



QUEENSLAND FARMERS' FEDERATION

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Submission

27 April 2021

Mr Dick Williams
Reviewer, *Electrical Safety Act*
WorkSafe Queensland
Brisbane QLD 4000

Via email: esreviewer@oir.qld.gov.au

Dear Mr Williams

Re: Review of the Electrical Safety Act 2002 (Qld)

The Queensland Farmers' Federation (QFF) is the united voice of intensive and irrigated agriculture in Queensland. It is a federation that represents the interests of 21 peak state and national agriculture industry organisations and engages in a broad range of economic, social, environmental and regional issues of strategic importance to the productivity, sustainability and growth of the agricultural sector. QFF's mission is to secure a strong and sustainable future for Queensland farmers by representing the common interests of our member organisations:

- CANEGROWERS
- Cotton Australia
- Growcom
- Nursery & Garden Industry Queensland (NGIQ)
- Queensland Chicken Growers Association (QCGA)
- Queensland Dairyfarmers' Organisation (QDO)
- Australian Cane Farmers Association (ACFA)
- Queensland United Egg Producers (QUEP)
- Turf Queensland
- Queensland Chicken Meat Council (QCMC)
- Bundaberg Regional Irrigators Group (BRIG)
- Burdekin River Irrigation Area Irrigators Ltd (BRIA)
- Central Downs Irrigators Ltd (CDIL)
- Fairbairn Irrigation Network Ltd
- Mallowa Irrigation Ltd
- Pioneer Valley Water Cooperative Ltd (PV Water)
- Theodore Water Pty Ltd
- Eton Irrigation Scheme Ltd
- Pork Queensland Inc
- Tropical Carbon Farming Innovation Hub
- Lockyer Water Users Forum (LWUF)

The united voice of intensive and irrigated agriculture





QFF welcomes the opportunity to provide comment on the review of the *Electrical Safety Act 2002 (Qld)*. We provide this submission without prejudice to any additional submission from our members or individual farmers.

Scope of Review

QFF understands that the review of the Act was a recommendation of the 2020 report 'Improving Electrical Safety in Queensland: A Report by the Commissioner for Electrical Safety'¹ (The Report). The report draws on the outcomes of a 2019 industry roundtable to discuss safety in large-scale solar farms.

The review aims to ensure that Queensland's electrical safety laws continue to provide high standards of safety for workers and communities, while recognising that new and emerging technologies have led to significant changes for electricity generation, storage, and supply across the state.

The review will consider updates to the objects of the Act and regulation-making powers to address the following key issues:

- The relevance and effectiveness of all definitions under the Act.
- The relevance and effectiveness of all duties and requirements under the Act (and any subordinate legislation), including on suppliers and generating entities.
- The alignment of provisions in the Act with Queensland's work health and safety legislation.
- Future proofing the Act for new and emerging energy technologies, including renewable energy generation and storage devices.

Background

Queensland's farmers are amongst the most productive in the world, adopting new technologies, particularly in the energy and renewable energy sector in order to remain competitive in national and international markets.

Australian decision-makers have suggested that innovation "*is the main driver of farm-level productivity growth, as farmers reduce costs by adopting more efficient technologies and management practices*" (ABARES 2014). Adoption in new, innovative technologies has largely been driven by the lack of sustainability of the 'business as usual' approach. Queensland's farmers for example, who have adopted/implemented innovation (particularly in energy efficiency and renewable energies) have found that any potential savings that were identified in the project planning stage have been subsumed in the unsustainable increasing cost of electricity.

The ability of Queensland's farmers to participate in efficiency and renewable energy programs remains vital for businesses to reduce their energy costs, including for those bearing the highest burdens and to curb or cut carbon emissions. Rural and agricultural communities have distinct energy productivity and renewable energy needs. Renewable energy projects for rural homes, businesses, farms, and institutions also 'keep dollars local' and increase rural prosperity.

The agricultural sector is investing in cleaner energy and energy productive technologies. 26.5 per cent of CEFC loans are taken out by the agricultural sector (the single largest sectoral investment) and the average project amount financed in the agribusiness sector is \$248,998. Farmers took loans with the

¹ See https://www.worksafe.qld.gov.au/_data/assets/pdf_file/0021/73182/improving-electrical-safety-in-queensland-report.pdf

CEFC of over \$100 million for energy productivity improvements and a further \$110 million+ for renewable energy installations. Queensland's agricultural sector is leading this investment.

