

# JOINT INDUSTRY SUBMISSION

Industry Response to Queensland Government's  
Electrical Safety Office - Discussion Paper

27 June 2023



# Overview

## Joint Industry Position

This paper reflects the position of Queensland's leading industry bodies representing the electrical and fire sectors, their workers and the broader community, including:

- Master Electricians Australia (MEA)
- National Electrical and Communications Association (NECA)
- National Fire Industry Association (NFIA).

Industry feedback within this submission is solely reflective of the recommendations outlined in the *Response to the Review of Queensland's Electrical Safety Act 2002 – Key Definitions and Emerging Technologies – Discussion Paper* (Discussion Paper).

The three key industry associations in Queensland have come together to provide informed, trusted and reliable advice to the Queensland Government on how the issues outlined in the Discussion Paper affect the sector, its businesses and workers and the community, focusing on the following three categories as explored by the discussion paper:

- Electrical safety considerations of new and emerging technologies.
- Changing landscape of electricity and the workforce.
- Electrical safety and electric vehicles.

The importance of safety in the electrical sector remains a priority for all industry participants, including the industry, government, and workers.

**MEA, NECA and NFIA commend the Queensland Government on embarking on this significant review of the *Electrical Safety Act 2002* to ensure that everyone is better informed and ready to adapt to emerging technologies, rapid transformation of the electricity grid, and increase in consumer interaction with electricity, energy storage and electrical equipment.**

We also extend our joint acknowledgements to Mr Dick Williams for his efforts and significant work to deliver the Review of Queensland's *Electrical Safety Act 2002*.

## Final Report Feedback

Our three industry associations continue to review the recommendations outlined in the *Review of Queensland's Electrical Safety Act 2002, Report – December 2021* (Final Report), and will provide feedback to the Queensland Government by the specified due date of 15 August 2023.

# Industry Position on Recommendations

Recommendations	Industry Position
<p><b>Recommendation 1:</b> It is recommended that modernising the scope of the Act to ensure new and emerging energy generation and storage technologies are incorporated, whether or not they are connected to the grid or stand-alone in nature, by including in the definition of electrical equipment/electrical installation:</p> <ul style="list-style-type: none"> <li>a) solar PV modules, designed to be connected to other solar PV modules and when connected be of a combined voltage of greater than extra low voltage; and</li> <li>b) battery cells, when connected to other cells for the purpose of storing and releasing power of a combined voltage of greater than extra low voltage.</li> </ul>	<p><b>SUPPORTED</b></p>
<p><b>Recommendation 2:</b> Review the electrical safety risks presented in electric vehicles and consider their inclusion in the scope of regulation by the Act. It is further recommended that the Electrical Safety Office engage with other relevant Queensland and Australian regulators as needed to ensure appropriate scope and to avoid both regulatory gaps and duplication.</p>	<p><b>SUPPORTED</b></p>
<p><b>Recommendation 4:</b> To ensure the Act keeps pace with technological change, consider creating a general category of exception to the “extra low voltage” threshold for the definition of “electrical equipment”, to reflect risk to life and property by ELV electrical equipment.</p>	<p><b>Supported with caveats</b></p>
<p><b>Recommendation 5:</b> For solar PV panels falling within the definition of electrical equipment (see Recommendation 1), consider ensuring that the resultant “electrical work” definition is amended as needed to require:</p> <ul style="list-style-type: none"> <li>a) all connections and testing of PV module cabling as well as earthing and bonding work be performed by competent licensed electrical worker/s; and</li> <li>b) installation of cabling to be carried out by a licensed electrical worker or an unlicensed person assisting a licensed electrical worker and working under their direct supervision; and</li> <li>c) the mounting, fixing, and locating of solar PV modules and arrays to be carried out by competent persons under the direct supervision (Recommendation 16) of a licensed electrical worker (Act s 18(2)(f)).</li> </ul>	<p><b>Supported with caveats</b></p>
<p><b>Recommendation 6:</b> Consider including within the definition for Electrical Work that the electrical aspects of air conditioning / mechanical services work is electrical work and the tasks of fixing, installation of brackets / mounting of equipment and mechanical cable protection is ancillary to the complete installation.</p>	<p><b>Supported with caveats D</b></p>

