Regulatory Impact Statement

BACKGROUND

The Electricity Regulations 1997 provide for the safe supply of electricity, the safety of electrical appliances and fittings, and the occupational regulation of electrical workers.

In 2006, amendments to the Electricity Act 1992 were made that included the transfer of full responsibility for the occupational regulation to the Electrical Workers Registration Board and the requirement for public safety safety management systems for large scale generators and distributors of electricity. These amendments require amendments to the regulations. The regulations have also been reviewed for clarity, relevance and the need for any updating.

The proposals will ensure that the regulations provide for the safe delivery and use of electricity to industry and consumers, and that industry has clarity over its obligations in the electricity sector, while not constraining innovation.

ADEQUACY STATEMENT

The Ministry of Economic Development has reviewed the Regulatory Impact Statement and considers it is adequate according to the adequacy criteria agreed by the Cabinet.

STATUS QUO AND PROBLEM

The Electricity Act 1992 and the Electricity Regulations 1997 set out the legislative requirements for the safe supply of electricity, electrical appliances and fittings safety and the occupational regulation of workers and who may undertake electrical work.

In 2006, major changes were made to the safety provisions of the Electricity Act. Of particular note were:

- The inclusion of two safety-related purpose statements in the Act - to protect the health and safety of members of the public in connection with the supply and use of electricity in New Zealand; and to promote the prevention of damage to property in connection with the supply and use of electricity in New Zealand;
- Changes to the occupational licensing provisions for electrical workers to require registration and licensing classes and competency requirements to be defined by the Electrical Workers Registration Board, rather than in regulations;
- A new requirement for safety management systems to be in place for larger generation facilities and distribution networks; and
- New offence provisions and penalties.

The amendments to the Electricity Act mean that consequential changes to the Electricity Regulations are required.

Since the regulations were last amended, new technical standards, in particular AS/NZS 3000:2007, have been developed. These are more appropriate to cite in the regulations than out-of-date standards.

The regulations are also more prescriptive than desirable. There is a move towards more performance-based regulation, and the regulations should reflect this preference. Prescriptive regulations constrain innovation, which is undesirable for electricity as there is a need to encourage energy-saving products as well as improving the stability of the electricity supply for modern appliances and fittings.

The Health and Safety in Employment Act 1992 is regarded as the primary legislation for workplace safety, and therefore workplace provisions in the electricity regulations are inappropriate.

A discussion document outlining proposals for change was released in December 2007.

OBJECTIVES

The public policy objectives are to have regulations that:

- provide for electricity to be delivered in a way that is safe for the public, safe for property, and safe for workers;
- are clear and understandable to aid industry compliance;
- provide for the availability of electrical appliances and fittings that are safe to use;
- provide guidance to the industry as to what is expected of the sector by Government; and
- provide flexibility so that innovation is not constrained while still achieving safe outcomes.

ALTERNATIVE OPTIONS

The regulations must be amended to align with the amended Electricity Act, so there are no high level alternatives as the status quo is not an option.

However, as many of the existing regulations are to be continued, an option is to amend the existing regulations.

This option would involve substantial amendment of the regulations, including:

- revocation of the occupational licensing regime,
- transfer of worker safety provisions,
- addition of a significant number of provisions for the safety management systems, and
- incorporation of AS/NZS 3000:2007 for installations .

There is also a desire to improve the clarity of regulations to emphasise the new focus on public safety and the minimisation of property damage. It is likely that by simply amending the existing regulations, such changes would make the regulations less clear and perpetuate the existing feeling in industry that the regulations are inaccessible, and therefore do not fulfil the objective that the regulations aid industry compliance.

SPECIFIC ALTERNATIVE REGULATIONS OPTIONS

Alternatives for Design in Prescribed Electrical Work

Unless a person is exempted on the basis of their occupation or the type of work they are doing, they must be a registered and licensed person to undertake prescribed electrical work.

There are safety risks that are potentially created when installations are not designed to accepted industry best practice. To ensure that this risk is mitigated, it is important that designs are done by competent people and that that person takes responsibility for the design rather than the installer.

The scope of prescribed electrical work can include design as a result of the 2006 amendments to the Act. The primary reason for including design was that, at present, an electrical worker must certify aspects of safety outside that person's control. For example, an electrician may be asked to install a switchboard that has been designed by another person, and in certifying that the work is compliant with requirements the electrician must by inference certify that the switchboard design is compliant. There have been cases in which the Electrical Workers Registration Board (EWRB) has disciplined an electrician because the design (which they did not do) has been non-compliant. Although the Board's decision to take disciplinary action correctly reflects current accountabilities, there are two difficulties with this arrangement:

- to require electricians to fully assess the adequacy of design introduces a compliance cost since the assessment is in effect a duplication of effort – particularly if more than one electrician does work that is dependant on that design (e.g. installing circuits dependent for safety of protection equipment on that switchboard), and

- the electrician may feel compromised if there is pressure to accept the design (e.g. if employed by or contracted by the designer).

