



Energy Efficiency of Rental Accommodation in Ireland



McDOWELL



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1.1- EXECUTIVE SUMMARY

In late 2014 the Society of St. Vincent de Paul (SVP) launched research regarding how much it costs to consume the minimum energy needed to ensure adequate warmth and other needs throughout the year, in housing of various levels of efficiency. Research on the income and accommodation of household types most likely to be supported by SVP has found that the inability of people to afford adequate warmth (energy poverty) is caused by various factors, including inadequate income and living in homes with poor energy efficiency. The research showed that while improved energy efficiency will not take those families with inadequate incomes out of poverty, it will make a big difference to their budget, the comfort levels in their homes, and will enhance their health and wellbeing.

Armed with this knowledge SVP commissioned the pro bono legal support of McDowell Purcell Solicitors through the Public Interest Law Alliance (PILA) to map out current legislation around energy efficiency or related legislation for private rental accommodation in Ireland. The purpose of this paper is to identify what legal measures, if any, supported and promoted its use.

Recent research by the Vincentian Partnership for Social Justice (VPSJ) demonstrates the importance of energy efficiency improvements in homes. Many households in energy poverty do not own their dwelling and are therefore less likely to benefit from measures designed to enhance the energy performance of dwellings.

The research conducted by the legal team from McDowell Purcell found that no specific provision is made in legislation for the rating of energy efficiency of private rental accommodation in Ireland. In more general terms, physical standards for rental accommodation have been provided for in law since 1992. In September 2006, the Department of the Environment, Heritage, and Local Government launched the programme "Action on Private Rented Accommodation Standards". This led to the Housing (Standards for Rented Houses) Regulations 2008. The Housing (Miscellaneous Provisions) Act 2009 strengthened the sanctions regime applicable in respect of the Regulations, expanding the definition of "proper state of structural repair", and included properties "available for letting" in addition to those properties actually "let". The Regulations, while a step in the right direction towards improving the physical standards of private rented accommodation, do not apply retrospectively however and do not specifically promote energy efficiency.

In March 2009, the Better Energy Homes scheme was launched. Landlords wishing to upgrade rental properties may avail of this scheme for dwellings constructed prior to 2006. The majority of works funded under this scheme consist of less expensive and less intrusive improvements, such as attic insulation and cavity wall insulation. Nationally, the Department of Communications, Energy and Natural Resources (DCENR) have overall responsibility for determining and implementing national energy policy, energy efficiency targets, and Better Energy, the national energy upgrade programme and the Affordable Energy Strategy, Warmer Homes, the first of which was launched in 2011.

A critical factor underpinning the requirement for increased energy efficiency in Ireland is the State's obligations as a member of the European Union. Like every member state, Ireland forms an integral part of the European Union's target under the Kyoto Protocol. The overall target for the European Union under this protocol is to achieve an energy efficiency of 20% primary energy savings by 2020. Key Directives include the Energy Efficiency Directive of 2012 and the Energy Performance of Buildings Directive.

The responsibility for promoting and assisting energy efficiency and the administration of the Better Energy programme is delegated by DCENR to the Sustainable Energy Authority of Ireland (SEAI), and the Department of Environment, Community and Local Government (DECLG) has responsibility for a Housing Aid Grant for Older People. The Department of Social Protection have a role in providing income supports for certain categories of claimant in terms of the Fuel Allowance, Household Benefits Package and the smaller schemes of Heating Supplement and Exceptional Needs Payment for energy related expenses.

Construction 2020 was published in May 2014 with a stated aim of delivering a strong, sustainable approach to construction and housing. A working group under Construction 2020 will investigate the feasibility of introducing minimum thermal efficiency standards for rental properties. If introduced, such standards may place an onus on landlords to make improvements to rental properties, particularly if a stringent enforcement regime is implemented.

The Department of Energy is currently developing a successor Affordable Energy Strategy which will probably underline existing, and may hopefully commit to additional retrofitting measures for low income and rental households. Nonetheless, in legislative terms, there is currently no specific provision made for the promotion of energy efficiency within private rental accommodation in Ireland.

The paper found that while there has been support for the promotion of energy efficiency measures by successive governments, key to the success of this policy is specific legislation to progressively realise energy efficiency in private rental accommodation.

This important piece of research results from the collaboration of law firm McDowell Purcell and social justice charity the Society of St Vincent de Paul, stewarded by the Public Interest Law Alliance. It exemplifies how law firms can contribute their expertise to non-governmental organisations seeking to advance social justice. PILA facilitates the process by identifying issues where legal expertise would help and through sourcing appropriate legal partners for the organisations. The Public Interest Law Alliance itself is established to advance human rights and the public interest through engagement with lawyers and with social justice organisations. Learn more about PILA's work and the pro bono referral process at www.pila.ie.

IMPORTANT: Please note that this paper is for information purposes only and does not constitute legal advice. Specific advice should always be sought in given situations.

2.1- INTRODUCTION

2.1 PURPOSE AND STRUCTURE OF THE PAPER

The purpose of this paper is to map out current energy efficiency and related legislation for private rental accommodation in Ireland. Given the number of low income people in private rented accommodation and the incidence of 'cold homes' (energy inefficient accommodation) in this sector, it is necessary, for policy makers and advocates alike, that a comprehensive, integrated and up to date picture of existing laws in this area - and related gaps – is developed. It is also timely that such a mapping is established given the current drafting of a new Energy Affordability Strategy¹, the role of private rented accommodation envisaged in the Social Housing 2020 Strategy², and the current policy emphasis on the Private Rented Sector in its own right³.

It is intended that this paper will help inform policies related to building standards, energy affordability, social inclusion and climate change objectives. This paper will focus on the following:

- 1. Domestic legislation relating to standards for private rental accommodation in Ireland
- 2. A review of Part L of the Building Regulations (Conservation of Fuel and Energy)
- 3. The current EU legislative position applicable to energy efficiency of dwellings in Ireland
- 4. Current domestic policy and incentives to improve energy efficiency and reduce energy poverty

2.2 INTRODUCTION

A household which is considered to be suffering from energy poverty can be defined as one which is "unable to attain an acceptable standard of warmth and energy services in the home at an affordable $cost^{4}$ ".

