

QUEENSLAND RESOURCES COUNCIL SUBMISSION

Electrical Safety Act 2002 Review Discussion Paper and Final Report

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About the Queensland Resource Sector

The Queensland Resources Council (QRC) is the peak representative organisation of the Queensland minerals and energy sector. QRC's membership encompasses minerals and energy exploration, production and processing companies, and associated service companies, both technical and professional.

The QRC works on behalf of its members to ensure Queensland's resources are developed profitably and competitively, in a safe, socially responsible and environmentally sustainable way.

The Queensland resources sector is committed to continuous improvement in all areas of work, health and safety including electrical safety and follows a best practice, risk-based approach to managing risks of work-related injury and disease. Where work related injury occurs, the resources sector is committed to effecting timely and appropriate return to work arrangements.

The resources sector recognises that there is no competitive advantage in safety and acknowledges the importance of continuing to co-operate and share information, research and learnings.

The Queensland resources sector directly and indirectly employs over 450,000 persons largely in high paying roles, with a significant proportion of those roles located within rural, remote and regional areas of this state corresponding to the location of our energy sources and commodity groups.

QRC's latest annual economic contribution data details the resource industry's ubiquitous spending across Queensland down to the postcode level. The 2021-22 data shows that Queensland's resource industry collectively:

- supported one in six Queensland jobs,
- contributed one in every four dollars to the State economy,
- generates around 85% of the value of Queensland exports,
- supports more than 14,300 local Queensland businesses,
- contributes to more than 1,400 charities and local sports clubs

The demand for our resources both in energy and minerals has been forecast to increase in coming years to satisfy the global demand for both fuels and critical minerals essential for a low carbon future.

Introduction

The QRC is pleased to make a submission to the Queensland Government's final report of the Review of the *Electrical Safety Act 2002* (ES Act) and the ES Act Review Discussion Paper.

The QRC is uncertain about the correlation between the 'response to the Review of Queensland's Electrical Safety Act 2002 – key definitions and emerging technologies' prepared by the Office of Industrial Relations and the recommendations outlined in the Report of the Review of Queensland's Electrical Safety Act 2002, as compiled by the independent Reviewer. In light of this context, the QRC is submitting comments on both these documents in so far as they impact upon the resources sector.

The QRC notes that the Review Report found that the occurrence of confirmed serious electrical incidents (SEIs) in Queensland has consistently declined over consecutive fiscal years since the

proclamation of the ES Act in 2002 when adjusted for population growth and increases in the number of licensed electrical contractors.

Given the pace of technological transformation together with the sophistication and complexity of electric vehicle operating systems, the QRC proposes that a Code of Practice would be best placed to provide detailed information on compliance requirements and providing ease of amendment for currency.

Review Consultation

The QRC and its members value the Queensland Government's commitment to meaningful engagement and consultation with stakeholders to ensure that any proposed policy or regulatory changes with a material impact on the resources sector come with a default 12-week minimum structured consultation period in accordance with the Office of Best Practice Regulation's guidelines.

The QRC is disappointed however, that the independent Reviewer did not involve broader direct resource sector industry involvement. It appears the industry reference group that assisted the Review was essentially limited to electrical industry representatives, resulting in a lost opportunity.

The QRC is appreciative of the Deputy Director General and other senior officers of the Office of Industrial Relations (OIR) recently meeting with the QRC and industry representatives to discuss concerns with the ES Act review.

The QRC proposes that it be engaged as a stakeholder on any proposed changes to the ES Act, Electrical Safety Regulation or development of a Code of Practice or similar.

The transformation of technology within the Australian and global resource sector is advancing at a rapid rate, with technologies such as automation, robotics and big data being used extensively across resources companies to enhance workplace safety and health outcomes.

International organisations such as the International Council on Mining and Metals (ICMM) and the Global Mining Guidelines Group (GMG) work collectively to share learning and develop guidelines and practices which are designed to keep those who work within and interact with the sector, safe. Nationally, the Minerals Council of Australia (MCA) advocates for the minerals sector and policy where everyone who goes to work returns home safe and healthy.

