs for the Powercor network area alone would be in excess of $50 million.

4 Technical issues

- Steady-state low voltages in the EDC should be amended to align with current Australian Standards
- Alignment with Australian Standards to include an appropriate measurement or assessment procedure using smart meters for compliance monitoring of voltage variation
- Harmonic distortion, negative sequence and voltage fluctuation (from disturbing load) obligations on distributors should be removed from the EDC as they duplicate obligations in the Rules
- Inductive interference and negative sequence voltage obligations should be updated to align with the current Australian Standards
- Clauses relating to over-voltages and signals for voltages can be removed from the EDC as they are no longer required.

This section responds to the various matters raised by the ESCV in the technical standards section of the Issues Paper.

4.1 Voltage standards

This section discusses voltage standards set out in clause 4.2 of the EDC.

4.1.1 Amend steady state low voltage standards

The availability of voltage measurements from smart meters and the proliferation of distributed energy sources including solar photovoltaic (**PV**) systems and batteries are revealing challenges for distributors to manage steady-state voltages to the prescribed limits at of all time as currently contained in clause 4.2.2 of the EDC. We support amending the steady state low voltage standard to align with the current Australian Standard for both phase-to-phase and phase-to-earth voltages to introduce a probabilistic element on the existing limits.

The products and services currently purchased by customers, such as white goods, are currently manufactured to withstand voltages in accordance with AS 61000.3.100. It makes sense to align the voltage standard on our networks with the equipment that the network supports.

AS 61000.3.100-2011 is generally considered to be best practice for steady-state voltage limits. It was developed by the Standards Australia Committee EL-034 which has expert representation from distributors, equipment suppliers and academics. It defines the limits of steady state supply voltage to be delivered to electricity consumers from distribution systems. The standard enables technical and economic regulators to define performance indicators to be used for electricity supply, while optimising the cost of electricity network development.

The standard enables electrical equipment manufacturers to design their equipment to operate safely, efficiently and effectively over the supply voltage range, with resultant benefits in energy conservation. The electricity end-use customers' benefit from more efficient electrical appliances, with appliances meeting designed life expectancy.

As the ESCV notes, South Australia and New South Wales have adopted the Australian Standard (AS 61000.3.100) for voltage. The Queensland Government recently moved to adopt in 2020 to enable more

renewable generation to be connected to Queensland's low voltage networks at reduced cost to electricity entities and customers and enable appliances to run at more efficient levels.[12]

4.1.2 Including a measurement for all voltage ranges

Clause 4.2.2 of the EDC does not contain an appropriate measurement or assessment procedure for compliance monitoring of voltage variation. In the absence of this information, the steady-state voltage ranges may be interpreted as limits that apply for 100% of the time. If taken literally, this would result in over-design of Victorian distribution networks, driving inefficient over-investment leading to higher prices to Victorian consumers relative to distributors in other states that have adopted the Australian standards.

The increasing penetration of solar PV is pushing up voltages on the network. If the boost tap is at its maximum on the end of a feeder to counter the effects of PV not operating, the voltage could rise above 253 volts. This is outside of the current EDC limits, and to ensure compliance 100% of the time, distributors would need to throttle the amount of solar being exported to continue to comply. The Victorian distributors are mandating in our solar PV customer model standing offers for inverters to ramp down output above 253V and to trip off at 258V. This strikes a balance between customers' ability to fully export up to 253V, while reducing the risk of customer appliances being exposed to excessive voltages.

We propose that steady-state voltage at a site be based on consecutive 10 minute r.m.s. voltage measurements in accordance with AS/NZS 61000.4.30-2012. The use of this assessment procedure will allow a small number of excursions from the voltage range for up to 1% of the time. This will mean that distributors will be able to comply with the EDC when there is a high level of solar exporting from the grid, without reducing the exported capacity.

4.1.3 Maintain medium and high voltages requirements

We note that the Australian Standard AS 61000.3.100-2011 does not address phase-to-earth voltages. Furthermore, there is no Australian Standard for high voltages (i.e. 66kV). On this basis, we do not advocate for change to the steady-state medium and high voltages specified in clause 4.2.2 of the EDC. However, as noted above, we consider the EDC should contain an appropriate measurement or assessment procedure for compliance monitoring of voltage variation at these voltage levels.

4.1.4 Voltage standards and customer protections

The ESCV queries whether allowing greater flexibility with the voltage standards could affect the way customers are paid under Guideline 11–Voltage variation compensation, in the event damage occurs caused by excessive voltage.

We consider that the adoption of the Australian Standard for low-voltage steady-state voltages will not impact a customer's ability to seek compensation for unreasonably excessive voltages.

Currently, we use smart meter and ion meter data to assess claims that we receive under Guideline 11. Smart meter data indicates the length of a network outage or the quality of supply of electricity to a customer. Modern customer appliances such as white goods (e.g. fridges or freezers) are manufactured to withstand voltages in accordance with AS 61000.3.100. Therefore, smart meter data can be used to determine the extent and duration

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[12] Refer Queensland Government, Queensland's statutory voltage limit review, https://www.dews.qld.gov.au/our-department/consultations/queenslands-statutory-voltage-limit-review; and
Queensland Government, *Electricity (Voltage Limits) Amendment Regulation 2017*, Explanatory notes, https://www.legislation.qld.gov.au/view/pdf/published.exp/sl-2017-0223.

of any variations in voltages outside of Australian Standards on the network that may have contributed to damage of an asset at a customer premise. The smart meter data and the measurement techniques defined in the Australian Standards allow us to confirm compliance.

4.1.5 Amend impulse voltages

Clause 4.2.2 of the EDC sets out impulse voltages at different voltage levels on the distribution network.

Impulse voltages relate to over-voltages immediately following a lightning strike on a network. Lightning typically hits the overhead network, rather than the underground network. Therefore, lower impulse voltages are experienced on the underground network.

Distributors incur higher costs in procuring assets to withstand 150kV peak impulse voltages compared with lower impulse voltages. Such expenditure is inefficient on underground assets. Therefore, we propose that assets on the underground network only be required to withstand 125kV peak impulse voltages at 22kV, and 75kV on 11kV networks. We note that the 125kV peak impulse voltage is consistent with the requirements in Europe, as well as Australian Standard 2067.

4.1.6 Remove over-voltage requirement

Clause 4.2.3 of the EDC requires distributors to control over-voltage in accordance with IEC 60364-4-443. Over-voltages are transient changes in voltage before the voltage returns to a steady-state.

IEC 60364-4-443 has been withdrawn. The second edition of IEC 60364-4-44 published in 2007 cancels and replaces the first edition published in 2001, amendment 1 (2003) and amendment 2 (2006). The 2007 version has also been updated to include the contents of the corrigenda of May 2010 and October 2011.

That said, specification of an over-voltage standard within the EDC is not necessary. Equipment manufacturers design their equipment to withstand over-voltages in accordance with the relevant standard. Also, the EDC already requires that distributors maintain good asset management practices, and the design of the network and health of the equipment is only maintained where over-voltages are contained to the limits of the equipment.

4.1.7 Remove signals for voltage clause

Clause 4.2.5 of the EDC allows distributors to send signals for ripple control, medium-frequency or radio-frequency power-line carrier systems in accordance with IE 1000-2-2. This clause can be deleted as it is out-of-date and no longer required.

4.1.8 Change to voltage variation table

We propose the following amendments to the steady state voltages in table 4.2.2 of the EDC. For simplicity, we have reflected the recent amendments relating to REFCLs in the table.

STANDARD NOMINAL VOLTAGE RANGE				
Voltage Level in kV	Voltage Range for Time Periods			
	Steady-state Note 2	Less than minute	Less than 10 seconds	Impulse Voltage
<1.0	Note 1 +10% -6% (normal)	+14% -10%	Phase to Earth +50%-100% Phase to Phase +20%-100%	6 kV peak
1-6.6	+6% (±10% Rural Areas)	±10%	Phase to Earth +80%-100% (unless REFCL operating) Phase to Phase +20%-100%	60 kV peak
11				75kV (underground) 95 kV peak (overhead)
22				125 kV peak (underground) 150 kV peak (overhead)
66	±10%	±15%	Phase to Earth +50%-100% Phase to Phase +20%-100%	325 kV peak

Note 1: in accordance with AS/NZS 61000.3.100-2011
Note 2: All measurements of steady-state voltage at a site shall be based on consecutive 10 minute r.m.s. voltage measurements in accordance with AS/NZS 61000.4.30-2012.

4.2 Other technical standards

This section discusses other technical standards discussed in the Issues Paper.

4.2.1 Supply frequency

Clause 4.1 of the EDC relates to supply frequency. It sets out that the AEMO has responsibility for supply frequency on distribution networks.

The ESCV discusses specific circumstances where supply frequency management may be required outside of the remit of AEMO. For example, this may relate to household battery storage systems, micro-grids or stand-alone power systems.

We note that supply frequency on isolated or behind-the-meter systems may impact our distribution network where they rely on the distribution network for back-up power. The Australian Energy Market Commission (**AEMC**) is currently consulting on guidelines for stand-alone power systems, where distributors have

responsibility for frequency.[13] We consider the issue of supply frequency for stand-alone power systems is best managed through that forum.

4.2.2 Harmonics

Clause 4.4 of the EDC sets out the requirements on distributors to manage harmonic levels on the network. Clauses 4.4.1 and 4.4.2 can be deleted as it duplicates, and potentially conflicts with, the NER. We propose that clause 4.4.3 be maintained.

Clauses 4.4.1 and 4.4.2 of the EDC set out the voltage harmonic distortion limits and require compliance with the Institute of Electrical and Electronics Engineers (**IEEE**) standard 519-1992. The IEEE standards originate in America. Harmonics cause disturbance of a current or voltage waveform and may be caused by customer equipment such as fluorescent lights or plasma televisions, or by embedded generator loads.

Schedule 5.1a.6 of the NER requires harmonic distortion levels of supply to be less than the compatibility levels defined in the AS 61000.3.6:2001. The current Australian Standard sets out how to allocate harmonics to customers. It discusses compatibility levels with low voltage customers and planning for medium and high voltage customers up to 230kV.

The obligation for customers to maintain current harmonics discussed in clause 4.4.3 should be maintained, as there is no equivalent obligation under the NER or in Australian Standards. That said, the reference to the IEEE standard is out-of-date.

The operation of REFCLs and the impact on harmonics needs to be further considered.

4.2.3 Negative sequence

Clause 4.6 of the EDC sets out the requirements on distributors to maintain negative sequence voltage levels on the network. This clause can be deleted as it duplicates, and potentially conflicts with, the Rules.

Schedule 5.1a.7 of the Rules sets out the requirements for voltage unbalance on the network, with table S5.1a.1 setting out the maximum negative sequence voltages relating to the nominal voltage.

We note that maintaining the current EDC provision could impose higher costs on connecting generators or customers with large unbalanced loads to our network, and removing the provision and relying upon the Rules will bring Victoria into line with other states.

4.2.4 Power factor

Clause 4.4 of the EDC sets out the power factor requirements that apply to customers.

Distributors are required to maintain power factor levels on the network through its use of system agreement (UoSA) with AEMO. Therefore, we consider that there is benefit in retaining the current obligation on customers to enable us to maintain the quality of supply of electricity to all of our distribution customers.

The current drafting of this obligation appears to be on load customers. With many customers now having their own generation, this clause needs to be clarified. As generators offset load, we seek to clarify that the obligation applies to the load only with the assumption that all generators are out of service at a customer site.

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[13] Refer AEMC, Review of the regulatory frameworks for stand-alone power systems, available from: https://www.aemc.gov.au/market-reviews-advice/review-regulatory-frameworks-stand-alone-power-systems

4.2.5 Load balance

Clause 4.7 of the EDC imposes obligations on connecting customers in terms of load balance. We consider that this clause remains relevant, as distributors do not want all customers connecting solar PV to a single phase of a three phase system resulting in load imbalance.

4.2.6 Disturbing load

Clause 4.8 of the EDC sets out obligations on distributors and customers relating to disturbing loads, or flicker. This clause can be deleted as it duplicates the Rules.

Schedule 5.1a.5 of the Rules requires voltage fluctuation levels of supply to be less than the compatibility levels defined in the AS 61000.3.7:2001. The current Australian Standard sets out how to allocate flicker to customers.

4.2.7 Inductive interference

Clause 4.5 of the EDC sets out the requirement on distributors to manage inductive interference levels on the network. We consider that this clause remains relevant, and as there is no equivalent provision in the Rules, it should be updated to the current Australian Standard.

4.2.8 Fault levels

Fault levels are set out in clause 7.8 of the EDC. It currently applies to embedded generators to ensure that their generating unit does not contribute to causing excessive fault levels on the distribution network. We support retention of this clause.

5 Other matters

- We do not believe reliability standards in Victoria need to be revisited
- We already publish a significant quantity of information relating to our network and outages that meets the needs of our customers
- Other clauses in the EDC require updating and modernisation, and a trigger clause for review of the EDC should be included

5.1 Reliability standard

Clause 5.2 of the EDC requires that distributors use best endeavours to meet **STPIS** targets and to otherwise meet reasonable customer expectations of reliability of supply.

There is a trade-off to customers in terms of the reliability of supply and network cost.

A deterministic planning standard calls for zero interruptions to customer supply following any single outage of a network element, such as a transformer. This approach, which has previously been adopted in NSW and Queensland, has led to over-building or 'gold plating' of the network and resultant high costs to customers.