In the Government policy document "*Warmer Homes, A Strategy for Affordable Energy in Ireland*" ("Warmer Homes"), the Department of Communications, Energy and Natural Resources ("DCENR") outlined means by which energy poverty can be measured;

- The *preliminary measure* defines a household as being unable to afford its energy needs if it spends at a level greater than twice the national average share of disposable income spent on energy services⁵
- Severe energy poverty is defined as a household which spends more than 15% of its disposable income on energy services in the home in any one year
- *Extreme energy poverty* is defined as a household which spends more than 20% of its disposable income on energy services in the home in any one year

In 2011, DCENR estimated that one fifth of households in Ireland were likely to experience energy poverty and 10% of households were likely to experience severe energy poverty. DCENR believe that improving the energy efficiency of the housing stock in Ireland is the best and most cost effective solution to the problem of energy poverty⁶. Recent research by the Vincentian Partnership for Social Justice (VPSJ)⁷, commissioned by the Society

- ² Department of the Environment, Community and Local Government (2014): Social Housing Strategy 2020: Support, Supply and Reform http://www.environ.ie/en/PublicationsDocuments/FileDownLoad,39622,en.pdf
- ³ National Economic and Social Council Report 141: Ireland's Private Rental Sector: Pathways to Secure Occupancy and Affordable Supply, May 2015, Dublin

¹ New Consultation Paper on Affordable Energy - February 2015

http://www.dcenr.gov.ie/Energy/Energy+Efficiency+and+Affordability+Division/Affordable+Energy.htm, Department of Communications, Energy and Natural Resources

⁴ "Warmer Homes, A Strategy for Affordable Energy in Ireland", Department of Communications, Energy and Natural Resources, pg. 12

⁵ Warmer Homes, A Strategy for Affordable Energy in Ireland" Department of Communications, Energy and Natural Resources, pg. 12

⁶ Warmer Homes, A Strategy for Affordable Energy in Ireland" Department of Communications, Energy and Natural Resources, Chapter 4.2

of St Vincent de Paul, demonstrates the importance of energy efficiency improvements in homes. The research finds that the cost of the minimum energy needs in an efficient dwelling can be half that of an inefficient dwelling. Measures to improve efficiency can result in a lowering of the occurrence and depth of energy poverty⁸. That said, recent research by the Economic and Social Research Institute (ESRI) suggests that energy poverty is caused mostly by low incomes rather than energy costs or the thermal efficiency of a dwelling⁹.

Warmer Homes lists the following categories of households as those most at risk of energy poverty:

- **1.** Low income households
- 2. Households occupied by older people
- 3. Households renting a dwelling from a local authority
- 4. Households where the dwelling was constructed prior to 1945

Of the four categories outlined above, research conducted by DCENR for the purposes of Warmer Homes indicates that the most relevant factor in energy poverty is the age of the housing stock. It is stated that dwellings constructed prior to 1980 account for 72% of energy poor households whereas dwellings constructed post 1990 account for 15% of energy poor households. According to Census 2011, only 32% of all housing stock was built before 1970, while 28% of stock was built from 2001 onwards. So the apparent improvement in figures may partially be linked to changes in energy efficiency requirements imposed by Building Regulations, and to some extent the Building Energy Rating (BER) requirements introduced for newly constructed dwellings in 2007. The BER scheme was extended to all existing domestic dwellings from 1 January 2009 such that a BER certificate is now required for all houses offered for sale or rent.

Notwithstanding the recent research by the ESRI, DCENR considers the interplay of household income, the price of energy, and the energy efficiency of a dwelling as the three main elements contributing to energy poverty. In respect of rental accommodation, it has been argued that there is a natural association with energy poverty. This is due to a combination of factors. Given the strength of rental markets at present, and the fact that landlords themselves are not living in the accommodation, there is little incentive for owners to make improvements to properties. Where there is a lack of security of tenancy or a lack of income or both, tenants are not in a position to invest in the energy efficiency of the place they occupy. Tenants are also less likely to benefit from measures designed to enhance the energy performance of the dwelling as they are not the owners – an issue central to the problem of cold homes in the private rented sector. In any event, it is not the role of the tenant to invest in a dwelling ¹⁰ they do not own. A significant portion of the rental market consists of older buildings, and higher rents are reducing the disposable income of tenants. The result is that energy poverty is affecting an ever increasing demographic.

⁷ Thornton, R and Mac Mahon, B (2014) Minimum Household Energy Need, Technical Paper, Vincentian Partnership for Social Justice, Commissioned by the Society of St Vincent de Paul.

⁸ https://www.svp.ie/News-Media/News/SVP-urges-that-Budget-2015-must-address-energy-pov.aspx

⁹ Maître, B, Watson, D, 2015. "Fuel Poverty: a Matter of Household Resources or a Matter of Dwelling Efficiency?", ESRI Research Bulletin, summarising findings available at http://www.tara.tcd.ie/handle/2262/71985.

¹⁰ Scott, S., S. Lyons, C. Keane, D. McCarthy and R. S. J. Tol, 2008. "Fuel Poverty in Ireland: Extent, Affected Groups and Policy Issues", ESRI Working Paper No. 262, Dublin: Economic and Social Research Institute.

3.1- LEGISLATION RELEVANT TO MINIMUM RENTAL STANDARDS

No specific provision is made in legislation for the promotion of energy efficiency within private rental accommodation. In more general terms, physical standards for rental accommodation have been provided for in law since 1992. In the years that followed, it became clear that the standards prescribed no longer reflected the requirements of the modern rental sector. In 2004, the Government established the Private Residential Tenancies Board (PRTB) to register tenancies, resolve disputes and provide policy advice to policy makers. While the PRTB has not stipulated energy efficiency policy for the sector, it recently commissioned research which, among other things, considered energy efficiency in an international comparative context¹¹. In 2006, the Government's policy document *"Towards 2016"* was published which outlined a core objective of the Government and social partners to enable each household to have available to them an affordable dwelling of good quality. Achievement of this aim required the updating of the minimum standards Regulations for the private rented sector, and once updated, they were to be effectively enforced by Local Authorities¹².

In September 2006, the Department of the Environment, Heritage, and Local Government launched the programme "Action on Private Rented Accommodation Standards". This led to the Housing (Standards for Rented Houses) Regulations 2008. Following the introduction of these Regulations, further measures to improve the standards of rental accommodation required primary legislation, which was delivered by way of the Housing (Miscellaneous Provisions) Act 2009. The 2009 Act made a number of amendments to the Housing (Miscellaneous Provisions) Act 1992 under which housing authorities carry out the majority of their functions in relation to private rented housing. The primary changes were the introduction of a strengthened sanctions regime, an expanded definition of "proper state of structural repair", and the inclusion of properties "available for letting" within the terms of the Regulations in addition to those properties actually "let". To ensure compatibility with the 2009 Act, the Housing (Standards for Rented Houses) Amendment Regulations 2009 were introduced, implementing the necessary amendments to the 2008 Regulations and thereby completing the new regulatory code.

3.1.1 – The Regulations

The 2008 Regulations came into effect on 1 February 2009 in respect of all new tenancies let from that date. In respect of Articles 6, 7 and 8 of these Regulations, existing tenancies were permitted a 4 year phasing-in period as it was anticipated that these Articles could necessitate significant refurbishment works and capital investment on the part of the landlord. A property let at any time between 1 September 2004 and 31 January 2009 was deemed an "existing tenancy". The 2009 Regulations came into effect on 1 December 2009. The Regulations therefore became applicable in full to all rental accommodation on 1 February 2013 with the exception of the following:

- Holiday homes
- Accommodation provided by the Health Service Executive or an approved body with sanitary, cooking or dining facilities provided for communal use
- Demountable (e.g. mobile homes) housing provided by a housing authority

Article 8 does not apply to accommodation let by a housing authority or an approved housing body.

