An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage

Regulatory Impact Assessment (RIA)

Proposed amendments to Technical Guidance Document L Dwellings & Technical Guidance Document F 2025

Date 02 12 2024

Executive Summary:

Climate Action Plan 2023 requires that, by Q1 2025, the performance requirements for major renovations of residential buildings be strengthened to the 2023 cost-optimal level to effectively phase out fossil fuel boilers, where practical. Detailed analysis has been done in the 2023 residential cost-optimal report. The new cost-optimal level for major renovations of dwellings is a BER of A3. The new cost-optimal equivalent works include attic insulation and the replacement of old and inefficient space heating systems with either a heat pump or connection to an efficient district heating where available. As major renovations grant supported schemes operated by DHLGH and SEAI indicates that the market is already renovating to A3, it is expected this change from B2 to A3 will have little marginal impact on the cost of major renovations and will support achieving the Climate Action Plan's targets of 500,000 major renovations to B2 and 400,000 existing dwellings using heat pumps by 2030. This will complete part of Climate Action Plan's action BE/23/1 – Publication of 2023 cost-optimal calculations report - and part of action BE/24/1 - development of regulations to effectively ban fossil fuel boilers in existing buildings undergoing major renovation, where practical.

1. General Introduction

This Regulatory Impact Assessment (RIA) is concerned with proposals to amend the building regulations provisions for Part F (Ventilation) and Part L (Conservation of Fuel and Energy) of the Second Schedule to the Building Regulations applicable to dwellings, in order to implement the 2023 cost-optimal calculations for major renovations of dwellings.

Under the Energy Performance of Buildings Directive (EPBD), Ireland is required to carry out cost-optimal calculations every 5 years to set the performance requirements in Building Regulations for new dwellings and major renovation to existing dwellings. The cost-optimal level is defined as the energy performance for a building that can be achieved for the least lifecycle cost over a period of 30 years taking account of capital costs, operating costs, maintenance costs, replacement costs and energy savings.

The cost-optimal calculations are carried out in accordance with EU Regulation No 244/2012 and the associated EU Guidance Document No 2012/C 115/01. Ireland uses the calculations for the cost-optimal level based on the macro-economic analysis where the macro-economic analysis reflects a societal perspective and includes the price of carbon.

Under the EPBD, the cost-optimal calculations were required to be submitted to the Commission in March 2023, an extension to the deadline was agreed with the Commission and they were submitted on 4th October 2023. Ireland has 5 years to implement the cost-optimal performance requirements by introducing regulations, and so, the new performance requirements will need to be implemented in Building Regulations by March 2028 in order to comply with the EPBD.

Separately, Climate Action Plan 2023 commits to implementing part of these new requirements 3 years in advance of the EPBD by Q1 2025 to further strengthen the performance requirements for new non-residential buildings and major renovation to existing residential and non-residential buildings to effectively phase out fossil fuel boilers, where practical.

This RIA is concerned with proposals to strengthen the performance requirements for major renovation to existing residential buildings by implementing the 2023 cost-optimal calculations for major renovation in 2025.

2. Proposed implementation of 2023 cost-optimal calculations for major renovation

Ireland’s 2023 Residential cost-optimal calculations were submitted to the EU Commission in accordance with Directive 2010/31/EU.

2.1 Building Regulations and Technical Guidance Documents

The Second Schedule to the Building Regulations 1997-2024 sets out the statutory minimum performance requirements that must be achieved by a new building when it is constructed. The Second Schedule is comprised of twelve distinct parts, classified as Parts A to M, which are primarily designed to ensure the health, safety and welfare of people in and around buildings. A Technical Guidance Document (TGD) is published to accompany each of the various parts and it sets out how the legal requirements of each individual part can be achieved in practice.

The requirements of Parts A to M, and the associated TGDs, are reviewed periodically by the Building Standards Section of the DHLGH in light of evolving issues relating to the built environment and in response to developments and trends within the construction industry. The aim of the Building Standards Section is to develop and promote a strong and evolving building code in support of quality construction and sustainable development.

The purpose of this RIA is to consider in detail the impacts, costs and benefits of the proposed changes to the major renovation performance requirements in the TGDs for Part L (Conservation of Fuel and Energy) & Part F (Ventilation) for dwellings.

This RIA, together with draft copies of the proposed TGD L Dwelling & TGD F, will form the basis for a comprehensive two month public consultation process. It is intended that this process, taking due account of submissions received, will enable the DHLGH to recommend a final set of amended regulation provisions to the Minister for Housing, Local Government and Heritage for signature in Q1 of 2025 in accordance with the Climate Action Plan.

2.2 Major Renovation

In accordance with the EPBD, where more than 25% of the surface area of the building envelope undergoes renovation, the energy performance of the whole building should be improved to cost-optimal level in so far as this is technically, functionally and economically feasible. Cost-optimal calculations were performed for major renovation in residential buildings in 2018 and the performance requirements introduced in 2019 were set so as to only require marginal impacts when carrying out a major renovation.

2.3 2023 cost-optimal level for major renovation

The 2019 review of Part L of the Building Regulations for dwellings introduced a new requirement for major renovation of dwellings and set the performance requirements for major renovation at a Building Energy Rating (BER) of ‘B2’. Major renovation requirements apply where more than 25% of the surface of the building envelope undergoes renovation. This is typically achieved in existing

dwellings by insulating walls and roof and replacing old inefficient heating systems with new efficient condensing boilers or a heat pump.

