

## Response to the Discussion paper - Review of Queensland's Electrical Safety Act 2002 – key definitions and emerging technologies

Response from Resources Safety and Health Queensland (RSHQ) on questions seeking feedback

### 3.1.6 Questions seeking feedback

How are you, your organisation or your stakeholders affected by the problems identified and to what extent?
<p>The mining and quarrying safety and health framework relies upon section 73 of the Electrical Safety Regulation 2013 (ES Regulation) by providing the licensing requirements under that provision as the competency required by the Mining Safety and Health Advisory Committee (MSHAC) under the Mining and Quarrying Safety and Health Regulation 2017 (MQSHR).</p> <p>The MQSHR currently requires section 73 of the ES Regulation as the competency requirement for electrical work being performed on a mine or quarry, including on mining vehicles. RSHQ's view is that the requirement under section 73 should be retained in the context of mining and quarrying electrical work.</p> <p>Since the introduction of the ES Regulation, electric propulsion vehicles on Queensland mine sites have grown significantly in size and power capacity. With some heavy mining equipment now having a capacity of 2.6 megawatts with direct current (DC) bus voltages of more than 3,000 volts. Electrical hazards associated with electric propulsion vehicles used on mine sites are substantially higher than those associated with battery powered electric passenger vehicles. These include higher operating voltages, higher operating currents and higher prospective short circuit currents. RSHQ's concerns were detailed in the Submission to the review of the <i>Electrical Safety Act 2002</i> in April 2021 (<b>Attachment 1</b>).</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?
There is general agreement on the assessment of the problem identified.
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.
There would be a beneficial impact for new and emerging technologies. Newer technologies could improve electrical outcomes in the area of safety and performance. It would require new and emerging technologies to identify what additional electrical safety hazards arise from the technology and what, if any, additional controls would be needed.
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.
There is a potential cost for new installations. The costs could be associated with the materials used in this equipment and the enclosure types that would be required. Also monitoring and control technology could be different. Costs may be mitigated by incorporating already existing technology and circuit design
What is your preferred option for the various ELV discussed and why will it be best for you, your organisation and your stakeholders?
Option 2. This provides greater control of the safety aspects in relation to these technologies. It would ensure that people working on and installing this equipment have the appropriate skills and competencies to make the installation safe, as well as ensuring that those doing the work would also be safe.
If you prefer Option 1 (status quo), how would the potential electrical safety risks of newer ELV technologies be minimised or eliminated?
N/A

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.
No.
Are you aware of evidence of the dangers of particular forms/categories of ELV equipment? If so, what evidence is available?
Yes, there have been a number of incidents involving battery explosions and fires on ELV equipment. Arc blast from high energy levels as well as burns. See the Safety Bulletin attached ( <b>Attachment 2</b> ) as an example of an accident and the dangers associated with exploding lead acid batteries.
Should certain ELV equipment be included in the scope of the Act's regulatory reach that are not currently covered?
No.
What approach to including ELV equipment within the scope of the ES framework should be adopted in Queensland?
The approach recommended by OIR in the recommendations is supported.
Should a measure of energy density/capacity be adopted? If so, which measure and what amount (e.g., how many watts per hour)?
No.

### **3.2.6 Questions seeking feedback**

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?
Please refer to the response to the similar question in 3.1.6.
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?
The whole mining and quarrying industry.
Which are the key industries in which these tasks take place and how large are they?
All metal mines and quarries in Queensland.
Do you agree with the assessment of the issues identified with the changing nature of electrical work, are there any other elements to the issue that you think have not been captured? If possible, please share examples of your experience with these issues.
Agree.
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.
Negligible, as currently custom and practice.
In relation to the following three risks considered, which of the four options do you think is best and why? a. Fixing, mounting and locating of renewable energy generation and storage technology (such as solar PV panels) b. Mechanical cable protection work, 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.
Option 2 as RSHQ considers that it will maintain electrical safety standards in the mining industry.

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.
No.
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?
Agree.
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 of the works of an electricity entity before the initial connection of the cables to an electricity 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.
No, as works of an electrical entity are excluded from the jurisdiction of both mining acts.

### **3.3.6 Questions seeking feedback**

How are you, your organisation, the workforce or community affected by the problems identified and to what extent?
Please refer to the response to the similar question in 3.1.6.
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?
Agree.
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.
Negligible, as currently custom and practice although not legislated. Electrical workers currently perform this work on mine and quarry sites.
What is your preferred option and why would it be best for you, your organisation and your stakeholders?
Option 2 as RSHQ consider that it will maintain electrical safety standards in the mining industry.
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? b. Is a restricted licence (specified training) or full licence (full apprenticeship) suitable? If so, why? c. Should the licence type be determined based on the type of vehicle? If so, what would you suggest and why? 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)? e. Are there any elements under the Act which should not apply? Which sections and why? 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?
a. No exclusions for mine sites. b. Either, as long as the restricted licence is applicable for the equipment. c. No. d. Only exclusions as per reviewer's comments. e. No, agree with reviewer's recommendations. f. Yes, subject to being ELV or adequately engineered and interlocked for safety.
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.
No.