



07 July 2023

The Honourable Grace Grace MP  
Minister for Education, Minister for Industrial Relations, and Minister for Racing  
Queensland Government  
ESPolicy@oir.qld.gov.au

Dear Minister,

### **Submission on the review of Electrical Safety Act 2002 (Qld)**

Thank you for the opportunity to provide feedback regarding the review of the *Electrical Safety Act 2002* (Qld) (**ESA**) by the Queensland Office of Industrial Relations.

BHP Mitsubishi Alliance (**BMA**) submits the following feedback to some of the proposed questions of most relevance to us and our operations.

BMA continues to place the highest priority on the safety of our people and is committed to ensuring an ongoing focus on continuous improvement including with respect to electrical safety. We support the focus on ensuring that the electrical safety legislative framework is revised and amended to reflect changes in the electrical landscape. BMA emphasises the importance of any proposed changes being considered in light of the context of electrical and other impacted industries (including mining, camps, domestic housing, industrial etc), as well as the existing electrical safety and other applicable safety legislative frameworks. Care should be taken to ensure changes are made having considered all relevant factors and potential implications.

BMA seeks to be included as a stakeholder in consultation processes to assist with this, including to understand the proposed changes and impacts more deeply with respect to definitions such as electrical work, licencing etc (as explained in more detail below) in relation to the matters set out below and the broader matters covered by the Final Report.

#### **1. How are you, your organisation, your stakeholders the workforce and community) affected by the problems identified (with new and emerging technologies and electric vehicles) and the changing landscape of electrical work and to what extent? (3.1.6 - first dot point, 3.2.6 - 1 and 3.3.6 - 1)**

BMA is Australia's largest producer and supplier of seaborne metallurgical coal and is owned 50:50 by BHP and Mitsubishi Development. BMA operates seven Bowen Basin mines (Goonyella Riverside, Broadmeadow, Daunia, Peak Downs, Saraji, Blackwater and Caval Ridge) and owns and operates the Hay Point Coal Terminal near Mackay and the Moranbah airport. BMA operations includes a number of electric drive fleets and battery electric underground vehicles across Queensland, and we continue to consider other relevant technologies as they become available. Associated operations also include BMA Rail, as well as infrastructure which supports all of the above, including offices.

Given the varied nature of BMA's operations, the impacts of new and emerging technologies and electric vehicles varies across locations. BMA and its workforce are required to comply with the requirements of the ESA, and in some cases other applicable safety legislation that provides for specific obligations regarding electrical safety including for example the *Coal Mining Safety and Health Act 1999 (CMSHA)* and associated regulations.

We agree that it is important for legislation to be reviewed in light of technology advances and continuous developments. We are very committed to ensuring the ongoing safety of workers, including through the maintenance of appropriate safety standards with respect to electrical work including by reference to the potential change to risk profiles as a result of newer technologies and associated electrical work.

In summary, particular impacts that BMA sees arising from the matters identified (and the matters set out in the recommendations both in the Discussion Paper and the Final Report) are:

- A. Ensuring the appropriate safety standards, training, qualification, and supply of electricians is maintained in relation to emerging and changing technologies including in relation to solar installation, electric vehicles, battery electric equipment etc.
- B. We also anticipate an increase in demand and requirements as electrification proliferates to enable decarbonisation. Therefore, seeing an expansion into other vehicles.
- C. The interaction of proposed changes to the ESA with the obligations arising under other safety legislation including the CMSHA and CMSHR and ensuring the interaction and obligations are clear.
- D. Potential implications across numerous industries and stakeholders arising out of the recommendations in the Discussion Paper and the Final Report including with respect to bracketing, conduiting, the requirements around direct supervision obligations (which could potentially expand the circumstances in which direct supervision is needed, and where indirect supervision may be appropriate), testing electrical equipment (including when this might result in obligations to report for example testing for dead), what amounts to live work, obligations and duties with respect to Qualified Technical Persons (and potentially expanding the need for these and the duties placed with them), occupational electrical license eligibility, and implications to CPD points (including with respect to battery operated equipment).

***2. Do you agree with the assessment of the problem identified (with respect to new and emerging technologies and electric vehicles, and are there additional risks presented by new and emerging technologies and electric vehicles that have not been identified? If yes, what are they and can you provide examples of these issues? (3.1.6 - second and third dot point (in summary) and 3.3.6 -2)***

***4. 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. (3.2.6 - 4)***

As above, we agree it is important that the legislation and industry adapts to continue to ensure safety in light of changes to technologies etc.