In contrast, the probabilistic planning standards currently used in Victoria lead to more cost effective network however with some interruptions. Augmentation to the network is driven by balancing the costs against the benefits to the customer in terms of reductions in the quantity and value of energy at risk. This ensures uneconomic augmentation to the network is not undertaken to cover the possibility that an outage of an item of network plan may only occur for a few hours each year under extreme loading conditions.

The **AER** funds distributors to maintain levels of network reliability, including through the use of the STPIS.

We do not consider the reliability standard should be revisited.

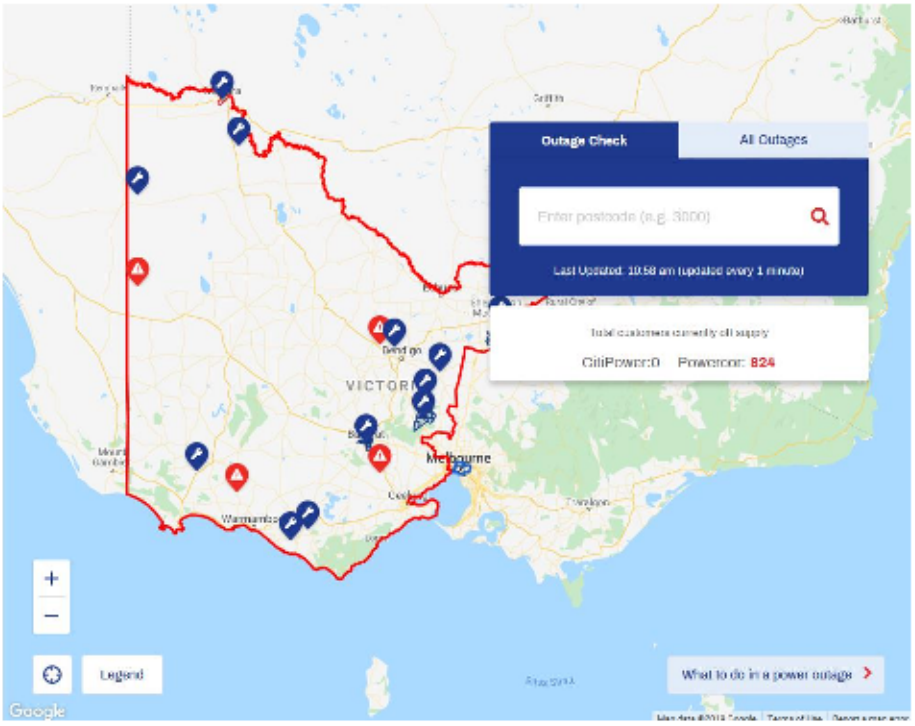
5.2 Distribution system planning and other reporting

The Victorian Government report into the Australia Day outages recommended that the ESCV consider including annual obligations for distributors to report on their use of smart meter technology, as well as publication of the location of network weaknesses, outage events and trends over time on our website.

The ESCV notes that distributors produce interactive online maps that report on the outages occurring on the network.[14] We also have apps available to our customers which show, in real time, the location and expected time for restoration of faults. The website and apps have been developed in response to feedback from our customers about what information they would like to receive.

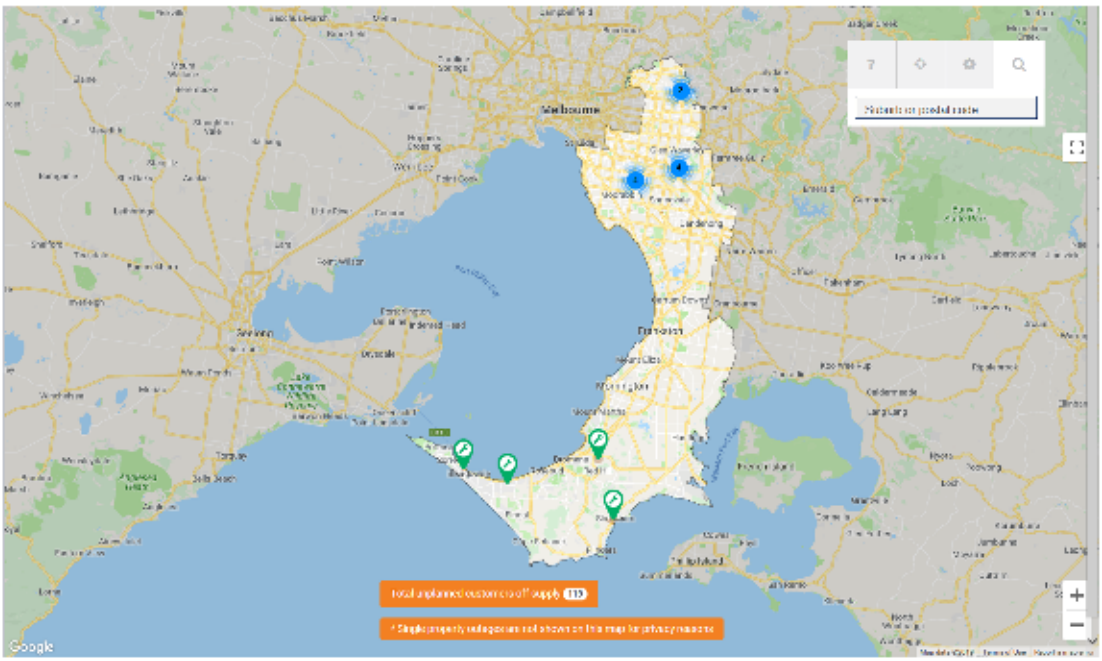
[14] ESCV, *Electricity Distribution Code Review — Issues Paper*, 13 August 2019, p. 43.

Figure 1 Current outages for CitiPower and Powercor



Source: https://www.powercor.com.au/outages/outage-map/

Figure 2 Current outages for United Energy



Source: https://outagemap.unitedenergy.com.au/

We also note that through Energy Networks Australia, we publish a significant quantity of data relating to our network. For example, we publish the geospatial Network Opportunities Map which shows network constraints and spare capacity to assist customers in determining where to connect.[15]

The information that we publish to-date has been prepared in collaboration with our stakeholders. We do not consider that additional regulatory prescription is necessary, and which if specified, may reduce the innovative approaches that we have undertaken in this space.

Finally, we note that a vast quantity of data is available relating to network performance of distributors, including operational and financial performance, through responses to the AER's Regulatory Information Notices (**RINs**).

5.3 Update to other clauses

This section sets out other clauses in the EDC that require review.

5.3.1 Trigger for review of EDC

We consider that the EDC should contain a clear trigger clause for review by the ESCV at the initiative of a distributor and in consultation with other distributors and relevant stakeholders, as appropriate. This trigger clause may be activated:

- where there is a relevant change in industry practice or other regulations, legislation, instruments or obligations
- to reconcile inconsistencies with other regulations, legislation, instruments or obligations, or
- after a certain period of time.

A trigger clause would ensure that the EDC remains fit-for-purpose, appropriately aligned with other legal regimes, and is not left outdated for extensive periods of time. Where the EDC is not fit-for-purpose, it may impose unnecessary processes or inefficient costs onto consumers or distributions, leading to higher prices.

5.3.2 Use of smart meters

The EDC still assumes fuses need to be inserted and removed in several instances, and the intent of the clauses needs to align with the current practice.

5.3.3 Connections

The ESCV has also recognised that there are inconsistencies, ambiguity and overlap across the State and National regulatory instruments for connections.[16] We consider that aspect of the EDC must be reviewed.

5.3.4 Extend reconnection of supply timeframes for third party metering

We seek longer timeframes for reconnection of supply in circumstances where we are not the owner of the meter or where a site visit is required. Currently, clause 13.1.2 of the EDC contains tight timeframes for reconnection of supply in both remotely read meters and well as manually read meters that require a site visit before reconnection.

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15 https://www.energynetworks.com.au/network-opportunity-maps

16 ESCV, *Advice on electricity regulation – timely electricity connections*, 7 September 2018, p. 10.

The existing clause was added in April 2011 and is intended to cater to instances where we are the meter owner and can complete the connection remotely via the AMI network.

It is noted that prior to the introduction of smart meters in Victoria, we had a field force of meter readers who were tasked with cyclic and special reading services for customers, including fuse inserts to enable connection/reconnection of sites as needed. Following the introduction of the smart meters, and the increased remote de-energisation/energisation capability of our meter fleet, our field force has significantly reduced. This was a key part of the business case for the Victorian Government when mandating the implementation of smart meters across the state.

Despite this change in approach, the EDC maintains tight turnaround times for reconnection. Without the field force to complete the energisation on short notice, the timeframes have become difficult to achieve, particularly given the breadth of our network.

In terms of third party metering, we note that we are not the owner of all meter types. Where we are not the metering co-ordinator, B2B processes must be run to engage to engage with the metering provider before the energisation can occur and this adds time to the overall process.

5.3.5 Limit deemed customer compliance

Under clause 1.4.1, a customer is deemed to have complied with the EDC unless they are expressly informed of any non-compliance or otherwise becomes aware of the non-compliance or could reasonably have been expected to be aware of the non-compliance. We consider that this is inconsistent with the intent of other provisions, and potentially undermines our ability and need to be able to clearly rely on a customer's obligations and matters within their control or knowledge in order to discharge our own obligations and liability (particularly, having regard to the increasing prevalence and potential impact of solar, embedded generators and other activities on the network over which customers have greater control or visibility than us).

Accordingly, we consider that deemed compliance under clause 1.4.1 should also be expressly subject to:

- any provision or agreement to the contrary
- in circumstances where the customer has been informed, is or ought to be aware, or could reasonably be expected to be aware, of the relevant obligation/requirement or contributing circumstances
- in circumstances where the non-compliance or associated circumstances or obligations are outside of the reasonable control or knowledge of the distributor (such as where the distributor does not have access to the relevant information).

5.3.6 Definitions and other

There are a number of drafting updates and potential changes to overarching or boilerplate provisions that we consider should be implemented as part of this review (including in relation to definitions). Such as references to superseded legislation (like the Trade Practices Act) and which provisions should apply to embedded generators or networks.

However, given that the significance or relevance of these changes will turn on a more precise understanding of what changes are proposed to the main or specific operative provisions in the EDC, we propose to further address these (as appropriate) at the next step in this review.

6 ESCV questions

In this section, we respond to the ESCV questions.

6.1 Communication of outages

1. Should we set an obligation on distributors to proactively contact vulnerable (such as life support) customers before a potential unplanned outage?

No, as we are unable to predict the location and extent of unplanned outages. As discussed in section 2.3, we do not have visibility of all vulnerable customers who are not also life support customers.

2. How should we update the current obligation on distributors informing government departments of unplanned long outages?

As discussed in section 2.3, we consider that the VEECP and its ongoing updates provide a thorough and sufficient framework for distributors to communicate with government in instances of potential or actual outages.

3. What form of notification or engagement should be provided to customers by electricity distributors before a planned outage?

As discussed in section 2.1, we consider that electronic communication should be the default for all communications with customers, including before a planned outage. The EDC should recognise and facilitate electronic channels as a valid form of "written notification".

4. Should we impose a new obligation to notify customers of a cancelled or rescheduled planned outage?

No, we do not consider that this is practical to impose as an explicit option for the reasons set out in section 2.1.2.

6.2 Guaranteed service level scheme

5. Should the purpose of the scheme be redirected to address poor service or something else altogether?

The purpose of the GSLs has been to notionally recognise and compensate the inconvenience to worst served customers in circumstances where it may not be economic to upgrade their supply. Our view is this should remain its core function.

6. Are there other ways we should think about improving service levels for the worst parts of the network in the code?

The EDC is not the correct place to address 'worst parts of the network'. If the ESCV is contemplating incentivising investments in these areas of the network, this should instead be considered as part of the AER's regulatory determination process.

7 Is each payment category still fit-for-purpose in meeting the overall purpose of the guaranteed service level scheme?

As discussed in section 3.1, we consider that the appointment GSL category is no longer required. The other payment categories are still fit for purpose in meeting the overall purpose of the GSL scheme.

8 Should customers receive a low reliability payment and a restoration payment?

No, customers should only receive either a low reliability payment, or a restoration payment, not both.

9 Are there new categories that we should consider including in the scheme?

We do not consider that there are new categories that should be included in the scheme.

10. Should we change our principle of worst served customer to capture systemic poor performance?

No. The AER's STPIS seeks to incentivise distributors to improve reliability.

11. Are there any outage scenarios we should include or exclude from the scheme?

As discussed in section 3.1, we propose an additional exclusion category relating to the operation of REFCLs in fire risk mode, as well as alignment of the exclusion definitions to the STPIS scheme.

12. Should we impose timeframes for guaranteed service level scheme payments?

We currently pay appointment and connection GSL payments as soon as practicable. These payments are made to the retailer who then adds it to the customer's bill. When the customer receives the GSL payments will depend on the cycle of their bills which is usually between 1-3 months. Reliability payments are cumulative, and are paid once a year, following submission of data to the AER for the purposes of the Annual RIN. This data undergoes an audit so we are confident of the accuracy and robustness of the data. Following audit, these payments are made to the retailer to pass onto the customer.

It will be difficult to impose a timeframe as the validation process is manual and we need to ensure accuracy of information. Also, the imposition of timeframes is of no benefit to customers as they receive the payment via the retailers, and retailers have no defined timeframe either. If the ESC imposes timeframes for GSL payments, the ESC would also need to concurrently review the Energy Retail Code.

6.3 Technical standards – Voltage standards

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?

As set out in section 4.1, we support adapting the industry-recognised Australian Standard for low-voltage management.