Recommendations	Industry Position
<p><b>Recommendation 7:</b> Ensure the installation of mechanical protection for cables, including but not limited to conduit (both plastic and metal), cable racks and trays, skirting, troughs etc., and the installation of cabling into these protection components is the work of licensed electrical workers or to be performed under the direct supervision of a licensed electrical worker.</p> <p>Associated with this work is earthing and bonding work, to be defined as electrical work (Recommendation 5) and must only be performed by competent licensed electrical worker/s.</p>	<p><b>Supported with caveats</b></p>
<p><b>Recommendation 8:</b> For electric vehicles (or parts thereof) falling within the definition of “electrical equipment” (see Recommendations 2 and 4), consider requiring:</p> <ul style="list-style-type: none"> <li>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</li> <li>b) appropriately licensed electrical workers carry out the electrical work on the electrical components of the vehicle when an electric vehicle requires on-road break-down work to ensure safety of owners/operators, the community and first responders.</li> </ul>	<p><b>Supported with caveats</b></p>
<p><b>Recommendation 13:</b> Clarify that off-grid systems are captured within the meaning “electrical equipment” and are therefore within the definitions of Serious Electrical Incident and Dangerous Electrical Event (Act, ss 11-12), giving rise to duties to notify the Regulator and otherwise respond to such incidents (Regulations, Part 14).</p>	<p><b>SUPPORTED</b></p>
<p><b>Recommendation 17(a)&amp;(c):</b> Consider clarifying miscellaneous requirements related to supervision, by:</p> <ul style="list-style-type: none"> <li>a) inserting the word “direct” before “supervision” in section 18(2)(e)(iii); and</li> <li>b) requiring direct supervision for a person directly assisting the licensed electrical worker in the 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 (s 18(2)(j)).</li> </ul>	<p><b>Supported with caveats</b></p>
<p><b>Recommendation 74(c):</b></p> <p>Consider clarifying and enhancing standards that apply to electrical installations (Regulations, Part 6), including by considering:</p> <ul style="list-style-type: none"> <li>c) ensuring there is a legislative basis in the Act for regulations concerning work involving water equipment (s 72), and, if it is to be maintained, work involving electric motors (s 73).</li> </ul>	<p><b>Supported with caveats</b></p>

# 1. Electrical safety considerations of new and emerging technologies

Refers to Recommendations 1, 4 and 13 (part)

## Overall Position

### Preferred Option: 2

Our industry associations generally support option 2. We believe that it is time for the safety legislation that protects workers and the general public to be updated to reflect the vastly different landscape we now have with the emergence of renewable energy in its many forms.

We support the objectives of the government to

- reduce the risk of exposure to electrical risk
- have a responsive agile framework and
- to encourage growth and innovation.

These three pillars will support the significant transformation of the Queensland energy industry landscape, support the States preparation for the 2032 Olympics and help Queensland move to zero emissions through the Zero Emissions Vehicle Strategy and Zero Emissions Action Plan.

While our associations support option 2, there are some areas of the proposed changes that our members have raised, that need clarification as we move through the consultation stages. These include the following.

- There needs to be more clarity around the specific definition of ELV. This is needed to ensure there are no unintended consequences to this change. Areas that would be of concerns are
  - a. ELV for fire protection systems. This cohort is currently licensed under either the QBCC or the ESO, and therefore amendments, insofar as they could affect fire protection, should only go so far as to clarify existing industry practice on the ground where necessary, and otherwise maintain status quo. This large industry works safely in an ELV environment installing fire protection panels, emergency lighting etc that may be adversely affected by these changes.
  - b. Demarcation between ELV and LV will create confusion
  - c. Creating additional areas of responsibility for already overworked electricians
  - d. Unnecessarily mandating electrical workers to perform work that is not electrical work would have unintended consequences to both consumer costs and labour availability.

- Data and telecommunications cabling, in particular the ES3 type that can carry voltages up to 1000 Volts. How will this be addressed under this new legislation

These issues and final changes must be further consulted with the industry and our associations before any new legislation is enacted.