To assist with this, BMA strongly supports implementing appropriate controls to manage risk related to the introduction of new technologies, including but not limited to working with Original Equipment Manufacturers (OEM) to engineer reduced risk exposure for workers.

As technologies evolve OEM equipment design is evolving to reduce risk exposure and provide for touch safe isolation components. Therefore, eliminating the exposure for operators and maintainers to live parts. These advancements in machines incorporate the latest operational and maintenance safety features and

meet or exceed the latest applicable Australian and International safety standards. This includes global best-practice standards specific to electrical safety of machinery.

Maintenance practices are also evolving with technology with more self-diagnosing systems leading to component exchange rather than onsite repair. Troubleshooting on these machines will typically be done through connecting and reading an instrument away from any live machine parts, de-energizing/re-energizing the machine from an inherently safe position away from any live machine parts, and then while deenergized, unplugging and replacing entire components without breaking into, or being exposed to hazardous voltage.

We also refer to our response below to question 4.

**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 (of new and emerging technologies, ELV equipment and electric vehicles). (3.1.6 - dot points 3 and 4 (in summary), 3.2.6 - 5 and 3.3.6 - 3)**

BMA supports workers being trained and competent in the tasks they are performing coupled with appropriate controls to manage risk. However, it will be important to consider the practical implications of proposals. For example, the Discussion Paper proposes in Option 2 an expansion of the definitions of 'electrical equipment' and 'electrical work', for the purposes of a licensing requirement. Therefore requiring "appropriately licensed electrical workers to carry out the electrical work on the electrical components when the vehicle is serviced and or repaired". This raises several practical implications including the following:

- A. Ensuring appropriate numbers of electrically qualified and licensed tradespeople in Queensland to meet any proposed requirements in circumstances where there are presently some limits to numbers.
- B. With the rapid increase in electrification as a path to decarbonisation demand for electrical tradespeople will continue to increase.
- C. Work will be required to ensure sufficient training places and sufficient workplace supervision is available to deliver the required number of electrical tradespeople to support any transition requirements as a result of options being adopted as well as the likely increase to requirements as a result of decarbonisation and electrification more broadly.
- D. Costs associated with the above.

Another example of potential impacts is in relation to ensuring appropriate consideration is given with respect to provision for appropriate abilities for relevant stakeholders to take action to control a fire and other emergency. For example, BMA has a function for fire and emergency services which may need to control risks arising from electric vehicles, and other new and emerging technologies. We seek that an exemption be included for this function in line with the exemption considered for QFES (as discussed in the note on the top of page 71 of the Discussion Paper – see also footnote 31).

**4. What is your preferred option and why would it be best for you, your organisation and your stakeholders? (3.1.6 - 5 and 3.3.6 - 4)**

We propose a variation to the options suggested which involves considerations similar to those presently in place in the coal industry, with further developments to ensure safety in light of evolving technologies including updates with respect to competencies and restricted electrical licensing (**REL**).

This could include alternative solutions already in use within the coal industry to manage risk. For example:

- Utilising competency/s from the Nationally Accredited Training Package as the basis of training and assessing a worker's competence to perform a relevant task, or

- Utilising the restricted electrical licence (REL) process by creating new appropriate categories. Enabling Qualified trades people to complete specific tasks. We seek to be included in consultation, including with respect to the definitions for electrical work and electrical equipment.

**5. If a licensing framework was introduced (3.3.6 -5):**

**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?**

BMA considers that competency for the task should be based specifically on the type of vehicle but rather on the task and be risk based (e.g., fault currents could be higher and supply voltages).

**b. Is a restricted licence (specified training) or full licence (full apprenticeship) suitable? If so, why?**

BMA is supportive of REL and is keen to be consulted as part of an industry group to define REL categories and competency requirements. This will enable the training of appropriately highly skilled tradespeople able to perform tasks safely, with the ability to be upskilled in technology as it advances.

**c. Should the licence type be determined based on the type of vehicle? If so, what would you suggest and why?**

See comment above at 5(a).