QFF has well-developed knowledge and expertise in energy innovation and energy productivity through long-term advocacy and program work including, but not limited to:

- The Energy Savers Program (<https://www.qff.org.au/projects/energy-savers/>) which has audited 200 farms to AS3598 and supported the implementation of a variety of technologies. QFF also supported earlier iterations of this program.
- Managing trials incorporating over 100 real-time electricity metering devices on Queensland Farms.
- Participation in the Alliance for Energy Productivity contributing to roadmap to double energy productivity (https://www.2xep.org.au/files/2xEP_Agriculture_roadmap_v2_3_160829.pdf)
- Management of four micro-grid trial projects (<https://www.qff.org.au/media-releases/funding-farm-microgrids/>)
- Is a member of the CRC for Reliable, Affordable Clean Energy (RACE) (<https://www.racefor2030.com.au/>)
- Advocated extensively and provided advice to State and Federal Governments on drought and climatic impacts associated with the energy-water-climate nexus and participation in several related projects will also inform the program and outcomes for climate adaptation and increased resilience as it relates to efficiency measures and productivity on-farm.
- Policy input into Energy Queensland and Powerlink Revenue Determination Processes
- Policy input into electricity pricing (through the Queensland Competition Authority)
- QFF and selected QFF members are active members of the Agriculture Industries Energy Taskforce (<https://agenergytaskforce.org.au/#:~:text=The%20Ag%20Industries%20Energy%20the,by%20the%20National%20Irrigators'%20Council>).

QFF also disseminates information to the sector on Workplace Health, Safety and Wellbeing issues through media and case studies on farm-safety matters including details of prosecutions. For example, the recent review of a prosecution under the Electrical Safety Act 2002 in the case *Guilfoyle v Wicks* (see <https://www.qff.org.au/blog/electrical-safety-farm/>). QFF also advocated for the 'Look Up and Live' energy infrastructure mapping tool initially developed by Energy Queensland, recognising the risks associated with farming machinery contacting overhead powerlines.

QFF notes that the dissemination of relevant information (for example, inspection outcomes, emerging issues, prosecutions etc), from the Electrical Safety Office and Office of Industrial Relations specifically to the agricultural industry associations and broader sector could be improved.

Specific Recommendations of the Report

QFF notes that while the Report was commissioned and focused to look at issues around large-scale, industrial sized solar PV installations, the Report and its recommendations have significant impacts on commercial-sized PV solar installations.

QFF strongly supports Recommendation 1 under Part 1 of the Report. The *Electrical Safety Act 2002 (Qld)* must be fit for purpose and keep pace with new and emerging technologies. Queensland's agricultural sector is embracing new technologies including, but not limited to, microgrids, a range of bioenergy installations, Concentrated Solar Power (CSP) and hydrogen amongst others.

QFF partly supports Recommendations 2 under Part 2 of the Report. QFF supports the role of competent (but unlicensed) workers for the installation of support structures for photovoltaic (PV)

modules. While QFF supports in principle, the other two elements of the recommendations², it is unclear how this will impact or apply to commercial-scale PV arrays (including their support structures) that are pre-fabricated off-site and then delivered to a site to literally ‘plug in’.

In addition, given the growing technology trend of plug-in connections for such technologies and a move away from hardwiring, it is unclear why a licenced electrical worker is required for the full range of the work outlined².

These technology trends and off-site fabrication approaches also have implications for Recommendation 3.

QFF supports the principles outlined in Recommendations 4-7 in Part 2 and Recommendations 8 and 9 in Part 3 of the Report.

QFF observes that the Report and its recommendations do not consider the electrical safety requirements at end of life and decommissioning of large-scale, industrially sized solar facilities. This must be considered given electrical easements and high voltage infrastructure will not be removed even after the solar facility has been decommissioned.

Beyond Scope of the Report Recommendations - Importance of Current Exemptions in the Act

QFF notes that there are a minor number of relaxations for licenced electrical work in the Act. For example, Section 55 (3)(c) which provides an exemption for ‘performance or supervision of remote rural installation work’.

And under Schedule 2, remote rural installation work being defined as:

remote rural installation work means work on an electrical installation if all the following circumstances apply—

- (a) the only source of electricity supply to the installation is a privately owned generating set used by—
 - (i) a farmer on and solely for a farm; or
 - (ii) a grazier on and solely for a grazing property;
- (b) the generating set is not directly or indirectly connected to the works of an electricity entity;
- (c) the capacity of the generating set is not more than 75kW;
- (d) a person holding an appropriate electrical work licence is not available to perform the work because of the remote location of the farm or grazing property.

QFF strongly supports the continued exemption listed in Section 55 (3)(c) as supported by the Schedule 2 definition of remote rural installation work within the Act.

QFF suggests that the definition of ‘remote rural installation work’ is updated and clearly authored to reflect other types of generating set including, but not limited to solar. QFF also suggests that the capacity of the generating set be increased from 75kW to 85kW³.