The 2023 cost optimal level has significantly advanced for major renovation with a proposed cost-optimal level of BER ‘A3’.

The material effect of the advanced performance requirement, is that the 2023 cost-optimal solution is to install electricity generating solar photovoltaic panels (PV), on 30% of the footprint of an existing typical semi-detached dwelling with fabric insulation improvement, replacing the heating generator with a heat pump or connecting to an efficient district heating (EDH) network if available.

In some cases, this may not be technically and functionally feasible, for example:

- It may not be possible to install PV on the roof of traditional buildings or some protected structures.
- The cost-optimal PV solution - option 3 @ 30% of the foundation area - is not currently feasible for all dwellings in all areas in Ireland as ESB Networks currently limit PV installations on existing dwellings to 3 kWp in rural areas and 4 kWp in urban areas.
- The predominant cost-optimal heating solution, i.e. efficient district heating, is not currently available throughout Ireland.

The EPBD provides flexibility for the application of the requirement where it is not technically, functionally or economically feasible. For the buildings where the cost-optimal solution of PV and EDH are not feasible, the cost optimal solution becomes ASHP or centralised ASHP within the cost-optimal sensitivity range.

2.4 Proposed implementation for major renovation

The Department of Housing, Local Government and Heritage (DHLGH) recommends a change of the performance requirement for major renovation from 125 kWh/m^2.yr (BER B2) to 75 kWh/m^2.yr (BER A3) – TGD L Table 7 Column 2. This will improve the energy performance for major renovation by 40% over current building regulation performance requirements to 75 kWh/m^2.yr for major renovation.

The cost-optimal equivalent works (COEW) – corresponding to the implementation of the energy performance improvements as set out in TGD L Table 7 Column 3 - are updated with the replacement of old and inefficient space heating systems with ASHP or connection to an EDH where available.

It is proposed to implement this requirement by Q1 2025.

This will meet part of the requirement of the Energy Performance of Buildings Directive to implement the cost-optimal level of dwellings within 5 years of its

calculation, while also meeting the Climate Action Plan commitment to further strengthen these performance requirements to effectively phase out fossil fuel boilers in dwellings, where practical.

The capital cost[1] uplift to achieve the 2025 COEW (ASHP) over the current requirement of B2 (90% gas boiler) have been estimated to range from €5,300 to €11,300 for the building types studied in the 2023 cost-optimal report – See Table 2 – and is €8,950 for a typical semi-detached house with cavity walls.

It is estimated that for a selection of energy efficiency measures to achieve a BER of A3 – see Table 3 - the average annual energy savings is €900 for a typical semi-detached dwelling with cavity walls.

3. Part F and Part L – Major renovation of Dwellings: Current Context

3.1 Current provisions for major renovation of existing dwellings

Part L (Conservation of Fuel and Energy) of the Building Regulations sets out the statutory minimum standards of energy efficiency and carbon dioxide emissions that apply to a newly constructed building, a new extension to an existing building or an existing building undergoing a material alteration or a material change of use and major renovation. TGD L sets out how owners, builders, developers and designers can achieve compliance with Part L requirements in practice. Since 2008 separate volumes of TGD L have been published in respect of Dwellings and Buildings Other than Dwellings.

Part F (Ventilation) of the Building Regulations sets out minimum standards to provide effective and adequate means of ventilation in buildings. In the context of greater energy efficiency and increased air tightness – adequate ventilation is paramount to ensure good indoor air quality. The option to use natural ventilation was retained in 2019 for air permeability between 5 and 3 $m^3/hr.m^2$ with an increase of the background vents' equivalent area of 40% compared with the minimum equivalent areas of background vents in new dwellings with air permeability in excess of 5 $m^3/hr.m^2$. In line with the maximum air permeability of 5 $m^3/hr.m^2$ for new NZEB dwellings, a new provision was introduced in 2019 for all NZEB dwelling ventilation systems to be validated by a competent person certified by an independent third party to ensure that they achieve the design ventilation flow rates. Furthermore, TGD F 2019 provides that where a new mechanical ventilation systems (cMEV or MVHR) is installed as part of a major

[1] The cost analysis undertaken by AECOM focused on uplifts in upfront capital costs and savings in annual regulated energy costs compared to major renovation requirements in TGD L 2022. Capital costs for measures were developed by Currie and Brown as part of the 2023 Cost Optimal Report analysis, Section 5, and were re-used in the current work. The capital costs for each measure include both materials and labour costs. VAT has been excluded from these costs, however in some cases (e.g. PV) VAT is not applicable. No learning rates have been included for any of the capital costs for newer technologies. Maintenance and replacement costs are excluded from the analysis. Details of the capital costs assumptions are given in the 2023 Cost Optimal Report Sections 5.1 and 5.2.

renovation, the ventilation system should also be designed, installed, commissioned and validated, as for new NZEB dwellings, to ensure it achieves the design ventilation flow rates. It is proposed in TGD F 2025 to extend this provision to all ventilation systems where there is a major renovation of a dwelling.

DHLGH is responsible for making necessary amendments to the Building Regulations and the TGDs to ensure that they are in compliance with the EPBD. The proposed TGDs for Part L & Part F, which have been published in tandem with this Regulatory Impact Analysis (RIA), update the specific performance requirements for a major renovation in Ireland in accordance with the 2023 cost optimal calculations.