At a state level, in addition to the QRC, the resources sector has well established tripartite consultative, advisory and expert committees which are well placed to provide advice and make recommendations about the impacts of proposed policy changes including skills gaps and competency requirements and how best to protect the safety and health of resource sector workers. These forums include the QRC Health and Safety Committee as well as the Ministerial Coal Mining Safety and Health Advisory Committee (CMSHAC) and Mining Safety and Health Advisory Committee (MSHAC).

Input during the Review process from these advisory and expert groups and from representatives from construction, mining, manufacturing and equipment/product supply industries would have assisted in ensuring a deeper understanding of the policy considerations necessary to ensure the regulation of electrical safety in Queensland remains contemporary, in both workplaces and domestic dwellings.

As a result, the QRC believes that not all recommendations outlined in the Review are supported by evidence and therefore have the potential to adversely impact electrical and workplace safety and health.

Evidence base

The QRC is supportive of policy and regulatory changes which are evidence based and materially reduce the incidence of physical or psychological harm within the sector. It is unclear if recommendations outlined within the Review are supported by an evidence base reflective of contemporary practices within the industry sector which would be impacted by such recommendations.

Recommendations 2, 3 and 8

For example, the report states that the National Electrical Contractors' Association of Australia (NECA) and the Electrical Trades Union (ETU) made representation to the Reviewer to restrict work on Zero Emissions (ZE) vehicles and charging stations to licensed electrical workers. As a result, the Review Report (recommendations 2, 3 and 8) recommended that because of the electrical safety risks presented by electric and hydrogen powered vehicles, consideration should be given to their inclusion in the scope of regulation by the Act and for coverage by licensed electrical workers.

The QRC strongly opposes this recommendation as it appears to assume licensed electrical workers have the competency to work on ZE vehicles. This may not be the case if they have not undertaken specialised training.

It is not apparent if in forming this recommendation, if account has been taken of the work being undertaken nationally to address the risks from ZE vehicles by the Commonwealth Department of Infrastructure, Transport, Regional Development, Communications and the Arts (DITRDA), the Australian Mining and Automotive Skills Alliance (AUSMASA), Powering Skills Organisation (PSO) and at a state level, the Queensland Resources Industry Development Plan (QRIDP) and within it, the Queensland Future Skills Partnership (QFSP).

DITRDA are establishing national standards for ZE vehicles which will include competencies and align these with international standards to ensure the safest possible vehicles are available for the Australian community and on our roads.

AUSMASA and PSO are two of ten Jobs and Skills Councils (JSCs) established by the Federal Government to address competency and skills shortages across different sectors. The PSO works across the energy sector, focusing on electricity, renewables and gas while AUSMASA works across the mineral exploration and extraction operations, as well as emerging industries covering driverless automotive technologies. AUSMASA are charged with developing training packages and competencies for the types of vehicles potentially captured by the ES legislation.

The QRIDP outlines the Queensland Government's commitment to work with industry against six key focus areas to respond to emerging global trends including automation and digital transformation. Evidence of the effectiveness of collaboration with industry under the QRIDP, is exemplified by the Queensland Future Skills Partnership (QFSP), an initiative led by BHP Mitsubishi Alliance in partnership with TAFE Queensland and CQ University. QFSP has successfully defined the first wave of new skills required to support automation and technology advancements within the resources sector.

A decision to restrict work on Zero Emissions vehicles and charging stations to licensed electrical workers, without account of the work being undertaken federally has the potential to place Queensland out of step nationally, be counter to the Queensland Government whole of government approach articulated within the QRIDP and may create unsafe working environments.

Recommendation 29

A further example of where the Review has fallen down due to a lack of consultation involves recommendation 29 which proposes including in the ES Act, provisions equivalent to Health and Safety Representatives (HSR) and Work Health and Safety Officers (WHSO) found in the *Work Health and Safety Act 2011*.

While the *Workplace Health and Safety Act 2011* has no application in mining workplaces, the QRC notes the continuing alignment with concepts and terms within the Work Health and Safety and Electrical Safety frameworks within mining safety Acts albeit, in our view, without full consideration of the consequences of such alignment. This has the potential to adversely impact safety and health of workers by introducing complexity to the current consultative arrangements.