¹¹ The Housing Agency (2014): "Future of the Private Rented Sector" Final Report on behalf of the PRTB. DKM, RDJ, ESRI, RED C. http://www.prtb.ie/docs/default-source/pdf-manuals/future-of-the-private-rented-sector.pdf?sfvrsn=0
¹² Towards 2016-Ten Year Framework Social Partnership Agreement 2006-2015 available at http://www.prtb.ie/docs/default-source/pdf-manuals/future-of-the-private-rented-sector.pdf?sfvrsn=0

The primary provisions of the 2008 and 2009 Regulations ("the Regulations") are as follows:

a) Structural Condition

Article 5 states that all rental accommodation shall be maintained in a proper state of structural repair. The 2009 regulations defined "a proper state of structural repair" as a dwelling that is "sound, internally and externally, with roof, roofing tiles and slates, windows, floors, ceilings, walls, stairs, doors, skirting boards, fascia, tiles on any floor, ceiling and wall, gutters, down pipes, fittings, furnishings, gardens and common areas, maintained in good condition and repair and not defective due to dampness or otherwise".

b) Sanitary Facilities

According to Article 6, all rental accommodation must contain the following sanitary facilities equipped with a continuous supply of cold water and a facility for the piped supply of hot water;

- A toilet with a wash hand basin adjacent to it
- A fixed bath or shower

These facilities must be within the living area of the house, for the exclusive use of the house, and in a room separated from other rooms by a wall and a door. They must contain separate ventilation and be maintained in good working order.

c) Heating Facilities

Article 7 provides that every habitable room must have a permanently fixed appliance (or appliances) capable of providing effective heating. These appliances must be capable of being independently managed by the tenant. There must also be suitable and adequate facilities for the removal of fumes and other products of combustion to the external air.

d) Food Preparation, Storage and Laundry

Article 8 states that the following shall be provided for the exclusive use of the house;

- 4 ring hob with oven and grill
- Provision for the effective and safe removal of fumes to the external air by means of cooker hood or extractor fan
- Fridge and freezer
- Microwave oven

• Sink with an adequate draining area, a piped supply of cold water, and a facility for the piped supply of hot water

- Adequate number of kitchen presses for food storage
- Washing machine or access to a communal washing machine facility within the curtilage of the building
- A dryer where the accommodation does not provide exclusive use of a garden or yard

All facilities must be maintained in good repair and working order.

e) Ventilation

Article 9 provides that every habitable room shall have adequate ventilation which is maintained in good repair and working order. Adequate ventilation shall also be provided for the removal of water vapour from kitchens and bathrooms.

f) Lighting

Article 10 provides the following;

- Every habitable room must have adequate natural lighting
- Every room, hall, stairs and landing must have suitable and adequate means of artificial lighting
- The windows of every room containing a bath, shower, and toilet must be suitably and adequately screened to ensure privacy
- g) Fire Safety

Article 11 provides that all rental accommodation must contain a fire blanket and either a mains-wired smoke alarm or at least two 10-year self-contained battery-operated smoke alarms.

In respect of a multi-unit building, the following must be provided;

- A mains-wired smoke alarm, a fire blanket, and an emergency evacuation plan within each selfcontained dwelling
- Emergency lighting in all common areas
- h) Refuse Facilities

Article 12 requires access for all rental accommodation to suitable and adequate pest and vermin-proof refuse storage facilities. Communal storage facilities where appropriate will be considered to comply with the regulations.

i) Electricity and Gas

Article 13 provides that installations for electricity and gas supply must be maintained in safe working order and good repair. There must also be, where necessary, provision for the safe and effective removal of fumes to the external air.

Enforcement

All landlords have a legal obligation to ensure their rental accommodation complies with the minimum standards prescribed in the Regulations. Responsibility for enforcement of the Regulations rests with the relevant local authority. It is a matter for each individual local authority to decide the specific details of its enforcement strategy and inspection arrangements, but in general terms, local authority inspectors carry out inspections of rental properties to ensure compliance. Where a property does not comply, the local authority can impose a series of sanctions on a landlord.

Perhaps the most important element brought about by the 2009 Act was the imposition of a new sanctions regime replacing the previous position whereby a housing authority could carry out remedial works in circumstances of a contravention of the Regulations and recoup the cost from the landlord.

The new regime is as follows;

a) Improvement Notices

Where a landlord contravenes a requirement of the Regulations, a housing authority may issue an improvement notice informing the landlord of the contravention, the remedial works necessary, and a time limit in which the works must be carried out. Information must also be provided to the Landlord regarding the submission of an objection and his/her right of appeal. A copy of the improvement notice must be given to the tenant.

Once an improvement notice is issued, there is an obligation on the landlord to inform both the tenant

and the local authority of when the remedial works have been completed. A landlord aggrieved by the improvement notice may submit an objection, and, if the objection is not upheld by the local authority, appeal that decision to the District Court. A local authority may withdraw an improvement notice but is not precluded from issuing a further improvement notice in respect of the property.

b) **Prohibition Notices**

Where a landlord fails to comply with an improvement notice, a housing authority may issue a prohibition notice directing that, at the end of the existing tenancy, the property shall not be re-let until the contravention of the regulations has been remedied. Information on the right of the landlord to appeal such a notice must be provided. Prohibition notices come into effect when the property becomes vacant. This protects the rights of existing tenants who may, if they wish, terminate the tenancy under the Residential Tenancies Act 2004.

A copy of the prohibition notice must be given to the tenant of the property. A landlord has a right to appeal the prohibition notice to the District Court but must, at the same time, notify the housing authority in writing of the appeal and the grounds for the appeal.

Where a landlord has remedied the contravention, he is required to inform the housing authority and the tenant. The local authority must then issue to the landlord a written notice of compliance with the prohibition notice, a copy of which must be sent to the tenant of the house. It will be open to a housing authority to withdraw a prohibition notice but it retains the power to issue further notices in respect of a property if necessary.

In the interests of public health and safety, the housing authority may make whatever arrangements they consider appropriate or necessary to bring the contents of a prohibition notice to the attention of the public e.g. publishing the notice on their website.

Any person who obstructs an authorised person in the lawful exercise of their powers under the Housing (Miscellaneous Provisions) Acts or who contravenes the Regulations is guilty of an offence. Failure to comply with an improvement notice or prohibition notice is also an offence. Where a person is guilty of an offence under these Acts, the maximum fines payable are \leq 5,000 and \leq 400 for each day of a continuing offence. The court may also order that person to pay the costs and expenses incurred by the housing authority in prosecuting the offence¹³.

