



HEAVY VEHICLE
INDUSTRY AUSTRALIA



HVIA Submission

Review of Queensland
Electrical Safety Act

July 2023

Heavy Vehicle Industry Australia
Represents and advances the interests of manufacturers
and suppliers of heavy vehicles and their components,
equipment and technology.



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Background

Heavy Vehicle Industry Australia (HVIA) represents and advances the interests of the entire industry involved in the design, manufacture, importation, distribution, modification, sale, service and repair of on-road vehicles with a gross vehicle mass or aggregate trailer mass over 3.5 tonnes as well as their components, equipment and technology.

The industry directly employs over 70,000 people and provides some of the world's most efficient, safe, innovative and technologically advanced vehicles. HVIA seeks to work with government and industry stakeholders to promote an innovative and prosperous industry that supports a safe and productive heavy vehicle fleet operating for the benefit of all Australians.

A significant number of HVIA members are involved in the design, engineering, manufacture, importation, and service/repair of Electric Vehicles (EVs) and Hydrogen-fuelled Fuel Cell Vehicles (HFCVs), both commonly referred to as Zero Emissions Vehicles (ZEVs).

Review of the Queensland Electrical Safety Act.

The Electrical Safety Office of WorkSafe Queensland has released a discussion paper titled: *A response to the Review of Queensland's Electrical Safety Act 2002 – key definitions and emerging technologies*. The paper accompanies a report titled: *Review of Queensland's Electrical Safety Act 2002*. The objective of the paper is to allow stakeholders to provide feedback on several recommendations that will be used to inform the Queensland Government response to the report.

HVIA has an interest in Section 3 of the paper. It considers whether any changes to the Queensland Electrical Safety Act (QESA) are required to support emerging technologies that use electrical systems. The technologies discussed include renewable energy generation and storage technology and all the related storage, charging and cabling as well as the electrical systems within electric vehicles.

The renewable energy and storage systems issues covered in the review are not core issues for most HVIA members. HVIA does, however, have an interest in the discussion around electric vehicles and in particular, electric heavy vehicles. This discussion also relates to hybrid and hydrogen fuel cell vehicles which also have electric systems.

One of the issues covered by the discussion paper (Recommendation 8 of the report) is whether the QESA Electric Licenses Framework should be extended to cover the connection and disconnection of the electrical systems within these electric vehicles.

Recommendation 8: *For electric vehicles (or parts thereof) falling within the definition of "electrical equipment" (see Recommendations 2 and 4), consider requiring:*

- a. *appropriately licensed electrical workers to carry out the electrical work on the electrical components when the vehicle is serviced and or repaired, to ensure the safety of owners/operators and community; and*
- b. *appropriately licensed electrical workers carry out the electrical work on the electrical components of the vehicle when an electric vehicle requires on-road breakdown work to ensure safety of owners/operators, the community and first responders.*

HVIA's position on the Recommendation 8

HVIA does not support the extension of the Electric License Framework to cover electrical systems within electric vehicles.

Insisting that work is conducted by fully licensed electrical workers would impose unreasonable costs on the industry for no safety benefit. The increased costs would include:

- significant administration and training costs associated with having to comply with new licensing requirements,
- increased costs, delays and loss of operational efficiency for both normal service and repair and on-road breakdown work, and
- wage pressures due to significant shortages of licensed electrical workers.

It would also exacerbate the shortage of these skilled workers for other activities to the detriment of the general community.

In HVIA's view, the existing combination of manufacturer supplied information and training, existing and planned Australian Design Rules, and the incorporation of EV related units such AURETH101 (Depower and reinitialise battery and electric vehicles) into heavy vehicle related TAFE courses and micro qualifications is a more appropriate solution because it ensures that workers also understand important vehicle related systems.

Even the minimalist step of requiring these workers to obtain a Restricted Electrical Work License based on them having a combination of manufacturer training and relevant TAFE units would provide no benefits over the current approach and would add unnecessary costs.

Detailed discussion of HVIA's position

In the discussion of Recommendation 8 of the report, the paper does not propose changes to the existing exemptions under the QESA Electric Safety Act for non-propulsion components of the vehicles (e.g., lights, starter motors, heating, ventilation, and air conditioners). The paper goes on to discuss Section 73 of the existing regulations, which provides the current exemption for electric motors in electric vehicles.

The paper discusses whether the propulsion systems (motor and battery) should be included under the Act because these systems operate at a higher voltage than the non propulsion systems in the vehicle. Essentially the argument proposed is that because the voltages are higher, they are riskier.

The discussion paper states that the current approach seems to be working. Manufacturers of vehicles provide relevant information and training and that there is no evidence that there are significant risks of injury for people involved in general maintenance on electric vehicles or repairing damaged propulsion components of an electric vehicle.