No evidence has been presented suggesting the current system is not working. The ES Act and the *Workplace Health and Safety Act 2011* have been successfully “dovetailed” to ensure that consultation on electrical and workplace health and safety matters can be undertaken, and issues resolved. There is nothing that stops a licensed electrical worker or any other specialised tradesperson from standing for election as a HSR and representing a Designated Work Group (DWG) on health and safety matters.

The QRC expresses concern that the proposals may not yield demonstrable safety benefits, and potentially having two HSRs dealing with a health and safety issue affecting a DWG has the potential to create complexity and confusion which will lead to unsafe outcomes if implemented.

Discussion Paper

Responses to specific issues raised within the Discussion Paper are provided below.

3.1 Electrical safety considerations of new and emerging technologies

The QRC recognises that the legislative framework has not kept pace with the changes occurring in the resources sector, which is evidenced by the growth in vehicles using electric propulsion systems on mine sites.

As previously stated, given the pace of this technological change, the QRC proposes that a Code of Practice would be best placed to provide detailed information on compliance requirements in a format which can be quickly amended for currency.

The ES Act places duties of care on persons for the purposes of ensuring electrical safety. This duty extends to new and emerging technologies.

Queensland has not seen an increase in the rate of electrocutions or SEIs. In terms of fatalities the rate is consistent with other Australian jurisdictions and SEIs are continuing their downward trend.

The QRC is of the view that this safety performance provides the opportunity for Queensland to take the time to work with Commonwealth, other State and Territory government agencies and industry to identify the risks associated with these emerging technologies and then determine what regulation needs to be implemented to mitigate these risks.

It is noted, the Discussion Paper does not consider or address the complexity associated with these integrated systems such as the complexity of some software used in the operation of battery powered vehicles. In view of the complexity and variation in emerging technologies, any review of the ES Act should take account of the skill sets and competencies needed to undertake the work on these emerging technologies safely.

Practically, this may allow workers who have completed appropriate competencies through recognised industry training packages rather than completed an electrical apprenticeship.

The QRC notes that following the decision in the *State of Queensland v Maryborough Solar Pty Ltd [2019] QCA 129* which enabled workers without an electrical licence to continue to locate, mount and fix of solar PV modules, there has not been an increase in the rate of electrocutions and SEIs at solar farms under construction despite the substantial growth in construction activity in this sector.

In terms of the practical impact (in the form of benefits and costs), the options would have on the resources industry is very much dependent on how these new definitions are drafted to ensure that advances in technology are not limited by legislative change. Electrical systems on machines used in in the resources industry are designed to eliminate the need for operators and maintenance crews to be exposed to live parts.

There is genuine industry concern that the ability to roll out these advanced technologies is being impeded because of the lack of clarity in the ES legislation and under the proposed options. For example, the Discussion Paper is silent on a classification for earthmoving machines other than a reference to mining vehicles with a voltage of 3000V+.

The QRC prepares its CEO Sentiment Index by surveying its full member CEOs. The survey typically receives responses from mining and energy, minerals processing, contracting, exploration, electricity generation and oil and gas extraction members in Queensland. The survey asks CEOs to nominate the extent to which they expect a series of eleven factors to impact on their organisation's objectives over the next 12 months.

The QRC weights the responses to create a single sentiment value for each of the sentiment factors. For the March 2023 quarter, uncertain and/or poor regulation has remained the number one concern for QRC member CEOs. However, attracting and retaining skilled employees has returned as a top three concern for CEOs, with little relief in sight.

The resources industry is characterised by its remote and regional nature. Although representative of opportunities for the state, added competition for labour will also be compounded by developments through the Queensland Energy and Jobs plan and burgeoning hydrogen industry as evidenced by the Hydrogen Industry Development Workforce Roadmap released in 2022 as well as the 2032 Olympics and associated infrastructure projects.

The resources sector is currently reporting a shortage of specialist skills across several categories including licensed electricians (including auto).

With the current undersupply of licensed electrical workers, any decision to mandate that work on emerging technologies must be conducted by such workers will create a bidding war and result in substantial business disruption due to labour shortages.

