



# Powerlink Queensland response to Discussion Paper

A response to the Review of Queensland's Electrical Safety Act 2002 – key definitions and emerging technologies

June 2023



Electrical Safety Act 2002 Review – ESO Discussion paper	Powerlink Comment
Electrical safety considerations of new and emerging technologies	
<p>How are you, your organisation or your stakeholders affected by the problems identified and to what extent?</p>	<p>Powerlink is effected to large extent by the identified problems identified by the discussion paper for the electrical safety considerations of new and emerging technologies.</p> <p>Powerlink owns, operates and maintains the Queensland electricity transmission network which runs 1,700km from north of Cairns to the New South Wales border. We have a strong history of safely connecting customers to the energy they need, delivering electricity to almost five million Queenslanders and 236,000 businesses and providing network connections for large-scale generators such as solar and wind farms, as well as major industrial customers including rail systems, mines and mineral processing facilities.</p> <p>Looking forward, Powerlink recognises that the world is changing rapidly and the energy supply industry we operate in is undergoing transformative change. Helping the energy system as it transitions to a lower carbon future is a key focus for Powerlink. The transmission system is moving from transporting electricity from centralised generators to major loads and distributors, to a system that interconnects widely distributed generators, loads and storage. For the discussion paper it should be recognised that the electrical safety considerations of new and emerging technologies applies to grid level, electrical equipment.</p> <p>Given Powerlink’s role as the new network system strength service provider for Queensland new system strength requirements will drive the increase of development and deployment of new technologies in proximity to our existing network/assets. New types of equipment including battery energy storage systems (BESS) and synchronous condensers will be included in our Works. Grid forming inverters, batteries, running synchronous machines and synchronous condensers are examples of different assets that will likely be required to manage grid following</p>

	<p>equipment of our connection partners. The electrical safety considerations for this new technologies include that with grid stability comes network reliability and electrical safety, avoiding widespread outages, asset failures, effective coordination for normal operation and a capable industry and workforce. In Powerlink’s case this equipment where it is operated by Powerlink, is electrical equipment and should continue to be regulated as ‘Works’ of the entity rather than electrical installations.</p> <p>The definition of ‘operating works’ under the <i>Electricity Act</i> is being amended to reflect these new technologies, as can be seen in the new exposure draft bill (s162) (see <a href="https://yoursayhpw.engagementhq.com/energy-bill-consultation">https://yoursayhpw.engagementhq.com/energy-bill-consultation</a> ). Equivalent amendments need to be made to the <i>Electrical Safety Act</i> for consistency.</p>
<p>• Do you agree with the assessment of the problem identified, and are there any other elements to the issue that you think have not been captured? If yes, what are they and can you provide examples of these issues?</p>	<p>Although the discussion paper does not consider the problems in the context of the electricity networks exclusively, Powerlink’s original submission to the Review of the Electrical Safety Act extensively detailed how the changes in technology, and changes in market structures and in electricity market participants is impacting electrical safety management and electrical safety outcomes. Electrical equipment and electrical work is a central part of the electricity networks, known under the Electrical Safety Act as ‘works’ of an entity. Analysing the problem in terms of a narrow scope for generation was expressly not the intent of the Review. The discussion paper has not captured the issues for all situations which rely on the definitions of electrical equipment and electrical work. This will limit the opportunity to improve electrical safety and may give rise to unintended consequences for stakeholders in that and other industry sectors.</p> <p>Powerlink does support option 2 from the discussion paper as there is a clear need to capture new and emerging technologies as regulated electrical equipment. However, more broadly rather than simply adding in types of technologies which have already emerged, Powerlink urges the approach taken to these matters to be principles based. The Reviewer’s Report clearly differentiated between Legislative rules and Legislative principles. Both mechanisms need to be clearly based on the</p>