¹³ <u>http://www.environ.ie/en/Publications/DevelopmentandHousing/Housing/FileDownLoad,21697,en.pdf</u>

4.1- BUILDING REGULATONS

Despite the improvements brought about by the implementation of the Regulations, **no specific provision is made for the promotion of energy efficiency within private rental accommodation**. To adequately examine the position on rental properties therefore, it is necessary to look beyond the private rented sector. It is necessary to map out the legislative provisions relating to energy efficiency of the housing stock in general in order to establish a wider framework within which to approach **rental accommodation policies in this area**.

The Building Control Act 1990 sets out the system of building regulations and their enforcement in Ireland. It states that national building regulations may be made by the Minister for the Environment, Heritage and Local Government for a range of purposes to include:

- **1.** Health, safety and welfare
- 2. Special needs of the disabled
- 3. Conservation of fuel and energy
- 4. Securing the efficient use of resources
- 5. The encouragement of good building practice

The first Building Regulations came into effect on 1 June 1992. The detailed technical content was removed from the regulations and put into twelve separate technical guidance documents which are as follows:

PART	TITLE
PART A	Structure
PART B	Fire
PART C	Site preparation and resistance to moisture
PART D	Materials and workmanship
PART E	Sound
PART F	Ventilation
PART G	Hygiene
PART H	Drainage and waste disposal
PART J	Heat producing appliances
PART K	Stairways, ramps and guards
PART L	Conservation of fuel and energy
PART M	Access for disabled people

Each Technical Guidance Document ("TGD") is self-contained, written and illustrated in language familiar to the building industry.

The Building Regulations apply to all new builds from 1 June 1992, and with regard to existing dwellings, to all extensions and alterations carried out from that date under Parts A and B. The Building regulations also apply where the work involves the provision or replacement of heating services, sanitary appliances, accommodation, drainage and waste disposal systems.

Particular requirements apply where there is a 'material change of use' of a building or part of a building. Where an existing building is undergoing a 'change of use' as if it were a new building having a new proposed use, the following parts apply:

PART	TITLE
PART A	Structure
PART B	Fire
PART F	Ventilation
PART G	Hygiene
PART H	Drainage and waste disposal
PART J	Heat producing appliances
PART L	Conservation of fuel and energy

The Department of the Environment, Community and Local Government ("DECLG") undertakes a continuing programme of revision and development of building regulations to keep pace with technical change. Account is taken of changing circumstances to ensure better, safer and more accessible buildings, and European legislation is implemented. With constant developments in this regard, it has proven necessary to amend the Building Regulations on a continuous basis.

For the purposes of this review, the evolution of Part L (conservation of fuel and energy) of the Building Regulations 1997 – 2011 and the associated TGD is assessed.

4.2 - PART L – CONSERVATION OF FUEL AND ENERGY

Part L of the1991 Building Regulations provides the following at section L1:

"A building shall be so designed and constructed as to secure, insofar as is reasonably practicable, the conservation of fuel and energy".

The table below¹⁴ provides a general overview of the evolution of energy efficiency requirements under Part L of the various Building Regulations.

Timeline	2005	2008	2011	2015- 2020	
% Improvement	Baseline	40% and renewables requirement	60%	Nearly Zero Energy Policy (70% approx.)	
Primary Energy kWh/m2/annum	150	90	60	45	
CO2 kg/m2/annum	30	18	12	10	
BER	B3	B1	A3	A2	

4.2.1 - Part L of the 1997 Building Regulations

The 1997 Building Regulations apply to works or buildings in which there is a material change of use and where these works or change of use commenced on or after 01 July 1998.

The objective behind Part L of the Second Schedule to the 1997 Building Regulations is to ensure that occupants can achieve adequate levels of thermal comfort whilst minimising the use of scarce resources. Part L states that buildings should be designed and constructed to achieve this aim in so far as is practicable. This requires, as a minimum, the provision of energy efficient measures which –

- A. limit the heat loss and, where appropriate, maximise the heat gains through the fabric of the building
- **B.** control as appropriate the output of the space heating and hot water systems
- **C.** limit the heat loss from hot water storage vessels, pipes and ducts

The 1997 TGD is divided into four sections:

- The limitation of heat loss through the building fabric
 This section outlines maximum figures in relation to heat loss which should not be exceeded.
 Methods of limiting heat loss are outlined to limit thermal bridging around windows, doors and
 other openings, and the infiltration of cold outside air.
- 2. Controls for space heating and hot water supply systems This section sets out the minimum requirements for the effective control of space and water heating systems so as to limit energy use. It states that where practicable, provision should be

¹⁴ Adapted from Department of the Environment, Community & Local Government's presentation entitled "Future Regulatory Framework for Nearly Zero Energy Buildings". Also available at <u>http://www.energyquarter.com/energy-saving/construction/part-l-2011-primary-changes/</u>

made for individual room thermostats, or zone controls for larger dwellings, to control heat space emission.

- **3.** Insulation of hot water storage vessels, pipes and ducts This section provides that all hot water pipes and storage vessels associated with the provision of heating and hot water should be insulated to prevent heat loss. Various methods of insulation are detailed in this section.
- 4. The heat energy rating method

The 1997 Building Regulations introduced Heat Energy Ratings. This was done to implement the EU SAVE Directive¹⁵, which required all Member States to implement a programme for the energy certification of buildings. The Heat Energy Rating of a building is defined as a measure of the annual energy output for the appliances which provide space and water heating for standardised room temperatures, levels of hot water use, and conditions of operation. This energy rating was aimed at providing the best single indicator of overall thermal performance in a standardised format. It was also hoped that this rating could be used as a means of conveying to potential property buyers the energy efficiency advantages of dwellings which comply with the Building Regulations.

4.2.2- Part L of the 2002 Building Regulations

In 2002, Part L of the 1997 Building Regulations was amended to set higher thermal performance and insulation standards for dwellings.

This extended the scope of the Building Regulations to include the replacement of external doors, windows or roof lights in existing dwellings. The 2002 Building Regulations apply to any repair or renewal of an existing building undertaken on or after 01 January 2003, where the repair or renewal is likely to affect the structural integrity of the building or the building element being repaired or renewed.

The main changes introduced by the 2002 TGD are as follows:

- The introduction of two additional methods for evaluating the acceptable levels of heat transmission through building fabric elements, the Elemental Heat Loss method¹⁶ and the Overall Heat Loss method¹⁷
- A reduction of approximately 35-44% on the U-values¹⁸ set in the 1997 Regulations
- The introduction of guidelines in relation to the limitation of heat loss through thermal bridging and air tightness
- The introduction of minimum criteria for the provision of controls for space and water heating systems
- The introduction of minimum standard specification for the insulation of storage vessels and pipe work associated with space and water systems.

¹⁵ Council Directive 93/76/EEC

¹⁶ Elemental Heat Loss method: A unit approach providing insulation requirements for building elements (external fabric).

¹⁷ Overall Heat Loss method: measures transmission heat loss by calculating a general U-value for a building

¹⁸ A U-Value is the measure of the rate of heat loss through a material. It represents the amount of heat lost through one square meter of the material for every degree difference in temperature either side of the material. It is indicated in units of Watts per meter Squared per Degree Kelvin or W/m²K.