The EPBD requires that where a major renovation is being carried out to a building, i.e. where more than 25% of the surface area of the building envelope undergoes renovation, the whole building should be improved to cost optimal level in so far as this is technically, functionally and economically feasible.

The current Major Renovation cost optimal level to be achieved is:

(a) An energy performance of 125 kWh/m^2/yr when calculated in DEAP as set out in Table 7 (Column 2) of TGD L Dwellings (i.e. a BER of B2)

or

(b) Implementing the energy performance improvements as set out in Table 7 (Column 3) of TGD L Dwellings insofar as they are technically, functionally and economically feasible.

The energy performance improvements as set out in Table 7 (Column 3) insofar as they are technically, functionally and economically feasible are attic insulation and the replacement of old and inefficient space heating system.

Table 7 (Column 1) describes the works and elements that qualify as a Major Renovation. Table 6 describes the areas affected by works that should be included when calculating the percentage of the surface of the dwelling envelope undergoing renovation.

3.2 Proposed provisions for the major renovation of existing dwellings

In TGD L Dwellings, it is proposed to amend clause 2.3.3 on the major renovation cost-optimal level to be achieved as follows:

2.3.3 *The cost-optimal level to achieve is:*

(a) An energy performance of 75 kWh/m^2/yr when calculated in DEAP as set out in Table 7 (Column 2) of TGD L Dwellings (i.e. a BER of A3)

or

(b) Implementing the energy performance improvements as set out in Table 7 (Column 3) of TGD L Dwellings insofar as they are technically, functionally and economically feasible.

The energy performance improvements as set out in Table 7 (Column 3) insofar as they are technically, functionally and economically feasible are attic insulation and the replacement of old and inefficient space heating system with an efficient and effective space heating system: either heat pump (individual or group heating) or connection to an efficient district heating system) where available. In effect, the proposed change in TGD L 2025 Table 7 Column 3 is limited to the change in the replacement of old and inefficient space heating system with either heat pump or connection to an efficient district heating system.

It is not proposed to introduce a requirement to install a roof PV installation equivalent to 30% of the building foundation area as it is not deemed technically and functionally feasible.

It is not proposed to change Table 6 and Table 7 (Column 1).

Further amendments in TGD F and TGD L dwellings, that are consequential to this main amendment, have also been made, such as the extension of the provision in TGD F to design, install, commission and validate all new ventilation systems in dwellings undergoing a major renovation for all ventilation strategies (Natural ventilation with intermittent extract ventilation, cMEV, MVHR).

It is not proposed to make any changes to DEAP.

The NSAI is currently revising S.R. 54 Code of Practice for the energy efficient retrofit of dwellings.

4 Residential Emissions and Energy Performance of Buildings Directive.

Electricity heating systems, the majority of which are heat pumps, were installed in 97% of new dwellings in 2023. This rapid transition to low-carbon heating systems is a result of Nearly Zero Energy Building (NZEB) regulations introduced by the Department of Housing, Local Government and Heritage in 2019. These regulations, have effectively phased out fossil fuel boilers in new homes. The change will significantly improve air quality in the areas where these new homes are built relative to traditional developments, providing more comfortable and

energy-efficient homes, while also helping to achieve carbon reduction targets committed to in the Climate Action Plan.

This significant shift towards renewable heating systems in new homes shows that Ireland's ambitious building regulations under the Climate Action Plan put us in a good place ahead of the requirements of the recast Energy Performance of Buildings Directive (EU/2024/1275)

The following are some of the main requirements of the Directive which will be introduced from 2026:

- Phasing out of fossil fuel boilers by 2040;
- Establish a national trajectory for the progressive renovation of the residential building stock;
- Introduction of Minimum Energy Performance standards for the non-residential building sector;
- From 2030, new buildings will be Zero Emissions buildings (ZEB) where the very low amount of energy required is fully covered by renewable energy;
- Introduction of additional requirements for electric vehicle recharging infrastructure;
- Calculation of the life-cycle global warming potential of buildings from 2028;
- Set requirements for the implementation of adequate indoor environmental quality standards in buildings to maintain a healthy indoor climate;
- Deployment of suitable solar energy installations.

5. Purpose and Objectives

The aim of the proposal to strengthen the major renovation performance requirements in TGD & L dwellings and TGD F to the 2023 cost-optimal level to effectively phase out fossil fuel boilers, where practical. This will reduce both residential energy demand and CO_2 emissions to deliver the emissions abatement targets for the residential sector set in the Climate Action Plan, and to ensure adequate and effective ventilation standards to deliver Indoor Environmental Quality.

6. Options

Two options have been identified:

- **Option 1** – Do nothing

- **Option 2** – Adopt 2023 cost-optimal calculations for major renovation to A3 in 2025

(A) Option 1 – Do nothing

Whilst there would be no additional costs associated with this option, there would be no benefits either. In addition, failing to address the impacts of the built environment on national and international climate change obligations would significantly undermine Government targets aimed at increasing energy efficiency and reducing CO_2 emissions. This would have adverse implications for sustainable development and would inevitably lead to necessary consideration by Government of alternative interventions to make up the resultant shortfall against existing commitments.

Ireland has 5 years to implement the cost optimal performance requirements by introducing regulations and so the new performance requirements will need to be implemented in Building Regulations by March 2028 in order to comply with the EPBD.

The EPBD does not permit member states discretion to derogate from these measures in their national building regulations and therefore this is not considered a viable option.