Electrical engineers and other specialists[1] commonly undertake design of low voltage installations, and are competent to do so. However, many are not registered by the EWRB as they are not competent to undertake the installation of the installation. Many are members of Institution of Professional Engineers of New Zealand or other professional organisations that provide professional support for their members in a

[1] Large scale work is usually undertaken or supervised by professional engineers holding BE degrees, who would normally be registered under the CPEng Act. For intermediate scale work there are also holders of three year BEngTech degrees, two year Diplomas in Engineering, and the older NZ Certificate in Engineering.

similar way to that of the EWRB for electrical workers. Therefore, dual registration to continue designing electrical installations is vigorously opposed by engineers.

Options were developed and analysed to address the existing problem and the concern by engineers that they may not be able to continue designing electrical installations:

a *Supervision of the engineer/specialist*. The current framework allows for unregistered and unlicensed people undertaking prescribed electrical work to be supervised by a registered and licensed worker who is competent in the work being done. However, this option is not supported as it is not appropriate for an electrical engineer or other specialist to be supervised by an electrical worker, and it may be difficult to source an electrical worker who is as competent as or more competent in design than the engineer/specialist.

b *Exemption from licensing under the EWRB*. By using section 9 of the amended Electricity Act, electrical engineers and other competent people may undertake design (which would still be considered prescribed electrical work) without breaching the Act. This method is currently used to exempt homeowners from undertaking certain prescribed electrical work. This option would also require the designer to sign the design to establish responsibility for the design. The objective of this option is to preserve design as prescribed electrical work. However, there does not seem to be any compelling reason to retain design as prescribed electrical work, and this option requires the Board to develop a design class for registered and licensed electrical workers to undertake design as many will not be competent to undertake innovative design as a matter of right. This then results in a similar, but inverse, outcome to the next option below.

c *Automatic licensing under the EWRB*. As with the Building Act, the Board could establish a registration category for those who are competent to undertake design but who are not necessarily competent to undertake the actual installation work. This arrangement could cater for those whose design competencies are not recognised in other legislation. It would, however, add compliance costs for those who do not already have recognisable competencies, and would require the Board and training providers to establish expertise to administer such registrations. This option would also require the designer to sign the design to establish responsibility for the design.

To fully achieve the existing ability of electrical engineers and architects to continue their electrical design work, a combination of options b and c would be required. This would result in a mix of exemptions and automatic licensing and potential confusion as to the competencies of similar occupational groups and would result in a lack of clarity for both the designers and the installers.

Alternatives for the Application of AS/NZS 3000:2007

Adoption of AS/NZS 3000:2007 will also mean adoption of the requirement for all socket outlets to have 20 amp residual current devices (RCDs) fitted. This would ensure that New Zealand requirements align with Australia. However, this option was generally opposed when it was discussed in the proposed Electricity Safety Regulations discussion document.

The main opposition was in regard to the significant costs retrospective fitting of RCDs in socket outlets would impose. This argument is not feasible, however, as the requirement is not retrospective in the standard.

On the other hand, there is scant evidence of a public safety problem of this nature, and therefore the cost of a mandatory fitting of RCDs in new socket outlets exceeds the public safety value obtained. Additionally, and more compelling, is the fact that there are alternative solutions to the small risk to public safety than the fitting of RCDs, and that it is more sensible from a cost point of view to have flexible solutions rather than to be tied to one solution.

Alternatives for the Appliance Regime

There has been a call from some in the New Zealand appliance industry to strengthen the appliance regime to ensure that poor quality product is not sold in New Zealand. This is suggested to be achieved by applying the declared article regime to all fittings and appliances. The declared article regime requires that fittings and appliances to be approved by either the Secretary or an accredited body or organisation.

Such a system is not risk-based and applies onerous requirements on all products regardless of risk. To apply this system to all fittings and appliances would result in significant compliance costs for many manufacturers and importers. Accredited bodies are costly and the expense would outweigh the benefit gained by suppliers and consumers for many fittings and appliances, particularly those of low risk. This may cause manufacturers or importers to either raise prices or withdraw from the market, reducing choice and availability of electrical fittings and appliances. It is also questionable that the imposition of such a regime would improve compliance. It also appears that most problems with unsafe electrical fittings and appliances occur in the medium risk category, and therefore strong restrictions on low risk products are unjustified.

This option also is in conflict with WTO obligations.

PREFERRED OPTION

The preferred option is for the Electricity Regulations 1997 to be replaced with new electricity safety regulations, which take into account the new safety requirements in the Electricity Act and are user-friendly.

