



Government of **Western Australia**  
Department of **Mines, Industry Regulation and Safety**  
**Building and Energy**



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Ms J J Shaw, MLA  
Chairperson  
Legislative Assembly  
Economics and Industry Standing Committee  
Parliament House  
4 Harvest Terrace  
WEST PERTH WA 6005

Dear Ms Shaw

### **Inquiry into Electricity Micro-Grids in Western Australia**

Thank you for inviting the Department of Mines Industry Regulation and Safety to contribute to the Committee's Inquiry into electricity micro-grids and associated technologies in Western Australia.

In November 2017, the Hon Bill Johnston MLA, Minister for Commerce and Industrial Relations approved that a review of EnergySafety's legislative framework be undertaken (the Review). One of the key considerations of the Review is to assess whether energy safety legislation still adequately caters for present and future realities in the electricity and gas industries.

### **Background**

The Building and Energy Division of the Department is responsible for the technical and safety regulation of all the electrical and most of the gas industry in Western Australia. Its responsibilities cover the regulation of:

- electricity production;
- electricity transmission and distribution;
- electricity utilisation (consumers' installations and appliances);
- gas distribution and gas production plants connected to gas distribution systems; and
- gas utilisation (consumers' installations and appliances).

The legislation it administers comprises a suite of Acts and Regulations progressively enacted from 1945 onwards:

- The *Electricity Act 1945* and its subsidiary regulations, the Electricity Regulations 1947, the Electricity (Licensing) Regulations 1991 and the Electricity (Network Safety) Regulations 2015 provide the legislative framework for the regulation of electrical safety in Western Australia.
- The *Gas Standards Act 1972* and its subsidiary Gas Standards (Gas Supply and System Safety) Regulations 2000, Gas Standards (Gasfitting and Consumer Gas Installations) Regulations 1999 and Gas Standards (Infringement Notices) Regulations 2007 cater for the safety regulation of the gas industry.
- The *Energy Coordination Act 1994* establishes the role of the statutory position of Director of Energy Safety (Director). This Act also provides for the designation and powers of electricity and gas inspectors.
- The *Energy Safety Act 2006* makes provision for industry funding, including the collection of a levy from certain industry participants and establishes an account relating to energy safety.
- The *Energy Safety Levy Act 2006* imposes a levy in respect of an energy industry participant.

These pieces of legislation have been frequently amended over the years to reflect technical evolution and organisational changes to the electricity and gas industries. With the more recent changes in the energy sector, this legislative framework now runs the risk of not reflecting realities in the sector. It has become imperative that a review be undertaken to modernise the legislation.

For years, electricity flow has been one way, from generation to consumer. The electricity utility was responsible for generating power and selling it to the customer. Energy customers were simply 'consuming' electricity. Recent advances in energy generation and storage technology have changed the way the energy sector operates.

Network operators are finding localised micro-grids more appealing than transmitting energy over long distances. While both network operators and prosumers can benefit from this new energy model, there are challenges to be addressed to enable a smooth transition. Australian Standards and electrical safety legislation will have to adapt to this new trend.

Embedded electricity networks are also beginning to emerge whereby the member consumers either are disconnected entirely from a public network or take advantage of opportunities to sell power to others via the network.

More and more rural and remote consumers are expected to adopt private electricity installations comprising a mix of solar, wind, diesel generation and battery storage. Commercial trials of such installations are already under way.

They show promise of providing more reliable electricity than the lengthy rural power lines relied on hitherto, which are prone to interruptions.

As more electricity consumers elect to disconnect from networks, three fundamental questions will arise:

- i. How will the energy safety legislation adapt to the change in the energy sector (that is, the change in energy flow)?
- ii. How will the industry funding, and specifically the levy, be allocated to ensure that all users contribute fairly to the funding of Building and Energy and that Building and Energy has enough funds to conduct its regulatory role?
- iii. Who will inspect the independent electrical installations to ensure their safety?

### Industry Funding

The cost of operating the energy safety functions of the Building and Energy Division is funded by licensing fees and a levy on major energy industry participants, under the *Energy Safety Act 2006*.

