

**COMMERCE**

MINISTRY OF COMMERCE  
Te Manatū Tauhokohoko



**OCCUPATIONAL SAFETY  
& HEALTH SERVICE**

**A REVIEW OF THE  
SAFETY REGIME FOR ELECTRICAL AND  
GAS WORK**

**DISCUSSION PAPER**

**December 1997**

## **THE DISCUSSION PAPER**

This discussion paper is intended to assist those who wish to make submissions to the review of the safety regime for electricity and gas work. It outlines:

- the scope of the review;
- the current regulatory regime for electricity and gas work;
- four possible regulatory approaches for achieving electrical and gas safety outcomes;
- issues about which the Ministry is seeking comment and information.

This paper invites wide comment. We wish to receive information and comment on all issues which participants consider relevant to the scope of this review.

*The first four sections outline background information relevant to the review. If you are familiar with this material, you could turn to page 21 for discussions of the four proposed approaches.*

## **SUBMISSIONS**

Final date for submissions: 27 February 1998

Comment and submissions should be addressed to:

Rachel Ennor  
Competition and Enterprise Branch  
Ministry of Commerce  
PO Box 1473  
Wellington

Telephone: 04 472 0030

Facsimile: 04 473 8949

Email: [ennorr@moc.govt.nz](mailto:ennorr@moc.govt.nz)

**OFFICIAL INFORMATION ACT 1982**

It is the Ministry's normal practice to prepare a summary of submissions received, together with the Ministry's responses. This summary is intended for circulation amongst parties who made submissions.

In providing your submission, please advise us if you have any objections to the release of your submission, and, if you do object, the parts of your submission that you would wish withheld, and the grounds for withholding. The Ministry will carefully review any representations that you make in this regard, in preparing and releasing any summary, and in considering any formal Official Information Act requests that might be received in the future.

**PRIVACY ACT 1993**

Any personal information that you supply to the Ministry in the course of making a submission will be used only by the Ministry in conjunction with consideration of matters covered by this discussion paper only.

It is the Ministry's normal practice to set out the names of parties making submissions when preparing any summary, for public circulation, of submissions on Ministry discussion papers. Your name will be included in any such summary unless you inform the Ministry that you do not wish your name to be included. In order to indicate your wishes, or to view personal information held about you in respect of the matters covered by this discussion paper, or to request correction of that information, please contact the Ministry of Commerce, ph (04) 472 0030.

## **1 EXECUTIVE SUMMARY**

### **Background**

1.1 This review examines the regulatory regime applying to electrical and gas work to determine whether it is providing appropriate levels of ongoing safety for workers, consumers and the general public, and whether it is achieving those levels of safety at a reasonable cost.

1.2 The regulatory regime for electrical and gas work is closely related to, and in many cases overlaps, a number of other regulatory regimes. The most significant of these overlaps occurs in relation to the Health and Safety in Employment Act 1992. This review identifies the overlapping areas between the regimes and considers whether these overlaps are appropriate.

1.3 Some electrical and gas workers are currently allowed to self-certify the compliance of their work with relevant safety standards. Anecdotal evidence suggests that some electrical and gas workers are not self-certifying all the work that they should, and this discussion paper therefore considers whether self-certification is appropriate, and, if so, how it could be improved to ensure compliance.

1.4 Buildings containing electrical and gas work generally have a relatively long lifespan, during which they are owned by several unrelated owners. It may be useful for subsequent owners of a building to know what electrical and gas work has been done by previous owners of that building to ensure ongoing safety for themselves and for electrical and gas workers. This information is not currently available to subsequent building owners unless it is furnished by previous building owners. This paper considers whether or not the Government should establish an office of record to provide building owners with a mechanism for accessing information about previous electrical and gas work.

### **Performance of the Current Regime**

1.5 The objective of the present regulatory regime is to achieve ongoing safety at a reasonable cost, i.e. the expected benefit of the regulation must outweigh the expected cost. Therefore, when assessing the current regime both the safety outcomes being achieved and the costs involved in delivering those outcomes must be considered. This review will evaluate the safety outcomes being achieved although its primary focus will be to establish whether the present levels of safety can be achieved while imposing lower costs on industry and other parties.

1.6 Certain groups believe that adequate safety outcomes are being achieved, while others consider that there is a need for improvement. There is a lack of quantitative evidence in relation to the cost of the existing regime. However, parts of the electricity and gas industries believe that current safety outcomes could be achieved at a lower overall cost.

### **Guiding Principles**

1.7 The following principles have been highlighted as important in attempting to achieve an appropriate level of safety at reasonable cost: flexibility; simplicity; certainty; transparency; competitiveness; the regulation must place incentives on those most able to influence safety

outcomes to promote safety; and the market should only be regulated to the extent necessary to achieve the objective stated.

1.8 Two characteristics primarily differentiate the potential options for regulating electrical and gas safety: prescriptiveness vs performance; and input regulation vs output regulation. These characteristics should be considered when evaluating the approaches which have been identified.

### **Approaches for Improving the Current Regime**

1.9 This paper describes four approaches for the regulation of electrical and gas work. They are as follows:

- a) Approach one retains the present regime, but it makes some incremental changes to improve its operation.
- b) Approach two concentrates on regulation of the inputs to the production and installation of electricity and gas occupations and the restrictions on who may do electrical and gas work.
- c) Approach three focuses on regulation of the outputs from the production and installation of electricity and gas by examining how employers of electrical and gas workers and owners of electrical and gas installations could be required to meet safety standards.
- d) Approach four combines both input and output regulation by maintaining occupational regulation and self-certification as a safety floor, but providing for alternatives based on compliance with other performance based legislation, primarily the HSE Act and the Building Act.

### **Preferred Approach**

1.10 The paper evaluates each of the approaches and concludes that approach four combined with approach two has the most merit in terms of the guiding principles described in paragraph 1.7.

1.11 This preferred approach would result in workers being required to register with a private sector organisation approved by the Ministry of Commerce, rather than a centralised government registration board as is currently required. The existing Electrical Workers Registration Board would become one such organisation. These organisations would be approved to license workers who had completed the education/training required for a licence. Instead of the current system of setting qualifications in regulations, broad educational and training requirements relating to public and consumer safety could be included in legislation, and qualifications to meet these requirements would be established and conferred by training agencies accredited to do so by licensing organisations. The licensing organisations would ensure that workers are taught the necessary skills and knowledge to work safely, and legislation would require workers to have relevant qualifications. This approach would provide for two alternative means of achieving electrical and gas safety outcomes in both the workplace and in the construction or modification of buildings, either through compliance with the electrical and gas regime of the HSE and Building Acts respectively.

<b>CONTENTS</b>		<b>Page</b>
1	<b><u>EXECUTIVE SUMMARY</u></b>	<b>4</b>
2	<b><u>BACKGROUND TO REVIEW</u></b>	<b>7</b>
	Purpose of Review	7
	Context for Review	8
	The Role of Government	8
3	<b><u>THE CURRENT REGIME</u></b>	<b>11</b>
	Objectives of the Electricity Act, Gas Act and Plumbers, Gasfitters and Drainlayers Act	11
	Description of the Current Regime	11
4	<b><u>PERFORMANCE OF THE CURRENT REGIME</u></b>	<b>15</b>
	Are the Regulatory Objectives Being Achieved?	15
5	<b><u>PRINCIPLES AGAINST WHICH TO ASSESS OPTIONS FOR IMPROVING THE REGIME</u></b>	<b>21</b>
	Guiding Principles	21
6	<b><u>APPROACHES FOR IMPROVING THE CURRENT REGIME</u></b>	<b>22</b>
	<u>Approach One</u> : Enhanced status quo (incremental improvement)	22
	<u>Approach Two</u> : Change the Way the Occupations are Regulated	24
	<u>Approach Three</u> : Regulate Electricity and Gas Work Through Alternative Regulatory Regimes	26
	<u>Approach Four</u> : Maintain a Minimum Level of Public and Consumer Safety Through the Electricity and Gas Regimes, But Provide for Alternatives in Other Areas Based on Compliance with Other Legislation	29
	<u>Preferred Approach</u> : Approach Four Combined with Approach Two	31
	<b><u>ANNEX I</u></b>	<b>33</b>
	<b><u>ANNEX II</u></b>	<b>34</b>

## 2 BACKGROUND TO REVIEW

*The first four sections outline background information relevant to the review. If you are familiar with this material, you could turn to page 21 for discussions of the four proposed approaches.*

### **Purpose of Review**

2.1 This review examines the way in which electrical and gas work is regulated to determine whether it is providing appropriate levels of ongoing safety for workers, consumers and the general public, and whether it is achieving those levels at reasonable cost. While the review considers present safety outcomes, it was prompted more by suggestions from parts of the industry that present levels of safety could be achieved while imposing lower costs on industry and other parties.

