



### National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

Opinion 1 CER Definition Approach	Statement
<p>Option 1: Broad Definition Approach</p> <p>The Broad Definition Approach proposes 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, exhibitions shows and stands, agricultural/horticultural installations, new connections at MV and HV, Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO). Additionally, under the Broad Definition Approach, the following electrical work would not be considered as a Restricted Electrical Work:</p> <p>Maintenance work on MV &amp; HV installations; Minor Electrical Works; &amp; Assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</p>	<p>We welcome the reclassification of all works currently classified as Controlled Works, to becoming Restricted Works. However, we are opposed to Exempting maintenance works MV &amp; HV installations Minor Electrical Works; &amp; Assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment. This opinion completely ignores the extreme danger and hazards that poor electrical work poses to the customer / end user. Not to mention that allowing untrained, unqualified, inexperienced personnel to carry out these works, will have a serious negative effect on accidents occurring in the workplace from electrocution. Adopting this opinion will promote prolific increase in poor maintenance and unsafe works to be carried out in highly populated buildings, e.g. Hotels, Schools, Universities, Hospitals, Factories, Event Canters. (Please Refer To Page 7)</p>



## National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

Opinion 2 CER Definition Approach	Statement
<p>Option 2: Intermediate Definition Approach</p> <p>The Intermediate Definition Approach proposes 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 MV and HV, Public Lighting and associated cabling (with the exception of lighting that is operated by the DSO).</p> <p>However, where Controlled Electrical Works are carried out by an Owner and Occupier of a Domestic Property, there will be 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. However, the Owner and Occupier of a domestic property will be prohibited from carrying out electrical work on Micro-generators and Special Installations.</p> <p>Under the Intermediate Definition Approach, the following electrical work would not be considered as a Restricted Electrical Work:</p> <p>Controlled Electrical Works undertaken by the Owner and Occupier of a domestic property (excluding Micro-generators and Special Installations). The Controlled Electrical Works carried out by the Owner and Occupier of a domestic property will still require certification by a REC when completed; Maintenance work on MV &amp; HV installations; Minor Electrical Works; &amp; Assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment.</p>	<p>As stated above, this opinion ignores the hazards and danger posed while working with electricity as well as the real concern of exposing the customer / end user to a potential hazard / danger during the interim process while waiting for a REC to test and certify the installation.</p> <p>Adopting this view is merely taking into account that the CE mark ensures the product leaving its place of manufacture passes all tests. This does not take into account and completely ignores the impact shipping may have on the product, i.e., loose terminals, loose wires, damaged insulation on cabling, vermin &amp; pest damage. It also ignores correct loading, correct conductor sizing, and testing &amp; certification before during and after installation, leaving a potential safety hazard until certification by a REC when completed. The Owner and Occupier of a Domestic Property will not bother with certification by a REC providing the apparatus installed works, irrespective of it having been installed by the ETCI Rules or not, therefore the potential of an undetected serious hazard is extremely high until an incident occurs.</p> <p>Electrical Contractors will not support the dilution of their trade to become testers &amp; certifiers for electrical work carried out by uninsured, untrained, unqualified handy men, while the REC bares all liability in the event of accident, electrocution or fire caused by poor or defective electrical work. (Please Refer To Page 7)</p>



### National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

Opinion 3 CER Definition Approach	Statement
<p>Option 3: Defined Definition Approach (including work by Owner &amp; Occupier)</p> <p>The Defined Definition Approach (including work by Owner &amp; Occupier) proposes that the application of Restricted Electrical Works be limited to: 6 Installations in a Domestic Property (which includes new installations and significant additions or alterations); Electrical installation of Micro-generators; Specialist Installations (swimming pools, saunas, fountains, caravan parks &amp; marinas); &amp; Carrying out of Periodic Inspections.</p> <p>Consequently, the following installations would remain as Controlled Electrical Works (and require Certification by a REC), and not be regarded as Restricted Electrical Works:</p> <p>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).</p> <p>Additionally, under the Defined Definition Approach (including work by Owner &amp; Occupier) both Minor Electrical Works and the assembly of CE marked equipment, CE marked machines and pre-assembled CE marked machines/equipment would not be regarded as a Restricted Electrical Work.</p>	<p>Also as previously stated, classifying works in a domestic property ignores the fact it requires electricity to operate that piece of electrical apparatus. The installation must be carried out by a qualified time served competent electrician. Anything less is deemed to be seen as accepting and promoting hazardous, defective, unsafe work and work practices to be carried out thus endangering the customer / end user. (Please Refer To Page 7)</p>



### National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

Opinion 4 CER Definition Approach	Statement
<p>Option 4: Defined Definition Approach (excluding work by Owner &amp; Occupier)            Option 4 is the equivalent to the Defined Definition Approach (including work by Owner &amp; Occupier), with the exception that, where Controlled Electrical Works are carried out by an Owner and Occupier of a Domestic Property, there will be 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.</p>	<p>The Owner and Occupier of a Domestic Property will not bother with certification by a REC, providing the apparatus installed works, irrespective of whether it has been installed by the ETCI rules or not, therefore the potential of an undetected serious hazard is extremely high.            Electrical Contractors will not support the dilution of their trade to become testers &amp; certifiers for electrical work carried out by uninsured, untrained, unqualified handy men while the REC is responsible for all liability in the event of accident, electrocution or fire caused by poor or defective electrical work. (Please Refer To Page 7)</p>