## Responses to Questions

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

*Some concerns raised by our industry include:*

- *Uncertainty in the sector and lack of clarity about the demarcation for ELV and electrical work.*
- *Finding companies that operate in ELV space are sometimes overstepping and doing LV work in which they are not qualified or appropriately licensed and this raises quality and safety concerns.*
- *High Current ELV electrical equipment is an issue that needs to be addressed in the review.*
- *Our members are directly affected by the problems identified and agree that there is increased risk to workers and the community with the increased use of inverters to transform ELV to LV in residential, commercial, mobile structures (caravans, food vans, demountables etc) and EV's.*

*We accept that there is also an increased risk posed from the widespread use of high current LV devices such as batteries used in BESS whether they be in a home or in a commercial application.*

### 2. 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?

*Yes, we agree, the issues have been captured well.*

*The industry requires certainty around who can work on what, and as ELV is becoming more prevalent and creating higher risks there is a need to look at ELV from a different perspective than just voltage. High current ELV systems and products are a high risk to the untrained or unaware worker.*

*For this reason alone, there needs to be more consideration given to high current devices that if installed incorrectly or fail will create a serious arc flash risk to workers and a serious fire risk to property. This is of particular concern, given the current prevalence of arc flash incidents in Queensland that need to be addressed.*

**3. 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.**

*Our members and electrical workers generally would benefit from increased worker and community safety, as well as increased opportunities for work and economic activity.*

*Using the review of the Act as an industry reset has the potential to reset the expectations of the industry and set new benchmarks in worker behaviors.*

*This will only be achieved by a comprehensive and wide-ranging education program that targets both electrical workers and the construction industry more broadly.*

**4. 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.**

*Unnecessarily mandating electrical workers to perform work that is not electrical work would have unintended consequences to both consumer costs and labour availability.*

*Overly onerous restrictions on non-licensed electrical workers being able to complete fabrication and installation tasks that are peripheral and incidental to the electrical installation work would exacerbate these skills shortages amongst electrical workers and markedly increase costs of installation.*

*This industry group would be in favour of maintaining the current status quo. This will protect our industries against cost impacts. If any changes in this area are proposed, a comprehensive Regulatory Impact Statement should be conducted to quantify the impacts to the community and industry at a time of increased living costs.*

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

*Option 2, with some caveats. we believe that the risks posed by high current ELV is real and that direct supervision by licensed electrical workers is warranted, as long as the supervision ratios are at a commercially viable level and reflect the risk level of the tasks being undertaken. Before any new supervision requirements are enacted, there should be an industry led consultation that looks at the best practice ratios across the country and lessons learnt from their implementation*

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

*Option 1 is not the preferred option.*

**7. 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.**

*A mix of options 2 and 3. There are many areas of the electrical industry that must have suitable supervision for the task being performed, but there are equally many tasks that can be carried out unsupervised or with minimal supervision. Similarly, using voltage only to determine aspects of an electrical installation is now only one mechanism. With high current ELV equipment we must use a multi aspect approach to determine firstly the risk and secondly the controls needed to mitigate this risk. With this new mindset, for example, mounting solar panels does not necessarily need to be identified as electrical work. Electrically connecting them must be defined as electrical work. Further and broad industry consultation should be undertaken to fully consider the impacts of these types of changes*

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

*As identified in the fact sheet; there have been multiple incidences of ELV battery packs failing and creating a fire risk.*

*There are many areas of statistical data such as Fire and Rescue, Clean Energy Council and State Regulator data that can be used to canvas root causes. Generally, these have been associated with overcharging, and damage caused by water or physical force.*

**9. Should certain ELV equipment be included in the scope of the Act's regulatory reach that are not currently covered?**

*ELV equipment that pose a greater risk to both workers and property must be covered by the Act. These would include items such as:*

- *Battery Energy Storage Systems (BESS) and the ELV connections that facilitate them.*
- *The conversion equipment associated with ELV to LV supplies.*
- *Off grid power supplies to houses.*



*Our industry would also like further guidance and understanding on how ES3 data cabling will be treated in this new legislation. This data cabling can withhold voltages of up to 1000 Volts which is well in excess of ELV but primarily used for the supply of audio and PA systems.*

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

*A cautious and practical approach that recognises the risks associated by increased use of high power ELV but does not overly regulate or increase community costs beyond what is necessary.*

*There should also be sufficient flexibility in the scope of the legislation that if improvement in design of ELV equipment enhances installation and maintenance safety, that current restrictive work practices can be modified.*

*Care must also be given to ensure areas or industries not directly associated with high risk, high current ELV are not subjected to additional requirements that limit their current operations.*

*As stated earlier, an industry wide consultation on the next steps is necessary to ensure these issues are covered.*

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

*There is no doubt that with these new forms of energy and energy storage, the traditional ELV and LV definitions are not entirely fit for purpose, and other considerations need to be factored into an assessment to ensure workers and the public are safe. Some measures that can be considered are*

