

[REDACTED]

Sent: Friday, 23 June 2023 3:19 PM
To: ESPolicy
Subject: FW: Feedback on the ES review Discussion paper

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Dear ES Policy team,

I'd like to take the opportunity to provide some feedback on the discussion paper content ahead of our submission to the topic before 15/8/23.

My area of interest is focussed on the topic of electric vehicles, therefore my feedback relates to section 3 solely.

With this feedback I seek to inform the paper's author of omissions and corrections that are required before a submission process can be meaningfully carried out.

Section 3.3.1

- The scope of vehicle technologies excludes Hydrogen powered electric vehicles. This is too vague. If this discussion excludes FCEVs as defined just above, then one small subset of EVs with high voltage (HV) Li-ion batteries and motors not covered in this set of recommendations which is rather odd. This may mean that qualified motor vehicle mechanics can respond to those but not to a full battery electric vehicle. If, however the exclusion is for Hydrogen combustion vehicles, the inclusion of "electric" is misplaced. This should be made clear in the discussion paper ahead of the consultation.
- *Scope: propulsion components of an electric vehicle:* An appropriately trained automotive technician would be aware that a electric vehicle includes various HV components of the same risk to life in the event of mishandling other than just the "motor and the Lithium-ion battery that powers the motor". Other HV systems that may be fitted to an EV include; DC to DC converters, Inverters and non-traction motors (eg, A/C, ePTO, power steering). It seems that these would all be out of scope and therefore not be a source of risk. This omission removes the premise that safety is the reason for a proposal to amend the Act
- *Electrical safety considerations:* While the risks stated in the introduction of this section are true the context to which these are invoked is not clearly articulated. Issues such as electric shock and arcing is not likely if the vehicle is not interfered with. The inference in this passage is that the vehicle may "self combust" or fault in a static state. The safety risk statement is not thorough enough to provide sufficient context and may lead the ill-informed to consider the risk to be greater than it is.
- *The extent to which OEMs are involved with older vehicles:* EVs unlike ICE vehicles will have a lower incidence of mechanical and electrical repair and maintenance due in most part the significant reduction in moving and wearing parts. This is evidenced by Tesla's decision not to provide a schedule servicing guidelines. In the event parts and servicing is required on an EV the complexity of the components in an EV will highly likely require return to the OEM for repair. With software flashing and initialisation these parts are not typically interchangeable by those without access to specific tooling (computers).
- *Voltage differences:* The data on several classes of vehicles inaccurate. In motorbikes the Harley Davidson Livewire runs on a 250V system, Zero motorcycles use a 100V system. The heavy truck voltages are incorrect, many heavy vehicles (>4.5tGVM and registered as such) operate on a 400V system, only some of the very largest operate on +800V. This can be attributed to the current required for traction systems (an electrical attribute the author seems to have overlooked). An additional class that seems to have been missed in this chart is hybrid cars where they range from 100-320VDC.
- *Incidents and queries:* The incidence of technician electrocution from HV EV batteries is not clear. However, a global search does not reveal any reported incidences. This does not make it the incidences zero, but it is clearly not an epidemic. That may, of course, be due to the low volume of EVs on the road here but globally this is not the case, more than 2 million EVs were sold in 2022, by the end of 2023 it is estimated that more than 40 million EVs on the worlds roads in total (<https://www.ev-volumes.com/>). If EVs are too new as a yardstick, hybrid vehicles (predominantly Toyotas) with HV Lithium-ion batteries could be used. Over 20

years Australia has seen over 315,000 hybrids sold (<https://www.drive.com.au/news/hybrid-cars-sales-australia-2022/>), many of these cars are out of warranty and have been used in high utilisation roles like taxis and ride share vehicles. Again, if the incidence of the risks identified is low enough not to have made it common knowledge, is it really a severe risk. A risk assessment matrix may be an appropriate way to quantify the issues.

- *Fire discussion:* The references to EV Fire Safe have been used without approval from the author. Engaging with the researcher will provide clarity on the subjective commentary about the workshop fire and any Queensland incidences. The commentary on vehicle fires while insightful adds no weight to the recommendations that licenced electricians should attend breakdowns or carry out repairs. Fires of all sorts should be addressed by emergency services.
- *Alternative QLD input on incidences:* The paper identifies the requirement for incidents of a severe nature be reported yet there is no detail or quantum offered to the reader on this topic. A simple statement of reference offers little. This seems to be an oversight of the paper. Additional incident investigation may be sourced from MTAQ and relevant unions.
- *Workers risks:* As mentioned earlier there are several HV components that are not included in the risks identified. To the extent these items are covered by the ES Act is conjecture and a proposal in this document. EV repairs and propulsion systems are not currently covered by the ES Act. This section implies the WHS Act is insufficient to cover workers safely, which is incorrect.
- *Training in Queensland:* There is a clear acknowledgement in this section that Queensland motor mechanics have high quality pathways to learn about safe EV repair while standardisation is required. This seems at odds with the recommendation that all repairs should be carried out by licenced electricians.
- *Regulatory considerations:* The statement in this section is a contradiction to others made and that of the national training ecosystem. The statement says that without a licencing framework the quality of training cannot be ensured however, the national training framework and apprenticeship frameworks do just that in automotive repair. It also implies that the community is not confident in the quality of automotive repair in Queensland.
- *Risk relating to the intersection with chargers:* As stated charging station installation and maintenance is covered under the ES Act. The implication of the statement in (a) is that the operator plugging a charger into the car is at some risk. In fact, this is quite ridiculous. The vehicle and charger both have initialisation and fault diagnosis protocols (international standards see Charin) that do not energise the HV until all is correct. There is no unmitigated risk at this intersection and this should not be in the paper.
- *Recalls:* The paper states that the ESO and the Minister have no jurisdiction over EV recalls and implies that there is no oversight at all. This is currently handled by the Commonwealth for all motor vehicles and should be stated in this section not separated into the next section. <https://www.vehiclecalls.gov.au/>
- *Interjurisdictional analysis:* It is acknowledged that NSW and WA have licences for motor mechanics but it is not clear if this provides any higher quality of repair or consumer protection than that afforded to Queenslanders. This does seem to be a premise of the entire topic and should therefore be a point of study in this paper.
- *Missing research:* There seems to have been an omission as to the standards employed by international jurisdictions on this topic. Any amount of literature points to Australia (including Queensland) as being laggard among western countries on alternatively fuelled vehicle uptake. This paper should include a review of key mature markets EV repair regulation and licencing.
- *Option 1:* This status quo option fails to include that the training identified in previous sections will proliferate the motor vehicle repair community and provide insight to those working on EVs. This should be included in the unlicenced workers and community boxes.
- *Option 2:* The economic impact to motor mechanic business should be included in the costs to unlicenced workers as not all will be able to reskill to a licenced level.

These points all constitute omissions or contradictions in the prose and should be addressed before any public consultation or submissions be sought.

Please feel free to contact me directly for any clarification.

Yours Sincerely,



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