Regulation of Electrical Contractors with respect to Safety:

Proposed Decision on the Scope of Restricted Electrical Works

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Dublin 24.

[www.cer.ie](http://www.cer.ie)
Under the Electricity Regulation Act 1999, as amended by the Energy (Miscellaneous Provisions) Act, 2006, the CER was designated with the statutory function to “regulate the activities of electrical contractors with respect to safety”. In order to fulfill its legal function, the CER published a Vision Document (CER/07/203), which sets out the CER's high-level approach to the regulation of electrical contractors with respect to safety.

On the 28th April 2008, following consultation, the CER published a decision paper on the Electrical Safety Supervisory Criteria Document (CER/08/071), which outlined the requirements to be placed on Registered Electrical Contractors (RECs) and any Safety Supervisory Body(s) (SSB) appointed. In October 2008, the CER appointed both the Register of Electrical Contractors of Ireland Ltd (RECI) and the Electrical Contractors Safety and Standards Association of Ireland Ltd (ECSSAI) as Safety Supervisory Bodies to operate the regulatory scheme on behalf of the CER.

In January 2009, the CER, following a consultation process, published a decision document on the definition of Controlled Electrical Works (CER/09/009). Specifically, Controlled Electrical Works are electrical works that legally require certification. Only a Registered Electrical Contractor (REC) can certify Controlled Electrical Works. Critically, Section 9(E) of the Act provides that the CER may by regulations designate a class or classes of electrical works to be designated electrical works, also known as “Restricted Electrical Works.” Restricted Electrical Works are those electrical installation works which may only be legally undertaken by a REC. Once Restricted Electrical Works are designated by the CER, and approved by the Houses of the Oireachtas, it will be illegal for any person other than a REC to carry out such works. In such instances, a person who is guilty of this offence will be liable:

- On conviction on indictment to a fine not exceeding €15,000 or a term of imprisonment not exceeding 3 years or to both, or
- On summary conviction, to a fine not exceeding €5,000 or a term of imprisonment not exceeding 6 months or to both.

On the 29th April 2011, the CER published a consultation paper (CER/11/077) on the proposed definition for the scope of Restricted Electrical Works. The purpose of the consultation paper was to elicit industry and public comment on the CER's proposed options for definitions for Restricted Electrical Works.

During the consultation window, the CER received 28 responses to the consultation paper (CER/11/077). Given the diversity of responses, the CER has decided to issue a proposed decision paper, prior to a final decision paper on the matter of Restricted Electrical Works. Once a final decision paper on Restricted Electrical Works is issued, it will be subsequently translated into regulations.
Target Audience:

This proposed decision paper is aimed at individuals, companies and organisations operating within the electrical industry, and members of the general public.

Related Documents:

- Vision for the Regulation of Electrical Contractors with respect to safety (CER/07/203).
- Criteria for the Regulation of Electrical Contractors (CER/08/071).
- Definition for the Scope of Controlled Electrical Works (CER/09/009).
- Consultation on the Scope of Restricted Electrical Works (CER/11/077).

Responses to this proposed decision paper should be returned by email, post or fax and marked for the attention of Thomas Quinn at the CER by close of business on Friday 28th October 2011.

The Commission for Energy Regulation,
The Exchange,
Belgard Square North,
Tallaght
Dublin 24
Fax: 01 4000850

Email: tquinn@cer.ie

The CER intends to publish all submissions received. Respondents who do not wish part of their submission to be published should mark this area clearly and separately or enclose it in an Appendix, stating the rationale for not publishing this part of their comments.
Executive Summary

The 1999 Electricity Regulation Act, as amended by the Energy (Miscellaneous Provisions) Act, 2006, (the “Act”), gave the Commission for Energy Regulation (CER), the statutory function to regulate the activities of electrical contractors with respect to safety. In order to fulfil its legal function, the CER published a Vision Document (CER/07/203), which sets out the CER’s high-level approach to the regulation of electrical contractors with respect to safety.

The Regulatory Objective was stated as:

“To protect the safety interests of customers with respect to electrical installation activities through creating a suitable regulatory system, which provides for electrical works to be carried out, tested and certified in compliance with the appropriate technical rules/standards.”

On the 28th April 2008, the CER’s decision on the Electrical Safety Supervisory Criteria Document was published following a consultation process (CER/07/071). In January 2009 the CER, following a consultation process, published a decision document on the definition of Controlled Electrical Works, (CER/09/009).

Furthermore, the Act also provides in section 9E that the CER “having consulted with such persons as it considers appropriate, and with the consent of the Minister may by regulations designate a class or classes of electrical work to be designated electrical works.” Designated electrical works (hereafter called “Restricted Electrical Works”) can only be completed and certified by a Registered Electrical Contractor (REC). Once Restricted Electrical Works are defined it will be illegal for any person who is not a REC to undertake these classes of electrical work.

Within the consultation paper (CER/11/077), the CER presented four options regarding the proposed definition of Restricted Electrical Works. The four options regarding the scope of the Restricted Electrical Works are as follows:

- **Option 1: A Broad Definition Approach**: this would involve restricting all Controlled Electrical Works in a commercial and domestic setting to RECs.

- **Option 2: An Intermediate Definition Approach**: this would involve legally restricting the carrying out and certification of all Controlled Electrical Works in a commercial and domestic setting to RECs but allowing for a legal exemption for the Owner & Occupier in a domestic property only.

- **Option 3: A Defined Definition Approach (including work by Owner & Occupier)**: this would involve restricting the carrying out and certification of all controlled electrical works in a domestic setting to RECs with no legal exemption for the Owner & Occupier.

- **Option 4: A Defined Definition Approach (excluding work by Owner & Occupier)**: this would involve restricting all controlled electrical works in a domestic setting to RECs with an exemption for the Owner & Occupier.
Following a review of responses received, the CER is proposing to implement Option 3 as the definition for “Restricted Electrical Works” at this time. The CER may in time and following consultation with relevant industry stakeholders extend the scope of restricted works to cover types of electrical works in a commercial setting.

This would mean that legally, certain Controlled Electrical Works, as currently defined, in a domestic setting can only be carried out by a REC. There would be no legal exemption for the homeowner. However, minor electrical work would remain outside the scope of Restricted Electrical Works (i.e. Option 3: Defined Definition Approach). The definition of Restricted Electrical Works will cover the following:

Option 3: A Defined Definition Approach (including work by Owner & Occupier); this would involve restricting the carrying out and certification of all Controlled Electrical Works in a domestic setting to RECs with no legal exemption for the Owner & Occupier.

The Defined Definition Approach (including work carried out by an Owner & Occupier) proposed that the application of Restricted Electrical Works be limited to Installations in a Domestic Property which include the following:

- the installation, commissioning, inspection, and testing of a new fixed electrical installation requiring connection or reconnection to the electricity network;

- the modification, installation or replacement of a Distribution Board or Consumer Unit including customer tails both sides of the main protective device, or new installation in special locations as defined in Part 7 (swimming pools, saunas, fountains, caravan parks & marinas) of the current edition of the National Wiring Rules;

- the installation, or replacement, of one or more extra circuits in an existing installation, including the installation of one or more additional protective devices for such circuits on a distribution board;

- the inspection, testing and certification of existing electrical installations in accordance with the current edition of the National Wiring Rules and to conform with Regulation 89 of SI No 732 of 2007.

Consequently, the following installations would remain as Controlled Electrical Works (and require Certification by a REC), but not be classified as Restricted Electrical Works:

- Installations in Potentially Explosive Atmospheres;
- Work in a commercial or work place setting including MV and HV connection and installations;
- Construction site electrical installations;
- Electrical installation within exhibitions; shows and stands;
- Agricultural and horticultural installations;
- Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO).
The CER has removed the category of Subsystems from its definition of Restricted Electrical Works for domestic installations. The installation of a Sub system in a domestic property would require a power supply via the distribution board or by adding a circuit. Rather than attempting to provide non exhaustive list of subsystem installations, the CER is of the view that the electrical work which should be restricted pertaining to the installation of subsystems is captured in items two and three above.
## Acronyms

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>ATEX</td>
<td>ATmospheres EXplosibles (i.e. Explosive Atmospheres).</td>
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<tr>
<td>CER</td>
<td>Commission for Energy Regulation.</td>
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<tr>
<td>CENELEC</td>
<td>European Committee for Electrotechnical Standardisation.</td>
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<td>CHP</td>
<td>Combined Heat and Power.</td>
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<td>DSO</td>
<td>Distribution System Operator.</td>
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<tr>
<td>ECSSAI</td>
<td>Electrical Contractors Safety &amp; Standards Association (Ireland).</td>
</tr>
<tr>
<td>ETCI</td>
<td>Electro-Technical Council of Ireland Limited (ETCI).</td>
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<tr>
<td>HSA</td>
<td>Health and Safety Authority.</td>
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<tr>
<td>HV</td>
<td>High Voltage.</td>
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<tr>
<td>LV</td>
<td>Low Voltage.</td>
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<tr>
<td>MCB</td>
<td>Miniature Circuit Breaker.</td>
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<td>MV</td>
<td>Medium Voltage.</td>
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<td>NIAUR</td>
<td>Northern Ireland Authority for Utility Regulation.</td>
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<td>REC</td>
<td>Registered Electrical Contractor.</td>
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<td>RECI</td>
<td>Register of Electrical Contractors of Ireland.</td>
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<td>S.I.</td>
<td>Statutory Instrument.</td>
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<tr>
<td>SSB</td>
<td>Safety Supervisory Body.</td>
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<td>TSO</td>
<td>Transmission System Operator</td>
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1.0 Introduction

1.1 The Commission for Energy Regulation

The Commission for Energy Regulation (CER) is the independent body responsible for the economic regulation of Ireland's electricity and gas sectors, and the safety regulation of petroleum undertakings, natural gas undertakings, natural gas installers and electrical contractors.

The CER’s role as an economic regulator began with its initial establishment under the Electricity Regulation Act, 1999 (the 1999 Act) where it was given regulatory powers over the electricity sector. The enactment of the Gas (Interim) (Regulation) Act, 2002 expanded the CER’s jurisdiction to include the economic regulation of the natural gas sector. More recently the Electricity Regulation Amendment (SEM) Act, 2007 outlines the CER’s functions in relation to the Single Electricity Market (SEM) for the island of Ireland. This wholesale electricity market is regulated jointly by the CER and the Northern Ireland Authority for Utility Regulation (NIAUR). Through its economic regulatory powers and functions the CER is working to ensure that consumers benefit from regulation and the introduction of competition in the energy sector.

The CER’s role in safety regulation commenced under the Energy (Miscellaneous Provisions) Act, 2006 (the 2006 Act). The 2006 Act gave the CER functions and powers relating the safety regulation of natural gas undertakings (such as Bord Gáis Éireann), natural gas installers (extended in 2011 to include LPG installers) and electrical contractors. By virtue of the 2006 Act, the CER was required to establish and implement a Natural Gas Safety Regulatory Framework which outlines how the CER discharges its downstream safety regulatory responsibilities. The Petroleum (Exploration and Extraction) Safety Act, 2010 (the 2010 Act) expanded CER’s safety role to include the safety regulation of petroleum undertakings engaging in certain petroleum activities. The 2010 Act requires the CER to establish and implement a risk based Petroleum Safety Framework which is based on a safety case regime.
1.2 Purpose of this paper

The purpose of this paper is to outline the CER's proposed decision regarding the scope of Restricted Electrical Works, and to clarify the rationale for the proposed decision. Additionally, the CER seeks further comment on the scope of Restricted Electrical Works, as outlined in this proposed decision paper.

1.3 Comments Received

The CER received 28 submissions to the consultation paper (CER/11/077), and would like to thank all those who submitted a response. Submissions were received from the following organisations and individuals:

Respondents to Consultation Paper (CER/11/077)

<table>
<thead>
<tr>
<th>1. ABB</th>
<th>16. JJ McGovern</th>
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<tr>
<td>2. All Trades Response</td>
<td>17. John Desmond</td>
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<td>3. Aviva Insurance</td>
<td>18. John O'Mahony</td>
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<td>4. Billy Cashman</td>
<td>19. NECI</td>
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<td>5. Dennis Digimas</td>
<td>20. Private Security Authority</td>
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<td>6. DIT</td>
<td>21. RECI</td>
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<td>7. Electrical Contractors Association</td>
<td>22. Robbie Sheridan</td>
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<td>8. Engineers Ireland</td>
<td>23. RSA Insurance</td>
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<td>9. Enterprise Electrical</td>
<td>24. SAfed</td>
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<td>10. ESB International</td>
<td>25. Schering Plough</td>
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<td>11. ETCI</td>
<td>26. SEAI</td>
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<td>12. HES Electrical Services</td>
<td>27. Valeo Foods</td>
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<td>13. Hivar Engineering</td>
<td>28. Vincent Higinbotham</td>
</tr>
<tr>
<td>14. HSA</td>
<td>29. Wexford County Council</td>
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<td>15. IBEC</td>
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1.4 Structure of this paper

This paper is structured in the following manner:

- **Section 1:** Introduction

- **Section 2:** Provides background information regarding the CER’s role with respect to the regulation of electrical contractors, and the development of Controlled Electrical Works and Restricted Electrical Works.