The adoption of the Australian Standard is consistent with the Principles and Guidelines for National Standard Setting and Regulatory Action by Ministerial Councils and Standard-Setting Bodies approved by the Council of Australian Governments (**COAG**). A goal of the guide is to adopt regulatory measures or standards that are compatible with relevant internationally accepted standards or practices in order to minimise any impediments to trade.

Most customers connected to the electricity distribution network will not be impacted by the change in the voltage variation from the current EDC to the Australian Standard. This is because most customers are being provided with voltages compliant with the Australian Standard already.

We do not support maintaining the current fixed limits set out in the EDC. The limits are no longer appropriate given the increasing penetration of solar PV on the network, resulting in the voltages moving outside of the prescribed limits. Significant amounts of expenditure would be necessary for distributors to improve the quality of supply on distribution networks to achieve compliance for 100% of the time. Such expenditure would not be efficient, and lead to over-design of the network.

We also do not support flexible or 'best endeavours' voltage standards. Instead, we support alignment with Australian Standards to include an appropriate measurement or assessment procedure for compliance monitoring of voltage variation.

14. What are the appropriate customer protections relating to voltage management that we should consider? In particular, we welcome stakeholder feedback on how any changes to voltage standards might interact with Electricity Industry Guideline 11 – Voltage variation compensation.

Please see discussion in section 4.1. In summary, we consider that adopting the Australian Standard for voltage variations on the low voltage network should not impact a customer's ability to seek compensation under Guideline 11.

15. Is there a need to consider the management of frequency in micro-grids and stand-alone power systems? And is it appropriate for these standards to be considered in the Electricity EDC?

As discussed in section 4.2, the AEMC is currently consulting on guidelines for stand-alone power systems. This matter is best addressed through that forum.

16. Should we consider expanding the existing standards to capture all embedded generation technology?

We consider that further industry workshops on this matter should be held to consider this matter.

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?

We note there is a joint Energy Networks Australia (**ENA**) and AEMO Open Energy Networks consultation that considers the role of an aggregator. This consultation is ongoing.

The mix of generation into the network is changing. Electric vehicle (**EV**) chargers are likely to be a disruptive to the operation of the distribution network in future. Distributors may seek standardisation on communication

protocols to ensure that distributors' energy resources and electric vehicles chargers can be integrated into network control systems. This is to ensure that the use of devices is maximised without over-investment in the network.

Furthermore, it may be required that customers seek approval from distributors to install EV chargers, even on standard residential connections. This will allow distributors to implement plans to manage EV chargers on peak days in conjunction with customers to optimise network investment for all customers.

18. Should we retire our register and harmonise by requiring distributors to comply with the national register only? What may be the potential benefits or issues with retiring our register?

Clause 7.9 of the EDC relates to maintaining a register of embedded generators. We consider that this clause can be deleted as it duplicates obligations in the NER.

As the ESCV notes, a national register of distributed energy resources will be established by AEMO under clause 3.7E of the NER. Furthermore, clauses 5.4.5 and 5A.D.1A of the NER require distributors to maintain registers of completed embedded generation projects.

19. Should we review the power factor range and consider alignment with industry practices?

Please refer section 4.2.4.

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?

As discussed in section 4.2.2, we support harmonising with the Rules by deleting clauses 4.4.1 and 4.4.2 of the EDC, but retaining clause 4.4.3. However, we note that the operation of REFCLs and the impact on harmonics needs to be further considered.

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?

As discussed in section 4.2.3, we support deleting the negative sequence limits in the EDC as it duplicates, and potentially conflicts with the Rules.

6.4 Other issues

22. Are there any defined terms that you think are no longer correct or relevant that we need to address?

Please see discussion in section 5.3. This will best be further discussed or considered in the context of any changes to the specific clauses in which those defined terms are used.

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?

Generally we support alignment with other applicable laws and codes, where the clause in which the definition is used is being relevantly aligned but will need to be further considered in the context of the proposed drafting as a whole. This will benefit consumers by reducing inefficient costs from increased administrative burden from tracking, recording and storing data as a result of inconsistent definitions.

24. Are there particular clauses that stakeholders think need to be made clearer?

Please see discussion in section 5.3.

STOKES STRATEGY AND RESEARCH

LITERATURE REVIEW

Energy customer preferences, communication trends and regulatory requirements: proposed amendments to Victoria's Electricity Distribution Code (EDC)

Report submitted to CitiPower, Powercor and United Energy (CPPCUE)

Author: **Dr Robyn Stokes - Stokes Strategy and Research**

Final Version submitted: **June, 2018**

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Executive Summary

Energy customer's lifestyles and communication practices are fast changing along with technologies employed by electricity distributors to share information and arrange appointments. Customers expect energy distributors to continually review the fit between their preferences and service delivery. Sustained evidence of any gaps in customer service or communication are addressed by distributors but should also prompt a dialogue with the regulator i.e. where these impact guaranteed service levels (GSLs) or information sharing provisions.

CitiPower, Powercor and United Energy's (CPPCUE) commissioned research of local and global best practice in energy customer communication and appointment setting presents ten (10) key recommendations outlined in this summary. It cites recent market studies in Victoria and other states (Colmar Brunton 2014, Deloitte 2015, 2016, Quantum Market Research 2016, Ausgrid 2017, Square Holes 2017) that show energy consumers as 'omni-present', constantly moving between social, mobile and traditional communication channels to gather insights, engage with others, make decisions and send messages. Digital is a way of life for most Australian energy consumers and research shows they are looking for a new model of interaction with electricity distributors. Customers often start in one channel or touchpoint and then opt to shift to a different channel (or agree to do so with a contact centre). In this context, communication technologies need to pave the way for customers to move seamlessly between channels.

Customers prefer 'light touch' communication channels, they do not closely scrutinise or keep paper-based information and they want to receive information via their 'channels of choice'. Offshore regulators have concluded that there is limited readership of distributor information and little to no cost efficiency of mailing discrete information about distributors to customers (Revealing Reality 2017). In the UK, Ofgem (2017) has removed the annual obligation for distributors to advise on their complaint handling procedures noting that this delivers 'best value for money for customers while companies still retain the obligation to take all reasonable steps to inform customers e.g. by electronic communication (Ofgem 2017, p.3).

Sharing the Customer Charter remains an important role of distributors, but adjustments to the way in which this occurs is also suggested in this report in line with international best practice in customer communication. Increasingly, key information about distributors, their service standards and complaints mechanisms is sought by customers via company websites. However, the removal of annual distributor notifications is not recommended in this report, but rather that electronic communication is used to convey these details unless a special need for other channels of communication is indicated. It is clear that some distributors more consciously pursue both compliance and customer relationship building goals in the design of their Customer Charter, while others veer towards compliance and a simple statement of responsibilities. Some are also more overt in drawing attention to services available to special needs segments e.g. life support customers and culturally and linguistically diverse groups. In line with the UK position, this report concludes that the Customer Charters of Australian electricity distributors are best placed on distributors' websites (unless there is a special customer need or request for a copy in standard or large print format). A related amendment to the Electricity Distribution Code (EDC) to require electronic

advice on how to locate the Charter online at the time of connection, on request and once every five years is sensible giving due recognition to declining readership of printed materials.

Business and residential energy customers (including life support customers) have a 'first channel preference' for SMS notifications of planned and unplanned outages. Recent market research in Victoria, New South Wales and South Australia (and offshore) has confirmed the *overriding preference for mobile, IVR, website and social media updates* (supplemented by call centre contact as needed) during unplanned outages. An initial SMS providing brief details of a planned interruption (also preferred by many customers) is ideally supplemented by an email notification and/or telephone call. Some vulnerable customers (but not all) still prefer or need postal advice of a planned outage prior to the event.

Customer appointment setting presents different challenges in rural and urban areas across Australia's states/territories. Technicians and tradespeople in all states including Victoria begin work as early as 5am to fulfil rural appointments set within an 8am-10am window and many city-based travel routes have also become time intensive. The need to factor travel time into appointment setting has been duly considered in the Northern Territory's recent Code amendments for 2019/20 (Utilities Commission 2017). The NT Utilities Commission has removed the current penalty triggers of over 30 minutes late in urban areas and over one hour late in rural areas in favour of a single 'over 30 minutes late' penalty trigger, effective from 2019.

As Victoria's largest energy distribution group, CPPCUE covers diverse geographies in fulfilling site appointments. The use of sophisticated field management software enables CPPCUE to firm up the appointment time 3 days prior to the agreed date, engage in two way communications with customers and identify 'jeopardies' on the day, but travel distances and traffic complications are constant influences. This report views the Northern Territory Utility Commission's recent decision to enforce penalties at 'over 30 minutes late' for the agreed appointment as (1) balanced and considerate of all CBD and regional route/transit issues and (2) appropriate to engender high levels of trust in distributors to deliver service excellence within the regulated appointment window across all geographies. However, changes to the initial appointment window could better leverage the capabilities of field management software.

This report's ten key recommendations for revisions to Victoria's EDC complete this summary.

Recommendation 1: *That CPPCUE jointly submits a suite of proposed EDC amendments to Victoria's Essential Services Commission that span: (a) the approach or methods used to share the Customer Charter, (b) the communication methods used for annual distributor notifications, (c) the channels used to communicate with customers about planned and unplanned outages, and (d) the processes and timeframes involved in arranging appointments with customers.*

Recommendation 2: *That CPPCUE proposes an amendment to the EDC that encourages distributors to instigate on-line portals or systems to identify customers' channels of choice and use these preferences to define (and justify) the mix of communication channels used to share information with electricity consumers. Simultaneously it is suggested that the EDC overtly states that retailers provide correct and complete customer data to distributors to enable all customers to receive outage notifications (planned and unplanned) via their 'channels of choice'.*

Recommendation 3: *That CPPCUE proposes amendments to the EDC that allow Victorian distributors to publish their Customer Charter online and provide digital or electronic communication at the time of connection, on request and annually (with a link to the Charter and GSLs). Postal advice and a large print version of the Charter would still be provided on request to customers with special needs.*

Recommendation 4: *That CPPCUE proposes amendments to the EDC that allow Victorian distributors to inform customers annually about their role, contact details and address using digital or electronic communication channels. Postal advice will be provided on request to customers with special needs.*

Recommendation 5: *That CPPCUE proposes an amendment to the EDC that overtly recognises the need for multi-channel outage communication using SMS/text, IVR and telephone, email and web-based communication as primary mediums for outage notifications (planned and unplanned). Reference to 'written notice' should be interpreted as 'advice provided via digital, electronic or hardcopy communication, pending customer needs or preference'.*

Recommendation 6: *That CPPCUE ensures that all life support customers receive initial outage advice via their 'first preference' channel (i.e. SMS/text or other) plus digital, electronic or postal advice 4 days in advance of a planned outage. CPPCUE should also emphasise to life support customers that the onus is on the customer to be prepared for outages with an emergency contact number and action plan.*

Recommendation 7: *That CPPCUE suggests that a revised EDC encourages distributors to use innovative communication mediums and enable omni-channel customer interactions so that customers can begin their contact with the distributor in one channel and seamlessly move to another channel to resolve their enquiry.*

Recommendation 8: *That CPPCUE proposes a new definition of customer appointments be included in a revised EDC. Reflecting the Queensland approach, customer appointments would be defined in Victoria as 'attending a premise for the sake of (a) reading, testing, maintaining or inspecting a meter, or (b) inspecting, altering or adding to the customer's electrical installation'. This definition sensibly excludes appointments for new connections where timeframes and processes are covered by dedicated GSLs and related penalties.*

Recommendation 9: *That CPPCUE seeks an amendment to the EDC that allows for a three (3) hour appointment window with final confirmation and an expected arrival time provided no less than one day prior to the appointment. This amendment to the Code will improve overall outcomes for customers, enabling a larger number of jobs to be completed daily across urban and rural locations.*

Recommendation 10: *In conjunction with the above change, an amendment to the EDC should be sought to replace the current 'over 15 minutes late' penalty with an 'over 30 minutes late' GSL penalty (mirroring the Northern Territory's recent Code amendment that takes account of timeframes involved in servicing urban, rural and regional geographies by the electricity distributor).*

1.0 Introduction

In late 2017, CitiPower, Powercor and United Energy (CPPCUE) commissioned Stokes Strategy and Research to undertake a global and local scan of customer communication and appointment setting practices in the energy sector. Key purposes of the literature review and accompanying report were to provide a snapshot of customer expectations and best practice communication with energy customers globally and report on:

(1) Global and local trends in energy customer communication and related consumer preferences and needs (including those of vulnerable and life support customers),

(2) The optimal approach to providing customers with a Customer Charter and any related recommendations to amend regulatory requirements within the Essential Services Commission of Victoria's (ESCV) electricity distribution code (EDC),

(3) The optimal approach to providing customers with annual distributor notifications and communicating about planned and unplanned outages and related avenues to amend and improve the EDC, and

(4) Current practices in customer appointment setting and related avenues to revise the EDC to better align customer expectations and field management practices.

To provide macro and micro-level insights on customer communication trends and preferences of medium-long term value to CPPCUE, the enquiry spanned 'best practice' and regulatory requirements in the UK and Europe, current practices and emerging trends in the USA and Canada plus a 'deep dive' into recent energy utility practices and related research in Australia and New Zealand. As a result, the body of knowledge for this report includes: thought leader reports from global consultants, annual energy industry surveys, national and state policy papers and publications, annual reports, customer charters of energy firms, customer charter guidelines, case studies, journal articles, media commentary and market studies.