The 2002 Building Regulations placed responsibility for increasing awareness of the importance of energy efficiency in housing, with specific emphasis on the Heat Energy Rating of dwellings, on the Department of Communications Marine and Natural Resources and Sustainable Energy Ireland ("SEI").

4.2.3 - Part L of the 2005 Building Regulations

The 2005 Building Regulations amended Part L to introduce a requirement that the Co2 emissions associated with energy use for space heating, water heating, ventilation and lighting of a new dwelling be limited in so far as is reasonably practicable. The 2005 Building Regulations apply to works or buildings in which there is a material change of use and where these works or change of use commenced on or after 01 July 2006.

The main changes introduced by the 2005 TGD are as follows:

- The introduction of the Dwelling Energy Assessment Procedure ("DEAP") for calculating the Maximum Permitted Co2 Emission Rate ("MPCDER")
- The introduction of an obligation to insulate storage vessels and water pipes in unheated spaces to avoid freezing

4.2.4 - Part L of the 2008 Building Regulations

The Building Regulations were amended in 2008. The TGD for the amended Part L introduced an increase of 40% to the energy reduction targets set in 2005. These regulations also provided for the first time specific guidance for existing dwellings. The 2008 Building Regulations apply to works or buildings in which there is a material change of use and where these works or change of use commenced on or after 01 July 2008.

The main changes introduced by the 2008 TGD in relation to new dwellings are as follows:

- The improvement of the DEAP methodology for calculating primary energy consumption and Co2 emissions
- The introduction of the requirement for a minimum renewable energy contribution in relation to new dwellings¹⁹
- Reduced maximum U-values for windows, doors and roof lights
- The introduction of mandatory air pressure testing under a new heading of Building Envelope²⁰ Air Permeability
- The introduction of a minimum energy efficiency requirement of 86% for oil and gas boilers to apply to fully pumped hot water based central heating systems
- The introduction of a new heading, *Construction Quality and Commissioning of Services* to ensure insulation continuity, air tightness, and avoidance of thermal bridging
- The introduction of a requirement on installers/contractors to provide owners with sufficient information to enable them to operate and maintain building systems at optimal energy performance

¹⁹ All new homes must have an energy contribution from a Renewable Energy source of 10Kwh/m2/yr. This regulation is being enforced with all homeowners, Builders, Architects, Engineers and BER Assessors having to ensure that all new homes meet the minimum renewable energy contribution standard.

²⁰ Building Envelope: The building envelope is the line of separation between the inside and outside environments of a building.

Under the 2008 TGD, existing dwellings are also required to comply with minimum requirements in respect of insulation, thermal bridging and air infiltration in circumstances where material alterations or extensions have been made to an existing dwelling.

4.2.5- Part L of the 2011 Building Regulations

The TGD with regard to Part L was revised in 2011 to reflect a process of continuing development and the establishment of higher standards, such as reductions in energy consumption, contributing to reductions in carbon emissions. The 2011 Building Regulations apply to works or buildings in which there is a material change of use and where these works or change of use commenced on or after 01 December 2011.

The main changes introduced by the 2011 TGD are as follows;

- A reduction of approximately 33% on energy performance levels including energy consumption and Co2 emissions
- The introduction of a new formula for calculating the energy saving achieved from use of Combined Heat and Power units
- Maximum U-values were reduced by approximately 15% and by up to 20% for windows and external doors
- The air permeability levels were reduced by 30% from their introductory level in 2008
- The requisite energy efficiency for oil and gas fired boilers was increased by a further 4% on the 2008 levels, bringing the requirement for energy efficiency to 90%

The 2011 Building Regulations are the second step in the transition to an almost zero carbon standard for all new homes, a target which the last government pledged to achieve by 2013²¹. The 2011 TGD amounts to a 60% overall improvement on the 2005 TGD levels of energy performance for residential dwellings.

In order to comply with the building regulations contained in TGD 2011 a building must achieve all of the required levels in terms of U-value, airtightness and heating system efficiency. A building must also achieve a 60% overall energy reduction in comparison to the Building Energy Rating (BER) that the same building would have achieved if designed in compliance with the requirements of the TGD 2005. This 60% reduction is calculated using the SEAI's DEAP software. Using this software, the percentage reduction is calculated by inputting the dimensions of the building being designed, together with the energy performance details of each element of the building. The DEAP software will then identify the energy consumption and carbon emissions of the building, relative to a reference house in the 2005 regulations²².

²¹ <u>http://passivehouseplus.ie/ci/articles/part-l-building-regulations/part-l-changes.html</u>

²² http://passivehouseplus.ie/ci/articles/part-l-building-regulations/part-l-changes.html

5.1- EU LEGISLATION

A critical factor underpinning the requirement for increased energy efficiency in Ireland is the State's obligations as a member of the European Union. Like every member state, Ireland forms an integral part of the European Union's target under the Kyoto Protocol²³. The overall target for the European Union under this protocol is to achieve an energy efficiency of 20% primary energy savings by 2020. The Kyoto Protocol has been recognised as the foundation for global climate diplomacy²⁴.

5.1.1- The Energy Efficiency Directive (2012/27/EU)

The Energy Efficiency Directive (2012/27/EU) ("the Directive") was formally adopted by the Council of Ministers and European Parliament in October 2012. The Directive amends and repeals both the Cogeneration Directive (2004/8/EC) and the Energy Services Directive (2006/32/EC). As a result of the Directive, the following elements of the European Efficiency Plan will now be binding on Member States;

- An annual rate of renovation for central Government buildings of 3%
- An inventory of central Government buildings with a total useful floor area over certain thresholds
- An obligation on public bodies to procure products, services and buildings with high energy efficiency performance
- Metering and billing information for consumers
- The promotion of efficiency in heating and cooling
- Obligations for industry relating to energy audits and energy management systems
- A common framework for national energy savings obligation schemes equivalent to annual energy savings of 1.5% of energy sales

The Directive has been fully transposed into Irish law through the introduction of two Statutory Instruments;

- Statutory Instrument No. 426 of 2014 which transposes the majority of the Directive into Irish Law
- Statutory Instrument No. 131 of 2014 which transposes Article 7 and minor additional provisions into Irish Law

In July 2014, a review of the European Efficiency Directive was published which included an appeal for an efficiency target of 30% to be achieved by 2030. This reflected the content of a document published by the Commission of the European Union in January 2014. Entitled *"A policy framework for climate and energy in the period from 2020 to 2030"*, this document set out the Commission's ambition for a 2030 Climate and Energy Policy Framework and proposed the following aims:

- A reduction in greenhouse gas emissions (GHG) by 40% below the 1990 level
- An EU-wide binding target for renewable energy of at least 27%
- Renewed ambitions for energy efficiency policies

A review of Ireland's progress towards meeting the 20% primary energy savings target under the Kyoto Protocol took place in October 2014 at the European Union Energy Summit. Ireland advanced the argument that Ireland's national debt should entitle the country to softer target levels for greenhouse emissions. European

²³ The Kyoto Protocol is an international agreement linked to the United Nations Framework Convention on Climate Change, which commits its Parties by setting internationally binding emission reduction targets.