This allows for all the changes outlined in the alternative option to be adopted and also allows for restructuring to improve the clarity of the regulations. This improves the ability of workers to understand their obligations with regard to public safety and property damage, and therefore for consumers to have more confidence that the work and products are safe. It also improves the ability of the regulator and the Electrical Workers Registration Board (EWRB) to take appropriate action.

The following provisions are required to reflect the amended Act::

General Safety Requirement

In the existing regulations, the general safety requirement is found at regulation 69. This is a key provision for the electricity sector, as it affects works, electrical installations, appliances and fittings. While the existing regulations are structured so that the general safety requirement position is appropriate, the removal and addition of the new provisions dictate that moving the requirement to a more prominent place at the beginning of the regulations would improve the clarity of the regulations as a whole.

The changes to the general safety requirement are minimal, only to clarify the scope of the requirement over the full range of the activities covered by the regulations, such as supply, testing, and repair. Significant change (i.e. to provide more detail of the general safety requirement) has not occurred as responses to such a proposal in the discussion document were firmly rejected. Industry felt the existing wording was well-established. Therefore there are no cost implications with this option.

Design in Prescribed Work

The preferred option is for design not to be included in prescribed electrical work. This most closely resembles what is happening at the moment. For this option to be practicable the designer would be required to sign the design to establish responsibility for the design and that the design was in conformance with the legislation. The electrical worker installing the installation would then be responsible for ensuring that the installation complied with the design. The certificate of compliance would be signed by the electrical worker, with the signed design as part of the supporting documentation.

It would result in minimal changes for both the electrical worker and the designer, and establish the responsibility for the design. It would also avoid the development and maintenance of registration classes for design with its associated (and potentially onerous) competency requirements on designers and associated cost to licensed workers. There does not seem to be any compelling reason why design should be defined as prescribed electrical work. As long as the design is in conformance with the legislation, and responsibility is clear, the identified problem associated with design is resolved. This option also ensures the safety of the customer and the public, and provides flexibility of design solutions where needed.

Safety Management Systems

The amendments to the Electricity Act 1992 establish a requirement for public safety Safety Management Systems (SMS) for large generators (equal to or greater than 10 MW) and distributors (equal to or greater than 10 MVA). This requires the owner or operator to adopt and maintain a system that manages the risks of their operation to public safety and the potential for property damage.

The regulations will outline to owners and operators the outcomes expected from the requirement to have a safety management system, i.e. a documented system for identifying the risks to public safety and property damage, assessing those risks, and providing for any mitigation of them. They must also have in place both an internal and external (independent third party) auditing regime to assess the system on a regular basis and establish a continual improvement system to ensure the safety management system is working as intended. Industry has developed a standard (NZS 7901) to provide for guidance on how these outcomes could be achieved. It is intended that this standard is a means of compliance with the regulations.

The SMS provisions reflect the regulation-making powers for SMSs in the Act, with a mixture of “must have” with optional provisions. These outcomes are based on the fact that the electricity industry is a mature industry which, through international best practice, will already have similar systems in place. Therefore there should be, for most owners and operators, minimal compliance costs. It is not intended for owners and operators to construct a new system for public safety SMSs (i.e. employ new staff, install new software, or develop new systems), as components of the public safety SMS will be adequately covered by other management systems (such as environmental) that are already undertaken by the company. There will be some compliance costs for those in the industry that are not currently at the same level of operation as others, although it is intended to have a 3 to 5 year transition time before they are required to have a public safety SMS in place.

Industry seems divided over the extent of compliance costs resulting from a public safety SMS. This possibly arises from some operations being more advanced in this area than others and also from an apparent confusion over the scope of a public safety SMS.

There is a danger that owners or operators may split their assets to avoid the requirement for a SMS, but public safety provisions for those who do not require an SMS are stringent. The larger sectors of the industry also do not wish to have worker licensing applied to them, and having a SMS allows industry to demonstrate an ability to effectively operate safety management systems so that in the future there will not need to be worker licensing requirements for large scale generation and distribution works.

Application of AS/NZS 3000:2007

The preferred option for the application of AS/NZS 3000:2007 is to adopt the standard, but to exclude the requirement for mandatory RCDs on 20 amp socket outlets. This allows alternative solutions to be used that better balance the cost versus the public safety risks.

The amendments to AS/NZS 3000:2007 involve:

- Transferring the existing provisions from AS/NZS 3000:2000;
- The adoption of particular existing prescriptive provisions of the regulations (considered more appropriate in the Standard than the regulations); and
- Additional information and clarity around certain aspects of the old standard (requested by industry).

The cost benefit analysis for the adoption of this standard was part of the standards process. However, in summary, the changes made are considered to improve compliance costs as the standard now provides greater guidance to industry on technical matters. Australia has already implemented AS/NZS 3000:2007 with no significant issues arising regarding compliance costs.