	<p>various risk management fundamental principles of electricity, the effects of electricity on the human body and effective regulation of human behaviour so such rules and principles can be extended by analogy to respond to future technological changes as well as to equivalent issues in transmission line and network operation across definitions of equipment, installation and works. Rules and principles with clear foundation in logical fundamental principles will be easier for ordinary users of legislation to interpret practically and be more easily enforced and administered by the courts benefiting regulatory efficiency.</p> <p>Powerlink notes that Stanwell Corporation had made some suggestions for general principles based definitions as referenced in the Reviewer’s Report.</p> <p>There will occasionally be some arrangements that are not effectively captured by rules and do not align clearly with a general principles based approach. In this regard, Powerlink specifically seeks the insertion of a provision to allow for an exemption, on a similar basis currently provided for in the Work Health and Safety Laws. It seems that the Regulator for the ES Act does not have power to provide for exemptions in the same way as in the WHS Act section 276. Powerlink sees the opportunity to replicate a general exemption power for the Regulator to provide an exemption from applicable laws where there are alternate means employed to provide an equivalent degree of electrical safety.</p>
<p>• What practical impact in the form of benefits would the options proposed in the Discussion Paper have on you, your organisation, the workforce or the community? Please provide examples where possible, including for new and emerging technologies and ELV equipment.</p>	<p>Option 1 would promulgate confusion over legislative terms Powerlink does not see benefit in this option.</p> <p>Option 2 of expanding the definitions of ‘electrical equipment’ and ‘electrical installation’ in the act, considering their interactions with electricity networks and ‘entity Works’ would benefit Powerlink and the electricity supply industry in which it operates in terms of efficiency and effectiveness of implementing electrical safety controls.</p> <p>In practice the Act provides a risk based set of principles and rules which creates a consistent standard for companies, individual and other duty holders to interact with a common understanding for electrical safety. The option which improves this</p>

	<p>common understanding of expectations, its principles and controls not only drives efficiency, it improves the implementation of those controls. Powerlink sees and resists the pressures to reduce standards to meet time and cost drivers. Empowered with clarity Powerlink’s technical specifications aimed at interstate and international suppliers of new technology equipment (Large scale BESS, Synchronous condensers etc.) will be more clearly understood and hence supply contracts will be more easily and efficiently negotiated and delivered.</p> <p>Integral to Powerlink’s business is gaining understanding of the grid level emerging technology being proposed for connection to the transmission network for impacts to the network via the connection, or by mere site location adjacent to the network. Among the risks identified for the early phases of a grid level BESS was that Mega Packs would be imported with a significant level of charge – an electrical safety risk to be managed in transport, storage and while being installed. Significantly for networks was the identification that locating a BESS adjacent to network infrastructure has the remote possibility of a conductive smoke plume contacting High Voltage lines.</p>
<p>• What practical impact in the form of costs, would the options proposed in the Discussion Paper have on you, your organisation, the workforce or the community? Please provide examples where possible, including for new and emerging technologies and ELV equipment.</p>	<p>Clarity of understanding in legislation, whether within the statute or in supporting information, will improve the efficient implementation of regulation. It would be expected that this clarity duty holders and other users of the legislation will have less need to engage technical and legal costs to negotiate and resolve discussions.</p>
<p>• What is your preferred option for the various ELV discussed and why will it be best for you, your organisation and your stakeholders?</p>	<p>Powerlink supports expansion to the definitions of ‘electrical equipment’ and ‘electrical installation’ in the Act to clearly incorporate new and emerging technologies. As mentioned above, Powerlink urges the approach taken to these matters to be principles based, so that the principles can be extended by analogy to respond to future technological changes as well as to equivalent issues in transmission line and network operation across definitions of equipment, installation and works.</p>
<p>• If you prefer Option 1 (status quo), how would the potential electrical safety risks of newer ELV technologies be minimised or eliminated?</p>	<p>NA</p>