- *Short circuit current potential information could be considered to help in identifying risk.*
- *Discharge Rate Watts/HR, should be considered to assist in identifying efficacy.*

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

*There are numerous examples on Fire and Rescue statistics of ELV associated with rooftop solar PV causing fires.*

*This is at a very low current level. At this low current level there are risks, therefore we should act now to avoid the same statistics replicating for ELV high current devices like BESS's.*

## 2. Changing Landscape of Electricity and the Workforce

Refers to Recommendations 5, 6, 7, 17 (a) and 17 (c)

### Overall Position

#### Preferred Option: Combination of 2, 3, 4

The objective of the Government to reduce electrical risks to workers, industry and the community whilst encouraging technological growth and innovation in the electrical technology industry is supported throughout our industries.

The complexity of the everchanging electricity landscape necessitates the use of multiple components of the options proposed to get the balance right across the industry whilst maintaining the transformation to an all-electric renewable future.

Expanding the definition too far (Option 2) may lead to electrical workers performing work that is not electrical work which would have unintended consequences to both consumer costs and labour availability. There are many components of the construction of electrical assets that are best placed to be done by non-electrically trained workers. Examples include

- The installation of long complex runs of large cable is best done by workers with extensive rigging and cable pulling experience.
- Landing and placing large manufactured switchboards is best done by those with experience in crane operations and rigging.

These skills are not common for most electricians, and therefore pose a potential safety risk to both the electrician and the completed electrical work if we move away from utilizing these highly skilled trade assistant type of workers.

Broader consideration must also be given to industries where changes to this definition may lead to unforeseen consequences such as in the fire industry, where some of the work listed forms part of a specialised fire protection system that is installed by these specialists.

Some changes to supervision requirements (Option 3) may assist in the objectives of this review, but if these are onerous, they will stonewall many projects because of skilled worker shortages. We are supportive of a review of supervision requirements, but this must be carried out with both safety and business viability in mind and any new supervision requirements must be based on risk.

As an example, NSW recently consulted on enhanced supervision requirements for apprentices and trade assistants. NECA undertook a study of a real-life infrastructure project where a company was

engaged to install large numbers of varying types of cable from HV to ELV. This was done to understand the impacts of an increase in supervision obligations. The study found that for this particular project the number of electricians on site would need to double to comply. The end benefit of these additional supervising electricians must be questioned, as all work is visible, can be tested and inspected at any time. With this in mind, it is prudent to carry out similar studies on existing projects to understand what the actual impact will be on the Queensland industry.

Supervision of things like installation of plastic conduit must be questioned. There is no earthing required and the main objective is ground depth and installation techniques, all of which can be visually inspected prior to being covered.

There is concern in the fire protection industry regarding unintended consequences of changes associated with recommendation 6 and components such as fire dampers. Our preference would be to add wording making clear that the fixing, installation of brackets and/or mounting of equipment which is required to have a level of resistance to the spread of fire or smoke (fire resistance level or resistance to the incipient spread of fire), would require the appropriate QBCC passive fire occupational licence to be held.

Education and awareness (option 4) is absolutely necessary across the entire Queensland construction industry and general public. This review will result in many important and complicated changes that all industry must be able to understand to incorporate them into their daily activities.

## Responses to Questions

### **1. How are you, your organisation, the workforce and the community affected by the issues posed by the changing landscape of electrical work? To what extent?**

*Our members and the electrical contracting industry in general are directly affected by the identified issues. Mandating a change for increased supervision by electrical workers (EW'S) to perform these tasks and/or only allowing licensed EWs to perform these tasks, will increase costs and exacerbate existing labour shortages within our already stretched industry.*

### **2. How many workers have been impacted by the identified hazards or are exposed to such hazards and might be exposed in the future? Which workers/ businesses/ households are impacted by the problem?**

*All businesses, workers and households are potentially exposed in some way to these identified risks.*

*We believe that any changes to the level of supervision, should ensure that the supervision ratios are at a commercially viable level and reflect the risk level of the tasks being undertaken.*

*It is important to note that work undertaken to install conduits, cables etc that is supervised is currently being done by highly efficient and skilled trade assistants that possess skills and qualifications in more relevant tasks such as rigging and crane operation, that many qualified electricians do not have.*

*This makes the work that trade assistants do in association with the supervision of the electrician even more unique and for these reasons we must ensure that we do not regulate these workers out of our industry.*