Most current work on EVs in Australia is conducted in dealer workshops and involves workers who have completed relevant dealer training and qualifications such as AURETH101 (Depower and reinitialise battery and electric vehicles). Refer to [training.gov.au - AUR32721 - Certificate III in Automotive Electric Vehicle Technology](https://training.gov.au/units/AUR32721) for information on other relevant courses offered through the TAFE system.

The TAFE colleges and relevant industry bodies have built close cooperative relationships in developing a range of courses to both ensure that new entrants to the industry have relevant skill to work safely but also that the existing workforce can upgrade its skills as the new technologies became more common.

The discussion paper also mentions that the government is considering publishing Australian Design Rules (ADRs) covering the safety requirements for electric drivetrains in electric and hydrogen fuel cell vehicles. The Government has now published two new draft ADRs:

- ADR 109/00 - Electric Power Train Safety Requirements

- ADR 110/00 - Hydrogen-Fuelled Vehicle Safety Related Performance

The draft ADRs align with the equivalent international regulations, being UN Regulation No. 100 and UN Regulation No. 134, respectively, and would apply to all vehicle categories on a 'must comply, if fitted' basis.

In proposing the ADRs, the Department of Infrastructure noted that almost all light EV suppliers and most heavy EV suppliers already meet those UN regulations.

As a result, there is now a framework to ensure that the design of the vehicles minimises risks by for example providing simple consistent mechanisms for safety deactivating the propulsion systems.

The discussion paper then canvassed three options:

1. Status quo
2. Modify the legislation to bring electric motors in EVs into the definition of electrical work which would bring them under the Electric License Framework
3. Conduct an awareness and education campaign.

In assessing the benefits and costs of these options the paper makes a range of points, outlined below.

- Under the discussion of costs and benefits of Option 1, the paper argues that the status quo will not place any additional administrative burden on the industry that the existing risks will remain.
- For Option 2, the paper asserts that reduced risk of harm is a benefit but does not quantify the value of any risk reduction. It also lists appropriate oversight powers for the Government as a benefit. In relation to costs it identifies:
 - the costs to individuals of upskilling and training.
 - the requirements for existing licensed electricians to be trained in the specifics of electric vehicles.
 - increased cost of services.
 - increased administrative for manufacturers and suppliers.
 - increased wages and administrative costs for companies and businesses maintaining electric vehicles.
 - reduced licensed electrical worker availability for the general community.
 - increased administrative and training costs.
- For Option 3, the paper uses terms including 'empowering' and 'proactive mitigation of risks' but is unable to define tangible benefits. In relation to costs it identifies the costs to manufacturers and the Government of the materials and the costs to users of having to comply.

Given that the discussion paper demonstrates that there is no current evidence for any electrical safety risks related to the maintenance of electric vehicles, the magnitude of any benefits for Options 2 or 3 are likely to be close to zero.

There are, however, substantial costs that are likely to be borne by industry if either of those options are adopted. It is therefore clear that neither Option 2, nor 3, can be defended on cost benefit grounds.

In particular, the impact on the general community of reducing the supply of licensed electrical workers (who are already in short supply) is likely to be substantial.

HVIA is therefore in favour of preserving the status quo.

Discussion paper questions

In relation to the specific questions outlined in Section 3.3.6 in the discussion paper, HVIA offers the following responses. These responses are related to electric motor and energy storage systems in electric vehicles.

How are you, your organisation or your stakeholders affected by the problems identified and to what extent?

The heavy vehicle industry has a strong safety culture and is already addressing safety issues related to heavy vehicles. The discussion paper does not identify any existing issues but speculates that there may be issues in the future if the number of electric vehicles grows. The industry is already addressing this.

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?

The discussion paper does not identify any specific issues or problems related to the current approach for electric vehicles.

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.

Anything other than the status quo would add administrative costs for no benefit.

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.

Refer to the response to the previous question, above.

What is your preferred option for the various ELV discussed and why will it be best for you, your organisation and your stakeholders?

HVIA is in favour of preserving the status quo.

If you prefer Option 1 (status quo), how would the potential electrical safety risks of newer ELV technologies be minimised or eliminated.

The industry is already addressing these issues through proposed enhancement of existing industry qualifications.

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.

HVIA prefers to work with the TAFE sector to address these options and is already doing so.

Are you aware of evidence of the dangers of particular forms/categories of ELV equipment? If so, what evidence is available?

The heavy vehicle industry has a demonstrated safety record of dealing with safety risk associated with electric vehicle equipment stretching back decades.

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?

HVIA is in favour of preserving the status quo.

Should a measure of energy density/capacity be adopted? If so, which measure and what amount (e.g., how many watts per hour)?

No.

Are you aware of evidence of the dangers of particular forms/categories of ELV equipment? If so, what evidence is available?

HVIA does not regard this as a significant issue for electric vehicles.