- **Section 3:** Summarises the various options presented by the CER for the introduction of Restricted Electrical Works, whilst also providing a high level overview of responses to the consultation paper (CER/11/077). The latter part of section three outlines the CER’s proposed decision regarding the introduction of Restricted Electrical Works (i.e. Defined Definition Approach: Option Three), and the rationale for this decision.

- **Section 4:** Reviews the comments received and presents the CER’s response.

- **Section 5:** Summary & next Steps.

1.5 Responding to this paper

Comments should be sent to Thomas Quinn ([tquinn@cer.ie](mailto:tquinn@cer.ie)) no later than Friday, the 28th October 2011. Comments in electronic format are preferable; however, comments may also be posted to the CER at the following address:

Thomas Quinn,
Commission for Energy Regulation,
The Exchange,
Belgard Square North,
Tallaght,
Dublin 24.
2.0 Overview of the Electrical Safety Regulatory Framework

2.1 Introduction

The objective of this section is to provide an overview of the current electrical safety regulatory framework in Ireland. Specifically, this section identifies the steps taken by the CER in fulfilling its regulatory functions under the Electricity Regulation Act, 1999, as amended by the Energy (Miscellaneous Provisions) Act, 2006. Additionally, this section outlines the concept of regulated electrical works as provided for under the 2006 Act, and the process undertaken by the CER in the first instance, to arrive at a definition for Controlled Electrical Works. Finally, this section examines the rationale behind the development of Restricted Electrical Works.

2.2 Background & Context to the Regulation of Electrical Works

Pursuant to the implementation of the Energy (Miscellaneous Provisions) Act in 2006, which amended the Electricity Regulation Act, 1999, the CER was given the statutory authority to regulate the activities of electrical contractors with respect to safety. In order to fulfil its regulatory obligations, the CER undertook to design and develop a regulatory framework that would ensure that defined electrical installations are carried out by competent electrical contractors to the required Technical Standards or rules.¹

Consequently, in November 2007, the CER published a Vision Document, which provided a blueprint for the creation of the regulatory model for electrical safety. Subsequent to the publication of the Vision Document, the CER published the 2008 Criteria Document (CER/08/071), which detailed the rules and obligations for participants operating within the electrical safety regulatory framework. Additionally, in October 2008 the CER designated the Register of Electrical Contractors of Ireland Ltd (RECI) and the Electrical Contractors Safety and Standards Association Ireland Ltd (ECSSAI), as the electrical Safety Supervisory Bodies (SSB’s), with the responsibility for regulating the activities of electrical contractors on a day to day basis.²

With reference to the SSB’s core activities, both electrical SSB’s are required to comply with the requirements as stated within the Criteria Document,³ which include, but are not limited to the following:

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¹ Technical Standards as defined in the Criteria Document being “the National Wiring Rules, including any current edition of ET101 National Rules for Electrical Installations, ET105 National Rules for Electrical Installations in Potentially Explosive Atmospheres and other applicable standards currently in force for the electrical works being undertaken, and any other technical rules or standards as may otherwise be specified by the CER in consultation with the ETCl and any such other parties as may be determined by the CER”.

² The creation of a regulatory framework and the appointment of two SSBs in December 2008, replaced the voluntary, self-regulatory system (operated by both RECI Ltd & ECSSA Ltd).

³ CER/08/071 'Commission Decision on Electrical Safety Supervisory Criteria Document'
(i) Receipt, processing and evaluation of Applications for Registration;
(ii) Registration of electrical contractors and publication of a Register of Electrical Contractors;
(iii) Monitoring, Inspection and Audit of electrical contractors registered with the Body;
(iv) Investigation of complaints received and the disciplining of electrical contractors registered with the Body;
(v) Inspection of works of Third Parties;
(vi) Management of the distribution, sale, recording, control and the validation of Certificates;
(vii) Public and industry awareness activities;
(viii) Interaction and co-ordination of activities with other Bodies and such other agencies, bodies, committees and Government Departments, as the Commission may direct from time to time;
(ix) Maintaining records of, and reporting on, the activities of the Body; and
(x) The operation, and use, of the Brand in accordance with the requirements specified by the Commission.

Additionally, with respect to the registration of RECs by the SSB’s, each REC is required to demonstrate that they, or an employee who certifies electrical work:

- have served a recognised apprenticeship as an electrician, which resulted in the awarding of a National Craft Certificate; or another suitable electrical award, equivalent to Level 6 or higher on the National Framework of Qualifications; &

- have in place and maintain insurance cover as may be specified by the SSB/CER.

- A REC is also required to satisfy the basic requirement of having successfully completed a recognised course in “Testing, Verification and Certification” in the previous 3 years.

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4 The term Registered Electrical Contractor (REC) refers to a registered party that undertakes electrical installation works. This may be either an individual sole trader operating as the electrical contractor or may be a larger operation, constituting many individuals (e.g. general operatives, engineers and electricians).
2.3 Legislative Basis for Controlled Electrical Works and Restricted Electrical Works

Fundamental to the development of the regulatory system for electrical safety is the scope of those electrical works that are to be regulated from a safety perspective, as this will determine the obligations to be placed on any parties carrying out such works.

Specifically, the 2006 Act introduced the concept of Specified Works (hereafter referred to as “Controlled Electrical Works”) and Designated Electrical Works (hereafter referred to as “Restricted Electrical Works”), into the 1999 Act, which provided the CER with the basis for defining what electrical works would be considered for the purposes of the new regulatory system for REC’s.\(^5\)

Controlled Electrical Works refer to electrical work that must legally be certified by a REC. Under Sections 9D (13) and (14) of the 1999 Act (as amended by the 2006 Act), the legislation permits the certification of Controlled Electrical Works under the following circumstances:

i. electrical works undertaken by a REC that are self-certified through the issuance of a Certificate; and

ii. electrical works undertaken by a Non-REC (but who is required to be competent and insured) that are examined and certified by an Inspector of an SSB.\(^6\)

In contrast, the 1999 Act (as amended by the 2006 Act) states with respect to Restricted Electrical Works (referred to within the Act as designated electrical works) the following: Section 9E.

(1) The Commission having consulted with such persons as it considers appropriate, and with the consent of the Minister, may by regulations designate a class or classes of electrical works to be designated electrical works.

(2) Where the commission proposes to make regulations under subsection (1) the Minister, where he or she has approved the draft of such regulations, shall cause a draft of the regulations to be laid before each House of the Oireachtas and the regulations shall not be made until a resolution approving of the draft has been passed by each such house.

\(^5\) In order to facilitate the introduction of regulated electrical works and to distinguish between the two classes of works, the CER’s 2007 Vision Document stated that Specified Works shall be referred to as Controlled Electrical Works, whilst Designated Electrical Works shall be referred to as Restricted Electrical Works.

\(^6\) The procedures for regulating Electrical Installations undertaken by a Non-REC, which are subsequently certified by an Inspector within an SSB, are detailed in the Third Party Inspection Common Procedure (CER/09/108) which forms part of the Criteria Document.
(3) A person shall not carry out electrical works which are designated electrical works unless that person is a registered electrical contractor.

(a) A person who contravenes subsection (3) is guilty of an offence and liable-
              on summary conviction to a fine not exceeding €5,000 or a term of
              imprisonment not exceeding 6 months or to both, or

(b) on conviction on indictment to a fine not exceeding €15,000 or a term of
     imprisonment not exceeding 3 years or both.

Within the 2007 Vision Document, the CER confirmed that it would adopt a two phase approach towards the implementation of Regulated Electrical Works by:

1. specifying the scope of Controlled Electrical Works at the outset of the new regulatory system; and

2. subsequently specifying and introducing Restricted Electrical Works after an initial period of operation of the new regulatory system for electrical safety.\(^7\)

\(^7\) The rationale for the deferred introduction of Restricted Electrical Works until after an initial period of operation was to provide industry participants the opportunity to understand the new regulatory system and the associated requirements imposed through the Criteria Document.
2.4 Controlled Electrical Works

In order to facilitate the introduction of Controlled Electrical Works, the CER published a decision paper (CER/09/009), which outlined the scope of Controlled Electrical Works. Controlled Electrical Works are defined as major electrical installation works at Low Voltage Installations\(^8\) (including additions, alterations and/or extensions), which are covered by the Technical Rules and require the issuance of a Certificate.

Specifically, the decision paper stated that major electrical installation works (including additions, alterations and/or extensions), which are covered by the current edition of the National Wiring Rules, and involve the following are considered Controlled Electrical Works:

i. the installation, commissioning, inspection, and testing of a new fixed electrical installation requiring connection or reconnection to the electricity network;

ii. the modification, installation or replacement of a Distribution Board or Consumer Unit, or new installation in special locations as defined in Part 7 of the current edition of the National Wiring Rules;

iii. the installation, or replacement, of one or more extra circuits in an existing installation, including the installation of one or more additional protective devices for such circuits on a distribution board;

iv. the inspection, testing and certification of existing electrical installations in accordance with Chapter 62 of the Current edition of the National Wiring Rules and to conform with Regulation 89 of SI No 732 of 2007.

In arriving at a definition for Controlled Electrical Works, the CER employed a risk-based approach to assess the safety risks associated with each class of electrical works. Specifically, the scope of Controlled Electrical Works was determined by an analysis of the options of managing the specific safety risk posed by the various types of electrical work, the practicalities of enforcing the system and the need to counter against over-regulation for limited benefit.

While the primary focus of the Controlled Electrical Works decision paper is in the area of low voltage installations, it should be noted that the definition of Controlled Works is such that it includes new connections at Medium Voltage and High Voltage, and therefore require certification by a REC.\(^9\) It should also be noted that installation and testing of electrical systems subject to the National Wiring Rules, in Potentially Explosive Atmospheres, and Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO)\(^10\) are within the scope of Controlled Electrical Works.

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\(^8\) The rationale for the focus on Low Voltage works is that it presents the highest risk to public safety.

\(^9\) The issues surrounding Medium Voltage Installations and electrical systems in Potentially Explosive Atmospheres is discussed in further detail in Section Four, regarding a proposed definition for Restricted Electrical Works.

\(^10\) Lighting operated by the DSO are outside the scope of the National Wiring Rules ET101
2.4.1 Certification Process for Controlled Electrical Works

In order to ensure that Controlled Electrical Works are carried out in line with the relevant technical rules and standards the CER has implemented, via the SSB’s, a Certification Process (Common Procedure No. 1: Certification (CER/09/107)), which is used to record and test the safety of an electrical installation by the REC.

Certificates for Controlled Electrical Works can only be accessed for use by RECs, who are registered with either of the SSB’s. The purpose of the Certification process, and the issuance of the Certificate, is to provide assurance to the customer that the installation has been carried out and tested in line with the relevant Technical Rules and standards (i.e. the REC confirms that the installation is in compliance with the relevant Technical Rules by signing the Certificate, and then provides a copy to the customer and the SSB). Furthermore, the issuance of a Certificate by a REC to the SSB also provides an audit trail for the SSB’s should a problem arise with the electrical installation.

For all new installations that require connection to the electricity network, a copy of the Certificate is submitted by the REC to their respective SSB for processing and evaluation. Once approved by the SSB, the relevant details on the Certificate are then submitted to the Distribution System Operator (DSO). The DSO, on foot of receipt of the specific details taken from the Certificate, will make supply available to the customer.

2.4.2 Enforcement of Controlled Electrical Works

The 1999 Act (as amended by the 2006 Act) does not make it an offence for an unregistered party to carry out Controlled Electrical Works. However, under the 1999 Act (as amended by the 2006 Act) any unregistered person who certifies such electrical work could be committing an offence, if they are holding themselves out to be a REC. Section 9D States:

(25) A person shall not describe himself or herself as a registered electrical contractor or in a manner likely to suggest that such a person is for the time being a member of a designated body.