<p>• Do you have suggestions for other options to address the problems identified? Please provide examples (including costs where appropriate) of your suggested options, including how it would ensure the workforce are electrically safe and conduct electrically safe work for community safety.</p>	<p>In addition to including new types of technologies, Powerlink also notes there are related matters that require to be addressed in relation to the definitions of electrical equipment, associated equipment, installations and works in order to make these provisions effective in relation to the full lifecycle of equipment.</p> <p>These include:</p> <ul style="list-style-type: none"><li>• A need to clarify language in these provisions related to the completeness of all stages of equipment, such as use of the phrase ‘is used’ and ‘is operated’. The language used apparently limits the scope of the definitions in non-operational phases, such as during equipment design and construction, or when it is disconnected. However it needs to be that equipment is regulated under the Act through its full lifecycle in order to manage electrical risks. As identified in the review, activities related to all phases of the equipment lifecycle do have the potential to materially influence electrical risk such as increased risk of fire and explosion arising from undetected issues in design, construction or incorrect installation before use. Powerlink sees the opportunity to clarify the definitions by reference to the purpose of the equipment rather than its active operational status. Similar laws such as in the gas safety sector address these issues by references to the different ‘stages’ of the equipment.</li><li>• A need to clarify how various types of ‘associated equipment’ is dealt with and whether it is regulated as electrical equipment or not. Questions routinely arise in relation to control and monitoring equipment, security equipment, barriers and fencing, telecommunications equipment and lighting. The approach taken to these matters should be risk based as in many cases these additional types of equipment are part of the design and are enablers, barriers or interlocks to ensure electrical safety for the conductors and insulators.</li><li>• A need to consider alignment with similar Electricity Act provisions. The definitions of ‘works’ and ‘operating works’ in the <i>Electricity Act 1994</i> is not</li></ul>
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	<p>the same as the definitions in the ES Act. This has relevance for those electrical equipment provisions the <i>Electricity Act</i> which also have application in the context of electrical safety management, such as the provisions requiring notification of activities near works (see section 99 of the <i>Electricity Act 1994</i>) and also the provisions making it an offence to interfere with works (see section 230 and section 231 of the <i>Electricity Act 1994</i>). Powerlink sees the opportunity to ensure consistency. Modern risk relevant language would also be modernising as the reference to ‘interference’ should be recast and clarified in terms of interfering with electrical safety controls, creating electrical safety risk etc.</p> <ul style="list-style-type: none"> <li>• A need to capture large transmission load customers. Currently generators are regulated as entity works however large load customers are not, they are captured as installations only. However from the electrical safety perspective there are good reasons why SMS might be required for large load customers as there is a very real electrical safety risk across the customer interface that would be best managed through new interface requirements in the SMS regulating common operating practices.</li> </ul>
<ul style="list-style-type: none"> <li>• Are you aware of evidence of the dangers of particular forms/categories of ELV equipment? If so, what evidence is available?</li> </ul>	<p>To avoid confusion Powerlink notes the very significant dangers of working with earthing conductors, which many people assume are not dangerous because they usually at ELV and low currents. Powerlink cautions policy makers to ensure all work involving earthing conductors is expressly treated as nominal line voltage work.</p>
<ul style="list-style-type: none"> <li>• Should certain ELV equipment be included in the scope of the Act’s regulatory reach that are not currently covered?</li> </ul>	
<ul style="list-style-type: none"> <li>• What approach to including ELV equipment within the scope of the ES framework should be adopted in Queensland?</li> </ul>	