The legislation allows the responsible Minister to determine:

- the total amount to be raised from the levy each financial year;
- which industry participants are liable to pay the levy; and
- the amount each industry participant must contribute.

Notice of this is published in the Government Gazette and Building and Energy issues notices of assessment accordingly.

Industry funded revenue is used solely for energy safety-related activities. The levy is set to ensure the amount raised, when added to licensing fee income, provides for the full costs of running the energy safety function. The levy effectively is paid by energy consumers as part of their utility bills.

If more electricity consumers elect to disconnect from networks, the responsibility for paying the levy may have to be revised to avoid consumers connected to networks paying a disproportionate amount. This may require appropriate changes to the *Energy Safety Act 2006*. This is being considered by the Review.

However, in the short to medium term, the effects are expected to be minimal because:

- Changes are proposed to national and Western Australian regulatory rules to allow network operators to provide electricity consumers with a stand-alone power supply as an alternative to a network connection. Several trials are being conducted by Horizon Power and Western Power to assess the associated costs, reliability and safety issues involved.
- Under these arrangements, the network operator will retain the customers involved even though they are not serviced by the network.

- Where customers sever physical and commercial ties with network operators by:
  - Installing their own independent power supply; or
  - Connecting into an independently owned, isolated micro-grid supply arrangement the number of such customers is likely to be minimal in percentage terms.

Changes to the levy legislation, therefore, are not expected to be necessary in the short term.

### **Inspections of electrical installations**

For many years after 1947, the antecedents of network operators, the State Electricity Commission (SEC) and the State Energy Commission of Western Australia (SECWA), inspected every consumer installation before connection to ensure they were safe to be connected to the electricity supply.

In 1995, when SECWA was split into Western Power and AlintaGas, the regulatory role was also split into what evolved to become EnergySafety. The Government at the time determined that Western Power and AlintaGas would retain responsibility for inspecting all customers connected to their networks and to perform initial breach investigations. The electricity and gas networks were staffed to perform both these functions. EnergySafety was given resources sufficient for inspections of installations not connected to a network, and for all regulatory activities.

Over time, network operators responded to cost pressures by obtaining approval from the Director of Energy Safety to carry out 'sampled inspections' under Regulation 253 of the Electricity Regulations 1947.

The sampling rate depends on the performance record of electricians and gas fitters signing Notices of Completion. Those with an exemplary record may only be inspected for one job in 20. Any electrician or gas fitter found guilty of breaching safety regulations has their next five jobs inspected, with a gradual relaxing of the sample rate thereafter if no further defects are uncovered during the inspections.

Network operators are required to prepare and submit an Inspection Policy Statement and Inspection System Plan to the Director for approval. These Plans detail how the network operators inspect and monitor work undertaken by electricity operatives on all types of consumer installations supplied with electricity or gas by the network operators. They are the cornerstone of the compliance framework to ensure the safety of consumer electrical and gas installations in WA.

Successive Western Australian Governments have insisted upon an appropriate level of inspections because electricity networks are delivering a potentially lethal product to users who generally cannot know whether or not their electrical installation is safe.

Building and Energy inspects a sample of the work undertaken on installations not connected to a network. As more and more consumers move away from networks, EnergySafety's inspection workload will increase, while at the same time, the respective workloads of network operators will drop accordingly. This may warrant a review of the inspection regime. A few options exist and the merits of each are being explored as part of the Review.

In the short term, such changes are not expected to materially increase the number of inspections carried out by Building and Energy or diminish network operator inspection workloads.

### **Technical Safety Standards**

Changes in electricity technology will be incorporated in national technical standards issued by Standards Australia. Building and Energy senior technical and policy staff are members of the Standards committees involved. The revised standards will be called up in the new legislation in due course, making them legally binding for network operators, micro-grids, electrical contractors, electricians and gas fitters operating in Western Australia.

The Department of Mines Industry Regulation and Safety looks forward to working with the Committee to address any perceived regulatory barriers affecting micro-grid development in Western Australia.

Please let me know if I can assist the Committee any further with its important inquiry.

Yours sincerely



Ken Bowron  
**EXECUTIVE DIRECTOR  
BUILDING AND ENERGY**

6 APRIL 2018