(26) A person who contravenes subsection (4), (24) or (25) is guilty of an offence and liable –

(a) on summary conviction to a fine not exceeding €5,000 or a term of imprisonment not exceeding 6 months or to both, or

(b) on conviction on indictment to a fine not exceeding €15,000 or a term of imprisonment not exceeding 3 years or both.

Currently, the main incentive for the customer to engage the services of a REC is where the electrical installation requires a new connection to the electricity network. The Distribution System Operator (DSO) will not make supply available to a customer without first receiving confirmation from the REC’s respective SSB that the installation has been tested and certified by a REC.
The DSO requires this Certificate in order to satisfy itself that the installation is safe before they make supply available. Therefore, this control mechanism for new connections reduces the safety risk to the customer, as it is a mandatory requirement in the case of all new connections that a Certificate is issued, thereby requiring the involvement of a REC.

However, outside of new connections to the network, there is a significant amount of electrical work that comes under the definition of Controlled Electrical Works. In fact, new connections have dropped significantly over the past number of years, primarily due to the decline of new builds. This decrease can be seen through the sale of Completion Certificates, which has also declined significantly over the past two years. Figures show that in 2008, there were 62,000 new connections to the network compared to 21,000 in 2010. New connections to the network now make up a smaller percentage of the overall amount of electrical work that is being carried out for consumers.

Although all Controlled Electrical Work legally require certification, without the requisite legal powers and in the absence of any control mechanism, such as the one used by the DSO for new connections, it is difficult to enforce the certification process. It is reasonable therefore to assume that there is a significant amount of Controlled Electrical work outside of new connections that is being carried out by potentially non competent parties. The lack of enforcement in relation to Controlled Electrical Works is creating a situation where non competent parties can potentially circumvent the current regulatory system and therefore undermine the certification process for Controlled Electrical Works, which was developed to provide consumer protection with respect to electrical safety. The CER notes that this may pose a potential safety risk to the general public.

Electrical installations which are not installed correctly present immediate and possibly life threatening risks to the users and people in the vicinity of the installation. In addition to the immediate risks the nature of electrical installations is such that faults may not present themselves until the system is stressed or changed. Thus a faulty installation such as incorrect cable size, oversized protection, inadequate earthing or poor connection may not be apparent to the user and could allow the system to operate normally but presents a risk of fire or electrocution on a continuous basis. Fire Authority statistics show that there is on average 450 domestic fires per year that relate to electrical installations. Therefore it is a logical conclusion that there is a significant risk of faulty installations occurring where there are untrained (non competent) personnel associated with the installation.

### 2.5 Minor Electrical Works

The CER when defining Controlled Electrical Work recognised that a certain amount of Do-It-Yourself (or “DIY”) electrical installation work is a feature of electrical installations in domestic premises in this country and generally involves “like for like” replacements of switches, sockets, lighting fittings and/or additions to an existing circuit of $\leq 1.5$ Kw. This work must also be in compliance with the Technical Rules. However, Minor Electrical Works are currently outside the scope of Controlled Electrical Works and also, under the proposed definition, outside the scope of Restricted Electrical Works.

The Commission is of the view, having given consideration to the responses received to its consultation on this issue, that Minor Electrical Works do not impose a significant safety risk on the consumer, and therefore should be exempt from the scope of Controlled and Restricted Electrical Works. Additionally, restricting Minor Electrical
Proposed Decision Paper on the Scope of Restricted Electrical Works

Works would achieve very limited public safety benefits, whilst imposing a disproportionate cost on customers.

However minor works may be included in the future based on assessment of risks or evidence to the contrary.

Therefore, Minor Electrical Works can be undertaken by a non registered party, and do not legally require the issuance of a Certificate. Examples of Minor Electrical Works include the following:

- Replacement of an electrical accessory such as light switch;
- Replacement or relocation of light fitting where the existing circuit is retained; &
- Provision of an additional socket to an existing circuit.

To summarise, the current regulatory framework for electrical safety involves the certification of Controlled Electrical Works (compulsory) and Minor Electrical Works (non compulsory), as illustrated in Figure 2.5.1. Under the current regulatory regime, Controlled Electrical Works can be certified by either a REC or through a Third Party Inspection, while Minor Electrical Works can be completed by either a REC or by a suitably trained person or competent person, and do not legally require the issuance of Certificate.

Fig 2.5.1 Current Electrical Safety Regulatory Framework

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11 Within the current regulatory environment, maintenance work on MV and HV installations, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment are not considered Controlled Electrical Works and do not require a certificate.
2.6 Restricted Electrical Works

Section 9E of the 1999 Act, (as amended by section 4 of the 2006 Energy (Miscellaneous Provisions) Act), states that the CER may by regulations designate a class or classes of electrical works to be designated electrical works. Given the potential safety risk posed by unregistered and potentially non competent individuals carrying out Controlled Electrical Works, which do not require connection by the DSO, the CER deems it appropriate to introduce Restricted Electrical Works. As stated in Section 2.4.2, this would enable the CER to prosecute unregistered individuals carrying out Restricted Electrical Works, thus reducing potential electrical safety risks to the general public.

Following the publication of a final decision paper by the CER on the scope of Restricted Electrical Works, the 1999 Act, (as amended by the 2006 Act), requires that the CER submit draft regulations to the Minister for the Department of Communication, Energy and Natural Resources, which shall be laid before each House of the Oireachtas by the Minister for final approval.

Once Restricted Electrical Works are designated by the CER and approved by the Houses of the Oireachtas, Section 9E of the 1999 Act, (as amended by the 2006 Act), makes it illegal for any person other than a REC to carry out such works. In such instances, a person who is guilty of this offence will be liable:

- On summary conviction to a fine not exceeding €5,000 or a term of imprisonment not exceeding 6 months or to both, or
- On conviction on indictment to a fine not exceeding 15,000 or a term of imprisonment not exceeding 3 years or to both.

2.7 Summary

Section Two has provided an overview of the CER’s current regulatory function with regards to electrical safety, as set out under the 1999 Act (as amended by the 2006 Act). Additionally, this section has highlighted the initiatives undertaken by the CER to develop a regulatory framework for electrical safety, in conjunction with a synopsis of the steps taken by the CER to define Controlled Electrical Works and ultimately moving towards a definition of Restricted Electrical Works. The subsequent section will outline the CER’s rationale for its proposed decision regarding the introduction and definition of Restricted Electrical Works.
3.0 CER Proposed Decision on the Scope of Restricted Electrical Works

This section provides an overview of the options identified for the introduction of Restricted Electrical Works, followed by a summary of responses received to the consultation paper (CER/11/077). Additionally, the latter part of this section outlines the rationale for the CER’s preferred option (i.e. Option Three: Defined Definition Approach), whilst also clarifying the rationale for not proceeding, at this time, with other options identified for the introduction of Restricted Electrical Works.

3.1 Options Regarding the Introduction of Restricted Electrical Works

In order to facilitate the introduction of Restricted Electrical Works, the CER published a consultation paper (CER/11/077) on the proposed scope of Restricted Electrical Works. The four options regarding the scope of Restricted Electrical Works included:

**Option 1: Broad Definition Approach**

The Broad Definition Approach proposed that all works currently defined as Controlled Electrical Works be reclassified as Restricted Electrical Works. This definition includes the installation of Micro-generators, Special Installations, Periodic Inspections, work in Potentially Explosive Atmospheres, construction site electrical installations, exhibition shows and stands, agricultural/horticultural installations, new connections at Medium Voltage and High Voltage (MV and HV), Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO). Under the Broad Definition Approach, the following electrical work would not be considered as a Restricted Electrical Work:

- Maintenance work on Medium Voltage & High Voltage installations;
- Maintenance Works on Low Voltage installations where works do not include Controlled Works;
- Minor Electrical Works;
- Assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.

**Option 2: Intermediate Definition Approach**

The Intermediate Definition Approach proposed that all works currently defined as Controlled Electrical Works be reclassified as Restricted Electrical Works; with certain exceptions – outlined below. This definition includes the installation of Micro-generators, Special Installations, Periodic Inspections, work in Potentially Explosive Atmospheres, construction site electrical installations, exhibitions shows and stands, agricultural/horticultural installations, new connections at Medium Voltage and High Voltage, Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO).

Under the Intermediate Definition Approach, the following electrical work would not be considered as a Restricted Electrical Work:

- Controlled Electrical Works undertaken by the Owner and Occupier of a domestic property (excluding Micro-generators and Special Installations). The Controlled
Electric Works carried out by the Owner and Occupier of a domestic property will still require certification by a REC when completed;
- Maintenance work on Medium Voltage & High Voltage installations;
- Minor Electrical Works; &
- Assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.

**Option 3: A Defined Definition Approach (including work by Owner & Occupier):**
this would involve restricting the carrying out and certification of all Controlled Electrical Works in a domestic setting to RECs with no legal exemption for the Owner & Occupier.

The Defined Definition Approach (including work carried out by an Owner & Occupier) proposed that the application of Restricted Electrical Works be limited to Installations in a Domestic Property which include the following:

- the installation, commissioning, inspection, and testing of a new fixed electrical installation requiring connection or reconnection to the electricity network;
- the modification, installation or replacement of a Distribution Board or Consumer Unit including customer tails both sides of the main protective device, or new installation in special locations as defined in Part 7 (swimming pools, saunas, fountains, caravan parks & marinas) of the current edition of the National Wiring Rules;
- the installation or replacement of one or more extra circuits in an existing installation, including the installation of one or more additional protective devices for such circuits on a distribution board;
- the inspection, testing and certification of existing electrical installations in accordance with the current edition of the National Wiring Rules and to conform with Regulation 89 of SI No 732 of 2007.

Consequently, the following installations would remain as Controlled Electrical Works (and require Certification by a REC), but not be classified as Restricted Electrical Works:

- Installations in Potentially Explosive Atmospheres;
- Work in a commercial or work place setting including MV and HV connection and installations;
- Construction site electrical installations;
- Electrical installation within exhibitions; shows and stands;
- Agricultural and horticultural installations;
- Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO).

The CER has removed the category of Subsystems from its definition of Restricted Electrical Works for domestic installations. The installation of a Sub system in a domestic property would require a power supply via the distribution board or by adding a circuit. Rather than attempting to provide non exhaustive list of subsystem installations, the CER is of the view that the electrical work which should be restricted pertaining to the installation of subsystems is captured in items second and third points above.
Option 4: Defined Definition Approach (Legal exemption for Owner & Occupier)

The scope of Option 4 is the equivalent to the Defined Definition Approach with the exception that, where Controlled Electrical Works are carried out by an Owner and Occupier of a Domestic Property, there will be a legal exemption and no criminal offence associated with the carrying out of that work. Controlled Electrical Works when completed by an Owner and Occupier of a Domestic Property will still require certification by a REC, as a third party inspection. Additionally, the Owner and Occupier of a domestic property will be prohibited from carrying out electrical work on Micro-generators and Special Installations.

