



Electrical Safety Office (ESO)

Office of Industrial Relations

Sent via email to: espolicy@oir.qld.gov.au

27 June

Dear ESO team

Response to Qld *Electrical Safety Act 2002* Review – Tesla response

Tesla Motors Australia, Pty Ltd (Tesla) welcomes the opportunity to provide the Office of Industrial Relations with a response to the *Electrical Safety Act 2002* (referred to as “the Act”) review. The below provides a response to the recommendations outlined in the Discussion Paper and we will also provide a response to the Full Report by the August deadline.

Tesla’s global mission is to accelerate the world’s transition to sustainable energy. To achieve this, safety is at the core of everything we do. Tesla embeds a domestic and international best practice approach to safety in all of our products and pride ourselves on having best in class safety features, as well as training for all installers and technicians handling our products. Tesla is also committed to growing our presence in Queensland. We currently employ >60 people across the state in four different locations – Tesla stores and EV service centres in Fortitude Valley, Mt Gravatt and Southport, as well as a delivery centre at Pinkenba. This includes a number of auto-technicians.

We also partner with 203 solar retailer and installers businesses across the entirety of the state, for the sale and installation of the Tesla Powerwall 5kW/ 13.5kWh residential battery system.

Our recommendations below are based on what we consider to be reasonable changes to the Act to improve safety settings.

Stationary storage and solar PV

Tesla is unclear of the justification to expanding the scope to include extra low-voltage stationary storage and solar PV assets in the scope of the Act.

To install solar and battery systems nationally requires CEC accreditation¹ through recognized training modules. Prerequisites for these courses is that participants hold relevant electrical licenses which is further mandated in

¹ Currently, though we note that the Clean Energy Regulator (CER) is currently working through a competitive process to consider other accrediting bodies.

connection standards for DER through DNSP's. Any legislative changes would need to consider the efforts needed to retrain an established industry already being serviced by licensed electricians.

Installer capacity issues are commonplace in the renewables industry with extensive lead times for installs and shortage of skilled workers. Changes that would further limit the ability for trades assistants to support with touch safe DC connections would only exacerbate these conditions.

Any DC connections made within PV or stationary storage systems are designed to be touch safe, limiting exposure to voltages above extra low voltage. If touch proof connections were classified as examples of demonstrated risk within the act, by extension how could the average consumer be trusted to safely connect an extension lead without an electrician present to supervise?

Incorporating extra low voltage PV or BESS within definitions of electrical work would be an incredibly broad definition and one that could in practice extend well beyond the reach of the standard electrical installation. Marine, off-road, defense services, telco and many more applications exist for PV and BESS systems where electricians could not offer expertise nor safely work on equipment.

The Discussion Paper notes nine serious electrical incidents relating to solar installations. One example given is of a home-owner directly interfering with installed solar panels. Including extra low voltage equipment in the Act would improve reporting on such issues, but unfortunately would not prevent them in the same way that increased education would. Separately the Discussion Paper mentions five separate electrical incidents relating to smart meters. It is unclear whether this reference is referring to asset specific meters, but if the incidents relate to the Smart Meters themselves, this should be considered outside of the scope of the Act. The Australian Energy Market Commission (AEMC) has recommended 100% uptake of Smart Meters by 2030², meaning Smart Meter electrical faults will impact on all Qld properties, not just those with rooftop solar or battery storage systems.

In respect of Battery Storage, the Discussion Paper notes that battery storage systems are not subject to development of building approvals "the quantity and location of BESS in Queensland is unknown". We would point out the following:

- Information on all residential solar systems and battery systems <30MW are captured by installers and reported through to the DER Register. Energex³ and Ergon⁴ mandate this data collection respectively. Data is housed on a server owned by the Australian Energy Market Operator (AEMO) and the OIR may wish to consider reaching out to discuss arrangements to access this data.
- Though not captured under existing building approval processes, residential battery storage systems are well regulated by AS/NZS 5139 which sets out installation requirements and compliance with the Battery Best Practice Guide on product safety. All installations are also regulated by AS3000.