2.2 Part of the purpose of this discussion paper is to seek feedback from industry and other interested parties, and information is provided to assist respondents in framing their responses. The paper describes four regulatory options for achieving electrical and gas safety, and evaluates the approaches against some guiding principles. It identifies a preferred approach as the most appropriate in terms of those principles, and seeks your views on its implications.

2.3 The safety regime is defined primarily in the Electricity Act 1992, the Gas Act 1992, and the Plumbers, Gasfitters and Drainlayers Act 1976. The review also takes into account other regulatory regimes which overlap or are integrated with the electrical and gas work regime including the Health and Safety in Employment Act 1992, the Building Act 1991, the Hazardous Substances and New Organisms Act 1996, those parts of the Electricity Act 1992 and the Gas Act 1992 that regulate goods, and other relevant legislation. The Plumbers, Gasfitters and Drainlayers Act 1976, is also an integral part of gas safety. Although administered by the Ministry of Health it will be necessary to consider this Act in the context of any proposals to change the Electricity and Gas Acts.

2.4 The Health and Safety in Employment (HSE) Act overlaps significantly with the regulatory regime for electrical and gas work. When the HSE, the Electricity Act and Gas Act were developed, there was considerable discussion on how the different Acts should interface. The decisions at that time were:

- Public and occupational aspects of gas and electricity safety would be very difficult to separate.
- The HSE Act should focus on occupational health and safety rather than extending to public health and safety, including property, consumer appliances and livestock.
- The HSE Act should therefore provide overall coverage of occupational safety, but specific aspects of gas and electricity safety should be covered under the Electricity Act and Gas Act (an approach that is common with other industries).

## **Context for Review**

### **Associated Initiatives**

2.5 This review takes into account several other initiatives including:

- In August 1996 the report on the Labour Select Committee Inquiry into the administration of occupational safety and health policy identified problems relating to the boundaries of the Health and Safety in Employment Act where issues of public safety arise. The March 1997 Government response to the Committee's recommendations indicated that an administrative framework should be developed for addressing the boundary issues. This framework is being developed by the Department of Labour, with the aim of reporting to their Minister early in 1998.
- An Electrical Workers Registration Board (EWRB) Review of the provisions of the Electricity Act which relate to its functions, as required under section 158 of the Electricity Act. This report is available separately from the Ministry of Commerce. The EWRB's recommendations include: establishment of a statutory Board with the status of a Crown entity to regulate and control specific electrical workers; continuation of Government involvement in the overall control of an electrical inspection regime; optional registration where satisfactory risk management processes are in place; greater involvement of industry training organisations; and various recommendations relating to the functioning of the EWRB. The EWRB has also recommended that overlaps between the Health and Safety in Employment Act and the Electricity Act be addressed. Many of these recommendations are consistent with different parts of the four approaches discussed in section 5 of this paper, and this review provides a useful context in which to consider the Board's recommendations. The Government's response to the EWRB's recommendations will be developed in the course of this review and made upon its completion.
- The Review of the Plumbers, Gasfitters and Drainlayers Act by the Ministry of Health, is being undertaken in conjunction with a review of other occupational regulation falling under the Ministry of Health's responsibility. The Ministry of Health considers that there is a need to regulate the occupations of plumbing, gasfitting and drainlaying to ensure the protection and safety of consumers, and proposes changes to the Plumbers, Gasfitters and Drainlayers Act. The Ministry of Health is seeking approval from Cabinet to delay a decision on the Plumbers, Gasfitters, and Drainlayers Act until the review discussed in this paper is completed.

## **The Role Of Government**

2.6 One of the fundamental questions that this review will address is the role that Government should play in regulating electrical and gas work.

2.7 It is considered that society will be better off if people are free to buy the good or service that best meets their needs. People are then able to make choices between different prices and qualities of goods and services. This recognises that different people have different preferences about price and quality.

2.8 However, there are some situations where people make decisions that are not in their own or society's best interests. When this happens, the market is said to have failed, and sometimes these decisions can endanger lives or cause injuries.

### **Market Failure**

2.9 Market failure may be the root cause of physical harm caused by electricity and gas in the absence of Government intervention:

#### *Information Problems*

2.10 Consumers of electricity and gas services may not have the information, time or ability to judge the competence of a service provider, or the quality of the service provided. This is particularly so for domestic consumers, and for people who use premises that may have been serviced to a substandard level, or who live close to a major electricity or gas installation.

2.11 Electrical and gas workers may face information problems if they are confronted with new technology or unfamiliar procedures, or if they work in an organisation which does not have formalised safety procedures or does not make them known to their workers.

#### *Full Costs Not Borne by Those Who Create Them*

2.12 The costs of mistakes are frequently borne by those unable to influence the quality of the service. For example, electrical or gas workers who carry out substandard work in a public building, exposing the public to a high safety risk, do not meet the full costs of the harm caused. There is a risk they will not take as much care in their work as is warranted, for example, by not following proper work procedures. They may also compromise safety for those workers who work on extensions or alterations to that work at some time in the future.

2.13 Workers may not take adequate safety precautions and/or provide insufficient provision for maintenance, through service providers attempting to become established in the market, or because of increased competition or reduced profitability.

### **Safety Risk**

2.14 It is important to examine the nature of the safety risk for consumers, workers and the public resulting from market failure. This risk can be assessed on the basis of the following:

- a) Whether there is a high or low probability of the risk causing harm. Risks that have a high probability of causing harm are more significant than those that have a low probability.
- b) Whether the magnitude of the risk is large or small. Risks with a large magnitude would cause major harm, such as death, permanent disability or permanent injury if a safety failure occurred, and those with a small magnitude would cause minor harm. Risks with large magnitudes are therefore more significant than risks with small magnitudes.

- c) The size of a risk is generally defined as the probability of that risk times the magnitude of that risk.
- d) Whether the risk is one that people know about or could be expected to know about. For example, many people may not know that incorrect electrical wiring can cause electrical appliances to become live or that the use of gas appliances in confined spaces could lead to carbon monoxide poisoning. If a risk is unknown then people will not be able to make the best choices. Risks which people do not know about are also by definition involuntary risks, as it is not possible for people to control a risk they do not know about.
- e) Whether the risk is voluntary, that people can control, or involuntary where they cannot. For example, people may know that incorrect electrical wiring can cause appliances to become live but they may not be able to easily control the wiring of their home by their local electrician. Most people are much less accepting of involuntary risks, and cannot use normal market choices to minimise their risks. Involuntary risks are therefore more significant than voluntary risks.

2.15 The risks to safety associated with working with and consuming electricity and gas have a high magnitude, may be unknown and may be involuntary. For the public, the safety risks are often unknown and often involuntary. There is therefore a *prima facie* case for considering Government intervention.

### **Regulatory Failure**

2.16 While it is the role of Government to intervene to address market failure, it is important that this is done effectively and efficiently. Government intervention can create administrative and compliance costs, and can result in unpredictable changes in behaviour. When regulation is ineffective or inefficient, it is said to have failed. Potential failures relevant for electricity and gas are excessive regulation caused by, for example, overlapping regulation, and information problems which create unintended, conflicting or perverse market incentives.

#### *Excessive Regulation*

2.17 Excessive regulation may be a cost to business and consumers through:

- a) a reduction in competition, innovation and consumer choice, caused by businesses diverting their resources to comply with regulation;
- b) multiple regulatory regimes causing high compliance costs, for example, the time spent filling in forms required by each regime;
- c) uncertainty about the requirements of different pieces of legislation;
- d) duplication of functions causing higher than necessary Government costs, for example, having to provide the same information to several Government agencies.

### *Information Problems*

2.18 Regulatory failure can also occur through the Government setting inappropriate standards. Prescriptive standards, for instance, can be set inappropriately if they do not keep pace with changing technology, preferences, etc and may contribute towards reduced innovation and consumer choice.

2.19 Government requirements may not be fully understood by workers.

## **3 THE CURRENT REGIME**

### **Objectives of the Electricity Act, Gas Act and Plumbers, Gasfitters and Drainlayers Act**

3.1 The existing safety regime for electricity and gas is defined primarily in the Electricity Act, the Gas Act, and the Plumbers Gasfitters and Drainlayers Act.

3.2 This safety regime establishes clear responsibilities on workers and employers, for example, by requiring registered electrical workers to certify their work. These Acts attempt to reduce compliance costs to workers and employees as much as possible. For instance, there is no independent inspection regime for electrical and gas work as most electrical and gas jobs are relatively small.

3.3 The safety regime is flexible in that it allows work to be undertaken under many different circumstances. For example, unskilled workers are able to do electrical and gasfitting work provided there is sufficient supervision, while companies can take responsibility for work if they wish through the employer licence system. The regime divides responsibilities between the Secretary of Commerce, the EWRB and the Plumbers, Gasfitters and Drainlayers Board (PGDB). The Boards, in particular, are given wide ranging powers and responsibility for worker safety. The safety responsibilities of the Secretary of Commerce relate much more generally to the safe supply and use of electricity and gas and the administration of the Electricity Act and the Gas Act.