<ul style="list-style-type: none"> <li>• Should a measure of energy density/capacity be adopted? If so, which measure and what amount (e.g., how many watts per hour)?</li> </ul>	
<ul style="list-style-type: none"> <li>• Are you aware of evidence of the dangers of particular forms/categories of ELV equipment? If so, what evidence is available?</li> </ul>	
<p>Changing landscape of electricity and the workforce</p>	
<p>1. How are you, your organisation, the workforce and the community affected by the issues posed by the changing landscape of electrical work? To what extent?</p>	<p>Powerlink is affected by a great extent by the problems identified for the electrical safety considerations for new and emerging technology by the discussion paper.</p> <p>Powerlink owns, operates and maintains the Queensland electricity transmission network which runs 1,700km from north of Cairns to the New South Wales border. We have a strong history of safely connecting customers to the energy they need, delivering electricity to almost five million Queenslanders and 236,000 businesses and providing network connections for large-scale generators such as solar and wind farms, as well as major industrial customers including rail systems, mines and mineral processing facilities.</p> <p>Powerlink has a major role in delivery of transformational projects including the delivery of the transformative network construction projects required to deliver the <a href="#">Queensland Energy and Jobs Plan</a>.</p> <p>Powerlink can see that the workforce involved in work related to the transmission network and our customer connections is increasingly being done by a much wider range of parties than has historically been the case. Powerlink employs a workforce of more than 1000 to design, construct, operate and maintain the network and support our business. Our workforce includes over 300 directly employed licenced electrical workers and electrical engineers, supplemented by many more through maintenance services agreement with Energy Queensland (including Ergon Energy and Yurika), and construction panel agreements with parties including Downer,</p>



	<p>Zinfra, CPP and UGL. These contractors are increasingly competing for skilled labour with interstate and international projects.</p> <p>Importantly, there is now also increasing contestability in relation to network and connection equipment. Under the National Electricity Rules connection customers have the option to have various types of network electrical equipment constructed and owned by parties other than Powerlink Queensland and our contractors (such as contestable construction of equipment known as Identified User Shared Assets (IUSAs) and Designated Network Assets (DNAs). The result of this is an increasing number of new and changing participants working and sharing electrical safety risk on multi-party projects and operations. It is Powerlink’s observation that new industry participants are not experienced at connecting to the High Voltage energised network. While Powerlink sees its role to facilitate electrical safety at this interface, clearer duties and powers would be beneficial enablers for educating new entrants and coordinating electrical safety.</p>
<p>2. How many workers have been impacted by the identified hazards or are exposed to such hazards and might be exposed in the future? Which workers/ businesses/ households are impacted by the problem?</p>	<p>Powerlink’s workforce currently includes over 300 directly employed licenced electrical workers and electrical engineers, supplemented by many more through maintenance services agreement with Energy Queensland (including Ergon Energy and Yurika), and construction panel agreements with parties including Downer, Zinfra, CPP and UGL.</p> <p>With current workforce forecasting and planning aligned to the QEJP it is projected that this will increase in wave 2 by 2027 to an additional 500 workforce comprising of electrical workers and electrical engineers, and managed service agreements for maintenance and project delivery services.</p>
<p>3. Which are the key industries in which these tasks take place and how large are they?</p>	<p>Electricity supply industry, infrastructure building and construction industry.</p>
<p>4. Do you agree with the assessment of the issues identified with the changing nature of electrical work, are there any other elements to</p>	<p>The discussion paper focuses on the complexities related to the decentralised nature of energy generation entities as the source of new entrants into the renewables</p>

<p>the issue that you think have not been captured? If possible, please share examples of your experience with these issues.</p>	<p>sector. This is too narrow a description of the complexity issues for the changing nature of electrical work and the limited understanding by these new entrants of the electrical safety requirements in Queensland.</p> <p>Powerlink sees similarities with the other types of large entities such as large load customers and other special approval holders.</p> <p>There are also additional complexities related to rely on the prevalent typical industry contracting structures which outsource electrical work for construction and maintenance. Construction (including initial electrical connection) and operate and maintain contractors are increasingly being relied on by entities to manage electrical safety.</p> <p>Importantly, as noted above, the increasing contestability scenarios available under Chapter 5 of the National Electricity Rules means that parts of an entities’ network can be constructed and owned by a party other than the electricity entity who is nominated by the customer. This party is not working under a contract for services with the entity, and therefore the entity will have limited control over the activities in a way which would justify placing the electrical safety duties for these activities onto the entity.</p>
<p>5. What practical impacts – including costs and benefits – would each option have on you, your organisation, the workforce and the community? Please share examples of impacts and experiences of impacts, where possible.</p>	
<p>6. In relation to the following three risks considered, which of the four options do you think is best and why?</p>	<p>As a general comment, Powerlink supports clarity and improvement in electrical safety control reliability as included within the legislation.</p> <p>However, Powerlink’s observation is that that these risk issues are not limited to energy generation and storage equipment. There are also similar risks associated with fixing, locating and mounting work of all kinds of electrical equipment including</p>