The literature review begins with a discussion of the 'customer-centric' energy business and the need for an 'outside-in' focus to build a customer-responsive approach to service and in turn, gather the necessary insights for a dialogue on guaranteed service levels. A continuous review of the *customer preference-service fit* and best practice communication is vital to the industry's ongoing dialogue with the Essential Services Commission to improve mandated requirements. The international scan of best practice customer communication follows providing a solid platform to review the role of the customer charter, how each distributor conveys guaranteed service levels (GSLs) within the charter and regulation impacting how it is shared. GSLs are compared across all states/territories along with UK policy shifts and standards for customer appointment setting and communication.

The report concludes with a discussion of ways in which Victorian distributors can benefit from the further aggregation of social, mobile and digital channels to deliver seamless communication to energy customers. A suite of ten (10) key recommendations are presented to guide CPPCUE and its allied stakeholders in proposing amendments to ESCV's Electricity Distribution Code.

2.0 The customer-centric energy business: fulfilling service expectations

Creating a business model or transforming an existing business to deliver customer-centric service (an 'outside-in' focus) across all touchpoints has become a primary focus for forward thinking service organisations including energy sector leaders. Usually it is drivers of energy customer satisfaction such as in-field or contact centre communication during outages or connections, billing issues or connections that provide the impetus to tighten customer service objectives and digitally transform and integrate outward-facing operations. Regulatory requirements to deliver guaranteed service levels (GSLs) and mandated requirements for information sharing heighten the energy utilities' awareness of the customer experience (although GSLs typically focus on operational performance, not customer satisfaction per se). To achieve a truly customer-centric service, it is therefore important that there is a direct relationship between widely accepted energy customer needs and preferences and regulatory requirements for service delivery.

A customer-centric energy business achieves an 'outside-in' focus by viewing the organisation as a holistic service provider, continually improving operational processes both within and across departments. Taking steps to overcome operational 'silos' is important to kill off any inconsistent messaging and interactions with customers across different touchpoints (human or digital). As Accenture (2013) notes, the energy customer usually sees the utility as one organisation but can be left feeling that they need to deal with three or four different entities if their needs are defined or managed differently across call centres, outage communication, appointment setting, connections and demand management programs. Accordingly, a customer-centric energy distributor has to continually review the *customer preference-service fit*, proactively address service gaps and at times engage in a meaningful dialogue with the regulator to assist in improving mandated requirements.

Energy thought leader, Accenture (2014) encourages utilities to build an enterprise mindset balancing performance and consumer expectations right across its operational model i.e. managing costs, revenue and the customer experience. In 2018, a social and mobile world and advances in business analytics provide a solid platform for distributors to map the energy customer journey to achieve customer centricity and cost efficiencies. Customers do not necessarily follow one path in engaging or interacting with energy distributor – the journey varies across segments and even at the level of a single customer, depending on why they are interacting and their history of liaison on one or more aspects of service (Hansa-GCR 2018). However, energy consumers across all market segments have a common interest in a fully connected and cohesive 'journey' that provides a seamless transition across different channels and departments.

Duke Energy (2016) in North America has identified six key customer lifecycle stages and within these, fifteen core customer journeys. Translated into service areas that are meaningful to an Australian energy distributor (versus a retailer), the *six lifecycle stages* are (1) initial connection and related insights sharing via the customer service charter, (2) electricity usage/consumption, (3) liaison about asset enhancement projects or service upgrades, business or residential (4) managing outages, (5) managing issues and complaints and, (6) the customer's exit experience. In each stage, there are several possible journeys that can be defined for business and residential segments in line with their unique interests and the assets/infrastructure that exist in their locality. Duke Energy's (2016) journey mapping and use of big data

analytics to look at multi-channel interaction with customers has enabled them to analyse gaps and opportunities across the organisation and 'deep dive' into several key journeys to enhance their business.

For Australian distributors, customer journey analysis (in key areas like electricity connections and outages) similarly begins with defining customer segments and 'personas' and listening to customers' preferred ways of communicating with their provider. Recent research in Victoria and other states (Colmar Brunton 2014, Deloitte 2015, 2016, Quantum Market Research 2016, Ausgrid 2017, Square Holes 2017) shows that energy consumers are already 'omni-present' – they move between social, mobile and traditional communication channels to gather insights, engage with others, make decisions and send messages. Digital is a way of life for most Australian energy consumers and in most market studies they have conveyed to distributors that they are looking for a new model of interaction (i.e. to improve their customer journey in one or more of the six stages of their distributor relationship noted earlier).

Customers are asking distributors to design their operating systems and multi-channel communication to align more closely with how they want to interact during the energy journeys they take. Across most Australian distributors, shaping a new or improved customer experience strategy (finding ways to mitigate 'pain points' and delight consumers) is easily informed by their existing research. However, creating segment-specific and personalised service experiences for consumers is time and resource-intensive. The head of Accenture's Energy unit for Australian New Zealand, Charlie Richardson has said that, "The key to catching up is for energy providers to revamp their operating models to focus on consumers who are increasingly using digital channels, services and utilities. Providers need to move quickly to shift from decades of long planning cycles and rigid processes to quickly create a new culture that reshapes and delivers personalised customer experiences" (O & G Australia 2017, p.2). Various utilities are on the digital transformation curve, gathering and responding to customer views obtained through their multi-year customer studies and data analytics. However, as Richardson also notes, providers must innovate at speed and this involves a cultural shift supported by next-generation technologies versus digital technology alone (O & G Australia 2017).

CPPCUE in Victoria sit among Australia's leading energy distributors in transforming their operations and customer communication, progressively identifying areas for service enhancement, integrating 'outward-facing' service operations and embedding social, mobile, digital technologies in communications. A recent deep dive into the CitiPower Powercor customer journey and outage communication (CitiPower Powercor / Foresight 2017) revealed a very strong customer preference for mobile and digital communication channels and importantly, the need to raise awareness among customers that their distributor can and will send them an SMS/text message about an outage and will continue to update them via SMS, IVR, their website and social media channels.

In an environment of fast changing communication trends and preferences, closing the communication needs gap to deliver 'customer centricity' relies on an equal alignment and commitment to best practice across electricity distributors and their regulator (e.g. in approaches to managing outage communications, distributing the customer charter and arranging customer appointments). A preface to that dialogue and regulatory change is a shared body of knowledge on current and emerging practice. Section 3 explores that changing landscape.

3.0 Energy customer communication: global and local shifts

In the past five years, a body of evidence has grown to demonstrate that a business model in which longstanding modes of interaction are dominant e.g. call centres, IVR and hard copy letters, faxes and bills is unsustainable. Customers are looking for a seamless online experience that draws together digital, social and mobile experiences. The pace of change has definitely quickened. Consumers are seeking web-enabled channels for the majority of interactions (Cognizant 2016) and the take-up of mobile and escalating interest in self-service has permanently changed their expectations of service providers. Global data points to customer choice being the key driver of satisfaction with over 90% of consumers seeking digital notifications when asked about their communication preferences across diverse energy interactions i.e. during outages, in the field service and billing and payments (Accenture 2015). Energy utilities across distributors, retailers and 'gentailers' are acknowledging this shift, introducing communication preference centres or portals and providing access through a wide array of new channels (e.g. energy apps, interactive outage maps) to accommodate changing market needs.

Traditional communication vehicles (paper-based and landline) continue to play a role in fulfilling some business objectives and reaching select segments, but the integration of digital, mobile and social to utility operations (e.g. outage and field service management) will progressively see offline communication methods minimised or phased out in most industries. Customers prefer and use 'low touch', online channels e.g. website, email, social media, mobile applications and SMS for most interactions. A siloed approach to service delivery where separate organisations manage call centre services and digital channels has also lost favour, with in-house service integration delivering greater benefits for today's customer-centric energy utility (Accenture 2013, 2015).

3.1 Customer communication expectations and practices (USA and Canada)

Utility Dive's (2016) State of the Electric Utility Survey spanning 515 utility executives in the United States and a recent large scale outage management survey conducted by Chartwell Inc. (2017) point to transformed operating systems and communication practices across US electricity utilities of all sizes. In the State of the Utility Survey, 67% of American utilities saw paper based billing and correspondence going into sharp decline by 2020 while the same proportion thought that customer interaction through their company website and other channels would rise (Utility Dive 2016). In response to consumer's stated preferences for communication, the majority of utilities (83%) are prioritising the development of mobile apps and 79% see social media use accelerating across most segments. Outbound phone calls and in-person outreach to resolve energy consumer issues was expected to remain steady. Chartwell Inc.(2017) research shows a significant shift towards customer choice portals and also predicts a much faster uptake of social, mobile and digital channels. A sample of verbatim comments from utilities participating in a Chartwell (2017) outage management survey is as follows:

"In the past 12-18 months, we have implemented a preference portal for our customers allowing them to select voice, text or email notifications. We have also implemented chat on our website and we have implemented a social media process in our main contact centre".

"We will be implementing in the coming year full proactive, predictive outage communications. We will start messaging customers that they are out of power before they report their outage. We will also have a % confidence level tied into those messages".

"We plan on implementing a sign up process for [communication] preferences through our contact centre. We will also roll out a new customer experience strategy".

"We are expanding our preference centre options and will fully capture business customers in our system. We are continuing to improve operations, placing emphasis on continuous communication with the customer. We are enhancing online outage maps and our web site and all social media channels will feature in our outage communications".

Reflecting the above comments, Channel of Choice programs are quickly gaining momentum. CenterPoint Energy's tailored Power Alert Service gives residential customers granular outage notifications through their contact channel of choice (Chartwell Inc. 2016). PG&E, a global energy leader and individual signatory to the Paris Climate Accord, gives all customers the choice of where, how and when they want to get outage notifications. As a result, PG & E has an extremely high take-up of text and email based outage notifications. At the start of their Channel of Choice program, a Napa Valley earthquake incident proved the program's worth when thousands of consumers received SMS updates via mobile while PG & E's field operations teams provided extensive outage and safety response work on the ground (O'Connell 2014).

Across North America and Canada, social customer care programs of electricity utilities (services delivered exclusively through social media) using Facebook, Twitter and Instagram are also increasing. Recently, energy utilities who are collectively responsible for more than 50 million energy consumers in the USA and Canada participated in a 2017 Social Customer Care Survey (Dhanani and Harris 2017) and 85% said they had already introduced social customer care with the remainder indicating that they plan to do so in 2018. In this very recent study, over 90% of energy utilities indicated that they respond to customers on social media within a day, two thirds of electricity utilities respond via social media within one hour and 30% respond in less than 4 hours (Dhanani and Harris 2017, p.4). The most frequent use of social media is for outage communication.

If customers need to be directed to another channel to report an outage, it is important that this message is made clear. As Dunklin (2016) notes, providing multiple reporting options like texting, calling or visiting a website does make it easier for the customer to report an outage in a way that is easy and convenient for them, but managing the direction of social media traffic and resolution is equally important. At times customers are asked to move to private messaging or call direct to exchange more details, but this needs to be a streamlined process. Focus groups in Southern California in and around large infrastructure upgrades have found that the use of the words 'planned' and 'unplanned' in describing outages on social media does tend to confuse customers. As a result, these terms have been replaced with 'maintenance' and 'repair' outages resulting in a 14 point jump in satisfaction with customer outage communication in JD Power utility satisfaction rankings (Dunklin 2016).

Mid-sized utilities in the US and Canada tend to have one full time employee and up to three part time staff working on social media customer care, while large utilities generally have two full time staff and up to five part-timers with extra people brought in during a major outage. The majority of mid-size utilities allocate less than US$50,000 a year to social media endeavours. Large utilities, pending the size of their customer base, spend between US$50,000 and $250,000 on social customer care programs.

The unique needs of residential and business customers are not overlooked by customer-centric providers in the US energy market. Honolulu-based Hawaiian Electric has around 80% of its SME customers enrolled in its utility outage alerts and attributes this strong adoption rate to business customer recognition of the time saved by getting on board with its proactive information distribution program (Herdic 2017). Chartwell's 2017 Business Customer Care Survey links an 88% satisfaction rate with outage alerts to the proactive efforts of utilities to sign up business customers in mass for email or SMS notifications. Phoenix based utility SRP has now successfully collected with no negative pushback either an email address or text capable mobile number for more than 90% of its mid-size business customer base. For some utilities, SMS text updates to customers have been aided by the FCC's August 2016 ruling on the Telephone Consumer Protection Act (TCPA). This ruling states explicitly that electric and gas utilities can now send automated calls and text messages to all customers who have provided their contact information to their utility (Henderson 2017). Further innovation in data base management and analytics by contact centre operations is also in train across US energy utilities.

The use of mobile apps is increasing in North America, albeit off a low base with the highest adoption (37.5% of utilities) in North-Eastern states (Cognizant 2016, p.2). Mobility strategies are guided by key decisions on what will be provided on the utility's website and/or its app-based solution, taking into account different customer needs such as the desire to simultaneously use the app and operate a flashlight feature to read a meter. Energy utility mobile apps typically offer traditional web content like map-based outage reporting plus mobile features such as sensors, geolocation services, push notifications and real time updates. A US survey by Clickfox has found that a very high proportion of energy customers (90%) would replace some or all of the traditional customer service channels of their utility service provider with a mobile app if it was available (Cognizant 2016). With 7.3 billion smart phone subscriptions worldwide predicted by 2023 in the highly respected Ericson Mobility Report (2017), the realisation of this figure in the US energy sector may not be too ambitious.