3.2 Responses to Restricted Electrical Works Consultation Paper

Subsequent to the close of the consultation window, the CER received 28 responses to the consultation paper. While the general consensus agreed with the introduction of Restricted Electrical Works, there was considerable divergence of opinions in terms of preferred options for defining the scope of Restricted Electrical Works (See Table 1, 2&3)
Table 1: Responses to Restricted Electrical Works Consultation Paper

<table>
<thead>
<tr>
<th>Agree with Introduction of Restricted Electrical Works</th>
<th>Preferred Option</th>
<th>Request for Exemptions/Inclusions</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Trades Response</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>Adviva Insurance</td>
<td>Option 2</td>
<td>Periodic inspections by accredited inspection companies should be excluded from Restricted Works.</td>
</tr>
<tr>
<td>CIT</td>
<td>Option 3</td>
<td>Should treat ATEX installations as a Restricted Electrical Work.</td>
</tr>
<tr>
<td>Electrical Contractors Association</td>
<td>Option 1</td>
<td>Restricted Works should not include electrical works which are carried out by persons or organisations deemed to be qualified and competent.</td>
</tr>
<tr>
<td>Engineers Ireland</td>
<td>Option 4</td>
<td>In terms of Restrictive Electrical Works in a commercial setting, the restriction should exclude business sectors where employers employ full time qualified, trained and experienced electricians, technicians and engineers. Additionally, business sectors, where employers maintain a Quality System and comply with ET101 and ET105 should be exempt from Restricted Electrical Works.</td>
</tr>
<tr>
<td>ESI International</td>
<td>Not Explicitly Stated</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>ETI</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>HCS Electrical Services</td>
<td>Not Explicitly Stated</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>IBEC</td>
<td>Not Explicitly Stated</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>John Desmond</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>John O’Mahony</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>INECI</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>IEaI</td>
<td>Option 1</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>Robbie Sheridan</td>
<td>Not Explicitly Stated</td>
<td>Restricted Works should include maintenance work on LV/MV &amp; HV installations, as well as Minor Electrical Works, and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</td>
</tr>
<tr>
<td>RSA Insurance</td>
<td>Option 4</td>
<td>Periodic inspections by accredited inspection companies should be excluded from Restricted Works.</td>
</tr>
<tr>
<td>Sealed</td>
<td>Option 2</td>
<td>Periodic inspections by accredited inspection companies should be excluded from Restricted Works.</td>
</tr>
<tr>
<td>Schering Prough</td>
<td>Option 2</td>
<td>Companies with their own in-house maintenance electricians should be exempt.</td>
</tr>
<tr>
<td>SEAI</td>
<td>Not Explicitly Stated</td>
<td>Requested clarification regarding what elements of a micro generation installation would become a Restricted Electrical Work.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Disagree with Introduction of Restricted Electrical Works</th>
<th>Disagree, but if Restricted Electrical Works are introduced would prefer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dennis Digimas</td>
<td>N/a</td>
</tr>
<tr>
<td>Enterprise Electrical</td>
<td>N/a</td>
</tr>
<tr>
<td>Hivar Engineering</td>
<td>Option 4</td>
</tr>
<tr>
<td>JJ McGovern</td>
<td>N/a</td>
</tr>
<tr>
<td>Yeago Foods</td>
<td>Option 4</td>
</tr>
<tr>
<td>Vincent Higginsbotham</td>
<td>N/a</td>
</tr>
</tbody>
</table>
Table 2: Further Responses to Consultation Paper

<table>
<thead>
<tr>
<th>No Explicit Comment regarding the various Options identified for introducing Restricted Electrical Works</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABB: stated that companies that are Original Equipment Manufacturers should not have to become a REC to continue to manufacture, assemble, install, or maintain it’s equipment and associated equipment that is used or supplied by them.</td>
</tr>
<tr>
<td>Private Security Authority: envisaged that the installation of electronic security equipment will remain outside the scope of Restricted Electrical Works.</td>
</tr>
<tr>
<td>Wexford CoCo: sought clarification as to whether the CER is considering classifying the installation, testing, certification and annual maintenance of life safety systems, such as fire detection and alarm systems and emergency lighting systems as Restricted Electrical Works.</td>
</tr>
</tbody>
</table>

Table 3: Numerical Breakdown of Responses to Restricted Electrical Works Paper

<table>
<thead>
<tr>
<th>Introduction of Restricted Electrical Works</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>19</td>
</tr>
<tr>
<td>Disagree</td>
<td>6</td>
</tr>
<tr>
<td>No Clear Position on Restricted Electrical Works</td>
<td>3</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
</tr>
</tbody>
</table>

3.3 CER’s Proposed Decision on the Scope of Restricted Electrical Works

Following a review of responses to the Restricted Electrical Works consultation paper (CER/11/077), the CER proposes to adopt Option Three: Defined Definition Approach (including work by Owner & Occupier). Furthermore, the CER will engage with the HSA and business representative groups in terms of enforcing the certification of Controlled Electrical Works in a commercial setting and as outlined earlier may in time move to a wider definition of Restricted Electrical Works. The Commission will work with industry in considering restricting certain works in a commercial setting in due course.

3.3.1 Rationale for Proceeding with Option Three

The rationale for the introduction of Restricted Electrical Works, and the pursuit of Option Three (Defined Definition Approach including Owner & Occupier) is based on a range of factors including:

- The scope of Restricted Electrical Works should be clearly established and it is critical that it should be capable of being simply and easily communicated in the interests of ensuring it is understood by the public and, therefore, complied with;

- Restricted Electrical Works shall be confined to those works which are covered by the current edition of the National Wiring Rules on the basis that the National Wiring Rules are intended to provide for the safety of persons that may arise in the reasonable use of electrical installations and define the correct requirements
for the design, erection, and proper functioning of electrical installations (and other relevant technical rules/standards as appropriate).

- The introduction of Restricted Electrical Works in general increases public safety whereby all Restricted Electrical Works shall be carried out by competent Registered Electrical Contractors (RECs). The work is then certified by the REC with a signed declaration stating that all of the works carried out were carried out to current relevant technical standards (i.e. National Wiring Rules) and thus reducing the public safety risk associated with a non compliant installation that has been carried out by a non competent party which could potentially result in poor workmanship of the installation that could result in fires, burns, electrical shocks, injury and electrocution.

- The introduction of Restricted Electrical Works will make it illegal for non-RECs to carry out such works. Consequently, if the CER or an SSB receives a complaint from a member of the public regarding an electrical installation which was completed by a non-REC, the CER has the power to take the necessary legal action against the non-REC which could result in a criminal conviction against that person or company.

- The greatest risk of faulty electrical installations is where there are untrained personnel associated with the electrical installation that are not subject to any form of regulation. This risk is greatest with respect to electrical installations in a domestic setting where untrained personnel, be they homeowners or unregistered contractors, can carry out Controlled Electrical Works in an existing electrical installation that does not require connection to the electricity network by the DSO. It is reasonable to assume that it is in this area that untrained individuals may attempt to carry out electrical work. It is therefore proposed that it would be reasonable to restrict all Controlled Electrical Works in domestic premises to RECs (but allowing for a limited amount of Minor Electrical Works to be exempt from any regulations developed).

- Given that the proposed approach to restricting electrical work is based on a graduated approach, namely, introducing a defined scope in the first instance and then in the longer term moving, following consultation, to a broader definition of Restricted Work the introduction of a Defined Definition Approach would not impose significant resource costs on the SSB’s as both organisations are already experienced in carrying out inspections and dealing with complaints in this area.

13 Public safety risks associated with non compliant installations as a result of poor workmanship are fires, burns, electrical shocks, injury and electrocution
3.3.2 Rationale for not proceeding with Proposed Options One & Two

There are a number of mitigating factors against pursuing Option One (Broad Definition Approach) and Option Two (Intermediate Definition Approach), which include:

- The adoption of Option One and Option Two could lead to additional unnecessary regulatory overlap between the CER and the HSA, particularly when electrical work is being carried out in a work place environment. The current Safety Health & Welfare at Work Act 2005 (under the auspices of the HSA) places obligations on employers and employees with regards to safety; breaches of those obligations can result in prosecution. It could be argued, therefore, that safety enforcement is already in existence through this mechanism and that there is no significant additional benefit in defining Restricted Works to cover electrical work in the work place.

- The primary purpose of the SSB’s is to inspect electrical Works as per the current edition of the National Wiring Rules. There is currently no Medium Voltage or High Voltage standard for electrical installations. Consequently, it would be problematic for SSB’s to assess the quality of an installation, given that there is no standard to benchmark the quality of an installation against.

- Following meetings with industry participants and business representatives there is evidence to suggest contractors are not aware of the CER’s regulatory requirements for electrical safety and in particular the requirement for certification of Controlled Work. Therefore, it would be prudent for the CER to liaise with the HSA, IBEC and other industry bodies to discuss the progression of the certification of Controlled Electrical Works in a commercial setting (at first instance), prior to any potential implementation of Restricted Electrical Works in a commercial environment.

3.3.3 Rationale for not proceeding with Exemption for Owner & Occupier

Within the Restricted Electrical Works consultation paper (CER/11/077), the CER provided an exemption for the Owner and Occupier from Restricted Electrical Works under its proposals for both an Intermediate Definition Approach (i.e. Option Two) and a Defined Definition Approach (i.e. Option Four).

The rationale for this proposal was based on the ability to enforce and police the scheme with respect to homeowners. In the event that a homeowner chose to carry out Restricted Electrical work in their home it would be highly unlikely that it would be reported to the CER. However, notwithstanding the difficulties associated with

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14 New connections however and re-connections to customer installations irrespective of voltage level fall within controlled works in so far as they require certification. The certification of Medium Voltage and High Voltage is done so in line with best practice that has been developed by the DSO over many years.
enforcement with respect to the homeowners the CER took the view that on balance and in the overall interest of public safety that that homeowner should not be allowed to carry out Restricted Works in their own home. This view was taken having considered the following:

The CER is of the view that excluding the Owner and Occupier as proposed under Option Two and Four, could create a loophole which could allow parties to potentially circumvent the regulatory system. For example, the Owner and Occupier could employ the services of a non-REC and claim they did the work themselves. There would be little, if any, incentive for a homeowner to have the work inspected and certified upon completion thereby avoiding the safety requirements of regulatory regime.

By introducing an exemption, the CER would be explicitly communicating to the public that an Owner and Occupier of a property would be exempt from the requirements of the scheme and can carry out work in their own home and then have the work certified by a REC and yet it is in this very setting where the greatest risk to safety is identified. This would be a retrograde step and is a move away from the messages that were communicated to the public regarding Controlled Electrical Works.

A useful comparative for the REC Scheme is the current Registered Gas Installer Scheme which does not legally exempt the Owner & Occupier from carrying out gas works. A policy put forward by the CER with the intention of exempting one particular defined group from any legal sanction regarding electrical safety would appear at odds with the policy developed and implemented for gas safety.

Additionally, key to the successful enforcement of the REC scheme will be ongoing promotion and public awareness campaigns targeting particular audiences. The idea of exempting the Owner & Occupier from any criminal sanction would cause difficulty and confusion with regards to the messages that would underpin any promotion and public awareness campaign.

3.4 Summary

Having reviewed responses to the Restricted Electrical Works consultation paper (CER/11/077), the CER proposes to adopt Option Three: Defined Definition Approach. Furthermore, the CER will engage with the HSA and relevant industry stakeholders in terms of enforcing the certification of Controlled Electrical Works in a commercial setting and as outlined earlier may in time move to a wider definition of Restricted Electrical Works.
4.0 Comments & CER’s Responses

Within the Restricted Electrical Works consultation paper (CER/11/077), the CER provided a list of questions that participants were requested to respond to. Consequently, this section provides a synopsis of comments to each question, and the CER’s response to the comments made. Additionally, numerous respondents made comments that were outside the scope of the Restricted Electrical Work consultation paper. However where appropriate the CER has also responded to these comments in section 4.5

4.1 Question 1: Introduction of Restricted Electrical Works Agree/Disagree

In order to elicit views on the merits of introducing Restricted Electrical Works, the CER requested that respondents confirm whether they agree or disagree with the introduction of Restricted Electrical Works.

4.1.1 Respondents’ Comments (Disagree)

The general consensus amongst respondents was that they agreed in principle with the introduction of Restricted Electrical Works, subject to varying degrees of amendments (See Section 4.2). Out of the twenty eight respondents, only six respondents expressed an outright rejection to the introduction of Restricted Electrical Works. The rationale for the rejection of Restricted Electrical Works varied, but it included claims that:

1. It would impose additional regulations and costs on REC’s.
2. It would create an impediment to the commercial operation of industrial plants (due to cost of Certificates), whilst also preventing in-house company electricians from doing their work (unless they register as a REC).
3. The electrical SSB’s would be operating outside their traditional scope of operation (i.e. Low Voltage Inspections) if Restricted Electrical Works was extended to include MV and HV installations.
4. Would not be appropriate to restrict electrical works in an MV and HV installation giving that there is no domestic standard to benchmark work in MV and HV installations.
5. Rejects proposals on the basis that Third Party inspections would remain a feature of the regulatory system.

4.1.2 CER’s Response to Comments that disagree with the introduction of Restricted Electrical Works

The introduction of Restricted Electrical Works is necessary to enforce safety standards required for public safety, particularly with respect to electrical installations within a domestic installation. Specifically, there are no enforcement mechanisms available to the CER to enforce electrical safety, and the CER is of the view that the introduction of Restricted Electrical Works will be an important instrument in addressing unsafe electrical installations and ensuring that suitably qualified parties carry out that work.
Proposed Decision Paper on the Scope of Restricted Electrical Works

Issue 1: It would impose additional regulations and costs on REC’s.