The vast majority of batteries sold in Australia are defined in AS/NZS 5139 as "pre-assembled integrated BESS" (fully integrated battery energy storage systems manufactured as a complete, pre-assembled integrated package, supplied in an enclosure with the power conversion equipment (PCE), battery system and protection devices) or pre-

² <https://www.aemc.gov.au/sites/default/files/2022-11/Draft%20report.pdf>

³ <https://www.energex.com.au/contractors-And-service-providers/contractor-information/solar-pv-installers/distributed-energy-resources-register>

⁴ <https://www.ergon.com.au/network/contractors-and-industry/solar-pv-installers/distributed-energy-resources-register>

assembled battery system (pre-assembled system with modules or battery systems and auxiliary equipment which may come in an enclosure). These assets are all fully enclosed and touch safe, with installers not directly interacting with the battery module itself.

There may be some benefits in expanding the scope of the Act to include battery storage systems that require on-site assembly (i.e. systems captured under Section 6 of AS/NZS 5139), where exposed connections may exceed extra low voltage thresholds however this should not apply to equipment utilizing touch safe push connectors.

Review of options:

Of the options presented in the Discussion Paper, Tesla is supportive of either:

- Option 1: Status Quo; or
- Option 3: Increased Education and Awareness

In respect of Option 3, we would be most supportive of an enhanced approach of Government working with peak bodies as well as the accrediting body appointed by the Clean Energy Regulator at the conclusion of their process engaging a new installer accrediting body. This will be more likely to create the most value for industry.

In respect of Option 1, our priority is to continue to improve all regulatory settings – particularly in respect of compliance. Tesla, along with other DER OEMs, have been pushing for improved processes for setting technical requirements and ongoing compliance (see response to the AEMC Review on CER Technical Standards available online)⁵. We support a nationally consistent and evidence-based approach for setting new technical requirements, and are not supportive of the continued state and jurisdictional discrepancies.

Electric Vehicles

Tesla strongly opposes the inclusion of electric vehicles within the scope of the Act. It is critical that work on electric vehicles is undertaken by a qualified, skilled and competent automotive workforce. Requiring that the entirety of the current workforce retrain as licenced electrical workers would be significantly disruptive to the industry, and may result in a slow-down or restrictions placed on EVs delivered into Queensland.

We believe that the combination of robust workplace training and existing trade qualifications specific to EV automotive repairs are sufficient to ensure the continued safety of the workforce. Currently all Tesla auto-mechanics operating in Queensland are certified to the following courses:

- AUR30620 – Certificate III in Light Vehicle Mechanical Technology⁶; and
- AUR32721 - Certificate III in Automotive Electric Vehicle Technology⁷

⁵ <https://www.aemc.gov.au/sites/default/files/2023-05/11.%20Joint%20OEMs%20-%20Submission%20to%20draft%20report%20-%20EMO0045%20-%2020250523.pdf>

⁶ <https://training.gov.au/Training/Details/AUR30620>

⁷ <https://training.gov.au/Training/Details/96ae9db4-1b10-4c71-b0d2-37730390e36c>

AUR32721 provides specialist EV training for auto-mechanics across 16 core units. This provides specialist training for auto mechanics on servicing EVs. All Tesla auto-technicians currently have, or will have, this specialist training.

While we appreciate that the inclusion of EVs within the Act would allow some discretion in how it is interpreted, an adverse interpretation would result in all auto-mechanics currently servicing EVs in Queensland needing to be replaced with electricians, or retraining as an electrician. Noting that electricians would also require retraining as an auto-mechanic to service EVs, the worst outcome would result in:

1. A four-year delay in servicing EVs in Queensland while all existing auto-mechanics servicing EVs upskill as electricians; or
2. A four-year delay in servicing EVs in Queensland while all a number of electricians upskill as auto-mechanics.

The industry is currently operating in a period of severe skills shortages, particularly in the skilled trades. Creating a four year pause in Queensland while the industry upskills would have dire flow-on consequences for the EV sector, for the deployment of renewable energy projects (both residential and utility scale), and for customers who will face long waits for vehicle servicing or access to electricians for standard electrical works.

Rather than including EVs in the scope of the Act Tesla recommends the Qld Government consider increasing the supply and promotion of specialist TAFE courses for electric vehicle technicians to ensure an appropriately skilled workforce.