transmission network equipment for lines and substations. Powerlink therefore urges the approach taken to these matters to be principles based, so that the principle can be extended by analogy to respond to future technological changes as well as to equivalent issues in transmission line construction and to promote consistency across all of s.18.

In seeking to identify the relevant principles, it may be useful to reflect that electrical system assemblies of all kinds consistent of the following components:

- i. Components which conduct electricity (such as conductors – including earth conductors, cable or busbars) and associated insulating components;
- ii. Components which secure their fixing (such as supports). The fixing components exist to locate the equipment and provide protection against disturbance; and
- iii. Components providing protection against mechanical damage (found in many but not all systems).

The apparent principled theme of s.18 and each of its elements relevant to the electrical work regime is to distinguish between work as follows on electrical systems:

- i. Work affecting or altering the components which conduct electricity, control electricity or insulate electricity. This work typically carries electrical risk either during the performance of the work from current within the conductors ( energised or induced current), or at a later stage of the equipment such as during operation as a direct result of the quality of the performance of the work; and
- ii. Work which does not affect or alter the components which conduct electricity or their associated insulating components. This includes work of locating but not altering the conductor and insulating components, as well as work only on the fixing or mechanical protection components. This work typically does not carry electrical risk during the performance of work if not

	<p>carried out near connected equipment and there is no induced current or direct contact risk – and the risks that may arise as a result of the performance of the work at a later stage arise from incorrect location or mechanical disturbance, rather than to the quality of work affecting conductor connections and insulation integrity.</p> <p>Work of the first kind affecting or altering the components which conduct electricity, control electricity or insulate electricity should require a relevant electrical work license based on defined competencies to manage electrical safety risk during the work and of the product of the work. We note that this then also attracts the application of the relevant electrical contracting requirements and minimum technical standards.</p> <p>Work of the second kind which does not affect or alter the components which conduct electricity or their associated insulating components typically does not require a relevant electrical work license, however we agree as flagged in the discussion paper that it can make sense to have the work performed under the supervision of a licensed worker where incorrect work of that kind will still create a latent electrical risk during a later stage of the equipment such as operation or maintenance. In this case it is important to clarify that supervision includes both the design of the equipment as well as the supervision of the relevant mechanical work.</p>
<p>a. Fixing, mounting and locating of renewable energy generation and storage technology (such as solar PV panels)</p>	<p>Powerlink routinely performs the work of fixing, mounting and locating electrical equipment. Powerlink does not perform this work on renewable energy generation and storage equipment as a matter of course and therefore is not in a position to comment directly on the risks involved for what this work type applies.</p> <p>However, Powerlink observes that the discussion paper raises the interpretation of the fixing, mounting and locating of equipment exclusion in s.18(2) and a certain legislative interpretation underpins some of the discussion points in the paper. Powerlink raises this point as this application issue has a related application to other work of fixing, mounting and locating of transmission electrical equipment and has been raised with Powerlink by industry participants in related contexts.</p>