### **Description of the Current Regime**

**(See Annex I & II)**

#### **Electricity Act**

3.4 The safety regime in the Electricity Act applies to almost all electrical work. Exceptions to this include fittings in ships and vehicles not connectable to outside supply<sup>1</sup>. This Act relies upon a mix of worker registration, employer licensing, certification, inspection and product standards to meet its aim of achieving electrical safety.

3.5 Most categories of electrical work, called “prescribed electrical work”<sup>2</sup>, may be carried out only by registered workers or workers working under an employer licence. There are

<sup>1</sup> See reg. 3, Electricity Regulations 1997.

<sup>2</sup> See reg. 17, Electricity Regulations 1997.

exceptions for work under supervision and for home-owners<sup>3</sup>. To be registered with the EWRB, workers must satisfy specified safety standards. Responsibility for the safety of the work is assumed by the employer. To be licensed, employers must demonstrate that they have sufficient training and work procedures in place to achieve safe outcomes. Certification of certain prescribed electrical work by the person who did the work and inspection of a narrower range of prescribed electrical work by independent persons is also required.

3.6 Home-owners may do most prescribed electrical work, provided there is little risk while the work is being done or the installation is disconnected from the supply. Some of this work must be inspected by a registered electrical inspector before connection. Some simple work may be done by any person, but only provided specific instructions are followed and there is no commercial incentive.

3.7 The regulations made under the Electricity Act require all works, fittings, electrical installations, electrical appliances and associated equipment to be electrically safe. The regulations also prescribe safety outcome requirements and, in many cases, establish a means by which these requirements can be met. This is called a “means of compliance” and is commonly either a New Zealand Standard or a Code of Practice. In such a case, following the Standard or Code of Practice is not the only means of complying with the requirement and it is open to any person to adopt other procedures to comply with the safety requirement.

## **Gas Act**

3.8 The safety regime in the Gas Act is much more restricted. It does not apply to the extraction of natural gas, gas used for feedstock, gas in circumstances to which the Maritime Transport Act 1994 or the Transport Act 1962 apply, containers used for the storage of gas nor LPG in liquid form in a pipe<sup>4</sup>. The Gas Act and the regulations made under it provide for the certification and inspection of work and establishes standards for works, fittings, gas installations and gas appliances. It places an obligation upon the owners and operators of distribution systems to ensure the safety of their systems and of any work done on those systems.

## **Plumbers, Gasfitters and Drainlayers Act**

3.9 The Plumbers, Gasfitters and Drainlayers (PG&D) Act establishes worker registration and employer licensing elements for gas work. Subject to similar exceptions to those that apply to electricity<sup>5</sup>, “gasfitting”<sup>6</sup> may generally only be carried out by a registered worker or a worker working under an employer licence. Any work on a gas transmission system or a gas distribution system is not “gasfitting”.

3.10 Certification of work under the Gas Act is required only for “gasfitting”. It is generally carried out by the person who did the work, although it can be carried out by other persons<sup>7</sup>. The product standards in the Gas Act operate in a similar way to those in the Electricity Act and apply to all fittings, gas installations and gas appliances.

---

<sup>3</sup> Other exceptions also exist e.g. for plumbers and gasfitters. See ss 109 to 113, Electricity Act 1992.

<sup>4</sup> See s 3, Gas Act 1992. There are some other exceptions for some appliances in that section.

<sup>5</sup> See s 57 Plumbers, Gasfitters and Drainlayers Act 1976.

<sup>6</sup> Defined in s 2 Plumbers, Gasfitters and Drainlayers Act 1976.

<sup>7</sup> See reg 24, Gas Regulations 1993.

3.11 The following Acts also provide for the safety of electrical and gas work.

### **Health and Safety in Employment Act**

3.12 The HSE Act provides for the health and safety of employees and other people at work and people affected by the work of others. Obligations are placed upon employers and persons who control work places and plant to ensure the safety of their employees and the safety of the work places and plant. There is limited obligation to ensure that action or lack of action by employees do not harm other persons and some obligations upon employees and self-employed. Most of these obligations require “all practicable steps” to be taken to deal with hazards.

3.13 The HSE Act imposes minimal prescriptive regulation and relies on performance-based criteria to provide for workplace safety. Current policy is that regulations will be made under the HSE Act where the criteria specified below are met.

- a) To set minimum standards for the management of particular hazards where alternative control measures are not always effective.
- b) To require employers to employ people holding a certificate of competence to carry out certain types of prescribed work.
- c) To place duties on designers, manufacturers and suppliers, of equipment intended to be used in places of work.

3.14 The following regulations and codes of practice have been established under the HSE Act: the Petroleum Pipelines Regulations 1964<sup>8</sup>, which relate to high pressure gas pipelines, and the Health and Safety in Employment Regulations 1995, which impose duties on designers, manufacturers and suppliers of plant, including gas and electrical appliances and equipment, used in places of work. Regulations are proposed for equipment that use high pressure gas and the Petroleum Pipelines Regulations are to be replaced.

3.15 Codes of practice approved under the HSE Act set out preferred work practices, and provide a means of complying with the requirements of the Act and regulations. Other means of compliance may be followed. Where there is no approved code of practice, compliance with industry-agreed standards establishing safe work practices is generally accepted as meeting the obligation to take “all practicable steps”.

### **Building Act**

3.16 The Building Act applies to all building work, that is the construction, alteration, demolition, or removal of buildings. The Act applies to electrical and gas systems inside buildings but does not apply to transmission or distribution systems, or most electrical and gas appliances<sup>9</sup>. It establishes the Building Industry Authority which has wide ranging functions under section 12 of the Act. The Act requires completed building work to comply with the Building Code and establishes an inspection and certification regime. Inspection and

---

<sup>8</sup> These regulations continue in force, despite the repeal of the Petroleum Act 1937 under which they were made, by virtue of section 24 of the Health and Safety in Employment Act 1992.

<sup>9</sup> See s 3, Building Act 1991.

certification of building work is carried out principally by territorial authorities. Territorial authorities, in carrying out their certification function, can choose whether or not to inspect, and they have the option of accepting a “producer statement” as providing evidence of compliance with the Building Act. Gasfitting or prescribed electrical work<sup>10</sup> must comply with the Gas and Electricity Acts respectively, and are not covered by the Building Act unless they are “compliance schedule items”, such as fire alarms, or the building owner wishes to have them covered by a building consent. Systems owned and operated by network utility operators are excluded from the definition of “building” by section 3 of the Building Act, and they are therefore not covered by the Building Act.

### **Maritime Transport Act and Transport Act**

3.17 The Maritime Transport Act 1994 and the Transport Act 1962 apply to shipping and road transport, respectively. These statutes have a significant effect on gas because it is transported by sea and road and is used as an automotive fuel. However their effect upon electricity is much less. The Transport Act requires vehicles to have either a warrant of fitness or a certificate of fitness. The Land Transport Act 1993 enables rules to be made for alternative fuel systems, which could apply to both electricity and gas. The Maritime Transport Act requires ships to be surveyed but this requirement does not apply to recreational craft. However, specific rules can be made under the Act for any ship, including recreational craft, relating to design, construction and the ship’s equipment. The Electricity and Gas Acts apply to some electrical and gas installations in motor vehicles and pleasure craft<sup>11</sup>. The Transport Services Licensing Act 1989 requires safety systems to be established for rail vehicles.

### **Hazardous Substances and New Organisms Act**

3.18 Gas is classified as a hazardous substance under the Hazardous Substances and New Organisms (HSNO) Act<sup>12</sup>, and is subject to that Act, but it does not apply to electricity. Aiming to protect the environment and the health and safety of people and communities, the HSNO Act places controls upon the use and possession of hazardous substances and new organisms. This Act repeals the Dangerous Goods Act 1974, under which regulations were made that applied to gas cylinders, but these regulations will continue in force under the Hazardous Substances and New Organisms Act.

### **Sale of Goods Act and Consumer Guarantees Act**

3.19 The Sale of Goods Act 1908 provides for implied conditions relating to the quality and fitness of goods when they are sold and applies to the sale of fittings and appliances. The Consumer Guarantees Act 1993 establishes wider guarantees relating to the quality and fitness for purpose of goods and services when they are supplied in trade. It therefore applies to the supply of fittings and appliances and electrical and gas work itself.

---

<sup>10</sup> See s 32A, Building Act 1991.

<sup>11</sup> For example, electrical installations in caravans that are connected to an outside source of supply.

<sup>12</sup> This Act is not fully in force.

3.20 Some common law rules developed by the courts also apply to electrical and gas work, including the law of negligence, which establishes a duty of care, and the law of nuisance, which prohibits interference with another person's property.

## 4 PERFORMANCE OF THE CURRENT REGIME

### Are the Regulatory Objectives being Achieved?

4.1 The objective of the current regulatory regime is to achieve ongoing safety at reasonable cost, i.e. the expected benefit from any regulation must outweigh its expected cost. Therefore, in assessing the current regime, both the safety outcomes being achieved by the regime, and the costs involved in delivering those safety outcomes, must be considered.