**3. Which are the key industries in which these tasks take place and how large are they?**

*Domestic, Public and Commercial sectors will all be affected by legislative changes to these work practices.*

**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.**

*Our associations agree broadly with the identified risks, however, we are of the view that the initial fixing, installing and mounting of individual PV components is a low risk and can be performed by Trade Assistants under the appropriate level of supervision by an electrician.*

*We agree that removal, repair, and replacement of PV components is high risk work and should only be performed by a licensed EW.*

*It is also important to note that the manual tasks carried out by TA's is best placed with them. They are the experts in some of the other skills such as rigging, lifting, hauling and crane operation that are needed to safely perform these tasks.*

**5. What practical impacts – including costs and benefits – would each option have on you, your organisation, the workforce and the community? Please share examples of impacts and experiences of impacts, where possible.**

*Options 1 is not adequate to address the changed circumstances confronting the industry.*

*Option 3 as written is unnecessary and would exacerbate current skills shortages and dramatically increase the costs associated with the decarbonisation of the economy.*

*We support Option 2 on the proviso that supervision ratios and practices reflect the risk level and don't unduly threaten the commercial viability of the sector.*

*Option 4 is also important to assist with the implementation of ES Act changes and is an important conduit to educate the industry and public on the changes.*

**6. In relation to the following three risks considered, which of the four options do you think is best and why? a. Fixing, mounting and locating of renewable energy generation and storage technology (such as solar PV panels) b. Mechanical cable protection work, c. 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.**

*We are broadly supportive of Option 2 (Requiring supervision by a licensed electrical worker for the locating, mounting and fixing renewable energy generation and storage technology), in requiring enhanced levels of supervision for higher risk identified tasks.*

*We have concerns that any changes to the level of supervision, should ensure that the supervision ratios are at a commercially viable level and reflect the risk level of the tasks being undertaken.*

*We support some greater level of supervision for installation of mechanical cable protection and laying of underground conduits, especially where it is conductive, but stress again our concerns about viable supervision ratios and practices.*

*We do not believe the inclusion of plastic/non-conductive conduit or cable support and protection systems, as recommendation 7 proposes.*

*We believe that this is unwarranted as there is no earthing/bonding requirement for these types of systems and could be installed under general or broad supervision.*

**7. Do you have suggestions for other options to address the issues identified? Please provide examples (including costs) on the impacts of your suggested options, including how it would ensure the workforce is electrically safe and conduct electrically safe work.**

*The introduction of an industry recognised safety/competency induction course for aspects of Trades Assistant duties, similar to Mine Safety Induction courses as an adjunct to changes in legislation is worth some consideration.*

- 8. The Review identified risks with the locating mounting and fixing of energy generation and storage electrical equipment. Do you agree that the risks identified are limited to this equipment? If not, what do you consider the scope of these risks to be? FOR CONSULTATION – NOT GOVERNMENT POLICY Page 60 of 78.**

*We agree that there is a risk associated with working with this equipment and that increased levels of supervision would aid in an improvement in overall safety within the industry.*

*Solar panels, batteries and any other similar energy devices need to be protected from inadvertent damage or short circuit events for their entire journey.*

*More needs to be done on the construction of these types of electrical equipment to ensure that when they are manufactured the live parts are suitably sealed to prevent any inadvertent contact as they make their way from the production line to the final installation address.*

*We believe however that supervision ratios and practices need to be at a level that appropriately mitigates the risk and does not put an undue burden on the cost of installation and exacerbates existing skills shortages.*

- 9. The Review identified risks from the laying, cutting or sealing of underground cables that are part of the works of an electricity entity before the initial connection of the cables to an electricity source (section 18(2)(j) of the Act). Other exclusions for electricity entities also exist in section 18(2) of the Act. Has the decentralisation of energy generation had a similar impact on the risk profile of these exclusions? Please provide examples where possible.**

*We agree that there is a risk associated with working with this equipment and that increased levels of supervision would aid in an improvement in overall safety within the industry but this must be consistent with the actual risk of the task in consultation with the industry more broadly.*

*Risks associated with laying, cutting and sealing newly installed underground cables vary depending on the location.*

*A greenfield site has significantly less risk than an already established underground network, and therefore we believe supervision ratios need to be at a level that appropriately mitigates the risk and does not put an undue burden on the cost of installation and exacerbates existing skills shortages.*

## 3. Electrical Safety and Electric Vehicles

Refers to Recommendations 2, 8 and 74 (c)

### Overall Position

#### Preferred Option – Components of 1, 2 and 3

The rise of electric vehicles (EV's) in Australia must be accompanied by suitable legislative requirements to ensure both end users and workers are safe. A broader concern relating to EV's is the effect their charging will have on local distribution networks and the cost customers may bear when they are required to upgrade street Network Operator conductors to facilitate their EV charger.