	<p>Specifically, s.18 (2)(n) excludes the following from being regulated electrical work:</p> <p>“locating, mounting or fixing in place electrical equipment, other than:</p> <ul style="list-style-type: none"><li>- (i) making or terminating electrical connections to the equipment, or</li><li>- (ii) installing supply conductors that will connect the equipment to a supply of electricity”</li></ul> <p>The review refers to this exclusion and in its conclusion interprets the effect of the double negative references in subsections (i) and (ii) as follows:</p> <p>“Therefore, regardless of the voltage of renewable energy generation and storage technology, the fixing, locating and mounting of electrical equipment – where it is not in relation to connection of the equipment – is not electrical work and does not require a licence.”</p> <p>Powerlink’s view is based on the principles of risk and the technical history of this provision. The better statutory interpretation is that the subsections (i) and (ii) should not be read as so limiting. It is not consistent with the theme of s.18 as a whole to suggest these subsections define the only type of activity that is regulated electrical work. If that view were adopted and taken to its logical conclusion then other types of power industry equipment installation work that does carry significant potential electrical risk arising from the performance of the work (such as industrial wiring installation or line stringing) would arguably be left unregulated where performed separately to the connection work activities.</p> <p>Powerlink observes that subsections (i) and (ii) have work to do to highlight that not all the work associated with fixing, locating and mounting work is excluded from electrical work. These exclusions should not be taken as an exhaustive statement of the broad net of installation work captured by s.18 as regulated work, particularly when read in the context of the other exclusions in s. 18(2). In terms of principles, it is the making or terminating electrical connections installing conductors – including</p>
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	<p>earthing and insulators that impacts the safety for conducting, controlling or insulating electricity.</p> <p>Powerlink takes the practical interpretative view that s.18 (2)(n) should be read by reference to its technical history. This provision was introduced and served to enable standard work practices which involved mechanical work on the fixing components of a system assembly which locate the equipment and secure protection from disturbance. Examples at the time of introduction were common trades support activities such as the locating and bolting in place of a switchboard, or the fixing of other manufactured installations such as complex luminaires or refrigeration units. This work is not of the same nature as the installation of newer technologies being considered and the provision may not be legally interpreted as having the same application to different equipment.</p> <p>Supporting this view is the statutory interpretation principle that in cases such as this involving technical definitions addressed to practical people skilled in a particular trade or industry, the technical practical meaning related to the way that the legislation has evolved in stages may be preferred (see Gill v Donald Humberstone and Co Ltd [1963] WLR 929 and [1963] All ER 180.)</p> <p>Powerlink agrees that these provisions require clarification from now on, but also believes there is a degree of doubt as to the narrow reading of the provisions applied by the review in the interim period.</p>
<p>b. Mechanical cable protection work</p>	<p>If the principles suggested above are applied in relation to mechanical cable protection work it might be better classified as second kind of cable work which would not alter the conductors or insulating components and if there is no risk of induction or shock from earthing conductors. In this case it is important to clarify that supervision includes both the design of the equipment as well as the supervision of the relevant mechanical work.</p>
<p>c. Laying, cutting or sealing underground cables that are part of the works of an electricity entity before the initial connection of the cables to an electricity source.</p>	<p>If the principles suggested above are applied in relation to this work, it can be seen to be work of the first kind as it involves work that affects or alters the conductor</p>