#### Safety

4.2 During the period 1992 - 1996 119 reportable accidents were reported to the Gas Incident Register<sup>13</sup>. There were 11 known fatalities. (Reportable accidents include those causing fatality, injury incapacitating for 48 hours or greater, or significant property damage.)

4.3 In the electricity sector there were 310 reportable accidents over the same period<sup>14</sup>. There were 28 known fatalities over the period.

4.4 ACC data<sup>15</sup> indicates that the electrical trade has few accidents in comparison with other trades. It enjoys the lowest ACC premiums of all trade related groups. An ACC injury prevention project has reported the following injury statistics for a number of trades including the electrical trade:

	<b>Total Injuries</b>	<b>Rate per 1,000</b>
<b>Electrical</b>	233	21.33
<b>Carpentry</b>	1,162	37.28
<b>Plumbing<sup>16</sup></b>	248	37.78
<b>Painting</b>	627	49.37

4.5 In some areas safety outcomes are not being achieved. For example, a disproportionate number of incidents occur with LPG installations in caravans, and a disproportionate number of young people rather than adults are involved in these accidents.

4.6 Some groups have suggested that independent inspection of prescribed electrical work should be reintroduced because of concerns about safety under the current regime. The inspection requirement was removed with the introduction of the Electricity Act 1992, which requires electricians to self-certify most work themselves.

<sup>13</sup> Some of these accidents resulted from the use of gas appliances, rather than occurring as a result of gas work.

<sup>14</sup> Some of these accidents resulted from the use of electrical appliances, rather than occurring as a result of electrical work.

<sup>15</sup> Electrical Contractors Association of New Zealand (ECANZ) Newsletter - July 1997.

<sup>16</sup> The proportion of these injuries which are attributable to gasfitting work is not known.

4.7 One problem with the current regime is that the reporting systems fail to deliver good quality statistical data of incidents in the electrical and gas sectors. Any proposed amendments to the regime should address this problem.

#### *Potential Information Problems*

4.8 It has been suggested that, under the existing provisions of the Electricity, Gas and PG&D Acts, there is an information problem for purchasers of buildings relating to the safety of electrical and gas work carried out by previous owners of that building.

4.9 Most buildings containing electrical and gas installations have a relatively long lifespan during which they are owned by several unrelated parties. The Building Act establishes territorial authorities as offices of record for all building work that is undertaken in accordance with a building consent. Purchasers of buildings can therefore obtain records relating to the construction and alteration of a building from the territorial authority, and compare those records with the physical structure of the building they propose to purchase. If the physical structure of a building deviates from the records of construction and alteration for that building held by the territorial authority, then the purchaser of that building will be made aware of the deviation, and can act accordingly.

4.10 The Electricity, Gas and PG&D Acts require electrical and gas workers to self-certify most of the work they do. Self-certification certificates are provided to the building owner and (on request only) to the relevant occupational licensing board. Electrical and gas workers are not required to lodge self-certification certificates with territorial authorities. It is illegal for a building owner to operate an uncertified electrical or gas installation.

4.11 If a building owner fails to obtain a building consent for construction or alteration of a building, they may have difficulty selling that building, because the purchaser will discover that the physical structure of the building deviates from the records for that building held by the territorial authority. This is seen by some to be a significant incentive for compliance with the Building Act.

4.12 However because territorial authorities are not offices of record for electrical and gas installations in buildings, purchasers of buildings will be unable to establish from the vendors of those buildings whether or not the electrical and gas installations in that building are safe. To resolve this problem, it would be possible to require self-certification certificates to be lodged with territorial authorities to provide a complete record of electrical and gas installations for future owners of that building.

4.13 The Ministry of Commerce considers that the existence of a building consent under the Building Act for all construction and modification work undertaken on a building does not give a high level of assurance concerning the ongoing safety of that building in relation to electrical and gas work. Safety standards change over time, and buildings deteriorate over time. This means that, if a building permit was issued 25 years ago (under the legislation that predated the Building Act), a prospective purchaser of a building covered by that building permit cannot rely on the building being safe simply because it received a building permit in 1972. For this reason, there are a number of independent building inspection services available to prospective building purchasers which utilise previous building records and related “as

built” records in combination with physical inspections to provide assurance for current and prospective building owners.

4.14 The level of detail contained in a building consent under the Building Act is considerably greater than that contained in a self-certification certificate under the Electricity, Gas and PG&D Acts. For example, building work must be completed in accordance with plans showing the nature and structure of the proposed work. Self-certification certificates do not contain such detail concerning what work has been done, and it would therefore not be possible for a future purchaser of a building to determine what and when electrical work was done.

4.15 The Ministry has considered the possibility of extending the level of detail required in self-certification certificates to provide information concerning what and when electrical and gas work was done. However, if a plan was required each time an electrician added a power-point to a home, this would impose significant compliance costs on electrical workers.

4.16 In addition, as with building work, prospective purchasers of buildings can obtain an independent inspection of electrical and gas work. This offers them an assurance concerning the safety of electrical and gas work in that building. Once again, the fact that electrical or gas work was certified 25 years ago would not necessarily mean that the work is safe today, and self-certification certificates therefore cannot guarantee long-term electrical and gas safety.

4.17 The Ministry of Commerce therefore considers that the existing system of self-certification and the availability of independent inspections for prospective purchasers of buildings is sufficient to provide consumers with a mechanism for ensuring the ongoing safety of electrical and gas work within buildings.

**1. Do you consider that adequate safety outcomes are being achieved under the current regime? If not, please provide details.**

**2. Are there particular areas where you believe safety outcomes could be improved? If so, please identify these areas.**

### **Reasonable cost**

4.18 There is a lack of quantitative evidence relating to the total overall cost for the Government and business of administering and complying with the existing regulatory regime.

4.19 Parts of the electricity and gas industries believe that current safety outcomes could be achieved at lower cost. The following potential problems with the regime have been identified and indicate possible regulatory failure.

### *Overlapping legislation*

4.20 The most notable overlap of legislation concerns safety of workplaces. The worker registration and employer licensing schemes under the Electricity Act and the PG&D Act provide for the safety of electrical and gas workers while they are carrying out work. This overlaps almost completely with the HSE Act. There is also significant overlap between these statutes concerning other workers in relation to electrical and gas safety.

4.21 Informal administrative arrangements between the Occupational Safety and Health Service (OSH) and the Ministry of Commerce ameliorate the effect of the overlap between the HSE Act and the Electricity and Gas Acts to some extent. OSH does not set electricity and gas standards in workplaces but recognises compliance with the standards prescribed in the Electricity and Gas Regulations as being compliance with the requirement to take “all practicable steps” to manage electricity and gas hazards in workplaces. OSH and the Ministry of Commerce also co-operate to investigate accidents in workplaces involving electricity or gas.

4.22 There is also significant overlap between the HSNO Act and the Gas Act. Both Acts apply to gas and the hazards that arise from its use and possession. There is also some overlap between the HSNO Act, the Transport Act and the Maritime Transport Act in relation to the transport of gas. The Land Transport Act enables the Minister of Transport to make Land Transport Rules and the Land Transport Authority is currently developing a Rule which will cover the transportation of dangerous goods by land.

4.23 There is some overlap between product standards in the Gas Act and the Electricity Act and the implied conditions established for the sale of goods by the Sale of Goods Act, and for the sale and supply of goods and services by the Consumer Guarantees Act. These product standards are outside the scope of this review, and may need to be addressed separately.

4.24 Overlapping legislation may impose unnecessarily high compliance costs on the electricity and gas industries. For instance, there may be requirements to comply with more than one item of legislation for the same safety outcome. Overlapping legislation can, however, help to achieve consistency across an industry and to provide more specific provisions under general umbrella legislation.

4.25 Some industry groups say the present regime is duplicative, costly and inefficient.

### *Level of Prescriptiveness*

4.26 The safety provisions of the Electricity Act and the Gas Act were criticised by the Labour Select Committee for being highly prescriptive. The Government’s response to the Committee notes that the Electricity and Gas Acts contain little that is prescriptive, other than the worker registration scheme<sup>17</sup> established under the Electricity Act and the PG&D Act respectively. This scheme sets out the standards that workers must meet to be registered and is therefore quite prescriptive.

---

<sup>17</sup> Prescriptive regulations set out detailed requirements or procedures, and compliance with those requirements and procedures results in a given safety outcome. Performance based regulations set out broad safety obligations or outcomes, and allow flexibility in how those obligations or outcomes are met.

4.27 The Government's response also notes that it is primarily the regulations and the administrative regimes set up under the Acts which are of concern to industry.