In summary, in the USA and Canada, 91% of utilities say they will have an omni-channel strategy in place by the end of 2018 i.e. a system where energy customers can start transactions in one channel or touchpoint, then seamlessly complete them on a different channel (Chartwell Inc. 2016). Across various North American energy market reports, the two most commonly cited business issues are (1) the need to replace the traditional utility business model opening up internet and mobile technologies to further strengthen customer relationships and lower the risk of load defection, and (2) the need for the regulatory model to keep pace with this change (Utility Dive 2016). Medium to large energy utilities recognise that customers want real time communication and they need to integrate outage management, distribution management, advanced metering, SCADA and on-the-ground field service support (Cognizant 2017). In the USA and Canada, leading utilities see the overall capacity and willingness of energy providers to embed new technologies (including diverse communication options) in customer-facing operations as less of a risk to the sector than the extent to which energy regulations keep pace with change (Utility Dive 2016).

3.2 Customer communication expectations and practices (UK and Europe)

In line with customer communication trends in North America, the UK energy regulator, Ofgem has noted that there is not a 'one size fits all' solution to communication needs, with energy segments exhibiting diverse characteristics, preferences and behaviours (Energy UK 2017). Customer communication expectations are fast evolving and Ofgem has acknowledged that its extensive and prescriptive rules for communicating with consumers introduced following its 2012 Retail Market Review did have unintended consequences (Dorey 2017). In 2017, Ofgem concluded that communicating with energy customers has to be more customer-centric than regulation has allowed for so far. As a result, it has introduced a new Informed Choices approach (further detailed in section 5.4 of this paper). While the primary focus is on retailer-consumer interactions, Ofgem also makes reference to customer communication on service standards, disruptions to supply and emergencies which involve energy distributors and network service operators.

Ofgem's deliberative workshops with UK energy consumers in 2017 showed that only a small minority of participants who read paper-based bills and documents closely, a further small group who never opened it (a somewhat larger group than those did read their energy-related mail), while the remainder said that they read it sometimes (Revealing Reality 2017). Although Ofgem's survey research shows that most customers still recall receiving one or more items of communication from their supplier in the past year, a gradual decline is evident and consumers under 35 years old have far less recall than others. Data shows that UK customers are very unlikely to have seen information about their supplier's service performance or standards of conduct and this has worsened since 2014 (with 28% recall in 2016).

Interest in receiving information about the distributor network operators' performance is also low. Customers providing feedback during a 2016 Ofgem Consumer Panel said that this information should probably be provided online. Panellists said they might read information about their distributor if it came with their bill, but if it came as a document on its own they wouldn't look at it. This aligns with comments made during Ofgem's 2017 consultation on distributor and grid transmission operators' methods of sharing insights on complaints handling procedures. Some respondents to this consultation said that "the cost of mailing out advice on complaints processes to households could not be justified due to the significant proportion of customers who will not read or keep mass communication of this type" (Ofgem 2017, p.2).

There is growing interest in digital billing and in using emails and apps to provide key information. During an electricity outage, Ofgem's Consumer First panellists (Revealing Reality 2017) said they would look for information online and would most likely search for relevant contacts using their smartphone (with a typical comment being, 'I would not rifle through drawers looking for paperwork in the dark'). Energy UK's (2017) Rules of Engagement Report acknowledges that technology is developing fast and with smart metering and smartphones there are many new options for utilities to explore in communicating with customers. Although not in focus in Ofgem's recent customer segmentation research, there has been a marked shift towards alternative communication channels including social media by the UK's energy network operators.

In the past five years, DSOs in the UK have progressively introduced multi-channel outage communication strategies i.e. a mix of outbound calls from contact centres, reactive and proactive SMS alerts, mobile apps, online messages through websites and social media (Eurelectric 2015). Studies of UK millennials are a reliable guide to the direction of energy customer expectations: 41% of this segment interact with their energy supplier via social media channels and all millennials want the ability to interact with their provider when, where and how they choose (Abtran and Cornwall 2017).

Elsewhere in Europe, the role of distribution system operators (DSOs) and their communication obligations during planned and unplanned outages attracts far greater interest. The DSO as the key contact on grid issues and unplanned power interruptions in most European nations has legal obligation to inform and update energy consumers in most nations and most explain the cause of the outage. The level and type of obligation for customer communication about energy outages changes across borders. Norway has mandatory requirements (but no specified methods for communicating outages), the Netherlands uses the scope of the outage to guide the choice of channels, while in Greece, all communication is voluntary (Eurelectric 2015). Reflecting trends in the USA, Canada and the UK, all DSOs in European nations are shifting away from traditional communication methods (printed materials, phone calls and mass media) in favour of social media and mobile phone apps.

Finland based DSO, Caruna automatically sends a text message to all customers at the start of an outage with a data-driven estimate of the waiting time and it follows through with updates on timing. Outage maps are widely used giving real time locational updates and once a higher threshold of affected customers is reached, mass media updates plus the websites of other authorities and a wider social media effort is activated (Eurelectric 2015). Twitter is used widely in France and in large scale outages (e.g. in the Ile-de-France region that includes Paris and its suburbs) the EDRF escalates awareness by responding to tweets that have been sent direct to them or that have mentioned the outage, quickly informing customers and updating a wide audience (as a result of a high volume of retweets). Across Europe, the transition to smart grids and the digitisation of energy businesses is expected to be the catalyst for further change in outage communications by European DSOs who in many countries already go way beyond their legal obligations to communicate with customers (Eurelectric 2015).

3.3 Customer expectations and communication practices in Australia and New Zealand

In Australia, there is extensive market research and data from energy customer engagement programs to inform understandings of what customers expect of their utility in terms of levels of service and information sharing. Regulatory requirements for energy utility service levels and information sharing are common across all Australian states/territories other than Victoria and there is also a strong vein of national consistency with regard to customer's communication expectations of their electricity providers. Key observations about energy customer communication preferences across electricity and gas align closely with global studies. For example, Deloitte's (2015, 2016) customer insight and engagement studies for Australian Gas Networks show that customers favour multiple communication methods that feature social, mobile and digital. They largely seek insights and updates via 'real time' channels and prefer SMS and email for quick and convenient communication about outages (planned and unplanned), although a small proportion do still appreciate postal information if there are planned asset works e.g. outages linked to mains and meter replacements (Deloitte 2016).

Across electricity distributors, the last five years has seen substantial changes to customer communication practice in all Australian states/territories with digital, social and mobile communication embedded in call centre operations, outage communication and field service management. In 2015, Western Australian electricity distributors were already reporting fewer complaints based on mobile phone friendly webpages with a three-fold increase in customers visiting the Western Power website and rising use of social media to communicate with customers (Economic Regulation Authority 2016). During Tropical Cyclone Olwyn, 13,000 customers were reached multiple times via social media.

In South Australia, recent customer research has shown that SMS is by far the most preferred channel for advice to residents and businesses prior to a *planned* outage, with an email and an item in the letterbox being customers' second and third preferences (Square Holes 2017). During and after *unplanned* outages, the order of preference changes to SMS, email and a phone call. However, the utility's website, social media and mass media all feature in customers' preferred communication mix. According to SAPN research (Square Holes 2017), the majority of consumers (95% of residents and businesses collectively) will use their phone to report an outage while 75% use their phone to check on an outage, followed by the website (61%) and email (36%).

Reflecting trends in North America, Canada, the UK and Europe, the provision of information to customers via their channel of choice is a practice increasingly adopted by Australian energy distributors and retailers. For example, Energy Australia keeps customers informed on issues or complaints via their preferred communication channel (or if not specified, through the most recent channel the customer has used to contact them). Trust in the reliability of communication channels is a significant driver of energy consumers' choice of channels in an emergency and wider communication using mass media outlets is favoured during crises.

In New South Wales, Essential Energy noted as far back as 2011 that customers and networks were communicating via an increased array of channels (e.g. internet, SMS, email and social alongside traditional forms of communication) to ensure effective communication during outages (Essential Energy 2011). NSW based Ausgrid has confirmed this in 2017 research that shows digital communication channels as the most favoured and useful communication channels for consumers who generally have less interest in outbound calls or a service shopfront (Newgate Research 2017). Real time information about outages via SMS, social media, the website and an app is preferred by NSW customers who see digital, social and mobile channels giving them more immediate insights plus increased comfort and control. Importantly, some customers surveyed about their outage information sources are not always aware that their distributor is the source of data they've found via an online search. For example, Ausgrid found a proportion of customers who said it was easy to get updates on a blackout via a google search or Facebook were not aware that they had tapped into Ausgrid generated information (Newgate Research 2017).

In Queensland, Energex and Ergon's customer research has shown strong support for the usage of SMS, email, online chat, social media and an online self-service account to tap into and convey information on outages (Energex 2014b). However, Ergon has found that some 'older generation' consumers and businesses in regions e.g. western Queensland and Cape York still favour personalised contact with a call centre service (Ergon Energy 2015). Mirroring their interstate counterparts, Tasmania's electricity distributor, TasNetwork also acknowledges this in its approach, establishing a customer-driven mix of online

and offline communication vehicles to properly account for the needs of those people who have poor digital access or skills to utilise new digital technologies (COTA Tasmania 2017).

In Victoria, a 2013 energy customer study showed that email and letterbox had almost equal status as first preference communication channels across combined city and rural regions for receiving general information from CitiPower/Powercor (UMR Research 2013). Later evaluations of the first choice channel for customers (Colmar Brunton 2014, CEB 2015) saw telephone contact with a company representative, the company website and email become the three preferred channels with all three mediums delivering 'lowest effort' interaction for customers. However, the last three years has seen digital, social and mobile options gain far greater momentum and some utilities have also developed online self-service portals. Energy Australia's portal is set to track billions of customer interactions via phone, email, live chat and other channels with analytics and correlation models continually assessing how best to communicate with customers in different market segments (McPherson 2017).

In 2018, Victorian distributors regularly use text/SMS and 24/7 telephone messages to convey real-time information on outages, restoration estimates, fault locations and causes. SMS is also a key vehicle to communicate with and enhance the performance of field crews restoring power on the ground. In line with global trends, CitiPower and Powercor also used digital, mobile and social vehicles in 2016/17 for their distributor notifications (i.e. advising customers of their contact details, role in maintaining supply, managing emergencies and restoring power after outages). The networks' *Digital Customer Communication Report* (2016) examined the comparative success of hard copy communication versus email to customers (whose email addresses were provided via retailers or a portal) and the use of SMS to reach those not already receiving an email. CitiPower Powercor found that an overall 44% of emails were opened during the 2016 campaign (well above the average 25% open rate for emails) with a 7% click through to the customer charter, homepage or myEnergy site (CitiPower Powercor 2016). During that period, a combined satisfaction index of 85% was achieved (Quantum Market Research 2017). Satisfaction with planned and unplanned outage communications was also robust across the two networks in late 2017: CitiPower (77% for planned, 73% for unplanned) and Powercor (90% for planned, 82% for unplanned).

Increased use of SMS and mobile has greatly enhanced CPPCUE's combined outage communications and their internal communication with field crews. It is now common practice for these networks to provide unplanned outage notifications by SMS within 30 minutes of their occurrence with IVR, the contact centre, the company website and social media all sharing further details. A 2017 study of the CitiPower Powercor customer journey during outages (CitiPower Powercor / Forethought 2017) showed SMS to be the top preference communication channel for outage notifications (43% of the sample), with customers moving between SMS and active information seeking via self-service channels (the web, app and social media), the IVR or direct enquiry to a call centre. The estimated time of restoration is the most sought-after advice. Only 5% of respondents said they did not use SMS.

In the past year, New Zealand energy provider, Vector (2017) similarly used a customer lifestyle survey to discover that 73% of their customers also prefer to be notified by SMS/text in response to an unplanned outage. In addition, 81% of their customers prefer to receive an email rather than a letter about planned outages with available email addresses now enabling the company to reach 76% of its retail customer base, saving $126,000 in postage costs and 4.5 tonnes of CO2e (Vector NZ 2017, p.40).

In summary, market studies in Australia and New Zealand provide strong evidence that customer acceptability of electricity outages is directly linked to the immediacy of information sharing (Newgate Research 2017). Telephone calls and SMS are the preferred channels alongside websites, apps and email i.e. the everyday points of reference for many Australian households. Regulatory provision for retail customer data to be given to distributors to facilitate SMS alerts to all consumers (a factor underpinning higher levels of success with outage communication in the USA) would further tighten the fit between customer's preferred channels and modes of communication used.

3.4 Communication needs and preferences of vulnerable consumers (including those on life support equipment)

Globally, the energy sector and its regulators are very conscious of their obligation to consider the needs of vulnerable consumers. Huntswood (2017, p.26) defines vulnerability with reference to three 'C's; these being (1) *channels and access*: hearing, sight and language barriers and physical disability, (2) *comprehension*: low financial understanding, mental capacity and issues related to old age such as dementia, and (3) *circumstance*: bereavement, family breakdown, childbirth, illness or financial difficulties.

In the UK (where Ofgem, as the energy regulator has been especially proactive in addressing consumer vulnerability), there are specific requirements for distributors to develop stakeholder engagement and consumer vulnerability strategies and provide key evidence outcomes. Typical activities of leading distributors such as Western Power Distribution (WPD) are social indicator mapping of vulnerability across the network, proactive data cleansing to further identify and confirm customers in vulnerable circumstance, proactive engagement with a network of referral agencies to achieve direct sign-ups of vulnerable customers, staff training on vulnerability and customised communication plans for vulnerable consumers during power outages. In 2018, Ofgem expects energy networks and providers to have 'enough knowledge under their belt to implement real operational and cultural changes within their business' - one of the key aims is to make more effective use of different types of data to build better customer experiences, be it through digital channels, face to face interaction or on the phone (Huntswood-Insight 2017, p.1).