²⁴Clark, D. (2012). *Has the Kyoto protocol made any difference to carbon emissions?* Available:

http://www.theguardian.com/environment/blog/2012/nov/26/kyoto-protocol-carbon-emissions (Last accessed 8th November 2014).

leaders deliberated and granted Ireland a key concession, agreeing a new long-term deal on climate change. Although the European leaders stopped short of setting specific national targets to reduce greenhouse gas emissions between 2020 and 2030, they settled on an overall target to reduce emissions by 40 per cent compared with 1990 levels²⁵.

5.1.2- Energy Performance of Buildings Directive

The Energy Performance of Buildings Directive 2002 ("the 2002 Directive") contained a range of provisions aimed at improving the energy performance of new and existing buildings. The 2002 Directive outlines information relating to energy performance which must be made available to builders, purchasers and tenants prior to entering into property transactions.

The 2002 Directive was transposed into Irish law by way of Statutory Instrument No. 666 of 2006, which was ultimately superseded by Statutory Instrument No. 243 of 2012. Statutory Instrument No. 666 of 2006 introduced the concept of an energy rating for buildings and the SEAI was charged with developing and managing this system. As a result, from 1 January 2009, all dwellings for sale or let are required to have a Building Energy Rating ("BER"). The BER is utilised as a key indicator of the success of the various energy efficiency incentives and policies.

The Recast European Performance of Buildings Directive 2010/30/EU (EPBD) requires that all new buildings constructed from January 2021 comply with the nearly zero energy building standards. The Government published an action plan for the implementation of this Directive in 2012, within which a nearly zero energy building was defined as follows;

"A building that has a very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced onsite or nearby".²⁶

If and when compliance with the nearly zero energy building standards is reached in Ireland, this will result in all dwellings having a minimum BER rating of A3²⁷. A-rated homes are the most energy efficient and tend to have the lowest energy bills.

²⁵ Lynch, S. (2014). Ireland's reliance on agriculture recognised in EU climate deal. Available: <u>http://www.irishtimes.com/news/world/europe/ireland-s-reliance-on-agriculture-recognised-in-eu-climate-deal-</u> <u>1.1975544</u>. Last accessed 27 October 2014.

²⁶ Action Plan for the Implementation in Ireland of Directive 2010/31/EU, September 2012

²⁷ Towards Nearly Zero Energy Buildings in Ireland-Planning for 2020 and Beyond, pg. 30

6.1- CURRENT GOVERNMENT POLICY

In May 2014, the DCENR published The *Green Paper on Energy Policy in Ireland*²⁸. This paper revealed that the majority of Ireland's energy is imported, at an approximate annual cost of €6.5 billion to the Irish economy. The primary energy fuels are oil and natural gas, and whilst there is increased penetration of renewable sources of energy, this remains a low portion of overall consumption.

The majority of Irish energy policy is driven by relevant EU legislation and Directives, as set out above. Due to the nature of energy poverty, responsibility for its improvement is shared between different government departments and the energy regulator. The purpose behind this sharing of responsibility is to ensure policymakers focus on their individual areas of competence.

The DCENR have overall responsibility for determining and implementing national energy policy, energy efficiency targets, and Better Energy, the national energy upgrade programme. The responsibility for promoting and assisting energy efficiency and the administration of the Better Energy programme is delegated by DCENR to the Government agency, the SEAI. Responsibility for building standards and regulations lies with the Department of Environment, Community and Local Government ("DECLG"). The Commission for Energy Regulation ("CER"), an independent regulator, is tasked with regulation of the energy supply sectors' energy demand reduction obligation scheme.

Other Departments have responsibilities within this area. The Department of Environment, Community and Local Government has responsibility for a Housing Aid Grant for Older People. The Department of Social Protection have a role in providing income supports for certain categories of claimant in terms of the Fuel Allowance, Household Benefits Package and the smaller schemes of Heating Supplement and Exceptional Needs Payment for energy related expenses.

The social welfare system plays a central role in alleviating the impact of energy poverty and social exclusion on families and individuals. While no scheme exists which is directed explicitly at the energypoor, a number of schemes and programmes operate with the primary objective of providing income support to families and individuals to assist in meeting the costs of household energy/fuel needs. More detail on these supports is found in section 6.1.6, **Financial Assistance Schemes**.

There are a variety of Government policies and strategies in place which provide a framework for Ireland to improve energy efficiency and meet its EU obligations. The most relevant are summarised below.

6.1.1- Construction 2020

Construction 2020 was published in May 2014 with a stated aim of delivering a strong, sustainable approach to construction and housing. In terms of energy efficiency, the objective outlined in Construction 2020 is to ensure that, in accordance with the National Affordable Energy Strategy, everyone can afford to heat and power their homes to an adequate level. A working group is to be established to explore whether it is feasible to introduce minimum thermal efficiency performance standards for properties offered for rent. Construction 2020 claims that the introduction of these minimum thermal efficiency standards for rental properties would serve to reduce energy poverty, improve health and minimise emissions from the private rented sector²⁹.

²⁸ Department of Communications, Energy and Natural Resources, (2014). Green Paper on energy Policy in Ireland. Available: http://www.dcenr.gov.ie/NR/rdonlyres/DD9FFC79-E1A0-41AB-BB6D-

²⁷FAEEB4D643/0/DCENRGreenPaperonEnergyPolicyinIreland.pdf . Last accessed 10 October 2014.

²⁹ http://www.taoiseach.gov.ie/eng/Publications/Publications_2014/Construction_Strategy_-_14_May_2014.pdf

In Construction 2020, the Government promises to allocate a budget of €57 million to further stimulate energy efficiency measures in the residential sector. This encompasses the implementation of a publicity campaign to increase awareness of the availability of the various supports and energy efficiency packages in existence to ensure greater uptake. Responsibility for this project has been allocated to DCENR but no timeline for implementation is specified.

6.1.2- National Energy Efficiency Action Plan (NEEAP)

The NEEAP was published in 2009 outlining Ireland's commitment to a 20% reduction in energy demand by 2020. The objective of the NEEAP was to achieve a 15% saving on energy consumption levels. The document was intended to act as a roadmap outlining the measures and policies required to achieve this target. The estimated savings indicated in the NEEAP were to account for approximately 75% of Ireland's 2020 target, with the balance to be achieved through other measures and programmes. Three action plans have been published to date setting out strategies for achievement of the target. The most recent of these plans was published in 2014.

6.1.3- Better Energy Programme

The Better Energy Programme was introduced to deliver energy savings towards Ireland's 2020 target. These savings were intended to complement those achieved through the NEEAP.