4.28 This point is best illustrated by comparison with the HSE Act which establishes broad responsibilities and, for the most part, leaves it to employers to determine how to meet these obligations. In contrast, regulations made under the Electricity and Gas Acts contain detailed requirements that employers and workers must meet when they carry out work. Also, many standards established under the Electricity and Gas Acts for fittings, installations and appliances are prescriptive, although the standards generally set only an acceptable means of compliance, rather than the way work must be done.

4.29 Parts of both the electricity and gas safety regimes are not as prescriptive. For example, the employer licence system places a general responsibility upon employers to ensure that work is carried out safely, and provides considerable flexibility to employers. Also, the Gas Regulations set only general obligations upon owners or operators of distribution systems to ensure that people who work for them are competent to safely perform their work, and are familiar with relevant safety procedures.

4.30 The detail in the electricity and gas safety regime may be useful for many workers because they can easily understand what they must do to work safely. To remove this detail and require workers to decide what actions are necessary to meet general obligations could increase costs and make it more difficult to achieve successful prosecutions.

4.31 Nevertheless, the safety regime applying to electrical and gas work is prescriptive. The question is whether or not this is desirable.

#### *Ensuring that Self-Certification Occurs*

4.32 Anecdotal evidence and a limited survey by the Ministry indicate that some electricians are not self-certifying all the work that they should, and that they therefore cannot be audited by the EWRB since the certificates provide an audit trail. However, there is no evidence to support the presence of any direct safety risk arising from non-certification, as the certification itself does not affect the quality of the work done. It is also important to note that, if the EWRB does not receive any self-certification from an electrician over a long period, the EWRB is alerted to the absence of the certificates and will investigate the electrician concerned.

4.33 This problem is largely an administrative one, and is therefore not directly addressed in any of the approaches outlined in section 6 of this paper. It could be addressed by additional information provision to make the public more aware of the need to obtain self-certification for the work done by their electrician, and the EWRB has done considerable work on developing an audit mechanism that relies on other factors in addition to self-certification as a basis for auditing.

### *Input Regulation or Output Regulation*

4.34 There are two broad approaches for ensuring that work is safe:

- an input oriented regulatory approach that would impose controls on who may do electrical and gas work and how such work must be done, with monitoring focused on the person or company that does the work.
- an output oriented approach that requires employers of electrical and gas workers and owners of electrical and gas installations to meet safety obligations, with monitoring focused on the safety of the completed work. Combinations of these approaches are possible.

4.35 In its purest form, output regulation is unconcerned about the competence of the person who performed the work. If the completed work is established to be safe, how it was completed becomes irrelevant. Output regulation gives maximum freedom to workers but does rely on the ability to establish safety of the completed work. (For example, it can become difficult to inspect aspects of electrical or gas work that become hidden behind wall claddings, although this can sometimes be addressed through progress inspections.) Output regulation also relies on there being no significant risk while the work is in progress.

4.36 Input regulation, by placing controls on who may do work, imposes significant restrictions on workers. It does, however, remove the necessity to check completed work, which can be expensive especially on smaller jobs, and it addresses the risk imposed while the work is in progress.

## **5 PRINCIPLES AGAINST WHICH TO ASSESS OPTIONS FOR IMPROVING THE REGIME**

### **Guiding Principles**

5.1 The following principles should be adhered to in examining approaches that attempt to achieve appropriate ongoing safety at reasonable cost:

- a) Appropriateness of incentives - The regulation must place incentives on those most able to influence safety outcomes, to promote safety.
- b) Flexibility - Where changes, for example in technology or preferences, make standards inappropriate, it should be possible to change those standards without undue delay or cost.
- c) Simplicity - Regulation must be easy to understand, thereby promoting clarity and compliance.
- d) Certainty - The regime must be certain as to: what is required of those who undertake gas and electricity work; whether the completed work meets safety objectives; the rights of workers, consumers and the general public; and the way in which the regime is to be enforced.
- e) Transparency - The process for developing regulations and the criteria for making decisions under those regulations must be clear and open to ensure good quality regulation and a high level of compliance.
- f) Competitiveness - The regulation should not reduce competition, consumer choice, or the incentives on markets to innovate.
- g) Level of intervention - The market should only be regulated to the extent necessary to achieve the objective stated, and no more.

5.2 There are many potential options for delivering electrical and gas safety outcomes. They can primarily be differentiated by two characteristics. These are:

- i) Prescriptiveness vs Performance - As described in section 4.16 the range of potential options exist along a continuum, from prescriptive regulation at one end, through to performance-based regulation at the other.
- ii) Input Regulation vs Output Regulation - As described in sections 4.22 - 4.24 one could adopt an input oriented regulatory approach or an output oriented regulatory approach.

**3. Do you have any comments on the principles being used to assess the options for improving the electrical and gas safety regime?**

**4. Do you have any comments about the merits of the approaches described above ie prescriptiveness vs performance and input regulation vs output regulation?**

## 6 APPROACHES FOR IMPROVING THE CURRENT REGIME

6.1 Four approaches for the regulation of electrical and gas work are outlined:

- a) Approach one retains the present regime, but it makes some incremental changes to improve its operation.
- b) Approach two concentrates on alternative ways of controlling who may do electrical and gas work by examining systems for the licensing of workers and the setting of qualification/competency standards.
- c) Approach three focuses on the results of electrical and gas work by examining how employers of electrical and gas workers and owners of electrical and gas installations could be required to meet safety standards.
- d) Approach four combines both the control of workers and control of the results of their work by maintaining occupational regulation and self-certification as a safety floor, but providing for alternatives based on compliance with other performance-based legislation, primarily the HSE Act and the Building Act.

6.2 These approaches represent a wide variety of options: from prescriptive based approaches to more performance-based forms of regulation; and from options which regulate inputs, to those which focus upon the regulation of outputs. While there are other options, these approaches are thought to have most merit.

6.3 After evaluation against the principles listed in section 5.1, a combination of approach two and approach four is considered the most appropriate means of regulating electrical and gas safety.

6.4 Respondents should assess the four approaches in terms of the principles, keeping in mind the need to achieve appropriate safety outcomes at reasonable cost.

### **Approach One: Enhanced status quo (incremental improvement)**

#### **Description**

6.5 This approach retains the existing electricity and gas safety regime with some improvements. The essential features of the current regime, such as worker registration and licensing, self-certification of completed work, the inspection regime and the interface with the Building Act, are retained. The present provisions of the Electricity Act, the Gas Act and the PG&D Act would be substantively retained.

6.6 The administration of these Acts would continue in its present form with responsibilities divided between the Secretary of Commerce, the EWRB, the Ministry of Health and the PGDB. The roles of the Ministry of Commerce and OSH in investigating electrical and gas accidents in the workplace, would be clarified in the form of a memorandum of understanding between the two departments or an amendment to the relevant legislation. Minor changes to the Acts and regulations relating to accident reporting and investigation might also be required.

6.7 It is anticipated that some changes will be made to these regimes as a result of the current reviews of the gas and electricity regulations.

6.8 The Energy Inspection Group of the Ministry of Commerce recently began a review of the Electricity Regulations. The review examines the technical provisions of the Electricity Regulations, and (amongst other changes) is expected to remove many of the prescriptive requirements of the regulations applying to installations and to place them in a New Zealand Standard, NZS 3000. It is also proposed to change the requirements of the regulations that apply to electrical appliances and the fees associated with the operation of the EWRB.

6.9 A review of the Gas Regulations, which contains a mixture of performance based and prescriptive elements, is being undertaken by the Office of the Chief Gas Engineer of the Ministry of Commerce. The resulting regulations are intended to state performance based requirements for gas safety, quality and measurement, or to have performance based requirements stated in Standards which are mandated by the regulations, with the industry taking greater responsibility for developing means of compliance. Proposed technical amendments include the introduction of a warrant of fitness for fittings and gas appliances in relocatable buildings, similar to that which applies to electrical fittings and appliances in relocatable buildings, to address an area of concern with LPG installations.

### **Comment**

6.10 This approach should achieve similar safety outcomes to the current regime. The changes to the provisions of the Electricity Regulations and Gas Regulations relating to installations would reduce the level of prescriptiveness in those regulations and may reduce costs to businesses.

6.11 The proposal to clarify the responsibilities of the Ministry of Commerce and the Occupational Safety and Health Service may make a small difference for accident investigation. However, this approach would not remove the requirement upon employers to comply with two statutes for the work undertaken by employees.

### **Conclusion**

6.12 Workers and employers would have incentives to promote safety by being required to comply with the electricity and gas safety regime and the HSE Act. Employers would have some flexibility in that they would be able to choose to comply with the employer licence provisions rather than employing registered workers. This approach does not reduce overlapping legislation and the level of Government intervention may be too high.