The need to have suitable alternative channels of communication to overcome digital exclusion and ensure that everyone has the same level of access is regularly emphasised. In Australia, under the National Energy Retail Rules Version 11 the energy retailer has specific obligations to share information with hardship customers (i.e. in a hardship policy distributed as soon as possible after a financially vulnerable customer is identified). There are specific provisions for both retailers and distributors to fulfil in relation to customers on life support equipment. This segment has grown in number in recent years e.g. CitiPower Powercor has seen a 65% growth since 2012 with 7,000 people plus their carers registered in late 2017. United Energy has also seen a doubling of its life support customers since 2012, AusNet Services has 6,000 life support customers and Jemena has 2,442 registered premises (Energy Networks Australia 2017).

The *Final Rule Determination: National Energy Retail Amendment (Strengthening protections for customers requiring life support equipment) Rule 2017* has brought about a number of changes that impact distributor communication with life support customers. The responsibility of the customer to approach either their retailer or their distributor for life support protections is a key feature of the previous and new life support rules. The final rule also has an obligation for retailers and distributors to share relevant information from

their life support registers, although the provision of information on planned disruptions (e.g. the suggestion made by the PIAC that four days written notice was inadequate) was seen by the AER to be outside the remit of the above determination (AEMC 2017). Under the new ruling, the distributor is required to provide the customer with an emergency telephone contact number (not more than the cost of a local call), general advice that there may be a distributor planned disruption or unplanned disruption at the address and they must give information to assist the customer to prepare a plan of action in the case of an unplanned interruption.

Importantly, the life support customer must provide medical confirmation of their condition and if they have not, they must be contacted either by phone, in person or by electronic means (up to two reminder notices) about that failure to provide confirmation. Distributors may only deregister the premises if the customer has not provided confirmation before the date for deregistration set out in a formal notice. However, there is limited advice or insights provided by the AER on the most appropriate or preferred communication methods for liaising with life support customers. It was in this context that Ausgrid (2017) implemented their survey on life support customer communication preferences in late December, 2017. Among 1,659 survey respondents using life support equipment, the majority needed a positive airways pressure machine (PAP/CP) machine to treat sleep apnoea, although patient circumstances are diverse. A key observation was that 60% of Ausgrid life support customers do not have an emergency action plan to deal with a power outage (with this figure increasing to 74% among those from culturally and linguistically diverse backgrounds). Customers using home dialysis, an oxygen concentrator or a feeding pump were somewhat more likely to have developed this plan.

The most common ways that customers had interacted with Ausgrid to date were via the phone (35%) or via post (68%) with smaller numbers having visited the website or interacted via SMS or social media. In the context of an unplanned outage, just over half of these life support customers expected Ausgrid to contact them straight away or within the first 2 hours from the start of an outage and most expect to be kept informed about the outage every 2 hours until power is restored. In contrast to their interaction to date, *the majority of Ausgrid life support customers chose SMS/text as their preferred method of communication* about unplanned outages (across all time periods, but most especially between 9pm and 6am when they do not want to be disturbed). A typical comment was, 'Please set up SMS contact ASAP for unplanned outages'. Life support customers' second, third and fourth preferences were a phone call, email and a door knock. A stand-out finding in this study was that these customers also prefer to receive an SMS/text to inform them about a planned outage, rating this method as 'completely acceptable'.

Among Ausgrid culturally and linguistically diverse (CALD) life support customers, the *same preferences apply for unplanned outages as for the total sample* (with SMS/text being the preferred method) but telephone contact and email were rated equally by this group. Interestingly, 88% of CALD life support customers still prefer to receive outage information in English. Acil Allen (2015) noted that more than half of Australia's culturally and linguistically diverse (CALD) household and SMEs don't understand their electricity bill (and one third of these SMEs don't read written energy communication). There are other ways to communicate with CALD communities (non-traditional avenues) Capire (2016) highlights in-person contact, small group meetings, pop-up information booths, arts/cultural events and other 'on the ground' activities to reach CALD consumers about topics/issues of a broader nature. However, CALD consumers, like all other customers, favour SMS/text for immediate insights and updates on outages.

4.0 The Customer Charter of energy distributors: roles, regulation, modes of access

In most Australian states/territories, the customer charters of electricity networks are directly aligned with the National Energy Retail Rules (NERR) Version 11, although in Victoria (where the NERR does not apply) the charter requirement sits within the EDC. The customer charter is intended to provide transparent evidence of the distributor's regulated commitment to service or guaranteed service levels. While industry and consumer interest in service charters has peaked and waned over the years with codes of conduct replacing charters in many industries (ACCAN 2010), the requirement to have a Customer Charter has remained in the energy sector. In effect, a service charter informs customers about key services (what the organisation does), outlines how to communicate with the organisation about its services, details relevant service standards, lists the clients' rights and responsibilities and summarises ways that customers can give feedback and activate complaint mechanisms.

The over-riding purpose of a Customer Charter is to bring about quality improvements, with the proviso being that the published service standards align with what customers need and expect (Loffler, Parrado et al. 2007). As a result, energy distributors and suppliers publishing charters do have a business obligation to continuously review the customer relevance of its content and advise the regulator on suggested amendments or enhancements in line with their research. In this report, that advice primarily relates to how the Energy Customer Charter is communicated or shared with energy users.

4.1 Customer charters for reference, compliance and relationship building

In Australia, the regulatory platform for the Energy Customer Charter and related penalties for non-performance on guaranteed service levels (GSLs) has led to charters that are very much compliance focused with limited content or supporting communication designed to build or enhance customer relationships. Loffler et al (2007) in their extensive work on customer charters referred to three ways that service 'quality' is defined in the charter, these being: quality as *conformance to specification* i.e. to comply; quality as *fitness for purpose for use* i.e. customer interest and readership; quality as *meeting or exceeding customer expectations;* and, quality as bringing about a deep *customer relationship or passionate commitment* to the service.

In a compliance-driven publication which largely typifies customer service charters in the Australian energy sector, a 'conformance to specification' approach largely applies i.e. the organisation's services, its GSLs and mechanisms for customers to advise of non-performance and seek compensation are simply outlined. Some charters briefly convey a customer commitment, philosophy or vision and speak to their customer-responsive approach to business, but largely the charter (provided online and / or in printed form) is used as a customer reference and compliance tool. Key observations arising from a brief, high level review of a small sample of Australia's Energy Customer Charters (distributors and retailers) are as follows:

- **NSW based Essential Energy publishes its customer charter with GSLs online plus a customer commitment statement that spans three core principles**: *listening* (understanding customer needs, responding to feedback and providing a courteous, fair and professional service); *respect* (for safety and wellbeing, for diversity and communities in which customers live and their property and privacy), and *delivery* (on promises, clear and timely information, efficient services and ease of access).

- **The Energex Customer Charter is comprehensive and somewhat lengthy (12 pages) -** it overviews who they are, where the network is, service guarantees, access and issues impacting customers' properties, what customers can expect in terms of direct interaction and response, electrical safety, general information and importantly, it features a back page, quick and easy reference on 'How to Contact Us'.

- **SA Power Networks Customer Charter is an appealing, well-laid out document with GSLs written very briefly and simply (not as a list of numeric targets).** The document is very lengthy (20 pages) albeit with a strong commitment statement, clear reference to what to do when the power goes out, a good explanation of maintenance and outage advice, insights on vegetation clearance and living or working in a bushfire zone and how to provide feedback.

- **The Jemena Customer Charter excels in its visual presentation and customer-focused style** – its appeal stems from the choice of imagery and horizontal format, language that speaks directly to the customer and the inclusion of the GSLs in an eye-catching, easy to read, half page feature box. It stands out for its clear reference to interpreter services and section for life support users that draws the reader's eye. The charter is 23 pages in length but the chosen style shortens the read.

- **The CitiPower Powercor Customer Charter also excels in its presentation with colourful graphics, images and personalised language.** This charter presents GSLs as bullet points with symbols (versus a list) and a smart, visually appealing layout achieves the impression of a document that is shorter than its 22 pages. **The United Energy Customer Charter is more of a simple and straightforward document**, albeit colourful with plenty of white space, but it is somewhat more compliance focused in style.

- **The AusNet Services Customer Charter includes simple and brief, straightforward advice** on their role, the difference between AusNet and a retailer, the customer promise (aligned directly with the Code), the list of GSLs and customer responsibilities. It is easy to read by virtue of limited words and maximum use of white space throughout the document. However, customer relationship build via words and imagery is limited in this format.

In summary, it is clear that some distributors more consciously pursue both compliance and customer relationship building goals in their Energy Customer Charter design, while others veer towards compliance and a simple statement of distributor and customer responsibilities. Some are also more overt than others in drawing attention to services available to special needs segments e.g. life support customers and culturally and linguistically diverse groups.

Although engagement with customers on the design and content of the charter is recommended (Loffler, Parrado et al. 2007, Department of Public Expenditure and Reform Ireland 2012), there is little/no evidence of this in the Australian context. However, there is evidence of engagement on customer principles and commitment statements (e.g. with stakeholder and customer input sought by CitiPower and Powercor and SA Power Networks). Feedback and evaluation of the Energy Customer Charter as an information channel is also a worthwhile step (Loffler, Parrado et al. 2007, Department of Public Expenditure and Reform Ireland 2012). Offshore, the Ontario Energy Board takes steps annually to gain feedback on the Charter via a short, online survey. The Board also confers with its 100 member Consumer panel on what the charter should do and say and its overall readability and impact (Ontario Energy Board).

4.2 Sharing the Customer Charter - regulatory requirements and current practice (in Victoria and other Australian states)

In all Australian states/territories other than Victoria, the National Energy Retail Rules Version 11 require legislated service standards, GSLs and customer rights and obligations to be made available on the distributor's website. If requested by customers, the distributor must refer the customer to their website *or* provide customers with this information without charge if it is requested (provided it is not requested more than once in a 12 month period). However, there is no explicit reference made to a published customer charter in the national rules. In Victoria, the Essential Services Commission's *Electricity Distribution Code Version 9* (Clause 9.1.2) does make explicit reference to a Customer Charter made available to each customer at the time of their connection, to customers on request, and at least once every five years. In the Code there is no mention of the manner in which the Charter should be provided, although the common interpretation has been that it is mailed (as a large print copy if requested) to the customer's address.

There is no clarity in Victoria's EDC with regard to written communication (or discussion of its meaning) other than the requirement that distributors must inform and provide an explanation in plain English of any amendment to the Code that materially affects customers' rights, entitlements and obligations. Importantly, UK-based Ofgem's consumer engagement discussed earlier found little to no readership of bills within its annual customer panel and few customers scrutinised mailed documentation. In Victoria, CitiPower Powercor research (UMR Research 2013) has also confirmed little to no readership of printed materials with just 17% of customers saying they had received any written communication in 2013, despite having received a hard copy brochure from the distributor. SA Power Networks has clearly also found it difficult to achieve readership of its charter given that 74% of households and 69% of businesses said they had not heard of the distributor's GSL scheme in 2017 (Square Holes 2017).

It is now very apparent that customers mostly source insights from their energy distributor and supplier's websites as needed to understand their service at the point of connection, to find out about tariffs/pricing and to check on incident related updates (alongside their receipt of SMS/text updates and social media insights). In this context, CPPCUE believes that it is timely for the Essential Service Commission to review and adapt its specified approach to sharing the Customer Charter. In 2017, Ofgem removed the obligation on distributors to inform all consumers once a year of their complaint handling procedures and how to obtain a copy, stating that this amendment 'represents the best value for customers while companies still retain the obligation to take all reasonable steps to inform consumers e.g. by electronic communication' about these procedures (Ofgem 2017, p.3). In a public letter in March, 2017, Ofgem noted that it's prior requirement to write to every consumer to provide this information requires a large amount of administration and incurs costs that are ultimately borne by customers (with research showing that many customers will not read or keep communication of this type).

In line with the UK position, the Customer Charters of Australian distributors are likely to be best placed online (unless there is a special customer need or request for a copy). A related amendment to the EDC in Victoria would give due recognition to declining readership of printed materials, while still enabling distributors to satisfy requirements for information provision. Distributors could still choose to email customers with a link to the charter on their company website. In addition, those who wish to introduce a 'channel of choice' portal could do so alongside the EDC's baseline requirement for website publication.

5.0 Planned and unplanned 'outage' communication and appointment setting: regulation, current practice and customer expectations

Following this report's comprehensive review of energy consumer communication preferences, this section focuses on current issues and future regulatory considerations with regard to *customer appointment setting* and general *communication practices* e.g. information sharing requirements within Victoria's Electricity Distribution Code Version 9 compared with other jurisdictions. An extensive review of current market studies suggests some amendments to the Code may be timely to align with shifting trends and conditions.

5.1 Customer appointments and regulatory requirements

Energy leaders globally place a high priority on the overall scheduling, reliability and punctuality of the field staff involved in business and household electricity connections, maintenance and repair. Across industries, appointment window options typically range from two to four hours with many offering a minimum two hour window (Schwartz 2014) and on-time guarantees are growing in popularity. There are marked differences in regulatory requirements for energy sector appointment setting across Australia. In the following table, current requirements for appointment setting in Victoria's Electricity Distribution Code are shown alongside legislated requirements in a sample of other Australian states/territories.