The Better Energy Programme merged the Warmer Homes Scheme, the Greener Homes Scheme (renewable technologies), and the Home Energy Saving scheme into a single programme. These had previously existed as independent schemes. This simplified the application process for households to claim financial assistance for energy efficiency upgrades.

6.1.4- Better Energy Warmer Homes

The focus of Better Energy Warmer Homes is to assist people on low incomes who live in owner occupied homes and who are in receipt of one of the following: Fuel Allowance as part of the National Fuel Scheme (Fuel Allowance); Job Seekers Allowance for over six months and with children under 7 years of age; or Family Income Supplement. The scheme provides a means of filtering energy efficiency based supports to home-owner households in receipt of at least one of the above supports. Energy efficiency improvements are available cost-free to eligible households including attic insulation, draught proofing, lagging jackets, CFL bulbs and cavity wall insulation. This scheme has been criticised on two grounds: that it does not generally support whole house deep retrofits resulting in a failure to realise the potential for more significant energy savings in the dwellings; and, that it is limited to home owners, many of whom are already on the National Fuel Scheme.

6.1.5- Better Energy Homes

In March 2009, the Better Energy Homes scheme was launched. This scheme applies to households that do not meet the necessary eligibility criteria for Better Energy Warmer Homes. Landlords wishing to upgrade rental properties may avail of this scheme, although it is important to note that the scheme applies only to dwellings constructed prior to 2006. The scheme provides financial assistance for energy

efficiency improvements to dwellings, to include the following works:

- Roof insulation
- Wall Insulation
- Installation of high efficiency gas/oil fired boiler with heating controls upgrade
- Installation of solar panels
- Completion of a BER

These improvements are not cost-free. Grants are provided dependent on the type of improvement required.

The majority of works funded under this scheme consist of less expensive and less intrusive improvements, such as attic insulation and cavity wall insulation. Whilst undoubtedly useful to some extent, it has been argued that these improvements are limited in their impact compared to the energy efficiency savings that may be garnered from a deep retrofit project comprising of a combination of external/internal wall insulation, attic insulation, upgrading of glazing, and temperature controlled high efficiency heating systems³⁰.

6.1.6- Financial Assistance Schemes

In addition to the Better Energy Programme there are a number of other schemes aimed at improving energy efficiency and reducing energy poverty which can be summarised as follows;

a) Housing Aid for Older People:

This is a grant scheme available to people over the age of 60 which is administered by relevant local authorities. The maximum grant available is $\leq 10,500$ with each grant dependent on the means of the individual. Under this programme grants are offered to eligible homeowners for energy reduction measures such as:

- High-efficiency boilers
- Attic and wall insulation
- Renewable technologies like solar heating panels

Grants may also be obtained for repairs, improvements and works such as re-wiring, dry lining, and replacement of windows and doors. The programme includes Building Energy Rating (BER) assessments on each property upgraded under the scheme. The Department of Environment, Community and Local Government is responsible for this scheme.

b) The National Fuel Scheme:

The objective of the National Fuel Scheme is to assist householders, who are long-term recipients of social welfare payments, to meet the additional cost of their heating needs during the winter months. This scheme involves a basic cash payment of €20.00 per week to eligible households for a 26-week period from September to May each year. To be eligible, households must be in receipt of one of a range of welfare payments, with one fuel allowance being paid per qualifying household.

³⁰ Thinking Deeper: Financing Options for Home Retrofit, 2011 cited in Keyes, Mark (2014) "Certificate in Training in Low Energy Buildings – Module 1 – Building for Energy Performance". Institute of Technology Blanchardstown, Dublin, Ireland. Output of QualiBuild Project led by Limerick Institute of Technology, Limerick, Ireland, Pg.121.

c) The Household Benefits Scheme:

This package of allowances assists people over 70, and people under age 70 in certain circumstances, with the costs of electricity or gas. A Free Television Licence is also part of the package. The Electricity Allowance is a cash credit paid each month. This change is automatically applied to a bill if the recipient is an Electric Ireland customer, and is shown as \leq 35 per month credit. Where the electricity provider is not Electric Ireland, the Electricity Allowance is paid directly to the claimant (financial institution or at the local post office). Depending on the gas supplier, a Natural Gas Allowance of \leq 35.00 can be paid as a cash credit on the monthly gas bill or paid directly to the claimant in the same way as electricity. The monthly allowance of \leq 35 can be carried forward without restriction, for gas or electricity, and can be drawn down at any stage, including circumstances where the claimant wishes to switch to a different energy provider.

d) The Heating Supplement under the Supplementary Welfare Allowance Scheme:

This is a weekly payment which can be obtained to assist with the cost of heating. Eligibility for the heating supplement requires proof of extra heating needs due to age, medical condition or disability. Those people living alone with a dependent child or relative may also be eligible. This supplement is means tested. There is no fixed rate or amount payable under the scheme and the amount of the allowance is based on need. Assessment of need is carried out by representatives of the Department of Social Protection.

e) Exceptional Needs Payment:

An Exceptional Needs Payment is a single payment to help meet essential, once-off, exceptional expenditure, which a person could not reasonably be expected to meet out of their weekly income. The Department of Social Protection may help with the cost of electricity or natural gas bill in exceptional circumstances. The Department's representative will make a decision on cases using the Code of Practice on Fuel Debt. Recipients must satisfy a means test. The Money Advice and Budgeting Service (MABS) is a free, independent and confidential service which provides household budgeting advice to households struggling with personal and consumer debt, including those arising from domestic energy costs. MABS is funded by the Department of Social Protection, through the Citizens Information Board. In addition, Non-Governmental Organisations such as the Society of St. Vincent de Paul (SVP) also provide financial assistance to households struggling with the costs of household essentials such as energy, and in 2013 spent more than €10 million assisting families and individuals across the Island of Ireland with the cost of fuel and energy alone.

f) Landlords and the Home Renovation Incentive (HRI)

The Finance (No 2) Act 2013 and Finance Act 2014 provide for a Home Renovation Incentive (HRI) Scheme, which runs from 25 October 2013 to 31 December 2015 for Homeowners and from 15 October 2014 to 31 December 2015 for Landlords. The Incentive provides for tax relief by way of an Income Tax credit at 13.5% of qualifying expenditure on repair, renovation or improvement works carried out on a main home or rental property by qualifying Contractors. The Home Renovation Incentive (HRI) was extended to include Landlords who are subject to income tax.

The works must cost a minimum of €4,405 (before VAT) per property, which will attract a credit of €595 per property. Where the cost of the works exceeds €30,000 (before VAT) per property, a maximum credit of €4,050 per property will apply. Homeowners or Landlords must be Local Property Tax and Household Charge compliant in order to qualify under the Incentive. Landlords must also have complied with the Private Residential Tenancies Board registration requirements.