With reference to RECs concerns over costs and regulations, the CER notes that the introduction of Restricted Electrical Works (Option Three) in its current format would not impose any additional regulations or costs on REC’s. Post implementation of Restricted Electrical Works (Option Three), REC’s would be required to certify completed Restricted Electrical Works, as they do currently for completed Controlled Electrical Works. Crucially, the introduction of Restricted Electrical Works would facilitate RECs operating within the electrical safety market, by making it an offence for Non-RECs carrying out Restricted Electrical Works, whilst also enhancing electrical safety standards.

Issue 2: It would create an impediment to the commercial operation of industrial plants (due to cost of Certificates), whilst also preventing in-house company electricians from doing their work (unless they register as a REC).

The CER notes the comments from industry regarding the potential impact Restricted Electrical Works would have on commercial enterprises in terms of the costs in having to issue Certificates, and the costs of having to employ RECs rather than in-house electricians’. Consequently, the CER would like to clarify the following:

- The CER proposes to adopt Option Three (Defined Definition Approach), therefore the introduction of Restricted Electrical Works will not have an impact on large scale manufacturing or commercial entities at this time. However Controlled Works will remain as a requirement that the industry are required to adhere to.

- Certification by a REC of Controlled Electrical Works is currently a requirement under Controlled Works; the proposed Restricted Electrical Works do not introduce any new testing / certification requirements.

- Each individual in-house electrician within a company would not have to become a REC. Specifically, the term REC refers to an electrical contracting entity. This may be either an individual sole trader operating as the electrical contractor or may be a larger operation, constituting many individuals (e.g. general operatives, engineers and electricians). Consequently, a company could register itself as a REC, and appoint one or more Qualified Certifiers. Therefore, in-house electricians could undertake Controlled Electrical Works on behalf of its company (which is a REC); provided it is inspected and certified by the companies designated Qualified Certifier (who takes full responsibility for the safety of the electrical installation).

- On the issue of Certificates, the cost of certifying Restricted Electrical Works will be the equivalent of certifying Controlled Electrical Works. However, the CER notes that the crux of the issue is that large scale businesses (with in-house electricians) in general are not aware of the current regulatory regime and in particular the requirement to issue Certificates for Controlled Electrical Works, In

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15 In recognition of the unique characteristics of the electrical contracting industry (i.e. electrical contractors operated as companies, as well as individual electrical contractors), the CER permitted group registration, that allowed RECs to register as companies as well as individual sole traders.
order to address this issue, the CER will engage with the HSA and employer
groups to both inform and enforce the certification of Controlled Electrical Works
in a commercial environment.

- Given that large scale manufacturing plants could potentially have to certify
  numerous Controlled Electrical Works during their daily operations, the CER
  notes that this could have potentially significant cost implications for large scale
  enterprises. Consequently, the CER will engage with the SSB’s and employer
  representative groups in terms of ensuring that they are familiar with the current
  requirements of the current regulatory regime for electrical safety.

**Issue 3&4:** The electrical SSB’s would be operating outside their traditional scope
of operation (i.e. Low Voltage Inspections) if Restricted Electrical Works was
extended to include MV and HV installations. It would not be appropriate to
restrict electrical works in an MV and HV installation giving that there is no
domestic standard to benchmark work in MV and HV installations.

In terms of comment made regarding the role of the SSB’s (Points Three & Four in
Section 4.1.1), the CER agrees that (currently) the primary focus of the SSB’s is to
inspect at LV level which, to date, has been primarily in the domestic arena. The CER
will, however, engage with the HSA and business representative groups in terms of
enforcing the certification of Controlled Electrical Works in a commercial setting and as
outlined earlier may in time move to a wider definition of Restricted Electrical Works.

Additionally, given that there is currently no Medium Voltage or High Voltage standard
for electrical installations with the exception of new connections and reconnections to
customer installations, irrespective of voltage level which fall within controlled works. It
would be problematic for SSB’s to assess the quality of an installation, given that there is
no standard to benchmark the quality of an installation against.

**Issue 5: Rejects proposals on the basis that Third Party inspections would remain
a feature of the regulatory system.**

In relation to Point Five (Section 4.1.1) the CER notes that some respondents are
against the introduction of Restricted Electrical Works in its current format as it permits
Non-RECs to carry out electrical installations, namely through the Third Party Inspection
procedure. Firstly, the CER would like to note that the current regulatory scheme allows for
Non-registered but suitably qualified parties, (i.e. must have insurance and must be
able to demonstrate competency)\(^\text{16}\) could carry out electrical installations including Minor
Electrical Works and Controlled Electrical Works (through Third Party Inspections).
However, by introducing Restricted Electrical Works, the CER is now preventing non-

\(^\text{16}\) The procedures for regulating Electrical Installations undertaken by a Non-REC, which are
subsequently certified by an Inspector within an SSB, are detailed in the Third Party Inspection
Common Procedure (CER/09/108) which forms part of the Criteria Document.
RECs from carrying out Controlled Electrical Works in a domestic setting. It is envisaged that this will remove the need for Third Party Inspections relating to a domestic property. A more detailed discussion on Third Party inspections is outlined in 4.2.2.

Introducing Restricted Electrical Work will in effect strengthen the regulatory environment and dis-incentivise Non-RECs from entering the black market, and will leave the electrical safety industry in a stronger position than it was in, prior to the introduction of Restricted Electrical Works. The CER has deliberately excluded Minor Electrical Works, as the CER does not view this type of electrical work to pose a significant safety risk to the consumer. However, the CER will monitor this situation continuously through feedback and evidence it receives from the SSBs and consumers, and may, if necessary, in the future consider restricting Minor Electrical Works in a domestic environment.

Furthermore, in terms of not extending, at this time, the scope of Restricted Electrical Work to include certain electrical work in a commercial environment, the CER would like to note that these works still require certification (which can only be done by a REC). The current HSA regulations require employers to use qualified and competent individuals, it is reasonable to assume therefore that given the current regulations and the vested commercial interests of companies in ensuring that their electrical installations are maintained and are working properly they are more likely to use competent individuals to carry out such work, as there is a genuine risk for potential damage to occur. Furthermore, employers could potentially be in breach of HSA legislation if they cannot demonstrate that they used a competent individual to certify and carry out Controlled Electrical Works.

Going forward, the CER will continue to monitor the safety of electrical installations in the workplace based on feedback and evidence from industry, consumers, SSBs and other relevant channels (e.g. HSA, CSO, etc.) and may in the future expand the scope of Restricted Electrical works to those in commercial premises.

4.2 Question 2: Options for the introduction of Restricted Electrical Works

To ensure that the CER considered all appropriate options for the introduction of Restricted Electrical Works, the CER requested that participants confirm whether the CER has considered all the appropriate options for the introduction of Restricted Electrical Works.
4.2.1 Respondents’ Comments

Eleven respondents explicitly stated that the CER did not consider all the appropriate options in defining Restricted Electrical Works. Specifically, some respondents highlighted the following items that should be considered in any definition of Restricted Electrical Works:

1. Minor Electrical Work, maintenance work on Low Voltage, Medium Voltage and High Voltage installations. And the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.
2. Electrical installations with a Maximum Import Capacity (MIC) greater than 50 kVA should be included in the definition of Restricted Electrical Works.
3. Removal of Third Party Inspections.
4. ATEX Installations.
5. The installation, testing, certification and annual maintenance of life safety systems such as fire detection and alarm systems, and emergency lighting systems.

However, other respondents suggested that the following should be exempted from the scope of Restricted Electrical Works:

6. Electrical work carried out by persons or organisations deemed to be qualified and competent (e.g. electrical engineers), who are able to demonstrate that they have adequate training, education and experience.
7. Independent inspection bodies (e.g. insurance companies) that carry out periodic inspections, on the basis that they do not operate as electrical contractors (i.e. don’t carry out installations, servicing or maintenance). Furthermore, respondents highlighted that insurance companies providing Periodic Inspection Services are accredited by INAB and/or UKAS, and that they adhere to the relevant technical standards.
8. Companies with their own maintenance departments, which have a Quality Assurance System in place, should be able to carry out electrical work in house including Periodic Inspections, testing and reporting of electrical installations.
9. Companies that are Original Equipment Manufacturers (OEM's) should not have to become a REC to continue to manufacture, assemble, install, or maintain its equipment and associated equipment used.
10. Medium Voltage and High Voltage installations. One respondent highlighted that there are no Irish Medium Voltage or High Voltage standards exist and that the SSB’s are currently not equipped to inspect Medium Voltage and High Voltage installations, as they are practitioners at Low Voltage only. Furthermore, the respondent stated that if the SSB’s are to supervise Medium Voltage and High Voltage installations, they must have a defined set of rules against which an installation can be judged. This is a precursor to their being given jurisdiction over this area and the introduction of Restricted Electrical Works for Medium Voltage and High Voltage installations.
Additionally, respondents requested further clarification on elements contained within the definition of Restricted Electrical Works, including:

11. Micro-generation: One respondent queried what element of micro-generation work would be restricted. Specifically, the respondent suggested that micro-generation installation work requires a combination of skill-sets which extend beyond the scope of the electrical qualifications of RECs (e.g. Design and construction). Therefore, the respondent suggested that limiting micro-generation to RECs may exclude other organisations operating within the market.

Additionally, the respondent highlighted it would be inconsistent from a risk based approach to make the installation of micro-generators a Restricted Electrical Work, whilst the electrical installation of larger small scale generators would remain a Controlled Electrical Work. Therefore, the respondent suggested that rather than making micro-generation a Restricted Electrical Work, one could introduce a micro-generator installer register, which would have defined qualification criteria. Furthermore, the respondent highlights that Article 14.3 of European Directive 2009/28/EC requires that a certification scheme be put in place for solar PV installers by 31st December 2012.

12. Definition of a REC: One respondent suggested that although the consultation paper (CER/11/077) sets out that certain works will be restricted to Registered Electrical Contractors (REC’s), it does not specify what legal entity is being restricted (e.g. an employee or a sub-contractor of an REC is not legally equivalent to the REC), therefore legal clarity is important to show the exact scope and scale of any restrictions being proposed.

13. Specialist Installations: One respondent stated that clarification on Option 3 and 4 is needed. Specifically, the respondent stated that these options exclude work in a commercial or work place but include specialist installations (e.g. swimming pools, saunas, fountains, caravan parks and marinas). However, the respondent highlights that many of these installations can occur in a workplace environment.

4.2.2 CER’s Response to Comments

Issue 1: Minor Electrical Work, maintenance work on Low Voltage, Medium Voltage and High Voltage installations, & assembly of CE marked machines and equipment should be classified as Restricted Electrical Works

With reference to comments proposing that Minor Electrical Works become Restricted Electrical Works, The Commission is of the view, that Minor Electrical Works do not impose a significant safety risk on the consumer, as minor works would involve one of the following:

- Replacement of an electrical accessory such as light switch;
- Replacement or relocation of light fitting where the existing circuit is retained; &
- Provision of an additional socket to an existing circuit.

Where it would be deemed that correct protective devices are in place and would trip within the required times
Additionally, restricting Minor Electrical Works would achieve very limited public safety benefits, whilst imposing a disproportionate cost on customers and therefore should be exempt from the scope of Controlled and Restricted Electrical Works. However, minor works may be included in the future based on assessment of risks.

Additionally, the CER does not agree with restricting maintenance work on Low Voltage, Medium Voltage and High Voltage installations, as they do not fall within the definition of Controlled Electrical Works. Furthermore, maintenance work in MV and HV installations would occur in workplace environments, which is currently regulated by the HSA. Finally, the CER notes that Original Equipment Manufacturers (in terms of the assembly of CE marked machines and equipment) are the experts in electrical safety (in terms of their own equipment), and therefore should not have to become a REC to manufacture, assemble or maintain its equipment.

**Issue 2: Electrical installations with a Maximum Import Capacity greater than 50 kVA should be classified as a Restricted Electrical Work**

Electrical Installations with a Maximum Import Capacity greater than 50 kVA tend to occur in workplace environments. Given that safety in the workplace is regulated by the HSA, the CER does not see any added benefit in defining electrical installations with a Maximum Import Capacity greater than 50 kVA as Restricted Electrical Works (See Section 3.3.2). It is proposed that Restricted Electrical Works at this time be based on the location of an installation rather than its contracted energy usage and as such a definition of Restricted Electrical works based on domestic versus workplace environments is considered most appropriate. Additionally, given that there is currently no Medium Voltage or High Voltage standard for electrical installations, it would be problematic for SSB’s to assess the quality of an installation, given that there is no standard to benchmark the quality of an installation against.