Table 1 – Comparison of GSLs for Customer Appointments in Victoria and other states/territories

State/ Territory	EDC requirements across select Australian states/territories	GSL penalty
Victoria *EDC Vers. 9, 2015*	Appointment window of no more than 2 hours (within the EDC) where the customer is required to be in attendance or they have chosen to attend. No more than 1 day where the customer is not required or opts not to attend (unless an alternative timeslot is agreed). An appointment window must be given no later than 5pm the prior day.	GSL payable of $30 if the distributor is over 15 minutes late for appointment.
New South Wales *NERR, Vers. 11*	No appointment window specified, but the National Energy Retail Rules (NERR) requires that distributors use their best endeavours to contact customers to arrange appointments prior to disconnecting.	No GSL nominated in the NERR for late appointments
South Australia *EDC Vers. 12.1, 2018*	No appointment window specified in the current SA Power Networks Customer Charter or in EDC dated January 2018.	GSL payable of $30 if over 15 minutes late for appointment.
Northern Territory *EDC Vers. 1, 2017*	No appointment window specified in the 2017 version of the EDC - new GSL amendments set to roll out in 2019/20. (*Note:* over 30 minutes late for urban appointments and over 1 hour late for rural appointments applies now).	GSL payable of $22.50 if the distributor is over 30 minutes late
Queensland *EIC Edition 2015*	The distributor must attend within one day (Ergon Energy) or 5 hours (Energex). A distributor can reschedule an appointment provided it notifies the customer before the day of the appointment. The EIC defines eligible appointments as 'when attending a premise for the sake of (a) reading, testing, maintaining or inspecting a meter, or (b) inspecting, altering or adding to the customer's electrical installation.	GSL payable of $57 if the GSL as stated for Ergon and Energex is not met.

Our literature review has shown a general lack of clarity around the definition of customer appointments linked to current GSLs. Queensland's EIC provides the only point of reference here, defining eligible appointments as 'attending a premise for the sake of (a) reading, testing, maintaining or inspecting a meter, or (b) inspecting, altering or adding to the customer's electrical installation'. This definition sensibly excludes appointments for new connections which are covered by a separate GSL (reflecting the fact that this is a discrete operational activity for distributors with dedicated resourcing). The same definition of customer appointments is suggested as a proposed amendment to Victoria's EDC later in this report.

The National Energy Retail Rules (NERR) do not specify a single process or approach for customer appointment setting nor do they specify a nation-wide customer appointment window, but most EDCs at state/territory level outline their own appointment windows and penalties for failure to comply with GSLs. A five hour window for customer appointments in Queensland sits in contrast to Victoria's current two hour Victoria. Importantly, the customer's expectation and expressed needs should be the focus of the GSL, with a sensible leeway for appointment arrival times in line with operational, time and distance considerations e.g. appointments in rural and/or urban locations.

Customer appointment setting presents different geographical challenges across Australian states/territories and technicians regularly travel long distances to rural appointments, but urban travel to appointments is also increasingly time intensive. This has been duly considered in the Northern Territory's recent Code amendments for 2019/20 with the Utilities Commission moving away from rural-urban distinctions in its GSL for customer appointments. The NT's current penalty triggers of over 30 minutes late in urban areas and over 1 hour late in rural areas will change in 2019 with the introduction of a single 'over 30 minutes late' penalty.

A customer centric mobile workforce management strategy plays a major role in fulfilling appointment expectations. Field service management capabilities give customers input to appointment setting while still enabling distributors to efficiently dispatch technicians and manage schedules. However, some customer expectations challenge even the best field service teams with new generations of energy consumers seeking 'Uber-like' technician tracking services' (Salesforce 2016). Commentators on customer service conclude that the best response is to embed software into the business to enable reliable two way communication with the customer using their preferred communication channels (e.g. SMS, email or other channel) that also gives customers and field staff the ability to provide timely updates on any shifts/changes in the appointment time. Those working on the ground know that setting the right tone with the customer from the outset and managing the appointment process well are a good basis to grow trust in the company (Schwartz 2014).

The Victorian Energy Market Report on the 2016-17 performance of energy companies (Essential Services Commission 2017) shows that electricity distributors' late appointments with customers dropped substantially from 2014 to 2015 no doubt linked to new GSLs and improvements in field service. However, late appointments rose marginally from 49 in 2015 to 101 in 2016, potentially linked to travel-related time challenges and changing traffic pressures. As Victoria's largest energy distribution group, CitiPower, Powercor and United Energy (CPPCUE) cover diverse geographies in fulfilling site appointments. CPPCUE's cloud-based Click Software automatically routes appointment schedules based on due date and geography and crews receive jobs on I-Pads and complete time stamps for work acceptance, the time enroute and the

arrival and completion times. The use of this sophisticated field management software enables CPPCUE to firm up the appointment time 3 days prior to the agreed date, engage in two way communications with customers and identify 'jeopardies' on the day, but travel distances and traffic complications are constant influences.

CPPCUE managers view the Northern Territory Utility Commission's recent decision to enforce penalties at 'over 30 minutes late' for the agreed appointment as (1) balanced and considerate of all CBD and regional route/transit issues and (2) appropriate to engender high levels of trust in distributors to deliver service excellence within the regulated appointment window across all geographies. However, CPPCUE also sees value in widening the initial appointment window to 3 hours in Victoria to account for different geographies and improve customer outcomes (with more jobs completed on a daily basis). Appointment window options and scheduling that fulfil the needs of customers and align with field management software capabilities are important. Ofgem's requirements for UK electricity and gas suppliers (updated in 2016) are that: 'A standard four (4) hour appointment window is agreed within normal business hours when commencing the appointment, that appointment windows of two (2) hours are not unreasonably withheld and that suppliers look to accommodate more specific appointment times although they are not obliged to satisfy the request' (ICOSS 2016). Scottish Power (2016) similarly requires customer appointments to be set in a 4 hour time band or a 2 hour time band on request.

CPPCUE's proposed three (3) hour appointment window that is confirmed along with the expected arrival time no less than one day prior to the appointment sensibly aligns with state of the art field service management capabilities to support the GSL. The new appointment window and subsequent communication to firm up the arrival time via a Click Schedule digital message will enable customers' service expectations to be uniformly met across urban, rural and semi-rural areas. The adoption of an 'over 30 minutes late' GSL penalty (mirroring the Northern Territory's recent Code amendment) would sensibly acknowledge the diverse geographies serviced by CPPCUE networks.

At Customer Service Week 2016 in North America, leading utilities noted that pressure to respond to customers in increasingly tighter timeframes has led to appointments within smaller and smaller time margins (Lenz 2016). As quickly as utilities deliver improved service, expectations are rising (with geography determining to some degree whether these expectations remain feasible). Setting customer expectations at a realistic level will become increasingly important as work-life balance issues and time poverty (Contact Engine 2017) accelerate expectations and challenges associated with customer appointment setting. As Troll (2016) notes, despite sophisticated systems that route and schedule appointments and enable distributors to engage in a two way dialogue with customers, there is still an erosion of industry-wide trust when even a small number of customers express dissatisfaction via social media. TOA Technologies analysis of 2,000 tweets sent over a five week period (cited by Troll 2016) showed that Twitter amplified complaints by a factor of 400 creating an expansive, network-wide effect. In some cases, a small number of tweets have amplified to undermine an otherwise solid history of good performance by electricity distributors.

CPPCUE believes that Victorian electricity consumers can be given more precise appointment windows (leveraging improvements in advanced field management software used by distributors). However, amendments to the Code as outlined are needed to enable distributors to consistently and reliably fulfil customer expectations across different geographies.

5.2 Customer communication (distributor and outage notifications) and allied regulation

As noted already in this report and in the Northern Territory's recent statement of reasons for Code amendments, *energy customers' communication preferences have markedly shifted since earlier versions of electricity industry codes were formulated*. It is evident locally and globally that there is exponential growth in the take-up of digital and mobile communication channels. Comments made by the Northern Territory's Utilities Commission in the context of its recently approved 2017 Electricity Industry Performance Code acknowledge this 'change in customer preferences and communication channels' and that 'written correspondence includes electronic responses'. The Commission's definition of 'written' in their Code (Utilities Commission 2017) provides a potential precedent for the Essential Service Commission to further clarify the meaning of written communication in Victoria's EDC.

The table below shows the regulatory requirements for customer communication in the NERR across most Australian states/territories and unique points of difference in some jurisdictions e.g. Victoria's Essential Services Commission requirement for 'written notice' to each customer and the shift to electronic communication with customers in the Northern Territory.

Table 2 – Customer communication requirements to convey distributor information and outage advice

Victoria *EDC Version 9, December, 2015*	**Victoria's EDC content** - *Annual distributor notifications* must be in writing to each customer. (*Note*: electronic communication is not specified as an option). Customers must be given written notice of any distributor *planned interruption*s (date, time and duration) at least 4 business days before the planned outage). Advice of an *unplanned outage* must be given within 30 minutes (or as soon as practicable) to each affected customer via a 24 hour phone number (with an option to connect to an operator) and online with frequent updates on timeframe of the outage. An emergency contact number, advice on a plan of action and written notice *also applies to life support customers* unless a longer period is sought, needed and can be provided.
New South Wales *NERR Version 11*	**National Energy Retail Rules, Part 4 - Provision of Information to Customers** A notice of a *planned interruption* (expected date, time and duration) may be given by any appropriate means at least 4 business days before with a 24 hour phone number for enquiries (at no more than local call cost). In the case of NSW *customers who are registered as having life support equipment* at their premises, reference is made by Essential Energy in their Charter to 'at least 4 days written notice of any planned interruption'. In line with the NERR, advice of *unplanned interruptions* in NSW *must also occur within 30 minutes* (again with a 24 hr phone number at no more than a local call cost). Upon advising customers of an unplanned interruption, distributors make information available about the nature of the interruption and also provide an estimate of the time when supply will be restored or when reliable information on restoration will be available.
South Australia *EDC Version 12.1, January, 2018*	**National Energy Retail Rules, Part 4 - Provision of Information to Customers** As per the description of requirements specified above for NSW. **South Australia's EDC content** – *Interruptions outside the control of distributor* – 'the distributor must use its best endeavours to give prompt notice to affected customers on details of the event, expected duration, the extent to which obligations are affected and steps being taken to remove, overcome or minimise those effects.

Northern Territory *EDC Version 1, October, 2017*	**National Energy Retail Rules, Part 4. - Provision of information to customers** As per the requirements specified for NSW and other Australian states (except Victoria) **EDC 2019/20 –** In the Northern Territory's new EDC, notice of *planned interruptions* must be given at least two business days prior (with a related *GSL penalty of $56.50*). *Note:* Written communication in the new NT code (also effective from 2019) includes electronic, more specifically defined as 'any electronic communication capable of being reduced to paper form by being printed'.
Queensland *National Energy Retail Rules plus Queensland EIC Edition approved July, 2015*	**National Energy Retail Rules, Part 4. - Provision of information to customers** As per the requirements specified for NSW and other Australian states (except Victoria) **EIC content** – In Queensland, a notice of a *planned interruption* to a small customer may be given via mail, letterbox drop, advertisement or any other means that are appropriate and reasonable in the circumstance. At least 4 business days' notice of a planned interruption is required unless varied in writing between the distributor and customer.

Our review of current market studies has shown that *letters or information in the letterbox are regularly listed as the least preferred communication channel* by most customers (except where remoteness, lack of digital infrastructure or certain types of special needs require this option). However, being on life support does not underpin any heightened need for printed communication given that the vast majority of life support customers in the Ausgrid (2017) survey, including culturally and linguistically diverse customers, prefer SMS/text communication of an outage in the first instance (be it planned or unplanned).

Adoption of the Northern Territory's new definition of 'written communication' in Victoria would enable customers to receive annual distributor information and advice on planned and unplanned outages through their preferred channels. While the NT Utilities Commission's definition of 'written communication' as being 'any electronic communication capable of being reduced to paper form by being printed' (Utilities Commission 2017) implies email and web communication, it is possible to print out the content of social media content and to copy, paste and print out SMS messages (although this is an unlikely path for most energy consumers who have overtly stated their preference for SMS/text communication about outages).

If electronic communication is accepted by the regulator for the provision of annual distributor information (as required by the end of December) this would undoubtedly occur via email advice, while a prominent website message could also be posted annually to remind customers of guaranteed service standards and contact details for the company. Distributors could also be encouraged to provide a brief reminder of relevant GSLs and contact details in social media e.g. Twitter and Facebook and GSLs could also be conveyed in SMS/text messages sent to customers to 'close out' communication following an outage or restoration of their household power. Based on current and emerging communication practices of energy consumers (evidenced in offshore and Australian reports), Victoria's ESC and distributors could confidently expect that information conveyed electronically would be viewed and read by a larger proportion of customers.

5.3 A principles-based regulatory approach: 'fit for purpose' flexible communication

In the UK and North America, there is a strong emphasis on widening the palette of customer communication options and enacting new legislation (or removing current requirements) to *give energy distributors greater latitude to use new social, mobile and digital channels* (e.g. US legislation enabling utilities to auto-enrol consumers to receive SMS and emails). However, the UK has gone further than simply allowing distributors to use a wider suite of communication in 2017, embarking on a full scale review of prescribed requirements for customer communication.