	<p>components and insulation including jointing and sealing. Ordinarily this work should be done by a licensed electrical worker, unless adequate systems of entity supervision by a competent and resourced entity can be confirmed.</p> <p>However, this provision is currently subject to a licensing exemption by operation transmission entity ownership. Powerlink points out that while exemptions based on entity ownership do provide convenience, in furtherance of our committed value of safety we recognise that an exemption based only on status of the equipment as intended entity works may not provide the highest order control option for the electrical safety of this work.</p> <p>Assumed supervision by an electricity entity, without further detail as to whether or not the entity needs to be a prescribed entity subject to SMS auditing, and what that supervision requires, is recognised as potentially uncertain leading potentially to a lack of reliable supervisory control. This is particularly the case for newer smaller industry entrants but even in Powerlink’s case we recognise that there is also some industry uncertainty as to how supervision can be applied in a contracted scenario when supervision might occur through contractual mechanisms rather than direct engineering or licensed worker control. It is important to note that it is necessary to consider both the supervision of the design as well as the relevant mechanical works.</p> <p>Powerlink supports continued entity supervision options (with clarification) in preference to licensed worker or registered engineer supervision. This is because entity supervision can be provided through engineering methods and in design processes as well as other managerial supervision rather than necessarily requiring direct electrical licensed worker supervision. In the current environment where licensed worker resources are tight this may be a practical necessity for this to continue.</p> <p>Powerlink sees that a beneficial option on this point is to provide further clarity as to which entities can provide supervision that would then exempt this work from licensing requirements (this ought be only prescribed entities or those who are subject to SMS auditing under the Act) and also how this supervision ought to be</p>
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	<p>applied (such as through review of designs, systems and controls, monitoring systems in lieu of direct licensed worker supervision).</p> <p>Powerlink considers this to be a very important electrical safety matter. In our case we are affected by customer works and installations across the network connection interface, and our workers are exposed to potential electrical safety risks when working at the interface where the customers’ underground cables have not had adequate design and supervision in place.</p>
<p>7. Do you have suggestions for other options to address the issues identified? Please provide examples (including costs) on the impacts of your suggested options, including how it would ensure the workforce is electrically safe and conduct electrically safe work.</p>	<p>Powerlink urges the approach taken to these matters to be principles based, so that the principle can be extended by analogy to respond to future technological changes as well as to equivalent issues in transmission line construction and to promote consistency across all of s.18. Powerlink has made specific submissions in relation to the possible principles to be adopted as described above.</p>
<p>8. The Review identified risks with the locating mounting and fixing of energy generation and storage electrical equipment. Do you agree that the risks identified are limited to this equipment? If not, what do you consider the scope of these risks to be?</p>	<p>No, there are also significant issues associated with the definitions of electrical work as they apply to transmission equipment including new line construction.</p> <p>With the increasing volume of new construction planned in Queensland in the next 10 years and beyond, the higher number of new entrants, increasing contestability scenarios, and a high volume of contracted network construction rather than entity managed construction, this is very important to ensure electrical safety for all persons working around networks and for the community.</p> <p>In some cases power industry transmission contractors have understood that they are not required to utilise licensed workers for overhead transmission line stringing, as they perceive this work is the mere locating and mounting and fixing of electrical equipment and falls within that specific exclusion, without having reference to other entity works provisions. They have perceived all locating, mounting and fixing to be excluded due to a misconstrued application of the words after ‘other than’ in the exclusion provision. The multiple overlapping exclusions and inconstant drafting style have created significant confusion and Powerlink encourages a review of these provisions to provide clarity for users not familiar with the legislation.</p>



	<p>The history of section 18 means that its theme can be difficult to logically discern, and its updates to adopt some of the changes from the harmonised WHS laws have caused additional lack of clarity. The Queensland industry history is highly relevant but is becoming lost in the resultant overlapping incremental drafting. The original entity works exclusions in s. 18 (2) were introduced to permit riggers and related trades to work on new overhead line construction without electrical work licenses if that work was carried out under the supervision of electricity entities. The 2004 amendments were introduced so that trades assistants could perform common industry tasks on the fixing components of electrical systems and this was not introduced so as to override the specific entity works construction provisions. The provision was also updated in 2011 to align some language to harmonised work health and safety laws and the intent was apparently not to change the meaning, however the multiple overlapping exclusions have actually complicated rather than clarified the issues.</p> <p>There is now a lack of logical consistency in the multiple exemptions that affects not only generation and storage equipment but transmission network equipment more broadly. Rectification of these requirements would be welcomed.</p>
<p>9. The Review identified risks from the laying, cutting or sealing of underground cables that are part of the works of an electricity entity before the initial connection of the cables to an electricity source (section 18(2)(j) of the Act). Other exclusions for electricity entities also exist in section 18(2) of the Act. Has the decentralisation of energy generation had a similar impact on the risk profile of these exclusions? Please provide examples where possible.</p>	<p>As we have identified above, there are multiple scenarios under which works of an electricity entity can be the subject of electrical work. In light of industry outsourcing and contestability models, it is very important to question whether or not exemptions based on entity ownership and assumed entity supervision are the highest order regulatory control available. Often this work will be performed by industry contractors, in some cases by contestable parties who are not working for the entity.</p> <p>The theme of the entity specific provisions in s.18 (2) is to assume that the involvement of an electricity entity ought to provide an exemption even where work is of the first category of work which includes affecting or altering conductor and insulating components which would otherwise require to be performed by a licensed worker. One exclusion from this extends to the work of laying, cutting or sealing</p>