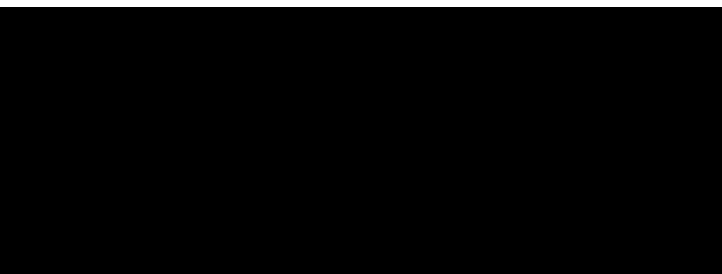
The Act was not designed to cover transport assets, and we believe that looking to expand the scope to non-stationary assets would result in duplicative effort and duplicative regulatory pathways, that would result in less skilled labour in Queensland.

Review of options:

Tesla is most supportive of Option 1 – maintaining status quo. However, we note that “self-regulation” is not entirely accurate given the presence of existing courses and TAFE accreditations specializing in EV training for the automotive sector.

For more information on this submission please contact [REDACTED]

Kind regards



Questions (note given the repetition of consultation questions in the separate sections on solar and battery systems as well as EVs, we have grouped our responses to the extent possible)

1. How are you, your organisation, the workforce or community affected by the problems identified and to what extent?

Tesla is very impacted by the recommendations made in this Discussion Paper. As noted above, our mission statement is to accelerate the world's transition to sustainable energy. We're committed to doing everything we can to ensure the rapid electrification of Australia's transport sector, as well as the decarbonization of Australia's electricity generation. The majority of our products will be impacted by changes to the Act as Tesla sells and distributes EVs, fast EV charging equipment, residential EV charging equipment, utility scale battery storage and residential battery storage in Queensland. The changes recommended would expand the scope of the Act to cover Tesla's residential battery deployments, and more importantly our electric vehicle servicing facilities.

From a business, and broader industry perspective, the largest impact of expanding the scope of the Act will be on the EV industry. As noted above we are concerned that requiring all automotive service technicians to also be a qualified electrical tradesperson will result in ~4 years delay in servicing EVs in Queensland and will significantly set-back the industry.

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?

In respect of EVs – as noted in the submission by the Electric Vehicle Council (EVC), the fact that there have been no stated cases of electrocution related to vehicle maintenance suggests that current processes are effective.

In respect of stationary storage – we accept the risks that are presented by OIR. The same risks are also outlined in AS/NZS5139 and were core in considering the international best practice product safety standards that were introduced as requirements in the Battery Best Practice Guide. These risks may exist, but are already well mitigated through other regulatory processes.

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?

We do not see any benefits in expanding the scope of the Act to include ELV or EVs. We are particularly opposed to the inclusion of EVs.

As noted above, the inclusion of EVs would result in the significant cost to industry. It would effectively create a pause on servicing EVs in Queensland for four years while staff are retrained.

For ELV, as we don't see any benefits, we're concerned about the opportunity cost of doing such work. Time would be better spent on improving the national approach to creating new DER technical standards and improving compliance rates.

4. What is your preferred option and why would it be best for you, your organisation and your stakeholders?

Option 1 for both EVs and solar/ battery installations for the reasons noted in the summary of this submission

5. If a licensing framework was introduced:

- a. Should any specific type of vehicle be excluded for the requirement (e.g., motorcycles, car buses, trucks)? If so, what are they and why?**

All vehicles should be treated the same.

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

Tesla’s preferred approach would be to look at requiring the specialist TAFE training outlined above as a more suitable qualification. If an electrical licence approach is pursued, a restricted licence is far preferred to a full licence.

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

No

- 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)?**

As above, we are supportive of status quo arrangements which would result in all examples above being excluded.

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

As noted above, our preference is for Option 1 – status quo

7. Are there situations in which a disconnect and connect restricted licence for performing work on non-propulsion components of a vehicle would be appropriate?

As noted above, our preference is for Option 1 – status quo

8. 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.

In respect of stationary storage and solar generation, our preferred approach is to create a national body responsible for policy making and setting technical requirements for DER technical standards. We believe that managing this

approach at a federal level is far superior to the discrepancies created by a state by state approach. More detail on this is available in the joint OEM response to the AEMC on CER Technical Standards

9. What approach to including ELV equipment within the scope of the ES framework should be adopted in Queensland?

Tesla is supportive of Option 1 – status quo.

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

We are opposed to this suggestion. There are already size thresholds contained in AS/NZS5139, in Energy Queensland's grid connection arrangements and in federal eligibility for claiming STCs. Including another size limitation in Queensland specific legislation will create further uncertainty and higher risks of non-compliance for no benefits.

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

N/A