In developing proposed new 'rules for engagement', Energy UK noted that 'communicating with customers should be simpler than regulation currently allows' (Dorey 2017, p.1). As a result, a new, principles-based regulatory approach favours the use of 'fit for purpose' communication aligned to energy customer's preferred channels. The UK preference is for distributors to be planning and delivering 'comprehensive and effective stakeholder engagement and communication' based on what the customer needs to know, rather than satisfying minimum prescribed communication requirements (Ofgem 2017, p.2). These changes stem from an understanding that the way in which customers interact with the market is evolving and as a result, regulations are too prescriptive, restricting innovation and customer choice. Energy UK has concluded that:

- Current license conditions and regulations were drafted to encompass a paper-based dominated communications environment and are unsuited to today's world where customers receive communication electronically, and
- Regulations governing customer communication in the energy market need to be 'fit for purpose not only for today but for the way in which the market and consumer behaviour may develop in future'.
- For the above reasons, Energy UK urged Ofgem to remove the majority of existing conditions relating to customer communication (Dorey 2017).

Energy UK's (2017) Rules of Engagement submission to Ofgem recognised that a 'one size fits all' communication philosophy was no longer relevant. After a comprehensive review, it concluded that customers simply need adequate information to: pay for energy, know where to seek assistance, complain if something goes wrong, know what to do in an emergency, find an energy deal that suits their characteristics and preferences, and be aware of and understand their contractual obligations, rights, changes and events (Energy UK 2017, p. 1). Both Energy UK and Ofgem accept that information can be communicated in both physical or electronic formats and that communication channels s are set to further evolve with technology. Already, bills are conveyed to many customers electronically (and personalised video statements of electricity accounts have been trialled in North America).

Based on the above inputs from Energy UK and other key stakeholders, Ofgem has taken active steps to move the UK electricity sector to a new principles-based, needs-driven approach to customer communication. This approach is focused on 'communication outcomes' not channels or methods (with customers having different preferences for the type, frequency and timing of communication on tariff structures, billing, outages, etc.). Energy UK also appealed to the sector to reduce the volume of separate pieces of written communication that have traditionally been shared with customers. By removing a range of license conditions focused on communication, these changes in the UK give electricity providers the

ability to make their own decisions about 'what information to provide customers, through what medium and which communication tools' (Energy UK 2017).

The UK experience is one of deep recognition of communication trends that have already unfolded, but also a signpost to the future in which multiple communication channels are flexibly employed by distributors and retailers (Energy UK 2017). To encourage innovation, Victoria's Essential Energy Commission could similarly adopt a principles-based approach that requires distributors to deliver open, accurate and timely information on GSLs and outages (planned and unplanned) through customers' channels of choice. Distributors in Victoria are already exploring better ways to convey information, explain key energy concepts and optimise information sharing before, during and after an outage. In this context, provision in Victoria's EDC for distributors to use diverse communication channels is timely, removing the requirement for written advice in favour of customer preferred mediums.

5.4 Aggregating social, mobile and digital channels to deliver seamless communication: the Victorian opportunity

Integrating social, mobile, digital and traditional channels *within and across* outward-facing functions (corporate communication, stakeholder engagement, community relations and customer service) is the best possible foundation to build a seamless approach to information sharing. In the USA, Con Edison's multi-pronged communication strategy (Chartwell Inc. 2016) is a good example with cross-departmental delivery of innovative web experiences, social media (with 24/7 Twitter embedded in a broader social care program) and mobile texts and calls updating customers on outages and site appointments. In New Zealand, Vector (Vector NZ 2017) is another excellent example, updating its app in 2016/17 to successfully engage approximately 70,000 customers about outages (planned and unplanned), encouraging customers to report outages via SMS messages, their app or other web interface. The company has also launched a new social care program integrating efforts across Facebook, Twitter and LinkedIn. Vector's energy insights on Facebook have been viewed by over 700,000 people, while their Twitter following has more than doubled to 4,700 followers in 2017. LinkedIn content in the past year has been viewed by customers over 58,500 times (Vector NZ 2017).

For Victorian distributors, a fully integrated strategy that capitalises on new media has the ability to more successfully share electricity insights and engage customers with GSLs (going beyond a formal Customer Charter). This is the case for most segments, but most especially the 41% of millennials in ECA's 2017 Customer Sentiment Study (Energy Consumers Australia 2017) who interact with energy suppliers almost exclusively via social media channels. Millennials are seeking increased speed, proactivity and consistency in energy utility messages, but also simple and flexible communication channels. However, diverse use of mobile and digital media is now evident across Victorian networks. In addition to using SMS during outages, AusNet Services uses SMS to tell customers with grid-connected solar when meter readings show that their installation is not exporting to the grid. Meanwhile, United Energy has used gamification and a smart phone app to successfully reduce demand in peak periods (Energy Networks Australia 2016). However, experience with new media is building and mobile websites of utilities sometimes equal or surpass the customer service options available via standalone apps (Adams 2016).

Combined with new field technologies that enable automated messaging to customers about home appointments and metered data, there are ample opportunities for Victorian distributors to further diversify and aggregate their use of social, mobile and digital channels to reach electricity consumers. To fully leverage emerging technologies and new media, regulatory requirements of Victoria's Essential Services Commission (Essential Services Commission 2015) that specify types of customer communication to be employed by distributors may need review. However, CPPCUE would also suggest additional clauses be included in the EDC that overtly encourage distributors to choose innovative communication choices and employ omni-channel customer interactions that enable customers to move seamlessly across different channels. Engaging with customers via SMS, IVR, email, Twitter, Facebook, the company website and contact centre personnel is desirable along with the availability of more than one avenue to manage appointment setting, report outages and glean insights on the estimated time of power restoration.

6.0 Summary findings and key recommendations

High level findings and observations across all themes in the literature review are now summarised and linked to key recommendations for future action and/or discussion.

Defining GSLs and customer information sharing in a customer-centric business – This report has highlighted the growing importance of customer-centric service delivery by energy distributors. With GSLs embedded in the Electricity Distribution Code (EDC), utility awareness of their obligations and related penalties for non-performance is high. However, GSLs and requirements for information sharing focus on a standard of operational performance determined at a particular point in time, not the extent to which the standard continues to align with customer preferences or satisfaction.

Since the ESC's last amendments to clauses within the Code, there have been significant shifts in customers' communication preferences, methods and technologies. Energy distributors have undertaken many recent studies that confirm the shift away from paper-based communication to digital, mobile and social media channels. These shifts combined with new, sophisticated customer self-service portals and field management software have created a different environment for customer communication, information sharing and appointment setting. Regulators in the UK and North America have already concluded that communicating with energy customers should be far more customer-centric than regulation has allowed to date. Accordingly, this report submits the recommendations outlined below.

Recommendation 1: *That CPPCUE jointly submits a suite of proposed EDC amendments to Victoria's Essential Services Commission that span: (a) the approach or methods used to share the Customer Charter, (b) the communication methods used for annual distributor notifications, (c) the channels used to communicate with customers about planned and unplanned outages, and (d) the processes and timeframes involved in arranging appointments with customers.*

Customer expectations of channels of choice – Customer preference portals or online, self-service centres are increasingly used by distributors in response to repeated evidence that a 'one size fits all' approach to customer communication falls short of public expectations. This international scan of 'best practice' in energy customer communication cites an array of research that confirms (a) the everyday communication of energy consumers is mobile, digital and social; (b) customers seek immediacy, simplicity and convenience and actively move between SMS and digital and social mediums in the context of an outage, (c) they do not closely scrutinise or keep paper-based information and, (c) they want to receive information via their 'channels of choice'.

Recommendation 2: *That CPPCUE proposes an amendment to the EDC that encourages distributors to instigate on-line portals or systems to identify customers' channels of choice and use these preferences to define (and justify) the mix of communication channels used to share information with electricity consumers. Simultaneously it is suggested that the EDC overtly states that retailers provide correct and complete customer data to distributors to enable all customers to receive outage notifications (planned and unplanned) via their 'channels of choice'.*

Provision of the Customer Charter and Distributor Notifications – This report's literature review suggests that information about distributors, their service standards and complaints mechanisms is mostly sought by customers via company websites. Research (both qualitative and quantitative) shows declining readership of paper based documentation from energy utilities (CitiPower Powercor 2016, Utility Dive 2016, Revealing Reality 2017, Square Holes 2017) and a low likelihood and in turn, little/no cost efficiency of mailing discrete information about distributors to customers (Revealing Reality 2017). In the UK, Ofgem (2017) has removed the annual obligation for distributors to advise on their complaint handling procedures and how to obtain a copy stating that this delivers 'best value for money for customers while companies still retain the obligation to take all reasonable steps to inform customers e.g. by electronic communication about their procedures' (Ofgem 2017, p.3).

Recommendation 3: *That CPPCUE proposes amendments to the EDC that allow Victorian distributors to publish their Customer Charter online and provide digital or electronic communication at the time of connection, on request and annually (with a link to the Charter and GSLs). Postal advice and a large print version of the Charter would still be provided on request to customers with special needs.*

Recommendation 4: *That CPPCUE proposes amendments to the EDC that allow Victorian distributors to inform customers annually about their role, contact details and address using digital or electronic communication channels. Postal advice will be provided on request to customers with special needs.*

Use of SMS, IVR, email, web and social media for outage communication (with auto-enrolment based on retailer-shared customer data) – Business and residential customers (including life support customers of all cultural backgrounds) have a 'first channel preference' for SMS notifications of planned and unplanned outages. Recent market research in Victoria, New South Wales and South Australia (and offshore) has confirmed the *overriding preference for mobile, IVR, website and social media updates* (supplemented by call centre contact as needed) during unplanned outages. An initial SMS providing brief details of a planned interruption is ideally supplemented by an email notification and/or telephone call. Some vulnerable customers (but not all) may require postal advice of an outage. In this context it is recommended that:

Recommendation 5: *That CPPCUE proposes an amendment to the EDC that overtly recognises the need for multi-channel outage communication using SMS/text, IVR and telephone, email and web-based communication as primary mediums for outage notifications (planned and unplanned). SMS will be the 'first advice' channel on outages to all energy users. Reference to 'written notice' should be interpreted as 'advice provided via digital, electronic or hardcopy communication'.*

Recommendation 6: *That CPPCUE ensures that all life support customers receive initial outage advice via their 'first preference' channel (i.e. SMS/text or other) plus digital, electronic or postal advice 4 days in advance of a planned outage. CPPCUE should also emphasise to life support customers that the onus is on the customer to be prepared for outages with an emergency contact number and action plan.*

Encouraging innovative, omni-channel communication - To fully leverage emerging technologies and new media, CPPCUE should also suggest that additional clauses are included in the EDC that overtly encourage distributors to choose innovative communication choices and employ omni-channel interactions that enable customers to move seamlessly across different channels.

Recommendation 7: *That CPPCUE suggests that a revised EDC encourages distributors to use innovative communication mediums and enable omni-channel customer interactions so that customers can begin their contact with the distributor in one channel and seamlessly move to another channel to resolve their enquiry.*

The customer appointment definition - While appointment setting might be broadly referred to as any appointment made with a small customer to visit the customer's premises, a definition of this nature fails to distinguish between the unique requirements and operational teams involved in electricity connections and other customer appointments. Here, Queensland's EIC definition provides valuable guidance.

Recommendation 8: *That CPPCUE proposes a new definition of customer appointments be included in a revised EDC. Reflecting the Queensland approach, customer appointments would be defined in Victoria as 'attending a premise for the sake of (a) reading, testing, maintaining or inspecting a meter, or (b) inspecting, altering or adding to the customer's electrical installation'. This definition sensibly excludes appointments for new connections where timeframes and processes are covered by dedicated GSLs and related penalties.*

Customer appointment setting – In the Australian context, our research shows that customer appointment setting presents different challenges in rural and urban settings. As Victoria's largest energy distribution group, CPPCUE covers diverse geographies in fulfilling site appointments. Technicians and tradespeople in Victoria are now commencing work as early as 5am to fulfil rural site appointments set within an 8am-10am window and traversing many city-based routes to attend appointments has also become very time intensive. The need to factor additional travel time into appointment setting has been duly considered in the Northern Territory's recent Code amendments for 2019/20 (Utilities Commission 2017). The NT Utilities Commission has removed the current dual penalties (over 30 minutes late in urban areas and over 1 hour late in rural areas) in favour of a single 'over 30 minutes late' penalty trigger.

The use of sophisticated field management software enables CPPCUE to engage in two way communication with customers, firm up the appointment time prior to the agreed date, and identify 'jeopardies' on the day. However, travel distances and traffic complications are constant influences. CPPCUE managers view the Northern Territory Utility Commission's recent decision to enforce penalties at 'over 30 minutes late' for the agreed appointment as (1) balanced and considerate of all CBD and regional route/transit issues and (2) appropriate to engender high levels of trust in distributors to deliver service excellence within the regulated appointment window across all geographies. An initial 3 hour window for appointments (with the expected arrival time firmed up the day prior) will also enable Victoria's networks to further leverage human resources and field management software to achieve consistently high levels of customer service.

Recommendation 9: *That CPPCUE seeks an amendment to the EDC that allows for a three (3) hour appointment window with final confirmation and an expected arrival time provided no less than one day prior to the appointment. This amendment to the Code will improve overall outcomes for customers, enabling a larger number of jobs to be completed daily across urban and rural locations.*

Recommendation 10: *In conjunction with the above change, an amendment to the EDC should be sought to replace the current 'over 15 minutes late' penalty with an 'over 30 minutes late' GSL penalty (mirroring the Northern Territory's recent Code amendment that takes account of timeframes involved in servicing urban, rural and regional geographies by the electricity distributor).*

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