## National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

<b>Appendix 1 – List of Substantive Questions</b>	
<b>Appendix 1 provides a list of questions that the CER requests participants to consider when responding to this consultation paper.</b>	
<b>Substantive Questions</b>	
Q1: Do you agree or disagree with the introduction of Restricted Electrical Works?	Yes the concept is correct, unfortunately the proposed model is utterly in complete contravention to the trade and qualifications possessed by an electrician.
Q2: Has the CER considered all the appropriate options for the introduction of Restricted Electrical Works?	No, I don't believe the CER considered appropriate options as they have completely ignored the history of the industry.
Q3: Which option do you believe that the CER should adopt if it decides to introduce Restricted Electrical Works?	None of the options will achieve the desired purpose of regulation.
Q4: Is there a potential for regulatory overlap between the CER and the HAS, if the CER adopts a 'Broad or Intermediate Definition Approach'?	There is most definitely an overlap with the HAS as the CER options are in complete variance with what the Health & Safety Authority are trying to achieve, which is Safety in the workplace.
Q5: If you deem that there is the potential for regulatory overlap between the CER and the HAS, do you believe that this is necessary to achieve the desired safety outcomes?	This proposal will not achieve the desired safety outcomes. It will most definitely have the opposite affect and will foster / promote Defective, Unsafe, Hazardous electrical installations. Furthermore it will encourage unqualified handy men to carry out work on the world renowned silent killer (Electricity).



## National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To

Consultation Paper

REFERENCE:

CER/11/077

### **Dangers of Electricity include a variety of hazards that include Electric Shock, Psychological Damage, Physical Burns, Neurological Damage and Ventricular fibrillation resulting in death.**

Any form of energy, when not properly controlled or harnessed or installed can result in serious danger to those who use it. The risks inherent with electric power can generally be divided into two categories: direct and indirect. The direct danger is the damage that the power itself can do to the human body, such as stoppage of breathing or regular heartbeats, or burns. The indirect dangers of electricity include the damages that can result to the human body as a result of something caused by electric shock, such as a fall, an explosion, or a fire.

Electricity at any voltage can be dangerous and should always be approached with caution. An electric shock can occur upon contact of a human or animal body with any source of voltage high enough to cause sufficient current flow through the muscles or nerves. The minimum current a human can feel is thought to be about 1 milliampere (mA). As little as 80 milliampere, can seize the heart muscle. The current may cause tissue damage or heart fibrillation if it is sufficiently high. A fatal electric shock is referred to as electrocution.

#### **Psychological**

The perception of electric shock can be different depending on the voltage, duration, current, path taken, frequency, etc. Current entering the hand has a threshold of perception of about 5 to 10 mA (milliampere) for DC and about 1 to 10 mA for AC at 60 Hz. Shock perception declines with increasing frequency, ultimately disappearing at frequencies above 15-20 kHz.

#### **Burns**

Dangers of Electricity include physical burns. High-voltage (> 500 to 1000 V) shocks tend to cause internal burns due to the large energy (which is proportional to the duration multiplied by the square of the voltage) available from the source. Damage due to current is through tissue heating. In some cases 16 volts might be fatal to a human being when the electricity passes through organs such as the heart.

#### **Ventricular fibrillation**

A low-voltage (110 to 220 V), 50 or 60-Hz AC current travelling through the chest for a fraction of a second may induce ventricular fibrillation at currents as low as 60mA. With DC, 300 to 500 mA is required. If the current has a direct pathway to the heart (e.g., via a cardiac catheter or other kind of electrode), a much lower current of less than 1 mA, (AC or DC) can cause fibrillation. Fibrillations are usually lethal because all the heart muscle cells move independently. Above 200mA, muscle contractions are so strong that the heart muscles cannot move at all.



## National Electrical Contractors Ireland Submissions To

The Commission for Energy Regulation,

In Response To  
Consultation Paper

REFERENCE:

CER/11/077

**Dangers of Electricity include a variety of hazards that include Electric Shock, Psychological Damage, Physical Burns, Neurological Damage and Ventricular fibrillation resulting in death.**

### Neurological effects

Other Dangers of Electricity cause interference with nervous control, especially over the heart and lungs. Repeated or severe electric shock which does not lead to death has been shown to cause neuropathy.

When the current path is through the head, it appears that, with sufficient current, loss of consciousness almost always occurs swiftly.

### Arc Flash

Arc flash and arc blast will always be present on the job, but proper awareness, training and the development of arc flash safety personal protection strategies can minimize the likelihood of injury and fatality.

The leading standard governing the calculation and determination of explosive hazard is the NFPA 70E - Electrical Safety in the Workplace. This electrical safety standard covers the full range of electrical safety issues from work practices to maintenance, special equipment requirements, and installation. In fact, OSHA in the United States already bases its electrical safety mandates on the comprehensive information in this important Standard.

Electrical safety is the leading subject in the North American power industry. Electrical accidents, when they occur (and they occur every day) are extremely debilitating and often fatal, depending on the voltage and amperage involved, as well as the conditions of electrocution. As little as 80 milliamps of electricity is enough energy to put the human heart into defibrillation and death. So, this subject should be addressed with commitment from electrical workers and their management.

### In Summary

The CER proposed Opinions do not reflect what is required or what is acceptable for correctly regulating the electrical industry. It completely dilutes and undermines the qualifications of that of a time served competent qualified electrician.

It completely contradicts the ETCI National Rules For Electrical Installations & Code of Practice for Electrical Work as these proposals makes them irrelevant .

It undermines the relevance of the National Training Agency (FAS) and the existence of the standards based apprenticeship system for becoming an electrician.

This CER approach undermine the Health And Safety Laws For The Country, in relation to carrying out electrical work, not to mention the quality and standards which presently exist in the industry.