Unlike the Review of Queensland's *Electrical Safety Act 2002*, it is essential that the Office of Industrial Relations consults widely on any change including affected industry groups, designers, manufacturers, suppliers and workers to ensure the impact of any legislative changes are fully understood and costed. This includes the groups outlined at the commencement of this submission.

The QRC is open to consider the incorporation of particular forms of ELV equipment within the definitions in the ES Act where there is a demonstrated risk.

While it is noted that both the ES Act and the *Workplace Health and Safety Act 2011* establish broad obligations on duty holders that cover the issues outlined in the Discussion Paper, the QRC considers that Option 2 provides the opportunity to consider how to better ensure electrical safety with developing technologies. However, this cannot be undertaken in isolation of industry views and recognition that there is a global supply chain for much of this technology.

3.2 Changing landscape of electricity and the workforce

The Discussion Paper advises it is likely that work related to renewable energy generation and storage technology extends beyond the existing definition of 'electrical work' in the ES Act but does not provide any examples.

The ES Act and *Electricity Act 1994*, which previously regulated electrical safety in Queensland contained provisions that clarified "what is electrical work" and these provisions have operated successfully in ensuring safety by clarifying what is and what is not electrical work. Workers who are not licensed electrical workers have been safely undertaking work involving matters such as fixing, mounting and locating of the solar panels at solar farms or cutting or sealing underground cables before the initial connection to an electricity source.

While these types of work activities are not considered to be electrical work, they are not undertaken by workers in the absence of any safety protections. The *Workplace Health and Safety Act 2011*, *Coal Mining Safety and Health Act 1999* and *Mining and Quarrying Safety and Health Act 1999* all establish broad obligations on duty holders who undertake the work. In general terms they require these persons to ensure that the health and safety of other persons is not put at risk from work carried out. These obligations also require, among other things, the provision and maintenance of safe plant and structures and the provision and maintenance of safe systems of work.

The Review identified three areas of risks resulting from the changing nature of electrical work.

The QRC considers that the *Workplace Health and Safety Act 2011*, *Coal Mining Safety and Health Act 1999* and *Mining and Quarrying Safety and Health Act 1999* impose the necessary obligations to ensure that the workers undertaking these work activities are trained and competent to do the work safely. The identified risk areas are:

1. Fixing, mounting and locating of renewable energy generation and storage technology (such as solar PV panels);
2. Mechanical cable protection work; and
3. 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.

Consideration should be given to Option 4 (education and awareness) combined including section 146 of the national model Work Health and Safety Regulations into the ES Act in any future amendments. This will provide greater clarity around the activities that are not electrical work and provide greater certainty and flexibility for obligation holders on what is and what is not electrical work involving emerging technologies. Section 146 specifies that it is not electrical work where it is:

- work that involves connecting electrical equipment to an electricity supply by means of a flexible cord plug and socket outlet;
- work on a non-electrical component of electrical equipment, if the person carrying out the work is not exposed to an electrical risk;
- replacing electrical equipment or a component of electrical equipment if that task can be safely performed by a person who does not have expertise in carrying out electrical work;
- assembling, making, modifying or repairing electrical equipment as part of a manufacturing process;
- building or repairing ducts, conduits or troughs, where electrical wiring is or will be installed if: - the ducts, conduits or troughs are not intended to be earthed, and - the wiring is not energised, and - the work is supervised by a [licensed or registered] electrical worker;
- locating or mounting electrical equipment, or fixing electrical equipment in place, if this task is not performed in relation to the connection of electrical equipment to an electricity supply;
- assisting a [licensed or registered] electrical worker to carry out electrical work if: - the assistant is directly supervised by the [licensed or registered] electrical worker; and - the assistance does not involve physical contact with any energised electrical equipment; and
- carrying out electrical work, other than work on energised electrical equipment, in order to meet eligibility requirements in relation to becoming a [licensed or registered] electrical worker.

The discussion under "2.3 Work requirements at large scale solar farms" is disappointingly focused on coverage of the work rather than safety. There is no demonstrated evidence of systematic failures in electrical safety at large scale solar farms and the failures that do occur can be addressed and resolved under the existing legislative framework.