(B) Option 2 – Adopt 2023 cost-optimal calculations for major renovation to A3 in 2025

Carbon Emissions

The change in the performance requirement for major renovation from a BER of 'B2' to 'A3' could potentially lead to an increase of up to 40% in CO_2 emissions savings for major renovations, i.e. an additional potential abatement of 0.3 $MtCO_2$ eq. for the CAP target of 500,000 dwellings retrofitted to cost optimal level by 2030[2]. It should be noted that this will be limited, as already major renovations in different national retrofit schemes are being completed to a BER better than B2: on average, a BER of A3:

- DHLGH Energy Efficiency Retrofit Programme (EERP) of social housing from an average BER of D2 to an average BER of B1 in 2023[3] (78 kWh/m2.yr, very close to A3);

[2] Based on an average floor area of 112 m^2 and 350,000 major renovations from TGD L 2025 implementation date to 2030.
[3] Source LGMA, Housing Delivery Co-ordination Office.

- DHLGH Midlands Retrofit Program (MRP) of social housing from an average BER of E1 to an average BER A3 in 2023[3];
- SEAI One Stop Shop (OSS) retrofit of private houses from an average BER of E1 to an average BER of A2 in 2023[4];
- SEAI One Stop Shop retrofit of Approved Housing Bodies from an average BER of C3 to an average BER of A3 in 2023[3].

Exchequer Funding

It is important to note that the updated requirements for major renovation could have a significant cost implication for the retrofit schemes supporting lower-income households vulnerable to energy poverty. These homes are some of the worst performing and can require significant ancillary and enabling works than other houses retrofitted under other schemes. In the first half of 2023, the average cost per home undergoing a major renovation under the Warmer Homes Scheme was €39,000 (including VAT). Demand for the scheme has increased very significantly in recent years with almost 10,000 applications received last year and over 9,150 applications received to end-July 2024.

The SEAI estimates that following the introduction of the new Major Renovation requirements, the average cost per home undergoing a major renovation under the Scheme would increase significantly. It will also mean that the number of completions will be lower than otherwise would have been the case, with each retrofit likely to take longer.

Some state funded programmes for retrofit and social housing delivery will also require funding increases as outlined above to achieve the cost optimal performance requirements. There may also be pressure to increase current levels of grant aid for vacancy schemes to compensate for the increased costs of renovation. It should be noted that this will have a marginal impact on some major renovations funded schemes in different national retrofit programmes (EERP, MRP, OSS) that are already renovating to a BER of A3.

Option 2 is the preferred option by DHLGH and is the basis used in this RIA. Option 2 is the preferred option as it is the most effective method of transposing the requirements of the Directive and delivering on our commitments to reduce domestic primary energy consumption and CO_2 emissions as set out in international agreements and in the Climate Action Plan, while not impeding on current efforts in delivering increased quality housing supply and renovation targets.

The proposed amended provisions in TGD L Dwellings and TGD F 2025 will:

[4] https://www.seai.ie/publications/SEAI-Retrofit-Full-Year-Report-2023.pdf

- Reduce by 40% the major renovation cost-optimal level to be achieved and support the effective phase out of fossil fuel boilers in dwellings;
- Support the delivery of the Climate Action Plan target of achieving 400,000 existing dwellings using heat pumps by 2030;
- Support the delivery of the Climate Action Plan target of retrofitting 500,000 existing dwellings to B2/cost optimal or carbon equivalent by 2030;
- Support the delivery of the Climate Action Plan target to develop Efficient District Heating; and
- Support the implementation of adequate indoor environmental quality standards in dwellings undergoing a major renovation in order to maintain a healthy indoor climate;
- Support the delivery of high quality housing in Housing for All.

There are no changes planned for DEAP in the preferred option.

7. Public Consultation

The proposed amendments to TGD L Dwellings and TGD F which are required under the Energy Performance of Buildings Directive have been preceded by a comprehensive inter agency consultation process involving close contact between the Department of Housing, Local Government and Heritage (DHLGH), the Department of Environment, Climate and Communications (DECC) and the Sustainable Energy Authority of Ireland (SEAI).

The draft proposals were presented to the professional stakeholders in meetings held on 5th November 2024 with members of the Construction Industry Council which consists of representatives from the following professional and industry bodies:

- The Building Materials Federation
- Association of Consulting Engineers in Ireland
- The Construction Industry Federation
- Engineers Ireland
- The Royal Institute of the Architects of Ireland
- The Society of Chartered Surveyors Ireland
- Irish Green Building Council
- National Standards Authority of Ireland
- Chartered Institute of Building
- Residential Ventilation Association
- Heat Pump Association of Ireland
- Local Authority Housing Designer
- Local Authority Building Control

A 2 months public consultation will be held starting in November 2024 where the following documents will be provided:

- 2023 Residential Cost Optimal Report;
- Regulatory Impact Assessment of draft proposal;
- Draft 2025 TGD L Dwellings;
- Draft 2025 TGD F.

It is planned to review comments received from the public consultation in Q1 2025 with a view to publish updated Building Regulation provisions by end of Q1 2025 with a 12 months transitional period starting 1st April 2025 in line with Climate Action Plan target.