underground cables – the specific issue raised. Other similar activities also have a licensing exemption where there is entity supervision– such as new line construction, maintenance of disconnected lines and decommissioning (see s.18 (2)(i) and (j) and (k) and (l)).

Powerlink points out that while exemptions based on entity ownership or supervision do provide convenience, in furtherance of our value of safety Powerlink recognises that an exemption based only on status of the equipment as intended entity works may not provide the highest order control option for the electrical safety of this work.

Assumed supervision by an entity, without further detail as to whether or not the entity needs to be a prescribed entity subject to SMS auditing, and what that supervision requires, is recognised as potentially uncertain leading potentially to a lack of reliable supervisory control. This is particularly the case for newer smaller entrants such as new generators but even in Powerlink’s case we recognise that there is some industry uncertainty as to how supervision can be applied in a contracted scenario when supervision might occur through contractual mechanisms rather than direct engineering or licensed worker control, or in the context of remoter relationships such as customer’s contestable service providers.

Powerlink supports continued entity supervision options in preference to licensed worker supervision. This is because in Powerlink’s case entity supervision can be provided through reliable engineering or managerial methods rather than always requiring direct licensed worker supervision. However this is unlikely to be the case for all entities and all work scenarios.

Powerlink sees that a good option on this point would be to provide further clarity as to which entities can provide supervision that would then exempt this work from licensing requirements (this ought be only prescribed entities or those who are subject to SMS auditing under the Act) and also how this supervision ought to be applied (whether directly or otherwise such as through review of systems and controls without direct supervision).

	<p>It is also recognised that any additional supervision may be perceived as leading to some increased labour costs for licensed electrical workers. However Powerlink notes that the existing model also includes undefined costs of either licensed worker or engineering / entity supervision which may or may not be defined effectively by these provisions.</p>
<p>Electrical safety and electric vehicles</p>	
<p>1. How are you, your organisation, the workforce or community affected by the problems identified and to what extent?</p> <p>2. Do you agree with the assessment of the problem identified, and are there additional risks presented by electric vehicles that have not been identified? If yes, what are they and can you provide examples of these issues?</p> <p>3. What practical impact, including the costs and benefits, would the options proposed in the Discussion paper have on you, your organisation, the workforce or the community? Please provide examples where possible.</p> <p>4. What is your preferred option and why would it be best for you, your organisation and your stakeholders?</p> <p>5. If a licensing framework was introduced: a. should any specific type of vehicle be excluded for the requirement (e.g., motorcycles, cars, buses, trucks)? If so, what are they and why?</p> <p>b. Is a restricted licence (specified training) or full licence (full apprenticeship) suitable? If so, why?</p> <p>c. Should the licence type be determined based on the type of vehicle? If so, what would you suggest and why?</p>	<p>Powerlink is engaged in the energy transition for the adoption of Electric Vehicles and associated technologies but not in the work with Electric Vehicles directly so does not make any comment on this section.</p>

<p>d. What types of work or occupations should be excluded from a licensing requirement? Or alternatively, what types of work or occupations should have specific licensing requirements (e.g., on-road works, general maintenance and check-ups, and/or removal and disposal)?</p> <p>e. Are there any elements under the Act which should not apply? Which sections and why?</p> <p>f. Are there situations in which a disconnect and connect restricted licence for performing work on non-propulsion components of a vehicle would be appropriate?</p> <p>6. Do you have suggestions for other options to address the problems identified? Please provide examples (including costs where appropriate) of your suggested options, including how it would ensure the workforce are electrically safe and conduct electrically safe work for community safety.</p>	
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