7.1- CONCLUSION

There is no specific provision in legislation for the promotion of energy efficiency in private rental accommodation. Some positivity may be taken from the establishment of a working group under Construction 2020 which will investigate the feasibility of introducing minimum thermal efficiency standards for rental properties. If introduced, such standards may place an onus on landlords to make improvements to rental properties particularly if a stringent enforcement regime is implemented. Construction 2020 acknowledges the importance of inspections of rental properties by local authorities to enforce current minimum standards for rental properties. The Government undertakes to support local authorities in this vital work, which is important given that there is a degree of variance in the amount of inspections that take place from county to county. This is perhaps reflective of the fact that responsibility for inspections is delegated, and is not carried out by a centralised authority.

Looking internationally, the UK Energy Act 2011 places a duty on the Secretary of State to bring into force regulations to improve the energy efficiency of buildings in the domestic and non-domestic private rented sector in England and Wales. The Regulations are currently being drafted.

In terms of wider policies on energy efficiency in Ireland, successive Governments lack cohesiveness in policymaking. Relevant policies and strategies in this area are spread across a number of Government Departments and state agencies, leading to an overlap of aims and responsibilities and a lack of delivery. Greater co-operation of the Departments of Environment and Social Protection with the Department of Energy on this issue is necessary to ensure energy affordability for people on low incomes. Central to the success of this policy however is specific legislation to progressively realise energy efficiency in private rental accommodation. This needs to be done over a realistic and achievable timescale, with appropriate incentives to provide positive change for tenants, viable tenancies for landlords, while securing both the supply and affordability of such housing.

IMPORTANT: Please note that this paper is for information purposes only and does not constitute legal advice. Specific advice should always be sought in given situations.

APPENDIX A- DEFINITIONS

Air Infiltration: the uncontrolled entry of fresh air into a building through air leakage paths, e.g. gaps at junctions between external building elements and around openings, unsealed penetrations of the building envelope accommodating services.

Building Envelope: the line of separation between the inside and outside environments of a building.

DECLG: the Department of the Environment, Community and Local Government.

Elemental Heat Loss method: a unit approach providing insulation requirements for building elements (external fabric).

Energy performance of a building: the amount of energy actually consumed or estimated to meet the different needs associated with a standardised use of the building, which may include, inter alia, heating, hot water heating, cooling, ventilation and lighting. This amount shall be reflected in one or more numeric indicators which have been calculated, taking into account insulation, technical and installation characteristics, design and positioning in relation to climatic aspects, solar exposure and influence of neighbouring structures, own-energy generation and other factors, including indoor climate, that influence the energy demand³¹.

Heat Energy Rating: accounts for heat demand and energy use by heating and ventilation systems. This method includes many of the elements required by the EPBD.

Nearly zero energy building: a building that has very high energy performance. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources, including energy from renewable sources produced on-site or nearby³².

Overall Heat Loss method: measures transmission heat loss by calculating a general U-value for a building.

Thermal Bridging: Fundamental of heat transfer that occurs in building envelopes when materials with high thermal conductivity (also called non-insulating material), such as steel, timber and concrete create pathways for heat loss that bypass thermal insulation.

U-Value: the measure of the rate of heat loss through a material. It represents the amount of heat lost through one square meter of the material for every degree difference in temperature either side of the material. It is indicated in units of Watts per meter Squared per Degree Kelvin or W/m^2K .

³¹ [EPBD, 2002/91/EC]

³² [EPBD recast, 2010/31/EC]

APPENDIX B- LIST OF ABREVIATIONS

BEH – Better Energy Homes BER – Building Energy Rating BEWH – Better Energy Warmer Homes CER - Commission for Energy Regulation CO2- Carbon Dioxide DCENR - Department of Communications, Energy and Natural Resources DEAP - Dwelling Energy Assessment Procedure DECLG - Department of the Environment, Community and Local Government EC – European Commission **EPBD** - Energy Performance of Buildings Directive **ESD - Energy Services Directive** ESRI - Economic and Social Research Institute EU – European Union GHS - Greener Homes Scheme GWh - Gigawatt Hour HES – Home Energy Saving scheme HRI – Home Renovation Incentive kWh - Kilowatt Hour MPEPC - Maximum Permitted Energy Performance Coefficient MPCPC - Maximum Permitted Carbon Performance Coefficient NEEAP - National Energy Efficiency Action Plan NERP - National Energy Retrofit Programme NREAP - The National Renewable Energy Action Plan NSAI - National Standards Authority of Ireland SEAI – Sustainable Energy Authority Ireland (formerly Sustainable Energy Ireland) SVP - Society of Saint Vincent de Paul **TGD** - Technical Guidance Documents VPSJ - Vincentian Partnership for Social Justice

WHS – Warmer Homes Scheme



APPENDIX C- SUMMARY OF THE IMPROVED CHANGES TO SPECIFICATIONS IN BUILDING REGULATIONS PART L

Regulation	Energy Performance Calculation	Building Fabric	Space Heating/Hot Water Systems and Controls	Storage Vessels, Pipes and Ducts	Additional New Sections
Part L 2002 Dwellings	Elemental Heat Loss method, the Overall Heat Loss method or the Heat Energy Rating	Maximum elemental U- values lowered from 1997, Thermal Bridging and Air Tightness Details	Minimum criteria for the provision of controls of space and water heating systems	Minimum standard specification for the insulation of storage vessels and pipe work	
Part L 2005 Dwellings	Maximum Permitted CO ₂ Emission Rate (MPCDER)	No changes	Reference to 2003 I.S. EN 12828 Heating Systems in Buildings.	Insulation of storage vessels and water pipes in unheated spaces to avoid freezing	
Part L 2005 Other than Dwellings	Overall Heat Loss and Elemental Heat Loss methods	Reference to BRE BR 448 Air Tightness in Commercial and Public Buildings	Efficiency of heating plant, air con and mechanical ventilation, controls for space/water heating	Specification for the insulation of storage vessels and pipe work	Guidelines for lighting systems > 1,000 W is provided
Part L 2008 Dwellings	Introduction of Dwelling Energy Assessment Procedure (DEAP) to calculate Maximum Permitted Energy Performance Coefficient (MPEPC) and Maximum Permitted Carbon Performance Coefficient (MPCPC)	ACDs introduced. Air permeability standards and testing for 10m³/(h.m²) introduced	New headings for <i>Heating</i> <i>Appliance Efficiency</i> and <i>Mechanical Ventilations</i> <i>Systems</i>	Unchanged	Contribution from renewable energy is stated in relation to dwellings. New headings introduced <i>Construction Quality & User Information</i>
Part L 2008 Other than Dwellings	Introduction of NEAP to calculate MPEPC and MPCPC	Avoiding solar overheating and thermal comfort of occupants	Unchanged	Unchanged	Encouraging designers to include renewables to achieve coefficients
Part L 2011 Dwellings	MPEPC and MPCPC reduced by 33%	Reduction in backstop elemental U-value. Air permeability standards improved to 7m ³ /(h.m ²)	Improved efficiencies for oil and gas boilers	Unchanged	Option for CHP as an alternative to renewables