A list of the supports which have been put in place as result of consultation in relation to previous TGD L and TGD F amendments are as follows:

- DHLGH *"Limiting Thermal Bridging and Air Infiltration – Acceptable Construction Details" updated 2021*
- NSAI Thermal Modellers Scheme – 16 registered to date
- NSAI Certified Air Tightness Tester Scheme – 102 registered to date
- NSAI Windows Energy Performance Scheme – 48 registered to date
- NSAI Ventilation Validation Registration Scheme established in 2019 – 56 registered to date
- NSAI S.R. 50-2:2012 Code of practice for building services - Part 2: Thermal solar panel guidelines
- NSAI S.R. 55:2021 Solar photovoltaic micro-generators for dwellings – design, installation, commissioning and maintenance
- NSAI S.R. 50-4:2021 Heat Pumps in dwellings
- NSAI S.R. 54:2014&A2:2022 Code of practice for the energy efficient retrofit of dwellings (currently under revision)
- Met Éireann Climatological Note No. 21 Climate data for use in building design – Past and future weather files for overheating risk assessment

SOLAS has currently over 50 programmes with a focus on Green Skills available for learners nationwide, with new programmes developed on an ongoing basis by six Education and Training Boards (ETBs) across the country[5]:

- NZEB Courses
  - NZEB Air Tightness and Vapour Control Installer
  - NZEB External Wall Insulation
  - NZEB Fundamental Awareness
  - NZEB for Electricians
  - NZEB for Bricklaying
  - NZEB for Plasterers
  - NZEB for Carpenters
  - NZEB for Site Supervisors
  - NZEB Retrofit

- Upskilling and reskilling in Renewable Energy courses
  - Solar PV Awareness
  - Domestic Heat Pumps Systems
  - Domestic Heat Pump Installation
  - Micro Solar Photovoltaic Systems Implementation
  - Micro-Generator Electrical Installations

The Department of Further and Higher Education, Research, Innovation and Science (DFHERIS) is guiding Ireland's further and higher education sectors as they pivot to address the requirements of the green transition, including the retrofit and renovation of residential buildings. Free training to boost the skills needed by the construction sector, mostly SMEs, to decarbonise our building stock is now delivered by a network of six Nearly Zero Energy Buildings (NZEB)/ Retrofit Centres of Excellence which are operational in Laois-Offaly, Limerick-Clare, Waterford-Wexford, Cork, Mayo-Sligo-Leitrim, and City of Dublin ETBs. These centres offer free, fast and flexible courses, ranging from a NZEB Fundamentals course, which is available to all, to more specialised courses in areas including Plumbing, Electrical, Heat Pump Installation, and Site Supervision. In many cases, where a person has an existing construction-related qualification, knowledge, or experience, they can learn these skills quickly, usually within three-four days.

Provisional Department of Further and Higher Education, Research Innovation and Science data show that from Jan-July 2024 there have been 4,133 enrolments. This represents an approximately 80% increase in enrolments compared to the equivalent period in 2023 (end July 2023 figure was 2,299). This demonstrates that there has been a year-on-year growth in enrolments as 4,442 people availed of upskilling and reskilling courses across these Centres of Excellence in 2023 compared to 2,069 in 2022. Another important milestone is

[5] https://www.solas.ie/programmes/green-skills

that there has been a cumulative total of over 11,000 enrolments since the first centre opened in 2020.

Further, in August the Minister for Further and Higher Education, Research, Innovation and Science launched a new Domestic Heat Pump Installation Incentivisation Scheme for plumbers. The new scheme, will target up to 300 recently qualified plumbers and will give an incentive of up to €500 for them to take time off work to upskill as SEAI-registered heat pump installers. This scheme will help accelerate the adoption of heat pumps by boosting the supply chain's installation capacity. It is aligned with the Government's target of installing 400,000 heat pumps by 2030 under the National Retrofit Plan.

8. Who will be affected by the proposed amendments to TGD L Dwellings and TGD F?

The following stakeholders will be directly affected by the proposed TGD L Dwellings and TGD F amendments:

- Home owners, occupiers and landlords
- Building Professionals
- Assigned Certifiers
- Developers and Builders
- Public Sector
- Construction product/ Systems manufacturers
- Industry Suppliers
- Renewable energy system producers
- Building Control Authorities
- Education Bodies
- Training Bodies

Compliance with the EPBD improves people's lives, brings comfort and convenience and addresses environmental challenges. It is also beneficial to our economy, creating and protecting jobs. It will mitigate against energy poverty and ill health as well as providing for fuel security and lower carbon emissions. Improvements in indoor air quality as a result of more effective ventilation benefit those with acute respiratory conditions such as asthma.

While the proposed amendments to the major renovation provisions set out in clause 2.3.3 of TGD L Dwellings substantially improve the energy performance requirements for dwellings, considerable discretion has been left for designers, developers, builders and consumers in choosing their own individual approach to achieving the overall standard required for compliance when opting to meet the cost-optimal level of 75 kWh/m^2.yr set out in 2.3.3 (a). When opting for 2.3.3. (a), no individual technology or system is either favoured or disadvantaged, allowing for a technology neutral approach. When opting for the cost-optimal equivalent

works set out in 2.3.3. (b), this will be in direct support of the Climate Action Plan targets of achieving 400,000 existing dwellings using heat pumps by 2030 and supporting the development of efficient district heating.

For homeowners who wish to move away from using fossil fuels, there are individual grants available from SEAI[6] for heat pumps, solar PV and thermal systems. There are also grants available for insulation and heating controls. SEAI One Stop Shop service[7] also offers specific grants for complete home energy upgrades such as major renovation.