The QRC supports the recommendation of the Clean Energy Council (CEC) which recommended that: "Solar PV panels are fully insulated (and in most cases, double insulated), extra-low voltage equipment...it would be practically impossible for a worker to suffer shocks or electrocution from handling an unconnected panel. The CEC position is that the task of mounting and fixing solar panels onto a frame is not electrical work. The task only becomes electrical work in the act of making the wiring connections between the extra-low voltage panels."

The QRC does not support Option 2 as it requires the installation of cabling to be carried out by a licenced electrical worker or an unlicenced person assisting a licenced electrical worker and working under their direct supervision, when this is not electrical work. As stated above the mounting, fixing, and locating of solar PV modules and arrays is not electrical work and should be able to be carried out by a trained worker without the need for direct supervision of a licenced electrical worker.

3.3 Electrical safety and electric vehicles

The design, manufacture and supply of electric vehicles is a global industry, with only a small manufacturing base within Australia.

Globally, organisations within the resources sector, such as ICMM and GMG have established specialist working groups comprising of representatives from mining companies, original equipment manufacturers (OEMs), original technology manufacturers (OTM), researchers, academia, regulators and industry associations who collaborate to share expertise and create guidelines that address common industry challenges such as the recently released publication of GMG's *Electric Mine Working Group Recommended Practices for Battery Electric Vehicles in Underground Mining*. These specialist working groups in recognition of the pace of technological transformation have established processes to ensure practices and guidelines remain contemporary and relevant. For guidelines and documentation this requires short timeframe review periods.

Manufacturers, importers and suppliers of electric vehicles have a duty of care and commercial imperative to ensure safety. Understandably, standards will differ from manufacturer to manufacturer depending on the type of electric vehicle and its purpose. Suppliers have an obligation to ensure the purchasers have the instruction and manuals to operate a vehicle safely and maintain it. Suppliers will also have trained staff to address vehicle failures.

The Discussion Paper acknowledges that the OIR has received correspondence from various interested parties indicating that industry is developing and delivering training to address the risks of electric buses and trucks.

As stated, at a federal level, skills gaps and training needs are under development by JSC's such as AUSMASA which are charged with developing training packages and competencies for electric and autonomous vehicles. At a state level, the QRIDP, QFSP and the Department of Youth Justice, Employment, Small Business and Training's (DESBT) Vocational Education and Training Strategy (QVET) outline strategies to meet state demand for skilled workers now and into the future with a particular emphasis on emerging industries and technologies.

In view of this, and the fact the Commonwealth Government administers the *Road Vehicle Standards Act 2018* it is appropriate for the regulation of electric vehicles to be developed and agreed by a national approach between state and Territory and the Commonwealth governments.

The QRC contends there is a real risk of an increase in electrocutions and injuries if Option 2 is implemented. Option 2 proposes only licensed electrical workers should be able to do the work. As noted in the submission from the Construction and Mining Equipment Industry Group, "The complexity of these machines and their systems means that, rather than benefitting from any generic qualification or the experience, it is manufacturer-specific and system-specific training, experience and qualifications that are required to maintain these machines and their electrical systems safely. A practitioner requires a thorough understanding of these machines holistically, covering integrated systems such as brakes, steering, electro-hydraulics and pneumatics, machine control systems etc, all of which sit outside of the training regime for a typical fully licensed electrician."

The QRC recommends the regulation to ensure the safe maintenance and repair of electric vehicles is progressed at a national level and in the interim, Option 3 (education and awareness) is implemented.

Report of the Review of Queensland's Electrical Safety Act 2002

As previously stated, the QRC is disappointed that there was not broader direct industry involvement in the Review of the ES Act. The industry reference group that assisted the Review was essentially limited to electrical industry representatives and this resulted in a lost opportunity.

The resources sector has well established tripartite consultative, advisory and expert committees which are well placed to provide advice and make recommendations about the impacts of proposed policy changes including skills gaps and competency requirements and how best to protect the safety and health of resource sector workers.

Input during the Review process from these advisory and expert groups and from representatives from construction, mining, manufacturing and equipment/product supply industries would have assisted in ensuring a deeper understanding of the policy considerations necessary to ensure the regulation of electrical safety in Queensland remains contemporary, in both workplaces and domestic dwellings.