² As being, the supervision of locating of PV modules and arrays is supervised by a by a licenced electrical worker and that all earth cabling and connections, and module cabling and connections must be installed by a competent licenced electrical worker.

³ Reflecting the solar capacity required for the average sized electrically powered irrigation pump (which is around 30kW). An example of sizing farm equipment (irrigation pump) to solar can be seen at the ARENA Knowledge bank see <https://arena.gov.au/assets/2020/08/analysis-of-solar-pv-hybrid-energy-irrigation-trial-at-bundaberg.pdf>

QFF notes the increasing number of stand-alone generating sets being utilised in Queensland's agricultural sector. The trend of electrification of on-farm equipment such as refrigeration and irrigation pumps has been undermined over the past eight years by unsustainably high cost of grid-connected electricity⁴. In some areas (for example, prior to recent works, the SWER line to St George and Dirranbandi), grid connected electricity has also failed to provide the reliability required by the sector, (such as irrigators with flood harvesting licences or farmers with livestock).

It is currently cheaper to utilise a diesel genset or solar pumping installation⁵ (for those users who can manage intermittent loads), than being connected to the electricity grid for a growing number of farmers, particularly those classed as large customers. Farmers are also familiar with diesel engine technology and maintenance.

Farmers that have animal welfare requirements (under the Animal Care and Protection Act and other legislation) require an immediate response to remedy electrical outages and other failures. Animal welfare standards in the chicken industry (chicken meat and chicken growers), eggs, prawns, broader aquaculture, pork and dairy sectors are particular vulnerable to changes in conditions and/or loss of power.

Many processors require their contracted farms to install secondary power systems (gensets) to limit the risks of animal welfare impacts from power and/or equipment failure. It is essential that farmers and farm workers are able to restore power in a timely manner.

The availability of suitably licenced labour in Queensland's regional towns (let alone remote areas) is challenging. Existing skills and labour shortages mean that farmers across Queensland are struggling to secure services in a timely manner or affordable rate. In addition, farmers are struggling to identify and source licenced electrical tradespersons with relevant experience with farming equipment (particularly with regards to irrigation pumps) and with renewable and energy efficiency technology experience⁶. Indeed, a review⁶ commissioned by QFF found that both solar PV providers and licenced electrical workers were providing poor and often incorrect advice to farmers with regards to renewable energy equipment selection and installation.

Costs of securing licenced electrical workers is also an issue. As an example, during 2020-2021, QFF expended \$60,000 installing 53 WattWatchers (real-time electricity monitoring devices) into semi-rural and rural areas⁷. No installations were facilitated in remote areas. Most of the expenditure was charged to travel-time rather than on-site/installation time and the installation timeframe took three-times that scheduled, even using multiple providers.

Restricted Electrical Licences

QFF recognises the importance of training and education for the agricultural sector (farmers and their trusted advisors) for electrical safety. QFF is already working with various stakeholders on skills and micro-credentials in the areas of energy efficiency amongst others and including a 'Farm Ready Card'.

⁴ See various 'Energy' submissions at <https://www.qff.org.au/advocacy/submissions/>

⁵ Haines, M., Davis, G. Adapting Solar Energy (PV) to Irrigated Sugarcane Production at Bundaberg, Queensland. Australian Society of Sugar Cane Technologists (ASSCT) Conference 2020, Bundaberg, Queensland.

⁶ See QFF commissioned reports, funded through the ECA, addressing the barriers to the adoption and utilisation of solar on farms, <https://www.qff.org.au/projects/renewable-energy-on-farm/>

⁷ See ABS definitions of remote, rural and semi-rural 1270.0.55.004 - Australian Statistical Geography Standard (ASGS) and <https://www.abs.gov.au/websitedbs/censushome.nsf/home/datausecla?opendocument&navpos=510#:~:text=For%20basic%20data%20QuickStats%20offer,as%20Major%20Cities%2C%20Inner%20Regional%2C>



QFF notes that the *Electrical Safety Act 2002 (Qld)* provides for the safety of all people through the licensing of people who perform electrical work and that the Electrical Safety Office (ESO), within the Office of Industrial Relations (OIR) is responsible for the administration and management of electrical licences in Queensland.

QFF will be writing to the ESO and other relevant stakeholders to investigate the opportunity of a restricted electrical licence for farmers and farm workers, noting that a restricted electrical work licence (a restricted licence) authorises the holder to perform electrical work of a particular type stated on the licence. And that an applicant must be able to **demonstrate an occupational need to carry out restricted electrical work incidental to a trade or calling**⁸.

Please do not hesitate to contact me if you have any queries about this submission.

Yours sincerely

Dr Georgina Davis
Chief Executive Officer

⁸ Queensland Government, Electrical Safety Office. *Electrical Licencing Eligibility Guide*, March 2021. Page 9.