The amended TGD L Dwellings requirements should also contribute to achieving national CO_2 emissions reduction targets and thus help address Ireland's international CO_2 commitments.

9. Achieving Compliance in Practice

9.1 Cost-optimal level to be achieved

In 2023, cost-optimal calculations were submitted to the EU Commission in accordance with Directive 2010/31/EU for 7 dwelling types of different construction types (cavity wall and solid wall) described in Table 1.

Table 1: Building Models for major renovation in 2023 cost-optimal calculations

Building Category	Dwelling Type	Floor Area
Single Family Buildings	Semi-Detached House	126 m^2
	Mid-Terrace House	96 m^2
	Detached House	160 m^2
	Bungalow	104 m^2
Apartment Block	Mid-Floor Flat	80 m^2
	Ground-Floor Flat	80 m^2
	Top-Floor Flat	80 m^2

The calculations identified that there was potential to improve the energy performance for major renovation in the order of 40% over the 2019 Regulations.

The average cost optimal level for all dwellings of all construction types is 56 kWh/m^2/yr, a BER rating of 'A3'. To provide some allowance for sensitivity in the price of the fabric/ services/ renewable technologies, the cost-optimal sensitivity

[6] https://www.seai.ie/grants/home-energy-grants/individual-grants/
[7] https://www.seai.ie/grants/home-energy-grants/one-stop-shop/

range included those primary energy values which are within 5% of the lowest macro-economic cost in the main analysis.

The average cost optimal sensitivity range for all dwellings of all construction types is 39-80 kWh/m^2.yr.

The current Major Renovation cost optimal level to be achieved is:

(a) An energy performance of 75 kWh/m^2/yr when calculated in DEAP as set out in Table 7 (Column 2) of TGD L Dwellings (i.e. a BER of B2)

or

(b) Implementing the energy performance improvements as set out in Table 7 (Column 3) of TGD L Dwellings insofar as they are technically, functionally and economically feasible.

The energy performance improvements or COEW as set out in Table 7 (Column 3) insofar as they are technically, functionally and economically feasible are attic insulation and the replacement of old and inefficient space heating system with an efficient and effective space heating system: either heat pump (individual or group heating) or connection to an efficient district heating system where available. Proposed text in Table 7 Column 3 is:

Upgrade insulation at ceiling level (roof) where U-values are greater than in Table 5 and Oil or gas boiler replacement[6] and controls upgrade where the oil or gas boiler is more than 15 years old and efficiency less than 90 %
or
Replacement of electric storage heating[6] systems where more than 15 years old and with heat retention less than 45 % measured according to IS EN 60531&A11:2019.

Note 6: Oil or gas boiler replacement and replacement of electric storage system should be with a connection to an efficient district heating where available or a heat pump system (individual, group heating system) with an efficiency as provided in section 2.2.2. Controls upgrade should be as provided in section 2.2.3.

9.2 Capital cost uplift

The capital cost[8] uplift to achieve the 2025 COEW (Attic insulation + replacement with ASHP) over the current requirement of B2 (Attic insulation + Replacement with 90% gas boiler) is estimated to range from €5,300 to €11,300 for the building types studied in the 2023 cost-optimal report – See Table 2a. For a typical semi-detached house, the capital cost uplift is estimated to be €8,950.

Representative examples of major renovations to achieve cost-optimal BER of A3 over the current requirement of B2 with a non-exhaustive selection of energy efficiency measures dwellings are given in in Table 3 for the following dwelling types: semi-detached house, mid-terraced house and mid-floor apartments, with either a cavity wall or solid wall construction. It gives the capital cost, improvement in energy and carbon dioxide emissions performance and annual energy savings for several examples. The average estimated annual energy savings for a typical semi-detached dwelling with cavity walls is €900.

[8] The cost analysis undertaken by AECOM focused on uplifts in upfront capital costs and savings in annual regulated energy costs compared to major renovation requirements in TGD L 2022. Capital costs for measures were developed by Currie and Brown as part of the 2023 Cost Optimal Report analysis, Section 5, and were re-used in the current work. The capital costs for each measure include both materials and labour costs. VAT has been excluded from these costs, however in some cases (e.g. PV) VAT is not applicable. No learning rates have been included for any of the capital costs for newer technologies. Maintenance and replacement costs are excluded from the analysis. Details of the capital costs assumptions are given in the 2023 Cost Optimal Report Sections 5.1 and 5.2.

Table 2: Capital cost uplift of change to 2025 COEW.

Building Types	Cost to replace with efficient gas boiler with radiators[9]	Cost to replace with ASHP with radiators[9]	Capital cost uplift of 2025 COEW (Attic insulation + ASHP) vs 2019 (Attic insulation + 90% Gas boiler)[9]
Bungalow (104 m2)	€8,650	€17,600	€8,950
Detached (160 m2)	€9,250	€20,550	€11,300
Semi-detached (126 m2)	€8,650	€17,600	€8,950
Mid-terraced house (96 m2)	€8,650	€17,600	€8,950
Flats (81 m2)	€9,400	€15,400	€6,000
Small Flats (49 m2)	€8,050	€13,350	€5,300

[9] Based on costs in Table 5.5b of 2023 Cost-Optimal Report. The cost analysis undertaken by AECOM focused on uplifts in upfront capital costs and savings in annual regulated energy costs compared to major renovation requirements in TGD L 2022. Capital costs for measures were developed by Currie and Brown as part of the 2023 Cost Optimal Report analysis, Section 5, and were re-used in the current work. The capital costs for each measure include both materials and labour costs. VAT has been excluded from these costs, however in some cases (e.g. PV) VAT is not applicable. No learning rates have been included for any of the capital costs for newer technologies. Maintenance and replacement costs are excluded from the analysis. Details of the capital costs assumptions are given in the 2023 Cost Optimal Report Sections 5.1 and 5.2. All space heating system replacements include controls and hot water cylinder.