** Issue 3: Third Party Inspections should not be permitted**

Section 9D (14) of the Electricity Act 1999 as inserted by section 4 of the 2006 Act makes a provision for cases where Controlled Electrical Works are carried out by an electrical contractor who is not registered with an SSB (i.e. Third Party Inspection). In such cases, the Act requires that the customer request that the SSB arrange for an Inspection of the Controlled Electrical Works performed by the Non-REC. Only an individual meeting the eligibility criteria (e.g. Non-REC can demonstrate competency, attainment of relevant qualifications and insurance cover), shall be eligible for a Third Party Inspection. The SSB shall then arrange for an inspection of the Controlled

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17 CE Marked equipment, i.e. products which are within the scope of the New Approach Harmonised Directives are controlled under standards and legislation separate from that associated with electrical installations and as such fall outside the scope of influence of the CER.

18 The provision of the Third Party Inspection service is designed to facilitate the Certification of Controlled Electrical Works carried out by Non-RECs, but who are electrically qualified and competent persons conversant with the Current edition of the National Wiring Rules applicable to the installation, and have completed a recognised Testing, Verification and Certification Course within the previous three years.
Proposed Decision Paper on the Scope of Restricted Electrical Works

Electrical Work carried out by the Third Party, and if appropriate, for the issuance of a Certificate.

Having monitored the number of Third Party Inspections since the commencement of the regulatory model for electrical safety (see Fig 4.1), the CER has observed that there have been 1,151 Third Party Inspection requests in the Republic of Ireland since January 2009. Whilst these inspections are carried out by the SSB’s inspectors and are in general carried out by qualified individuals who are insured, the CER is of the view that this is undermining the current regulatory regime by encouraging Electrical Installers / Electricians not to register with an SSB. Following a legal review of the current legislation, the CER proposes removing the possibility of customers availing of Third Party Inspection services for Restricted Electrical Work in a Domestic Property this will require a legislative amendment.

Fig 4.1: Number of Third Party Inspections

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Third Party Inspection Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1-09</td>
<td>119</td>
</tr>
<tr>
<td>Q2-09</td>
<td>133</td>
</tr>
<tr>
<td>Q3-09</td>
<td>97</td>
</tr>
<tr>
<td>Q4-09</td>
<td>127</td>
</tr>
<tr>
<td>Q1-10</td>
<td>101</td>
</tr>
<tr>
<td>Q2-10</td>
<td>136</td>
</tr>
<tr>
<td>Q3-10</td>
<td>128</td>
</tr>
<tr>
<td>Q4-10</td>
<td>110</td>
</tr>
<tr>
<td>Q1-11</td>
<td>104</td>
</tr>
<tr>
<td>Q2-11</td>
<td>96</td>
</tr>
<tr>
<td>Total</td>
<td>119 + 133 + 97 + 127 + 101 + 136 + 128 + 110 + 104 + 96</td>
</tr>
</tbody>
</table>

Issue 4:  ATEX Installations should be classified as Restricted Electrical Works

The CER notes that installations in Potentially Explosive Atmospheres pose high potential risks, and therefore require specialised technical equipment and knowledge to install. Currently, equipment for use in Potentially Explosive Atmospheres is regulated under the ATEX Directive (94/9/EC), which ensures a consistent standard of manufacture for equipment. Furthermore, the current edition of the National Wiring Rules for Electrical Installations in Potentially Explosive Atmospheres defines standards for the selection of equipment, installation, testing and verification of installations where Potentially Explosive Atmospheres may exist due to flammable gases, vapours, mists, fibres or dusts. Additionally, the HSA under the Safety, Health and Welfare at Work (General Application) Regulations 2007, addresses the safety of workers in Potentially Explosive Atmospheres. Given the extent of safety legislation, the CER is of the view that electrical installations in Potentially Explosive Atmospheres is adequately legislated.
for, and therefore proposes that the testing and installation of electrical work which is subject to the National Wiring Rules in Potentially Explosive Atmospheres should not be designated as a Restricted Electrical Work and therefore remain a Controlled Electrical Work (i.e. certifiable by a REC). It is however noted that the scope of Restricted Electrical Works may in Future be extended to include installations in potentially explosive atmospheres.

**Issue 5: Life safety systems, alarm systems, and emergency lighting systems should be classified as Restricted Electrical Works**

The installation of life safety systems (i.e. fire alarm systems) are outside the regulatory remit of the CER which are generally ELV systems working on voltage levels below 50v as these voltages do not pose a danger to public safety\(^{19}\). Currently, NSAI operates a registration scheme based on I.S. 3218:2009 for designers, commissioners and certifiers of fire alarm systems. Under the registration scheme, NSAI inspectors assess the operations and procedures carried out by commissioners and certifiers of fire alarm systems. Consequently, Fire Alarm and other Life Safety Systems are considered outside the remit of the CER and scope of Restricted Electrical Works. Similarly, the regulation of emergency lighting\(^{20}\) is outside the regulatory remit of the CER.

With reference to the installation of security systems, the CER notes that under the 2004 Private Security Services Act, the Private Security Authority of Ireland is statutorily mandated to regulate the private security industry, including installers of security equipment. Consequently, in order to install security systems, RECs must register with the Private Security Authority in order to ensure compliance with the 2004 Private Security Services Act. Therefore, the CER does not propose making the installation of alarm systems a Restricted Electrical Work\(^{21}\), as it is outside the regulatory remit of the CER and it is not considered a Controlled Electrical Work.

**Issue 6: Work carried out by persons or organisations deemed to be qualified and competent should be excluded from the definition of Restricted Electrical Works.**

The CER notes that there may be other competent individuals (e.g. electrical engineers, maintenance electricians, instrument crafts-persons) who may wish to carry out and certify Controlled Electrical Works through their commercial activities. Whilst the CER does not intend to exclude these individuals, they will be required to register with an SSB, as they are obliged to certify (similar to any other type of electrical contractor) that an electrical installation is in compliance with the current edition of the National Wiring Rules. Furthermore, if competent individuals are certifying Controlled Electrical Works, their performance must be assessed on an annual basis to ensure that their works are in compliance with the current edition of the National Wiring Rules. The CER will however

\(^{19}\) except where the works falls within the definition of Controlled Works (which would generally be where mains electrical power is required >50v such as supply to panels or components)

\(^{20}\) except where the works falls within the definition of Controlled Works (which would generally be where mains electrical power is required >50v such as supply to panels or components)

\(^{21}\) except where the works falls within the definition of Controlled Works (which would generally be where mains electrical power is required >50v such as supply to panels or components)
engage with relevant commercial entities to discuss the current inspection requirement for all RECs as to how best this requirement can take place.

**Issue 7: Independent inspection bodies should be excluded from the definition of Restricted Electrical Works.**

Under the definition of Controlled Electrical Works, Periodic Inspections and certification of same should be carried out by a REC. Whilst the CER recognises that insurance companies providing Periodic Inspection Services are not involved in electrical installations, they are still certifying that an electrical installation is in compliance with the current edition of the National Wiring Rules. Therefore, they are required to register with an SSB and issue a Certificate (in accordance with the electrical safety regulatory requirements), as it is the role of the SSB to assess whether an organisation involved in the provision of electrical contracting services is in compliance with the current edition of the National Wiring Rules.

The CER notes respondents’ comments stating that they are accredited with INAB and UKAS; however the CER understands that the function of the accreditation bodies is to ensure that companies providing Periodic Inspection services are adhering to the relevant ISO standards and not the current edition of the National Wiring Rules relating to electrical installations at Low Voltage. Consequently, the CER proposes to retain Periodic Inspections in a commercial setting as Controlled Electrical Works, and require insurance companies to register with SSB’s in order to certify this work (Periodic Inspections in a domestic property would remain a Restricted Electrical Work).

Currently periodic inspections are considered Controlled Works and this work should be undertaken by organisations registered with an SSB as an REC. As previously outlined under Option 3 Defined Definition Approach, periodic inspections are considered Restricted Electrical Works in a domestic setting, and are considered Controlled Works in a commercial setting.

**Issue 8: Companies with their own in-house maintenance electrical departments should be excluded from the definition of Restricted Electrical Works.**

The CER under Option 3 will not at this juncture extend Restricted Electrical Works to companies with their own in-house maintenance electrical departments. However, companies with their own in-house electrical departments that undertake Controlled Electrical Works will still be required to issue Certificates, which should be signed off by their designated Qualified Certifier. See CER comments in Section 4.1.2 for further details.

**Issue 9: Original Equipment Manufacturers should be excluded from the definition of Restricted Electrical Works.**

The CER agrees with comments to exclude Original Equipment Manufacturers from the scope of Controlled and Restricted Electrical Works. The CER notes that Original Equipment Manufacturers are the experts in electrical safety (in terms of their own equipment), and therefore should not have to become a REC to manufacture, assemble, install, or maintain its equipment.
**Issue 10: Medium and High Voltage installations should be excluded from the definition of Restricted Electrical Works.**

High Voltage and Medium Voltage works as non-domestic installations are considered to fall outside the proposed scope of Restricted Electrical Works. Installation standards are currently being developed and when published will form the basis for monitoring installation standards. New connections of High Voltage and Medium Voltage installations are considered Controlled Electrical Works. Additionally, Medium Voltage and High Voltage installations would only incur in a place of work, which is regulated by the HSA.

**Issue 11: Clarification on restrictions surrounding Micro-generation**

The CER recognises that there are numerous stages involved in micro-generation prior to the electrical connection of the micro-generation technology. These stages include, inter alia, design, specification, construction and the actual electrical installation of the micro-generation technology. Consequently, the CER proposes only restricting the electrical installation of a micro-generation technology in a domestic property to a REC\(^{22}\).

The CER does not accept comments that restricting the electrical installation of micro-generation technologies in a domestic environment is inconsistent with non-restriction of larger small scale generators. The installation of larger small scale generators would typically occur in a work place environment, which is regulated by the HSA. Furthermore, the installation of larger generators would remain a Controlled Electrical Work and require the issuance of a Certificate by a REC.

\(^{22}\) For further information on connection of Micro-Generation please see DSO website [here](#).
**Issue 12: Clarification on the Definition of a REC**

The Electricity Regulation Act 1999 (as amended by the 2006 Act) does not define the term REC. Consequently, in order to define a REC, the CER identified electrical works that can be only certified by a REC (i.e. Controlled Electrical Works). In order to self-certify these Controlled Electrical Works, one must become a REC with an SSB, and demonstrate that they have the necessary qualifications and insurance requirements. In recognition of the unique characteristics of the electrical contracting industry (i.e. electrical contractors operated as companies, as well as individual electrical contractors), the CER permitted group registration, that allowed RECs to register as companies as well as individual sole traders.

Consequently, the term REC refers to an electrical contracting entity. This may be either an individual sole trader operating as the electrical contractor or may be a larger operation, constituting many individuals (e.g. general operatives, engineers and electricians). Furthermore, in order to become a REC and have the ability to self-certify electrical installations, the electrical contracting entity must have a designated Qualified Certifier. Specifically, the Qualified Certifier is required to satisfy the basic requirement of having:

(i) Served a recognised apprenticeship as an electrician and having been awarded a National Craft Certificate; or,
(ii) Another suitable electrical award, equivalent to Level 6 or higher on the National Framework of Qualifications; and
(iii) Is required to have successfully completed a recognised course in “Testing, Verification and Certification” in the previous 3 years.

Registered Electrical Contractor applies to all electrical installation organisations and is not intended to be restricted to construction type companies, the term can be applied to any party registered with an SSB.

**Issue 13: Clarification on the treatment of Specialist Installations as Restricted Electrical Works**

In order to clarify comments on Specialist Installations, the CER can confirm that Specialist Installations in a domestic environment would become Restricted Electrical Works. However, Specialist Installations in a commercial environment would remain a Controlled Electrical Work, and still require certification by a REC.

**4.3 Question 3: Which option should the CER adopt**

The CER requested that respondents were to clarify which option they believed that the CER should adopt regarding the introduction of Restricted Electrical Works.