**5. What are the main advantages or disadvantages of retaining existing electricity and gas safety regime with some incremental changes, in terms of the safety outcomes which it delivers and the costs involved in delivering those safety outcomes?**

## **Approach Two: Change the Way the Occupations are Regulated**

### **Description**

6.13 This approach continues to regulate labour as an input to the production of electricity and gas services by retaining controls on who may do electrical and gas work and how such work must be done. Prescriptiveness and the costs of regulation for the Crown and business should be reduced by changing the way in which the occupations are regulated. Existing categories of electrical and gas workers would be reviewed to improve the flexibility of network operators, so that workers and firms who work on electricity and gas distribution networks would not require a licence. Network owners would be responsible for the public and consumer safety of their networks.

6.14 There would still be safety standards established by legislation for works, installations and appliances. Certain electrical and gas work would continue to be certified by the person who did the work. It is assumed that some form of worker registration and qualification or competency standards would remain, with workers and firms continuing to fund its operation.

6.15 There are three options for changing the registration system:

- A) Retention of a central licensing board established under legislation for electrical and gas workers (this board could be a body corporate); or
- B) Approval and auditing by the Secretary of Commerce of private sector organisations that would licence electrical and gas workers; or
- C) No mandatory licensing of electrical and gas workers.

6.16 There are four options for changing the qualification or competency standards for workers:

- I. Retention of qualification standards set in regulations and administered by statutory boards or some other government agency; or
- II. Broad parameters for qualifications set out in legislation, and the detail of qualifications established and conferred by training organisations and approved by the New Zealand Qualifications Authority (NZQA); or
- III. Broad parameters for qualifications set out in legislation, and the detail of qualifications established and conferred by training organisations and approved by private sector licensing organisations; or
- IV. No qualification requirements for electrical and gas workers.

6.17 As with the current licensing system, these forms of occupational regulation would apply to both workers and firms, so that either individual workers or individual firms could be licensed.

## Comment

6.18 The combination of no registration of electrical and gas workers and no qualification requirements for electrical and gas workers (C, IV) is unlikely to achieve acceptable worker and public safety, as it would allow any person to carry out any electrical or gas work, regardless of their skills and abilities. It may be possible to reduce the costs to business while retaining present safety outcomes by adopting a regime less restrictive than the present one which involves setting qualifications by regulation and centralised registration of workers (A, I).

6.19 As an alternative to centralised licensing, workers or firms could be required to obtain a licence from a non-government organisation/s approved and audited by the Ministry of Commerce (B above). Instead of a centralised government registration board, a non-government organisation/s would license workers who complete appropriate education and training. That organisation would also monitor and audit licensed members to ensure ongoing competence.

6.20 As an alternative to the current system of setting qualifications in regulations, broad educational and training requirements relating to public and consumer safety could be included in legislation, and qualifications to meet the requirements established and conferred by training providers accredited by the approved private sector licensing organisations (III above). The licensing organisations would ensure that workers are taught the necessary skills and knowledge to work safely, and legislation would require workers to have qualifications relevant to their work. The Ministry of Commerce would audit the licensing organisations to ensure that the qualifications they approved met legislative requirements.

6.21 It is possible that private sector organisations may not wish to license all categories of electrical and gas workers, and the position of existing licensed workers must also be considered. Therefore, it may be appropriate to corporatise the EWRB, requiring it to comply with legislative requirements for non-government licensing organisations under the new regime, and placing obligations upon it to continue licensing electrical workers. This would mean that all existing workers licensed by the board would retain their rights to practise, and that alternative licensing organisations to the EWRB could develop over time.

6.22 This approach, of amending the licensing and qualification requirements in line with (B) and (III) above, could remove central government from directly setting qualifications for electrical and gas work and from the worker licensing process. It would separate the functions of licensing and conferring of qualifications. It would also provide greater flexibility as qualifications could be amended more easily and could be focused on particular types of work. Because the broad education and training requirements included in the Electricity, Gas and PG&D Acts would relate only to public and consumer safety, overlaps with worker safety under the HSE Act would be eliminated. The Ministry of Commerce would retain the role of auditing private sector licensing organisations to ensure that they met legislative requirements.

6.23 On the basis of available information it is not possible to determine whether or not such an approach would affect the levels of safety achieved by the current regime.

## Conclusion

6.24 This approach (B and III) would place incentives on education/training providers and employers to promote safety by requiring them to develop qualifications that provide for consumer, worker and public safety, and would give them the flexibility to do so. Provided that safety obligations were clearly established under legislation, this approach would provide certainty concerning the rights and responsibilities of consumers, workers and the public, while the Ministry of Commerce would ensure transparency in the development of qualifications. This approach is likely to promote competition between private sector organisations accredited to license members, and this could provide greater choice for consumers.

6.25 This proposal would be more difficult for consumers or workers to understand than the current system which is operated by a single registration board and a single set of regulations concerning qualifications. It may also be difficult to ensure consistency of standards among multiple licensing organisations. It would also retain overlapping legislation for worker safety.

**6. What are the main advantages and disadvantages associated with amending the form of licensing and legislative qualification requirements in terms of the safety outcomes which it would deliver and the costs involved in delivering those safety outcomes?**

### Approach Three: Regulate electricity and gas work through alternative regulatory regimes

#### Description

6.26 This approach would remove all controls on electrical and gas work in the Electricity, Gas, and PG&D Acts by repealing the relevant sections of those Acts. Other Acts would then be relied upon to achieve the required safety outcomes. Legislative overlaps and prescriptiveness, mentioned in section 2, would be diminished.

6.27 All the provisions of the Electricity and Gas Acts, and regulations that relate to the supply of electricity and gas and the interconnection of networks to installations and appliances would be retained in the Electricity and Gas Acts.

6.28 This option would rely predominantly on the HSE Act and the Building Act to achieve electrical and gas safety outcomes in the workplace or in the course of construction or modification of buildings, respectively.

#### *Health and Safety in Employment Act*

6.29 The HSE Act imposes minimal prescriptive regulation and relies on performance-based criteria to provide for workplace safety. Reliance on the HSE Act to deliver safety outcomes in the workplace could mean removing the requirement to employ registered electrical and gas workers to undertake prescribed work. Employers would need to fulfill their obligations to electrical and gas safety under this Act through complying with the performance-based

provisions of the HSE Act. Compliance costs for large businesses are likely to be reduced, but increased for small businesses.

### *The Building Act*

6.30 The Building Act relies primarily on third party certification by local authorities to provide for building safety, contrasting with the Electricity, Gas and Plumbers Gasfitters and Drainlayers Acts, which place more emphasis on self-certification, underpinned by worker registration or employer licensing. Reliance on the Building Act to achieve electrical and gas safety within buildings could mean that unqualified people could do any electrical and gas work on a building, provided that their work was inspected and certified by the local authority. Relying on independent inspections of all electrical and gas work could be more costly than self-certification and worker registration, especially for small jobs. However, if electrical or gasfitting work was carried out by appropriately qualified people, the local authority would be able to accept producer statements from such people. This means that reliance on the Building Act would not necessarily result in increased costs.

### *Coverage of the HSE and Building Acts*

6.31 The HSE Act and Building Act would not by themselves provide the coverage of electrical and gas safety now provided by the Electricity and Gas Acts. Public safety outside buildings and consumer safety outside buildings would not be covered.

6.32 There is some coverage by other laws, including common law (e.g., torts, the Consumer Guarantees Act and Fair Trading Act), but at a lower level of intervention than the Electricity, Gas and PG&D Acts, and the HSE Act and Building Act. It is doubtful that existing law would deliver desired safety outcomes.

### *Public Safety Outside Buildings*

6.33 The HSE Act applies essentially only while work is being undertaken, and does not ensure that completed work will continue to be safe. For instance, while work is being carried out on a power pole it is considered to be a workplace, and is covered by the Act, however, two weeks after work had been completed it is unlikely to be so. Public safety could be undermined if the regime relied solely on the HSE Act. In addition, the Building Act does not cover public safety outside buildings and does not cover most appliances.

6.34 Accident records show that the probability and magnitude of the public safety risk arising from electrical or gas failure outside buildings and the workplace is as high as the safety risk inside buildings and in the workplace. The risk is also often 'involuntary', which means that the public is neither aware of, nor could be expected to be aware of, the risk.

6.35 Some of these areas could be covered by other legislation. For example, the Sale of Goods Act and the Consumer Guarantees Act could deliver safety outcomes for the sale and supply of electrical and gas goods and services, and the HSNO Act for the possession and use of gas. Common law rules, such as negligence, could ensure that appropriate levels of care are observed by workers.

### *Consumer Safety Outside Buildings*

6.36 The Building Act does not apply to consumer safety from gas appliances or electrical appliances within buildings, and the HSE Act does not apply to consumer safety outside the workplace. For instance, when electrical and gas appliances are being repaired, the HSE Act would apply only while the work is being done. It would not apply once the work had been completed and the appliance returned to its owner. The HSE Act may therefore not deliver consumer safety outcomes. The HSE Act would not apply to some workers such as home owners.