The QRC is providing comment on relevant recommendations that were not covered off in the Discussion Paper.

Fire protection installations

The fire protection equipment licensing reforms implemented by Government through the Queensland Building and Construction Commission (QBCC) resulted in licensed electrical workers no-longer being able to perform fire protection-related work, such as the installation of fire alarm systems.

Consistent with the position on ZE vehicles, the QRC considers this situation should remain due to the specialist nature of fire protection equipment installations. The Reviewers recommendation is not supported.

Supervision of apprentices and unlicensed workers

The Review Report notes the ETU advocated for an explicit definition of "supervision" in the ES Act. In Schedule 2 of the ES Act "supervise" is defined as "supervise, electrical work, means supervise the way the electrical work is performed".

The Review recommended that the three levels of supervision be defined in the legislation by explicitly including the three recognised levels of supervision – direct, general and broad, as follows:

- Direct means constant in person monitoring by the licensed electrical worker, who remains within sight and/or earshot of the work being carried out by a person directly assisting the licensed electrical worker in conducting electrical work.
- General means for a person directly assisting the licensed electrical worker in conducting electrical work, the licensed electrical worker is available in the same work location for in person assistance or instruction as needed.
- Broad means occasional in person contact at intervals during the day determined by the licensed electrical worker, for a person assisting the licensed electrical worker.

This recommendation is not supported as it will create confusion and complexity for employers, supervisors and the Regulator and is inconsistent with the ordinary meaning of supervision.

Health and Safety Representatives (HSR) and Work Health and Safety Officers (WHSO)

The Review recommended consideration be given to the ES Act, provisions equivalent to Health and Safety Representatives (HSR) and Work Health and Safety Officers (WHSO) found in the *Work Health and Safety Act 2011*.

While the *Workplace Health and Safety Act 2011* has no application in mining workplaces, the QRC notes the continuing alignment with concepts and terms within the Work Health and Safety and Electrical Safety frameworks within mining safety Acts albeit, in our view, without full consideration of the consequences of such alignment and including the potential to adversely impact safety and health of workers by introducing complexity to the current consultative arrangements.

No evidence has been presented suggesting the current system is not working. The ES Act and the *Workplace Health and Safety Act 2011* have been successfully “dovetailed” to ensure that consultation on electrical and workplace health and safety matters can be undertaken, and issues resolved. There is nothing that stops a licensed electrical worker or any other specialised tradesperson from standing for election as a HSR and representing a Designated Work Group (DWG) on health and safety matters.

The QRC expresses concern that the proposals may not yield demonstrable safety benefits, and potentially having two HSRs dealing with a health and safety issue affecting a DWG has the potential to create complexity and confusion which will lead to unsafe outcomes if implemented.

External Licences

The Review recommended consideration be given to introducing a requirement where a licenced electrical worker is undertaking work in Queensland with an external licence from another jurisdiction and their primary place of residence is in Queensland, that the person must apply for a Queensland licence after a period of time.

The QRC notes the which *Mutual Recognition (Queensland) Act 1992* has application to this recommendation. The Act enables the enactment of uniform legislation relating to the recognition of regulatory standards adopted in Australia regarding goods and occupations. The QRC will not support any proposed change that imposes limits on the movement of skilled occupations around Australia.

Electrical Licence Inspectors

The Review noted that in Western Australia, legislation allows the Regulator to designate powers as a means of ensuring licensing compliance. Specifically, a person may be designated an Electrical Licence Inspector. Requirements of this role include being full-time, paid employees of the relevant union and having a sound understanding of the licensing regime and legislation; and being a qualified and licenced electrician.

Electrical Licence Inspectors can inspect electrical licences for the purpose of assessing compliance with electrical licensing requirements.

Following representations from the ETU the Review recommended the ES Act be amended to introduce electrical licence inspectors under the ES Act.

The QRC strongly opposes this recommendation as it has the potential to lead to Electrical Licence Inspectors accessing mine sites where they have no understanding or training of the unique risks associated with Queensland mines. For example, an Electrical Licence Inspector entering an underground coal mine (using their powers) may put themselves at risks as well as the other workers in the mine where they have no experience of working at the underground coal mine.

ENDS