**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)?**

Consideration should be given to specific restricted licencing requirements with respect to disconnecting, reconnecting, diagnosing, and replacing propulsion components (such as batteries and wheel motors. This should be considered based on voltage and fault current levels associated with the task and level of risk of work.

**e. Are there any elements under the Act which should not apply? Which sections and why?**

BMA seeks that careful consideration is given to ensuring appropriate interactions with existing safety regimes in all industry including ensuring, it is clear what sought of qualifications and licenses required for different types of work.

- Inclusion of direct supervision for installing brackets and conduit. Indirect supervision by a qualified electrician is sufficient to manage risk in many circumstances (whether with respect to vehicles and more broadly). The interaction with other applicable safety legislation including the CMSHA and CMSHR should also be considered, or risk potential inadvertent flow on impacts. For example, in a mining context, the current test for dead is not deemed to be live electrical work. The consideration with respect to flow on effects should include but is not limited to consideration of interactions with the sections of the ESA and the following sections of the CMSHR:

- **112 Live testing electrical equipment** (1) A surface mine must have a standard operating procedure for live testing electrical equipment at the mine. (2) The procedure must— (a)state— (i)what equipment may be live tested; and (ii)what instruments may be used for the testing; and (b)provide for the following— (i)isolating areas where equipment is being live tested or test run; (ii)using personal protective equipment; (iii)using high voltage test equipment and discharging stored energy after the test; (iv)dealing with high prospective fault currents; (v)other precautions to be taken for live testing.

- **186 Live testing in an ERZ** (1) A person must not live test electrical equipment or installations, including intrinsically safe electrical equipment and installations, in an ERZ0 at an underground mine. (2) An underground mine's safety and health management system must provide for— (a) live testing electrical equipment and installations in an ERZ1; and (b) limiting the live testing to extra low voltage and low voltage; and (c) notice of the live testing, other than testing of intrinsically safe electrical equipment and installations, to be given to an inspector within 7 days after the live testing is carried out.
- **187 Live testing in a NERZ** (1) An underground mine must have a standard operating procedure for live testing electrical equipment and installations in a NERZ. (2) The procedure must provide for the following— (a) limiting live testing to extra low voltage and low voltage electrical equipment and installations; (b) isolating areas where equipment is being live tested; (c) the type of test instruments to be used; (d) using high voltage test equipment and discharging stored energy after testing; (e) using personal protective equipment; (f) dealing with high prospective fault currents.
- Consideration with respect to the introduction of any CPD requirements for licence holders (whether here or for licence holders more broadly, would need to include phasing in a requirement at initially low points attainment threshold (recommended at 6 hours/year equivalent or similar), to be increased over a suitable period of time until full implementation is achieved over no more than two contractor licence periods (six years).

***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?***

- Refer to our comments above at 4.

***6. Do you have suggestions for other options to address the problems/issues identified (i.e. with the changing landscape of electricity and the workforce and with electric vehicles)? 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. (3.2.6 - 7 and 3.3.6 - 6)***

BMA remains committed to taking appropriate steps to manage electrical safety. BMA proposes a minimum standard for restricted electrical license as a minimum for any work above set levels for voltage and/or fault currents as defined by the legislation.

As above, we look forward to sharing further feedback as part of relevant consultation processes.

**Other comments with respect to 3.1.6 Questions seeking feedback:**

As a broad comment, BMA is supportive of considerations being given to how to continuously ensure electrical safety considering the significant impacts of changes to the industry including the solar industry specifically with respect to the ELV installations which pose risk to a higher level, including for example the impacts of new solar equipment and approach where these are to be linked.

**Other comments with respect to 3.2.6 Questions seeking feedback:**

With respect to the broader matters arising from the landscape of electricity and the workforce, again BMA is supportive of appropriate changes to ensure safety and is keen to be consulted in relation to proposed changes. In particular, BMA considers there are potentially significant impacts arising from recommendations 24 and 25 of the Final Report for multiple industries where workers are employed but are not providing a service like electrical contractors. Potential implications regarding the requirements for QTP certification in businesses should be carefully considered.

In addition to the specific questions responded to above, BMA considers that some of the recommendations outlined in the Final Paper have potentially significant impacts which will need to be carefully considered in the context of relevant industries, including those in which we operate. We seek to be included in consultation so that we can engage further on these issues.

Yours sincerely,