**4.3.1 Respondents’ Comments**

As illustrated in Table 3, respondents’ comments were mixed regarding their preferred option for the introduction of Restricted Electrical Works.
Table 3: Numerical Breakdown of Respondents Preferred Options

<table>
<thead>
<tr>
<th>Preferred Choice if Restricted Electrical Works are Introduced</th>
<th>Responses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Option 1</td>
<td>6</td>
</tr>
<tr>
<td>Option 2</td>
<td>4</td>
</tr>
<tr>
<td>Option 3</td>
<td>1</td>
</tr>
<tr>
<td>Option 4</td>
<td>2</td>
</tr>
<tr>
<td>Agree with the introduction of Restricted Electrical Works but Not Explicit on Preferred Option</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>19</td>
</tr>
</tbody>
</table>

Generally, the respondents who were in the main from the electrical contracting industry selected Option One. It was suggested that this is the only approach that eliminates the non-competent person from completing electrical installations. Furthermore, respondents suggested that Option One would eliminate any potential grey areas, as the requirements are clear. Respondents who selected Option Two, who were from large commercial entities expressed similar sentiments to the respondents in favour of Option One, but either requested exemptions for companies with their own in-house electricians, or for companies involved in Periodic Inspections that don’t involve any electrical installation work.

Respondents in favour of Option Three and Option Four generally preferred this approach on the basis that electrical safety in the workplace is already regulated. However, some respondents requested that various amendments be made, with one respondent suggesting that ATEX installations should be treated as a Restricted Electrical Work, whilst another respondent suggested that individuals deemed competent should be excluded from the definition of Restricted Electrical Works under Option Four.

4.3.2 CER’s Response to Comments

The CER has set out its rationale for pursuing Option Three (see section 3.2) and its responses to proposed amendments regarding possible definitions for Restricted Electrical Works (see section 4.2).

4.4 Question 4 & 5: Is there regulatory overlap, and if so is it necessary.

4.4.1 Respondents’ Comments

In general, respondents suggested that regulatory overlap would exist if the CER adopted Option One or Option Two. Additionally, some respondents suggest that overlap already exists, as the definition of Controlled Electrical Works encompasses the workplace environment. Consequently, respondents suggested that close co-operation between the CER and HSA would be recommended in order to ensure present legislation enforced by the HSA is in line with any proposed definition of Restricted Electrical Works, and that there is no confusion in terms of defining competency. Additionally, one respondent suggested that there should be a broader regulatory review group set up to ensure that there is no regulatory overlap, and that there are clear lines of enforcement.
4.4.2 CER’s Response to Comments

The CER recognises that there is regulatory overlap between the HSA and the CER, as the term Controlled Electrical Works encompasses the workplace environment. Consequently, the CER will engage with the HSA in terms of reviewing its Memorandum of Understanding regarding electrical safety to identify clear lines of responsibility in terms of enforcement. Furthermore, the CER recognises the importance of engaging with the business community in terms of the certification of Controlled Electrical Works, and will look to engage with business representatives to ensure that they are aware of the current regulatory scheme and the requirements for certification.

4.5 Additional Issues Raised

Following a review of responses to the consultation paper (CER/11/077), the CER notes that many of the comments were outside the scope of the paper. However, given their relevance to the electrical safety industry, the CER has decided to issue a response to the comments made.

4.5.1 Issues raised by Respondents that are outside scope of paper

1. Training Standards:

Numerous respondents suggested that the electrical trade qualification is no guarantee that a person is competent with all types of electrical work (e.g. domestic installations, industrial installations, ATEX and hazardous installations). Therefore, respondents suggested that a trade qualification should be a minimum qualification, with various add-on qualifications (which are FETAC recognised) for different types of electrical installations. Additionally, one respondent suggested that it would be unfair to de-authorise people from performing work that they can currently do without giving them a cost effective path to prove their competence.

2. Individual Registration:

Various respondents suggested that a register of individual electricians should be introduced under Regulated Electrical Works, so that every regulated electrician would be responsible for one’s own workmanship. The rationale for this proposal was based on the views that competence in relation to electrical installations is more associated with a person than with a company. Additionally, respondents highlighted that the competence within a company can change radically in a short period of time by changes in personnel or by staff reorganisation, whilst also suggesting that the designated Qualified Certifier within a firm may certify an electrical installation without actually examining the electrical installation. Furthermore, one respondent suggested if it is deemed necessary that works should be restricted to a company rather than a person, then it appears reasonable that that company be certified to a recognised safety standard such as OSHAS 18001.
3. **Installation of Security Systems:**

Some respondents queried why RECs cannot install electrical installations such as security alarm systems, CCTV or access control systems when they are registered with an SSB.

4.5.1 CER’s Response

**Issue One: Training Standards**

The CER notes respondents’ comments regarding training and that RECs should have a minimum trade qualification, in conjunction with various add-on qualifications in order for a REC to work on different types of electrical installations (e.g. domestic, industrial, subsystems, etc). While the CER recognises the benefits of having various add-on qualifications (due to the specialised nature of some electrical installations), the CER would like to note that its regulatory role does not extend to designing or developing training courses for RECs to complete in order to carry out different types of electrical installations.

As previously stated in Section 4.2.2, the CER currently requires through the Criteria Document, that one must become a Qualified Certifier in order to become a REC with an SSB. Each Qualified Certifier must have:

(i) served a recognised apprenticeship as an electrician and have been awarded a National Craft Certificate; or,
(ii) an other suitable electrical award, equivalent to Level 6 or higher on the National Framework of Qualifications; and
(iii) is required to have successfully completed a recognised course in “Testing, Verification and Certification” in the previous 3 years.

Specifically to become an electrician, one must complete an apprenticeship with FAS, which involves working with an established REC for four years, while the Verification & Certification Qualification can be obtained through the SSB’s, ETCI, various Institutes of Technologies and other training providers. Whilst the CER recognises the benefits of having a minimum trade qualification plus various add-on qualifications, this can only be achieved through the provision of relevant courses by training providers. Once this is in existence this may require further consideration by the CER.

**Issue Two: Individual Registration:**

In recognition of the unique characteristics of the electrical contracting industry (i.e. electrical contractors operated as companies, as well as individual electrical contractors), and following consultation and feedback from the industry, general public and via the Criteria Document the CER allowed RECs to register as companies as well as individual sole traders. Consequently, the term REC refers to an electrical contracting entity. This may be either an individual sole trader operating as the electrical contractor or may be a
larger operation, constituting many individuals (e.g. general operatives, engineers and electricians).

To clarify, the CER does not propose introducing individual registration. While the CER recognises that individuals may leave organisations, the onus is on the employer to have a Qualified Certifier in place who shall take full responsibility for the electrical installations. With reference to comments that a Qualified Certifier may certify an electrical installation (without actually completing it), the CER notes that the Qualified Certifier has still taken full responsibility for the electrical installation, and is liable for any fallout from a electrical installation that is not in compliance with the current edition of the National Wiring Rules.

Also the SSB’s have QA and audit procedures in place to ensure compliance of electrical installations with the current edition of the National Wiring Rules. Although it is accepted that compliance with OSHAS 18001 would confirm high standards of safety during the installation of an electrical installation it is considered that this is within the remit of the HSA and workplace safety rather than CER and safe installations. Requirements for installers to meet workplace safety requirements during installation works are outside the remit of the CER and scope of the proposed Restricted Electrical Works.

Issue Three: Installation of Security Systems:

As stated within Section 4.2.2, the CER notes that under the 2004 Private Security Services Act, the Private Security Authority of Ireland is statutorily mandated to regulate the private security industry, including installers of security equipment. Consequently, in order to install security systems, RECs must register with the Private Security Authority in order to ensure compliance with the 2004 Private Security Services Act.
### 5.0 Summary & Next Steps

Following a review of responses to consultation paper (CER/11/077), the CER proposes to define Restricted Electrical Works in a domestic setting only (i.e. Option 3: Defined Definition Approach with no legal exemption for the Owner Occupier).

In order to issue a final decision on the scope of Restricted Electrical Works under a Defined Definition Approach Option Three, the CER would like responses to the following questions:

<table>
<thead>
<tr>
<th>Question/Proposal</th>
<th>Yes</th>
<th>No</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Q1. Do you agree with the CER’s proposed scope for restricting electrical works within a domestic setting (as outlined in Section 4) assuming the CER may in time extend the scope of restricted electrical works to cover certain electrical work in a commercial setting?</td>
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<tr>
<td>Q2. Do you agree with the definition of a Domestic property as outlined in Appendix One?</td>
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Appendix One: Restricted Electrical Works within a Domestic Property

Under Option 3: A Defined Definition Approach (including work by Owner & Occupier); this would involve restricting the carrying out and certification of all Controlled Electrical Works in a domestic setting to RECs with no legal exemption for the Owner & Occupier.

The Defined Definition Approach (including work carried out by an Owner & Occupier) proposed that the application of Restricted Electrical Works be limited to Installations in a Domestic Property which include the following:

- the installation, commissioning, inspection, and testing of a new fixed electrical installation requiring connection or reconnection to the electricity network;
- the modification, installation or replacement of a Distribution Board or Consumer Unit including customer tails both sides of the main protective device, or new installation in special locations as defined in Part 7 (swimming pools, saunas, fountains, caravan parks & marinas) of the current edition of the National Wiring Rules;
- the installation, or replacement, of one or more extra circuits in an existing installation, including the installation of one or more additional protective devices for such circuits on a distribution board;
- the inspection, testing and certification of existing electrical installations in accordance with the current edition of the National Wiring Rules and to conform with Regulation 89 of SI No 732 of 2007.

Consequently, the following installations would remain as Controlled Electrical Works (and require Certification by a REC), but not be classified as Restricted Electrical Works:

- Installations in Potentially Explosive Atmospheres;
- Work in a commercial or work place setting including MV and HV connection and installations;
- Construction site electrical installations;
- Electrical installation within exhibitions; shows and stands;
- Agricultural and horticultural installations;
- Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO).

The CER has removed the category of Subsystems from its definition of Restricted Electrical Works for domestic installations. The installation of a Sub system in a domestic property would require a power supply via the distribution board or by adding a circuit. Rather than attempting to provide non exhaustive list of subsystem installations, the CER is of the view that the electrical work which should be restricted pertaining to the installation of subsystems is captured in items second and third points above.
A Domestic Property shall be defined as:\footnote{Groups 1 taken from Building Regulations 2006, Technical Guidance Document B.} Use

<table>
<thead>
<tr>
<th>Group</th>
<th>Purpose for which a building or compartment of a building is used</th>
</tr>
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<tbody>
<tr>
<td>1(a)(1)</td>
<td>Dwelling house with no storey with a floor level which is more than 4.5m above ground level</td>
</tr>
<tr>
<td>1(b)(1)</td>
<td>Dwelling house with a storey with a floor which is more than 4.5m above ground level</td>
</tr>
<tr>
<td>1(c)</td>
<td>Flat or Maisonette</td>
</tr>
<tr>
<td>2</td>
<td>Caravan, Motor Caravans, Mobile Homes, Residential park homes and Transportable units excluding electrical circuits and equipment for automotive purposes.</td>
</tr>
</tbody>
</table>

Notes: (1) Purpose groups 1(a) and 1(b) include any surgery, consulting rooms, office or other accommodation not exceeding 50m$^2$ in total, forming part of a dwelling and used by the occupant of the dwelling in a professional or business capacity.
Appendix Two: Regulation of Electrical Works: An International Perspective

This section provides an overview of electrical safety frameworks in different countries, namely:

Ontario Canada;
Western Australia;
New Zealand; &
UK.

Specifically, the objective of this section is to provide information, and not to provide a critique of the various types of regulatory frameworks for electrical safety. Additionally, the reader should note that the development of regulatory frameworks for each country/region is unique based on their current environment and institutions.

2.1 Ontario, Canada

The Ontario Electrical Safety Authority (ESA) is responsible for public electrical safety, as designated by Ontario Regulation 89/99. Under the Ontario regulatory framework, inspections of electrical installations are required for the following electrical installations:

New Home Construction

Electrical installations in a new house must be inspected and authorised prior to connection to the Utility electricity distribution system, and any change to the original wiring including repair and replacement of electrical devices.

Industrial/Commercial/Institutional and Agricultural

Electrical installations involving New Construction, Renovations, and Electrical Maintenance Work require an inspection. New construction refers to electrical installations creating new business facilities – requiring initial connection to the Utility electricity distribution system. Additionally, Renovation/Additions and Alteration refer to modifications to existing electrical installations and equipment, whilst Electrical Maintenance Work refers to electrical installation work of a routine nature in connection with the maintenance or operation of a building or plant.

Roadway/Traffic Lights and Signals
Electrical Inspections are required for all new electrical work/installations as well as for the maintenance of existing electrical installations.

These electrical installations types are carried out by licensed electrical contracting businesses. Specifically, Ontario Regulation 570/05 states that no person shall operate an electrical contracting business without an electrical contractor license. However, Regulation 570/05 does not apply to a person engaged in the following types of electrical work:

Work done on original equipment of a manufacturer if done by an employee or agent of the original equipment manufacturer, who has been trained by the manufacturer to perform maintenance, service or repair on the equipment and if the work being done does not include extending or altering the equipment or installing, extending, altering or repairing any electrical wiring connected to that equipment.