6.37 There is considerable consumer risk from faulty electrical or gas workmanship, most obviously risk from repairs to electrical or gas appliances. There is a general obligation which covers the quality of workmanship in both the Sale of Goods Act and the Consumer Guarantees Act, and consumers may control the safety risk by selecting who does repairs. Given the incentives on consumers to choose 'safe' repairers, the repair industry should in turn have the incentives to self-regulate, in the sense of setting their own performance standards and promoting the use of qualified repairers. However, there are limitations in consumers' ability to choose 'safe' repairers due to potential information problems identified in section 2, for example, consumers not having the information, the time or the ability to judge the competence of a potential service provider.

6.38 The Sale of Goods Act applies only to the sale of goods and the Consumer Guarantees Act applies only to the supply of goods and services in trade. Neither Act applies to the use of appliances or installations or to situations where electrical and gas goods and services are supplied other than in trade (for example within an organisation or for free). Also, the level of intervention under these Acts is much less than under the Gas and Electricity Acts.

### **Comment**

6.39 As several statutes, each with different requirements, would apply to gas and electricity work, the costs for workers could increase.

6.40 If the HSE Act was relied on to ensure safety outcomes for electrical and gas hazards in workplaces, the bulk of safety requirements in existing Electricity and Gas Regulations could become industry standards, and regarded as "all practicable steps" for effective management of those hazards at work. Some additional performance-based regulations under the HSE Act might be needed, in accordance with the criteria set out in paragraph 3.13. Such regulations could be either or both minimum standards for particular hazardous situations involving electricity and gas, or requirements for employers to employ holders of certificates of competence to carry out some specific types of electricity and gas work.

### **Conclusion**

6.41 While this approach would not place incentives on workers and employers to promote consumer safety and public safety, they would have incentives to promote worker safety. The HSE Act would provide flexibility for changes in technology and preferences, and a similar degree of flexibility is allowed under the Building Act.

6.42 This approach would be easy to understand, as it would provide for HSE Act coverage in the workplace, Building Act coverage in the construction or modification of buildings, and general consumer protection. However, the rights and responsibilities of workers and employers for public and consumer safety would not be certain, and may require statutory clarification.

6.43 Competition between service providers would not be inhibited under this approach, but it would not provide consumers with information, through occupational regulation, to judge the quality of service providers, and it may therefore make consumer choices more difficult. Because this approach would not provide specific coverage of public and consumer safety outside workplaces and buildings, it may not intervene enough to provide for public and consumer safety in these areas.

**7. Would electricity and gas safety outcomes be compromised in either the workplace or during the construction or modification of buildings if these outcomes were regulated through the HSE Act and Building Act respectively?**

**8. What would be the effect on the compliance costs to business if safety outcomes in the workplace and the construction or modification of buildings were regulated through the HSE Act and Building Act?**

**9. What situations would require regulation under the HSE Act, in order to set minimum standards because alternative control measures may not be effective?**

**10. Would there be a need for regulations under the HSE Act requiring employers to employ holders of a certificate of competence to carry out types of electricity and gas work? If so, for what sorts of work?**

**11. Do you consider that the Sale of Goods Act and Consumer Guarantees Act provide adequate protection for consumers of electrical and gas repair work?**

**Approach four: Maintain a minimum level of public and consumer safety through the Electricity and Gas regimes, but provide for alternatives based on compliance with other legislation**

**Description**

6.44 This approach attempts to address potential risks to public and consumer safety and significant compliance costs arising under approach three. Reliance on the HSE and Building Acts, as in approach three, may reduce compliance costs for large businesses but, under the HSE Act, increase them for small businesses. Reliance on these Acts could also risk public and consumer safety, as the level of safety coverage provided by the current regime could not be replicated under the HSE and Building Acts.

6.45 Approach four provides for a streamlined application of the electricity and gas regime and the HSE Act to the workplace and for two alternative means of achieving electricity and gas safety outcomes in the construction or modification of buildings.

### **Workplace Safety**

6.46 Licensing would be retained for individual workers or individual firms under the Electricity, Gas and PG&D Acts to provide for consumer and public safety. The qualification requirements for licences would no longer include compulsory material concerning worker safety, as this would be covered by the HSE Act. OSH recognises that the HSE Act can impose significant compliance costs on small businesses, and work is being done to identify ways of reducing compliance costs for them. Once this work is completed, decisions will need to be made on whether any changes are needed to the law or whether compliance costs can be minimised through other methods such as provision of information about what constitutes “all practicable steps” in particular circumstances. Any reduction in compliance costs under the HSE Act could be tailored to cover electricity and gas worker safety.

6.47 Safety outcomes for workers, consumers and the public in the workplace would be achieved by complying with the HSE Act, and safety outcomes for consumers and the public outside the workplace achieved by licensing under the Electricity, Gas and PG&D Acts. There would be minimal overlap.

### **Construction and Modification of Buildings**

6.48 Two alternative means of achieving safety outcomes in the course of construction or modification of buildings would be to comply with an occupational regulatory system under the Electricity and Gas Acts, or to use either third party inspection or producer statements for territorial authorities under the Building Act. Building owners would be required to obtain either a self-certification certificate from a qualified electrical or gas worker or a code of compliance certificate from the territorial authority to prove compliance with the requirements of either the Building Act or the electricity and gas regime.

6.49 As under approach two, workers and firms who work on electricity and gas distribution networks would not require a licence, and network owners would be responsible for the public and consumer safety of their networks. Public and consumer safety outside buildings and distribution networks would be achieved by requiring electrical and gas workers or firms to be licensed.

### **Comment**

6.50 Approach four would retain occupational regulation provisions in the Electricity and Gas Acts to provide for public safety and consumer safety. In cases where the HSE Act and Building Act do not clearly apply such as public safety and consumer safety outside buildings, reliance would be placed on specific electricity and gas regimes.

6.51 In the workplace, however, employers and workers would comply with the HSE Act, and, during the construction or modification of buildings, building owners would have the choice of complying with either the Building Act or the Electricity, Gas and PG&D Acts.

6.52 Some firms that are currently covered by the Electricity, Gas and PG&D Acts have operations that have no public or consumer safety implications with respect to electrical and gas work. These firms would no longer have to comply with the Electricity, Gas and PG&D Acts with respect to safety.

## **Conclusion**

6.53 This approach would place incentives on workers, employers and owners of buildings to promote safety by requiring them to comply with the HSE Act and the electricity and gas safety regime or the building regime. Employers would have the flexibility to develop safety systems to meet their needs. Provided that systems for determining who was covered by each regime could be established, this approach would provide for the rights and responsibilities of consumers, workers and the public, while the Ministry of Commerce would ensure transparency in the development of qualifications. Because employers with safety management systems who elected to obtain an employer licence would be permitted to employ unlicensed workers, there would be competition between licensed and unlicensed workers, and this could increase consumer choice.

6.54 Because this approach would provide for building owners to comply with either the electricity and gas regime or the building regime, it could provide flexibility for changes in preferences and technology. Although this dual regime may reduce compliance costs, it may initially be complex for consumers, employers and the public to understand.

**12. What would be the advantages and disadvantages associated with maintaining a minimum level of public and consumer safety through the electricity and gas regimes, but providing for alternatives in other areas based on compliance with other legislation, in terms of the safety outcomes it would deliver and the costs involved in delivering those safety outcomes?**

## **Preferred Approach**

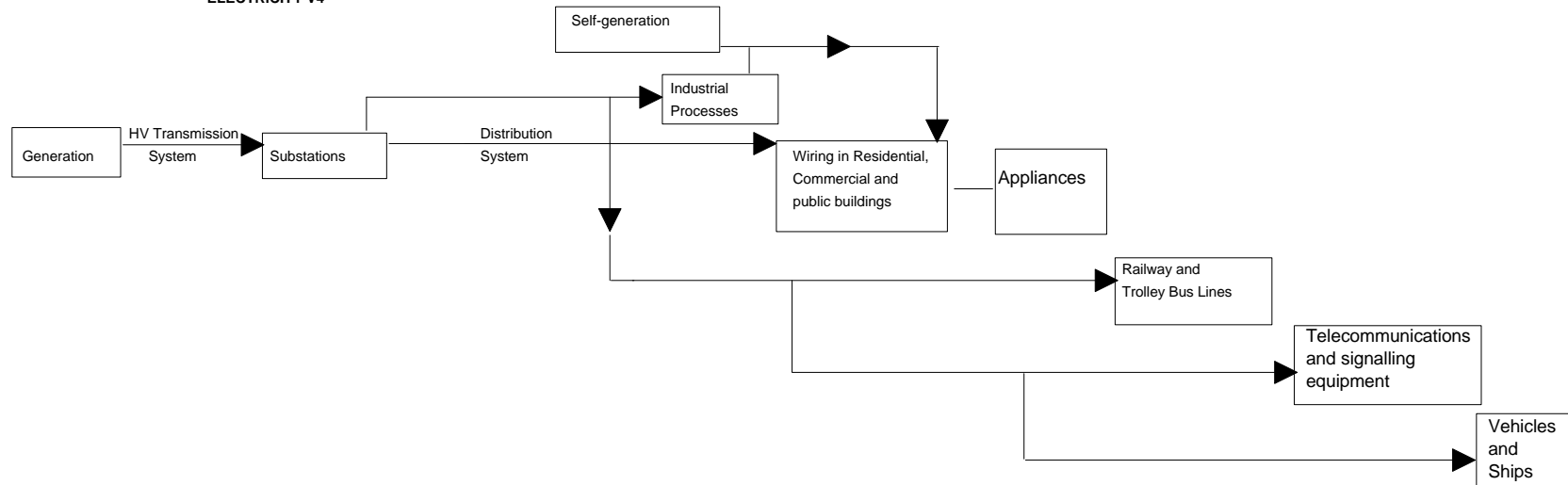
6.55 A combination of approach two and approach four rates favourably against the principles listed in section 5.1. It places incentives on those most able to influence safety outcomes to promote safety, provides certainty and transparency, promotes competitiveness, and provides some flexibility. Approach four also covers workers, consumers and the public both inside and outside work places and inside and outside buildings.