Table 3: Representative set of options to achieve 40% improvement for major renovation to A3 with associated energy and carbon emissions performance, capital cost increase and estimated annual energy savings[9]

		TGD L 2022	Proposed TGD L Dwellings 2025 A3 #1	Proposed TGD L Dwellings 2025 A3 # 2	Proposed TGD L Dwellings 2025 A3 # 3	Proposed TGD L Dwellings 2025 A3 # 4
		Walls and roof insulation Gas, no PV, sec. heating upgraded	Walls and roof insulation ASHP, no PV, sec. heating retained	Walls and roof insulation to TGD L 2011 Table 1 EDH, no PV, sec. heating removed	Walls and roof insulation to TGD L 2011 Table 1 ASHP, no PV, sec. heating retained	Walls and roof insulation to TGD L 2011 Table 1 Gas, 30% PV, sec. heating upgraded
Semi-Detached house	Primary Energy ($kWh/m^2/yr$)	120	73	69	63	63
	BER	B2	A3	A3	A3	A3
	RER	0	0.47	0.64	0.47	0.4
	Total Primary Energy (kWh/yr)	15,068	9,144	8,671	7,934	7,904
	Total CO2 ($kgCO_2/yr$)	2,944	1,856	884	1,576	1,880
	Capital Cost Uplift (€)	€-	€6,950	€13,677	€19,427	€23,069

	Annual Energy Savings (€/yr)	€-	€865	€386	€991	€1,372

		TGD L 2022	Proposed TGD L Dwellings 2025 A3 #1	Proposed TGD L Dwellings 2025 A3 # 2	Proposed TGD L Dwellings 2025 A3 # 3	Proposed TGD L Dwellings 2025 A3 # 4
		Walls and roof insulation Gas, no PV, sec. heating upgraded	Walls and roof insulation ASHP, no PV, sec. heating retained	Walls and roof insulation to TGD L 2011 Table 1 EDH, no PV, sec. heating removed	Walls and roof insulation to TGD L 2011 Table 1 ASHP, no PV, sec. heating retained	Walls and roof insulation to TGD L 2011 Table 1 Gas, 30% PV, sec. heating upgraded
Semi-Detached house (Solid	Primary Energy ($kWh/m^2/yr$)	109	66	69	63	62
	BER	B2	A3	A3	A3	A3
	RER	0	0.47	0.64	0.47	0.4
	Total Primary Energy (kWh/yr)	13,776	8,344	8,639	7,905	7,856
	Total CO2 ($kgCO_2/yr$)	2,681	1,671	881	1,569	1,870
	Capital Cost Uplift (€)	€-	€6,950	€2,271	€8,021	€11,663
	Annual Energy Savings (€/yr)	€-	€780	€223	€825	€1,209

		TGD L 2022	Proposed TGD L 2025		TGD L 2022	Proposed TGD L 2025
		Walls and roof insulation **Gas, no PV, sec. heating upgraded**	**Walls and roof insulation** **ASHP, no PV, sec. heating retained**		**Walls and roof insulation to TGD L 2022 Table 5** **Gas, no PV, sec. heating upgraded**	**Walls and roof insulation to TGD L 2022 Table 5** **ASHP, no PV, sec. heating retained**
Mid-Terraced House (Cavity Wall)	**Primary Energy (kWh/m²/yr)**	112	69	Mid-Terraced House (Solid Wall)	106	64
	BER	B2	A3		B2	A3
	RER	0	0.46		0	0.47
	Total Primary Energy (kWh/yr)	10,794	6,635		10,157	6,107
	Total CO2 ($kgCO_2$/yr)	2,083	1,274		1,954	1,166
	Capital Cost Uplift (€)	€-	€6,950		€-	€6,950
	Annual Energy Savings (€/yr)	€-	€558		€-	€544

		TGD L 2022	Proposed TGD L 2025	
		Walls and roof insulation **Gas, no PV**	**A3 #1** **Walls and roof insulation** **EDH, no PV**	**A3#2** **Walls and roof insulation** **ASHP, no PV**
Mid-Floor Apartment (Cavity	Primary Energy ($kWh/m^2/yr$)	104	73	47
	BER	B2	A3	A2
	RER	0	0.63	0.55
	Total Primary Energy (kWh/yr)	8,415	5,908	3,834
	Total CO2 ($kgCO_2/yr$)	1,525	603	491
	Capital Cost Uplift (€)	€-	-€1,600	€6,000
	Annual Energy Savings (€/yr)	€-	€128	€473

		TGD L 2022	Proposed TGD L 2025	
		Walls and roof insulation **Gas, no PV**	**A3#1** **Walls and roof insulation** **EDH, no PV**	**A3#2** **Walls and roof insulation** **ASHP, no PV**
Mid-Floor Apartment (Solid Wall)	Primary Energy ($kWh/m^2/yr$)	105	74	48
	BER	B2	A3	A2
	RER	0	0.63	0.55
	Total Primary Energy (kWh/yr)	8,521	5,994	3,873
	Total CO2 ($kgCO_2/yr$)	1,545	612	496
	Capital Cost Uplift (€)	€-	-€1,600	€6,000
	Annual Energy Savings (€/yr)	€-	€127	€480

Part F - Ventilation

Part L of the Building Regulations Conservation of Fuel and Energy in Dwellings is closely linked to Part F Ventilation and proposed changes to the provisions for major renovation in TGD L Dwellings may also affect TGD F.