Appliance Regime

The existing appliance regime is considered to have the following deficiencies:

- lack of clarity regarding the requirements of the regime;
- difficulties with enforcement as a result of the increased supply of cheaper appliances and fittings from Asia;
- insufficient use of a risk management approach; and
- necessity to take into account international regimes and obligations.

The proposed new appliance system does not significantly change the requirements for high risk products, as the existing system for such products appears robust, but does strengthen requirements and improve enforcement for medium risk and some low risk products. There is evidence that many of the problems with electrical fittings and appliances occur in the medium risk products. Accountability and transparency of their manufactured quality is to be improved by the requirement of test reports to recognised standards, or failing that, to essential safety requirements. This will increase the compliance costs on some manufacturers and importers, but this cost seems to be justified by the benefit gained from a better quality, and therefore safer, electrical good. The number of suppliers potentially affected by this is small, but even so many of the affected products will already have test reports to gain access to other markets. The providers of the test report also do not need to be accredited test laboratories, and therefore the cost is kept within an acceptable margin. The fact that the test laboratory is not accredited does not diminish the level of safety achieved, as the risk categories will be linked back to the general safety requirement, which itself links better into enforcement provisions.

The number of low risk fittings and appliances affected by the requirement for a test report to prove compliance with AS/NZS 3820 would also be small. It is considered that the cost of obtaining a non-accredited test report for such products is justified as they would only be products that deviated from standards or were new technology, and these products would therefore inherently carry a greater safety risk.

The revised regime is also more in line with other jurisdictions and better meets our WTO obligations.

Removal of Registration and Licensing

Amendments to the Electricity Act remove the requirements in the regulations in relation to registration and licensing of electrical workers. This is no longer a function of the regulator, but has been wholly transferred to the Electrical Workers Registration Board as Rules of the Board. The Board will develop a competency based licensing scheme, and therefore competency requirements are also to be removed from the Regulations. As this will require development of Rules by the Board, transition arrangements may need to be put in place to ensure there is no regulatory gap.

Worker Safety

In 2001, as part of the Energy Safety Review, Cabinet agreed that the Health and Safety in Employment (HSE) Act 1992 be the primary piece of legislation governing safety while work is being carried out by electrical, and for the safety of other workers using electricity at work [CAB Min (01) 33/5]. This arrangement ensures consistency of approach for workplace safety by the Department of Labour.. The Department is developing proposals for transferring the worker safety components of the electricity regulations to the HSE Act framework once suitable competency controls under the HSE Act are in place, in close collaboration with the Ministry of Economic Development and the Department of Building and Housing. The technical requirements for electrical equipment are retained under the electricity legislation to ensure equipment consistency between the workplace and domestic applications.

This may require transition arrangements to be put in place to ensure there is no regulatory gap.

Infringement Offences

The 2006 amendments to the Act established that infringement notices may be introduced as an enforcement tool for clear, minor breaches of the regulations.

Infringement notices provide a proportionate response to minor breaches of the regulations which are currently missing from the enforcement toolbox. In existing regulations, a worker can be disciplined by the Board for safety breaches or can be prosecuted by the regulator. These would be disproportionate responses with respect to minor breaches, such as late supply of a certificate of compliance.

However, there will be administrative costs to the regulator of developing an infringement regime. It is proposed that this will be similar to the existing Radio Spectrum Management infringement system and the two will be administered side by side, thus avoiding duplication of costs.

There will be costs involved with the dissemination of information regarding infringement offences and the notification system. This will be included with information on the changes of the Regulations and the regulator intends to produce a guideline on the enforcement framework of Energy Safety, similar to that produced for the Radio Spectrum Management. In this way, costs of publicising the infringement regime will be minimised.

IMPLEMENTATION AND REVIEW

Many of the changes to the Act have yet to be enacted, and will require an Order in Council to come into force.

It is intended to inform the electricity sector of the changes by way of articles in industry magazines, on the Energy Safety website (including through the e-Business Update emails), and media releases.

Energy Safety is intending to produce an updated guideline on their enforcement regime that will include the infringement offences.

CONSULTATION

Sixty-two submissions were received on the discussion paper. Eleven were from industry organisations. Three were from government agencies. One was from a consumer organisation. Forty-five submissions were received from industry, of which twelve identified themselves as electricians or contractors with small businesses, four identified as inspectors and ten as engineers. The remainder are large businesses including lines companies.

As a general comment, most submitters agreed that changes were needed to the regulations, in particular, to update and clarify the current regulations, and acknowledged that there were necessary consequential changes to the regulations following the 2006 amendments to the Electricity Act.

Significant concerns were around the inclusion of design in the definition of prescribed electrical work; the compliance costs of safety management systems, the removal of the registration and licensing provisions and the supremacy of the Health and Safety in Employment Act 1992 over worker safety.