The discussion paper has indicated three options all of which we believe if implemented in isolation will not suitably address the concerns of our combined industries. Therefore, there needs to be a meshed approach of all three options to provide the best fit for the issues presented.

The idea of a new restricted class of electrical licence is one that should be explored to identify the risks to both electrical and motor mechanic workers. Once this has been achieved there will be a better understanding of where a suitable restricted licensing framework will sit. An issue identified by our members was around who gets the restricted licence, with mechanics thinking they are now electricians and skills shortages are just some that have been highlighted by our members.

It is also reasonable to leave EV's as is, and consider that the electrical aspects and obligations only commence at the charging point, leaving the car itself the domain of the motoring industry.

Any changes must be accompanied by a comprehensive education and awareness program aimed at both the motoring industry and the electrical industry.

Recommendation 74( c ) requires clarification as to the “water equipment” being referred to before support can be given. Our industry group believe the references are related to section 72 and 73 of the Act. To ensure there are no industries unintentionally affected more clarity is required as to the actual changes proposed before any support can be given.

### Responses to Questions

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

*Our members and the broader electrical industry are already feeling the effects of the introduction of*

*EV's and are actively involved in installing the infrastructure to support them, in the form of EVC's and increased levels of Rooftop Solar PV.*

**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?**

*We agree with the broad thrust of the identified issues.*

*On a procedural point, we believe that it is incorrect to refer to only Lithium-Ion battery technology in the discussion paper, we believe that the Act should be technology neutral as to the type of batteries referenced, as it is the **high fault current** potential and voltage levels that present the risks and this will be the same no matter the chemical makeup of the BESS.*

**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 believe that legislative change may be needed, but that possibly the Electrical Safety Act is not the only instrument to achieve it.*

- *Option 1 would have the least impact on skills challenges in the electrical contracting industry.*
- *Option 2 would involve a great deal of change and upheaval in the industry, to move the relevant components of an electric vehicle under the purview of the Electrical Safety Act.*
- *Option 3 is a must to ensure all Queensland industries are fully aware of the new requirements.*

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

*In terms of this paper, a version of Options 1, 2 and 3 – Status Quo, restricted licensing (research) & Awareness and Education would appear to have the least impact on the electrical industry, and build on the work that is already being undertaken as pointed out on Pg 67 of the Discussion Paper.*

**5. If a licensing framework was introduced:**

**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?**

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



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

**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)?**

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

**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?**

*In an ideal world the responsibility of the Electrical Safety Act and Licensing should stop at the Electric Vehicle Charger (EVC). Given the enormous change that is occurring restricted licensing may be the best way to address this issue. If restricted licensing is the preferred method, any new restricted licensing must be researched and must have clear lines of demarcation between the two industries.*

*The existing motor vehicle industry in partnership with the OEM's should be given the opportunity to formalise the processes currently being developed, to define a competent person and the formal qualifications and licences needed to maintain and repair motor vehicles.*

*If any licensing is to be considered under the Electrical Safety Act, it should be limited to a Restricted Electrical License and designed specifically for the needs of the EV industry*

**6. 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.**

*The work that is being done by the MTAQ and TAFE with the introduction of micro credentialing to upskill existing mechanics and the introduction of the Cert3 in Automotive Electric Vehicle Technology, will have the best chance of a "just transition" for the existing ICE vehicle workforce, put the least strain on the electrical industry workforce, and cause the least amount of legislative overlap.*

*EV's have many fewer moving parts than conventional ICE vehicles, have sealed components, and are designed to be "plug and play" for maintenance and repair, with OEM's providing diagnostic software and excellent product training and manuals, just as they currently do for ICE vehicles.*

*The current regulatory and licensing environment for motor vehicle safety and repair is the best place to deal with this change.*

## Contact Details

This submission was prepared by representatives of Master Electricians Australia (MEA), National Fire Industry Association (NFIA) and the National Electrical & Communications Association (NECA). For any enquiries specific to this submission please contact in the first instance [REDACTED] [REDACTED] Other contact details specific to MEA and NFIA are as detailed below.