6.56 This approach would require workers to register with a private sector organisation/s approved by the Ministry of Commerce, rather than a centralised government registration board as at present. The existing EWRB would become such an organisation. These organisations would be approved to license workers who had completed the training required for a licence. Instead of setting qualifications in regulations, as at present, broad educational and training requirements relating to public and consumer safety could be included in legislation. Qualifications to meet these requirements would be established and conferred by training providers accredited by licensing organisations. The licensing organisations would ensure that workers are taught the necessary skills and knowledge to work safely, and legislation would require workers to have relevant qualifications. This approach would provide

two means of achieving electrical and gas safety outcomes in both the workplace and the construction or modification of buildings, either through compliance with the electrical and gas regime or the HSE and Building Acts respectively.

**13. What is your general assessment of the respective merits of all four approaches discussed?**

**ELECTRICITY V4**



**SCOPE OF REGULATION**

Form of Regulation

Electricity Act 1992

1. Worker Registration

Prescribed electrical work. Some exceptions.

or

Employer Licensing

Prescribed electrical work. Some exceptions.

2. Self-certification of work

Prescribed electrical work involving placing or positioning, or replacing or repositioning of conductors.

3. Inspection of completed work

Some classes of the prescribed electrical work subject to the certification requirements.

4. Product Standards

Works

Installations

Appliances

Works

Health and Safety in Employment Act 1996

Obligations on employers, controllers of workplaces and employees. Regulations and standards available.

Safety of workplace. Limited obligations to non-employees and non-workers.

Building Act 1991

Product standards  
Inspection and certification.

All building work other than prescribed electrical work

Transport Act 1962

and Maritime

Transport Act 1994

Non-connectable installations

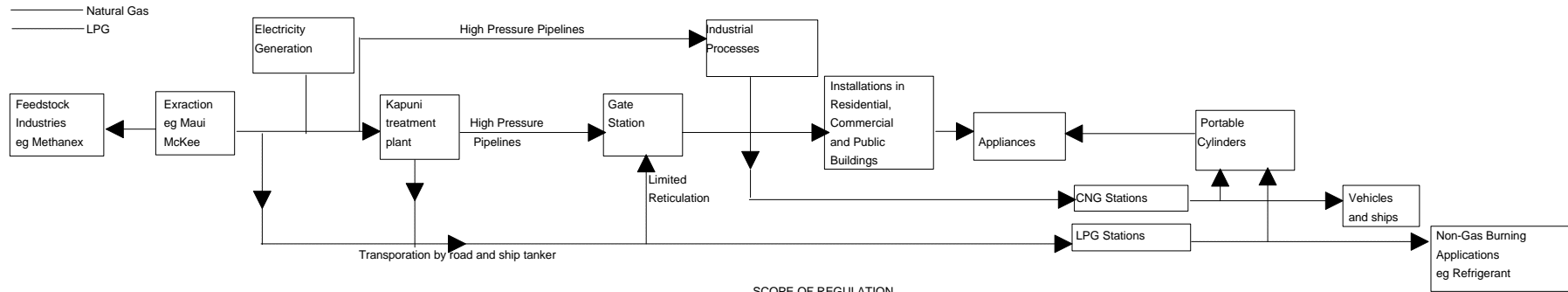
Fair Trading Act 1908

Consumer Guarantees Act 1996

Sale of Goods

Supply of goods and services

**GAS V4**



**FORM OF REGULATION**

Gas Act 1992

- 1. Testing and Inspection
- 2. Product Standards

**SCOPE OF REGULATION**

Some Installations	Gasfitting	Some Gasfitting Installations	Appliances	Some Gasfitting Installations	Installations
		Fittings			Fittings
		Gas LPG in liquid form in pipes exempted			Gas
		Distribution systems			

- 3. Owner/operator to ensure safety

Plumbers, Gasfitters and Drainlayers Act 1976

- Worker Registration or Employer Licensing

Gasfitting	Gasfitting	Gasfitting. Some exceptions.	Gasfitting	Gasfitting
Gasfitting	Gasfitting	Gasfitting	Gasfitting	Gasfitting

Health and Safety in Employment Act 1991

Obligations on employers, controllers of workplaces and employees. Regulations and standards available.

Safety of workplace. Limited obligations to non-employees and non-workers.

Hazardous Substances and New Organisms Act 1996

Restrictions, controls and safety standards

Possession and use of gas

Building Act 1991

Product standards  
Inspection and Certification

All building work other than gasfittings

Transport Act 1962 and Maritime Transport Act 1994

Non-connectable installations

Fair Trading Act 1908

Sale of Goods

Consumer Guarantee Act 1996

Supply of goods and services

## ANNEX III

### **Definitions**

The following definitions apply in this discussion paper:

#### **Prescribed Electrical Work and Gasfitting**

Terms used in the Electricity Act and Plumbers, Gasfitters and Drainlayers Act to define work which is subject to some controls over how it may be done.

Prescribed electrical work means work that falls into any of the following categories:

- (a) The construction or maintenance of electrical installations;
- (b) The maintenance of electrical appliances;
- (c) The connection or disconnection of works, electrical installations, and electrical appliances to or from a power supply, other than by means of --
  - (i) A plug; or
  - (ii) An appliance inlet; or
  - (iii) A pin --  
that is inserted into a socket outlet;
- (d) The construction or maintenance of works:

Gasfitting means:

- (a) The work of fixing or unfixing pipes (including flue and ventilation pipes) beyond the outlet of any gas measurement system supplying a consumer or gas refueller with gas (or, where there is no such gas measurement system, beyond the custody transfer point of the place at which gas is supplied to a consumer or gas refueller);
- (b) The work of fixing or unfixing pipes (including flue and ventilation pipes) that convey gas from any gas storage container in the possession or control of a consumer or gas refueller, and --
  - (i) In the case of liquefied petroleum gas, that are downstream of the first regulator beyond that container; or
  - (ii) In the case of any other gas or where there is no such regulator (in the case of liquefied petroleum gas), that are downstream of the outlet valve of the container;
- (c) The work of fixing or unfixing the whole or part of the control system of any gas appliance --

but does not include--

- (d) Work on any gas storage container, including its fixing or unfixing; or
- (e) Work on any gas transmission system or distribution system; or
- (f) Work on any pipes or fittings supplied with liquefied petroleum gas from any gas storage container or containers that contains, or together contain, less than 15 kilograms net weight of liquefied petroleum gas; or
- (g) Work in any circumstances where the exclusions in section 3 (2) of the Gas Act 1992 apply.

#### **Registration**

A system that requires a person to have their name entered on a register before they can legally do prescribed electrical or gasfitting work. *(Note that this is different from the meaning of "registration" in the Electricity and Gas Acts.)*

## **Licensing**

A system that requires a person to have been granted a licence based on the attainment of specified requirements, such as qualifications, prior to being authorised to carry out prescribed electrical work and gasfitting work. The issuing of the licence generally includes the entry of the person's name onto a register.

## **Competency**

The attainment of an acceptable level of skills, experience and knowledge. This includes the ability to work safely and achieve safety in completed work.

*Certification of competency includes Certificates of Competence issued or recognised in accordance with the HSE or electricity or gas legislation.*

## **Qualification**

A recognised level of knowledge.

## **Electrical Worker**

A person who carries out electrical work and includes owners of domestic premises or appliances carrying out electrical work on those premises or appliances.

## **Gas Worker**

A person who carries out gas work and includes owners of domestic premises or appliances carrying out gas work on those premises or appliances.

## **Workplace**

Has the same meaning as "place of work" as defined under the HSE Act.

## **Consumer**

Those who consume electricity or gas.

## **Public**

Persons who are not:

- within their own premises or using their own electrical or gas equipment;
- employees or other persons covered by the HSE legislation; or
- electrical or gas workers, while they are doing electrical or gas work.