Work done on equipment or electrical installations within an industrial establishment or on a farm if done by an owner, an operator or an employee of the owner or operator.

Work done on electrical equipment or installations within a residential dwelling if done by an owner or occupant of the dwelling.

Work done on the controls and equipment within refrigeration and air-conditioning units by a person authorized to do such work under Ontario Regulation 75/05 (Refrigeration and Air Conditioning Mechanic) made under the Trades Qualification and Apprenticeship Act.

Work done on fire protection alarm systems by a person authorized to do such work under Regulation 1078 of the Revised Regulations of Ontario, 1990 (Sprinkler and Fire Protection Installer) made under the Trades Qualification and Apprenticeship Act.

Work done on elevators and escalators by a person authorized to do such work under Ontario Regulation 209/01 (Elevating Devices) made under the Technical Standards and Safety Act, 2000.

Work done on electrical components of appliances by a person authorized to do such work under Ontario Regulation 210/01 (Oil and Gas Pipeline Systems), Ontario Regulation 211/01 (Propane Storage and Handling) and Ontario Regulation 215/01 (Fuel Industry Certificates) made under the Technical Standards and Safety Act, 2000.

Work done on electrical equipment that plugs into an electrical source if the work being done constitutes maintenance, service or repair of the equipment that does not include extending or altering the equipment or installing, extending, altering or repairing any electrical wiring connected to that equipment.

Work done that falls within the scope of Ontario Regulation 22/04 (Electrical Distribution Safety) made under the Electricity Act, 1998.
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Work done on any electrical equipment or electrical installation that is specifically excluded by Rule 2-000 of the Electrical Safety Code.

2.2 Australia & New Zealand

The Electrical Regulatory Authorities Council (ERAC) is responsible for liaison between the eight Australian states and territories and New Zealand in order to coordinate their activities in respect of regulatory strategies, policies and ongoing reforms.24 Rather than outline each individual electrical safety regulatory framework in the Australian States and New Zealand, this section will outline the regulatory framework in Western Australia and New Zealand in order to provide an overview of various types of Regulated Electrical Works.

2.2.1 Western Australia

The ‘Energy Safety’ Regulator makes it illegal for an unlicensed person to carry out electrical work, including modifications to fixed wiring. Essentially, electrical work is defined within the Electricity (Licensing) Regulations 1991, and means work on electrical machines or instruments, on an electrical installation or on electrical appliances or equipment to which electricity is supplied, at a nominal voltage exceeding 50 volts alternating current or 115 volts direct current, whether or not the item on which the work is being performed is part of, or is connected to any distribution works or private generating plant. Works include work performed on any appliance, whether or not electricity is supplied or may be supplied thereto through an electric plug socket or socket outlet.

The Electricity (Licensing) Regulations 1991 provides that electrical work may only be carried out by persons with the appropriate electrical worker’s licence (as issued by the Electrical Licensing Board). Licenses are issued for the following types of work:

Electrical contracting work – for electrical contractors who must employ licensed electricians.

Electrical installing work - for electricians. Electricians are required to hold an ‘A’ Grade electrical worker's licence endorsed as 'electrical mechanic' to allow them to work on electrical installations and/or 'electrical fitter' to allow them to carry out electrical fitting work. Electricians are licensed for up to 5 years and must carry their licence card with them and to produce it when required.

Electrical training - for apprentices and trainees. An apprentice/trainee electrician will have a licence card issued for the period of the apprenticeship/traineeship.

Restricted electrical work - for restricted electrical workers. Restricted electrical licences (RELs) are issued to persons other than electricians to legally carry out a "restricted" range of electrical tasks. The holder of a restricted electrical worker's licence is not permitted to carry out the installation or alterations to fixed wiring or to repair or replace items such as power points, lighting fittings etc.

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24 In Australia, the technical and safety electrical regulatory functions are largely the responsibility of state and territory governments
However, under the Electricity (Licensing) Regulations 1991, it is not illegal to carry out electrical work under the following scenarios:

- to work carried out on a communications or computer system, or a radio or television transmitter or receiver but does apply to an electricity supply circuit thereto having a nominal pressure exceeding 50 volts alternating current or 120 volts ripple free direct current; or

- to the mechanical assembly or winding of armatures, stators, rotors, field coils or other like equipment; or the manufacture or assembly, at the place of manufacture, of equipment, or parts thereof, on a repetitive basis, except to the extent that the work involves the final testing of the equipment or the connection of the equipment to an installation; or

- to work carried out for, and as authorised by, a network operator on poles, towers and overhead lines including the final connection and testing of circuits by persons trained in electrical linework; or

- to work carried out in jointing and capping underground cables of all kinds by persons trained in electrical cable jointing work; or

- to work carried out on any network operator service apparatus by a person authorised by the relevant network operator; or

- to the installation of poles, towers and overhead lines not involving the final connection or testing of circuits; or

- to the underground installation of underground cables, cable ducts, conduits and cable support systems (excluding the final connection or testing of circuits); or

- to the affixing of a plug, electrical appliance plug or cord extension socket to a flexible cord used or intended to be used to connect an electrical appliance to a plug socket outlet through which electricity is supplied or to be supplied at a nominal pressure not exceeding 1000 volts alternating current or 1500 volts direct current; or

- to work done in the course of training for a restricted licence; or

- to electrical work (excluding permanent installation work) performed as part of an educational or training course in a trade or technical school, college, university or other training institution.; or

- to such other kinds of electrical work as the Director after consultation with the Board declares, by order published in the Gazette, to be work that may be carried out by persons not holding a licence or permit; and

- to the installation of electric fences for security or stock control purposes (but does apply to the installation of an electricity supply circuit, having a nominal pressure exceeding 50 volts alternating current or 120 volts ripple free direct current, to such a fence).
2.2.2 New Zealand

- The New Zealand ‘Energy Safety’ regulator administers the principal laws governing electrical work in New Zealand. These are:
  - Electricity Act 1992
  - Electricity (Safety) Regulations 2010
  - New Zealand Electrical Codes of Practice
- Any person (other than a homeowner), who carries out prescribed electrical work, is required to be registered by the Electrical Workers Registration Board (EWRB). Under the Electricity (Safety) Regulations 2010, the following electrical work is deemed a prescribed electrical work:
  - **Prescribed Electrical Works**
    
    | (a) the installation or maintenance of conductors used in works or installations; |
    | (b) the installation or maintenance of fittings connected, or intended to be connected, to conductors used in works or installations; |
    | (c) the connection or disconnection of fittings to or from a power supply, other than by means of a plug or pin inserted into a socket, or an appliance connector inserted into an appliance inlet; |
    | (d) the maintenance of appliances; |
    | (e) the testing of work described in paragraphs (a) to (d) that is a non-prescribed work; |
    | (f) the certification of work described in paragraphs (a) to (d) that is a non-prescribed work; |
    | (g) the inspection of work described in paragraphs (a) to (d) that is a non-prescribed work; & |
    | (h) the supervision of any work described in paragraphs (a) to (d) that is a non-prescribed work. |

- In order to facilitate the differentiation between Prescribed and Non-Prescribe Electrical Works, the Electricity (Safety) Regulations 2010 identified the following items as non-prescribed electrical work:

**Low voltage fittings**
(a) work done on low voltage fittings, but only if the work is done in accordance with ECP 51, and without payment or reward, and the work consists of—

  (i) replacing a fuse link with a fuse link or plug-in miniature circuit breaker of an appropriate rating; or
(ii) affixing a plug, adaptor, cord extension socket, or appliance connector of an appropriate rating to a flexible cord designed for that purpose:

**Extra-low voltage supply**

(b) work done on installations, fittings, or appliances that—

(i) are intended solely for connection to, or are associated solely with, electricity supplies not exceeding extra-low voltage; and

(ii) are not in a hazardous area:

(c) work done on installations or fittings that—

(i) are intended solely for connection to, or are associated solely with, electricity supplies not exceeding extra-low voltage; and

(ii) are not in a medical location:

(d) repairing or adjusting fittings, or replacing fittings with the same or comparable fittings, in installations or appliances, but only if the work can be done without exposure to live parts intended to operate at voltages exceeding extra-low voltage:

**Operation**

(e) operating works, installations, or appliances:

**Isolating and earthing**

(f) operating or switching works, installations, or appliances for the purpose of isolating and earthing the works, installations, or appliances, including manually connecting or disconnecting temporary earthing or bonding fittings and manually removing and reinserting fuses:

**Electric lines**

(g) constructing overhead electric lines as part of any works, but only if the lines are being connected to poles or other supports that do not carry fittings that are already connected to a power supply:

(h) constructing underground electric lines as part of any works, but only if the lines are being connected to fittings or installations that are not already connected to a power supply:

**Permanent removal**

(i) permanently removing, dismantling, or demolishing works or installations that have been permanently disconnected from a power supply:

(j) maintaining appliances, but only if the work is done in accordance with user instructions prepared by the manufacturer and supplied with the appliance to the user:

(k) repairing or reworking an appliance, but only if it is undertaken in accordance with the instructions of the original manufacturer of the appliance:

(l) rewinding coils and armatures:
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**Testing, teaching, experimenting, etc**
(m) installing temporary conductors between fittings (or between appliances, or between fittings and appliances) or repairing fittings and appliances, but only if the fittings or appliances are used for experimental testing, demonstration, teaching, or research purposes in any electrical engineering workshop, manufacturing facility, electrical test room, laboratory, hospital, research project, or teaching institution:

(n) experimental work on radio transmitters, receivers, and electronic apparatus, but only if the work is not carried out for payment or reward:

**Telecommunications work**
(o) work done on or in connection with telecommunications lines or equipment where—

(i) the lines or equipment operate at telecommunications network voltage; or

(ii) the magnitude and duration of any shock currents cannot exceed IEC shock current standards; or

(iii) the work can be done without exposure to voltages that exceed telecommunications network voltage or to shock currents that exceed IEC shock current standards:

**Electric cars**
(p) any work on electric cars (being road vehicles that use electricity generated within the vehicle, or electricity supplied from a standard low voltage supply, as its motive energy source):

**Electric fences**
(q) any work relating to the conductors, supports, or insulators of electric fences, and connecting them to, or disconnecting them from, an electric fence controller:

**Temporary earthing**
(r) connecting or disconnecting temporary bonding conductors to or from any metal pipe or tube that forms (whether by design or not) part of an earthing system, but only if the temporary bonding conductor is for the purpose of maintaining a continuous path to earth during work on the pipe or tube:

**New Zealand Defence Force apparatus**
(s) assembling and repairing radio apparatus, fire control, equipment, or searchlights used solely for defence purposes under the control of the New Zealand Defence Force, but only if the officer or non-commissioned officer who has control of the apparatus, equipment, or searchlight has directed the conditions of security that must be observed in the assembly or repair:

With reference to the laws applying to electrical works in New Zealand, the legislation provides three mechanisms under which unlicensed workers may do electrical work.

- work which is not prescribed electrical work;
- work which may be done provided no payment or reward is given for that work;
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- work which may be done by the owner of a domestic installation or by the owner or relative of the owner of an electrical appliance

In general, these three provisions allow the public to carry out simple electrical work, which does not involve significant safety risks or work on their own equipment (appliances) or household wiring. Additionally, persons that own and occupy their own installation may do the following work on low voltage electrical installations (when there is no payment or reward):

i. remove and replace any of the following kinds of fittings, where the work does not involve work on any switchboard:
   - switches,
   - socket outlets,
   - permanent connection units,
   - light fittings,
   - batten holders,
   - cord grip lampholders,
   - ceiling roses,
   - flexible cords connected to any permanent connection unit, ceiling rose, or cord grip lampholder,
   - water heater switches,
   - thermostats,
   - elements.

ii. remove and replace fuse links.

iii. connect and disconnect fixed wired appliances.

iv. relocate existing switches, socket outlets, and lighting outlets that are supplied with electricity by tough plastic-sheathed cables.

v. install, extend, and alter subcircuits (including submains), provided that:
   - the person must not enter (whether personally, by holding any material or equipment, or otherwise) any enclosure where live active conductors are likely to be present; and
   - the work is tested by a licensed worker, in accordance with NZS 3000, and the work is certified by that licensed worker in accordance with regulation 66, before being connected to a supply of electricity by such an inspector.