The new performance requirement for major renovation to A3 is expected to lead to more airtight and insulated dwellings than for major renovation to B2 as demonstrated with past Building Regulations minimum requirements for energy performance and air permeability in Table 3 below. It is expected that major renovations will have a maximum air permeability typically of 7 $m^3/hr.m^2$.

Table 3: Relationship between maximum air permeability and compliance BER for a typical semi-detached house in Building Regulations since 2008

TGD L Dwellings	Compliance BER for a typical semi-detached house	Associated Maximum Air Permeability ($m^3/hr.m^2$)
2008	B1	10
2011	A3	7
2019	A2	5

TGD F 2019 currently provides for:

- The use of mechanical ventilation in new dwellings with an air permeability below 5 $m^3/hr.m^2$.

- The use of natural ventilation in new dwellings with an air permeability below 5 $m^3/hr.m^2$ and above 3 $m^3/hr.m^2$ with the additional provision for background ventilators that the equivalent area be increased by 40% above the provision for dwellings with an air permeability above 5 $m^3/hr.m^2$.

- The validation of new mechanical ventilation systems installed as part of a major renovation by an independent competent person.

This is in line with analysis of SEAI One Stop Shop (OSS) in Table 4 that indicates that Renovation works to A3 leads to an increasing proportion of use of mechanical ventilation.

Table 4: Analysis of air tightness tests and ventilation strategies used in 2023 SEAI One Stop Shop (OSS)

	OSS (mostly to A3 and A2)
Retrofit using Natural Ventilation	77%
Retrofit using Mechanical ventilation	23%

Research indicates that, as dwelling air tightness improves to reduce energy use, it is important to maintain adequate ventilation to ensure indoor environmental quality (indoor air quality and overheating):

- It is acknowledged that in deep retrofit such as major renovation to A3, there will be a need for further engagement with homeowners on the importance of indoor air quality (IAQ) and promoting good IAQ in energy efficient homes. Similarly, user interaction is key in mitigating overheating.

- Compact dwellings including mid and top-floor apartments are at an increased overheating risk - particularly those facing south and west and with low levels of thermal mass - meaning that, in Ireland, up to 10% of the existing occupied stock may be at risk of overheating into the future. Major renovation can bring resilience and reduction in risk of overheating where appropriate ventilation and solar protection are provided.

- Recent research on health benefits in major renovations to B2 in Ireland indicate that post renovation, the dwellings are not only decarbonized and more energy efficient, they are also healthier to live in. An independent 3-year post-retrofit survey has shown that energy efficiency renovation of 1,600 dwellings completed in line with Building Regulations improved the health and wellbeing of people living with chronic respiratory conditions. The research shows that over a 3-year period following their energy efficiency upgrade, participants reported fewer GP consultations, fewer emergency room visits and fewer hospital admissions - in relation to respiratory conditions - as well as fewer prescriptions for medication.

And so, consequential provisions to the new major renovation requirement to A3 have been included in TGD L Dwellings and TGD F:

- The provision to limit heat gains and assess risk of overheating for major renovation just like for new dwellings.

- The provision to have the post-works air permeability assessed by a competent person for all major renovations.

- The provision for the validation of all ventilation systems (mechanical or natural) for all major renovations by an independent competent person.
- Provision for more information on IEQ to be handed over to the home owner:
    - Valid Ventilation Validation Report from an independent competent person;
    - Sufficient information about the building and the fixed building services so that the building can be kept cool in hot weather.

There are several recent papers, guides and studies available or underway on IEQ in major renovation of existing dwellings. Research Studies funded by SEAI which have been referred to in the preparation of this document include:

- The Impact of Deep Energy Renovations on Indoor Air Quality and Ventilation in Irish Dwellings – Hala Hassan, Marie Coggins et al. (2023 AIVC Annual Conference Proceedings) – University of Galway – ARDEN SEAI RDD funded project on Indoor Air, ventilation and comfort in Irish domestic dwellings post deep energy renovations[10]
- Dwelling Overheating Risk in Cool Climates: Assessing the risk in the context of retrofit and climate change in Ireland – Mark Mulville, Ciara Ahern et al. Journal of Indoor Environments (2024, submitted but not yet published) – Technological University of Dublin – CC-DORM SEAI RDD Funded on Climate Change related Domestic retrofit Overheating Risk Mitigation[11].
- Quantifying Overheating in NZEB Irish residential buildings. An analysis of recorded interior temperatures of Irish new build and retrofit residential buildings against CIBSE, Passive House and WHO overheating criteria and recorded occupant satisfaction – Shane Colclough, Chiara Salaris, Energy and Buildings, vol. 303, 113571 (2024)– University College Dublin and Ulster University – nZEB101 SEAI RDD funded[12].
- Analysis of health impacts on the SEAI Warmth and Wellbeing retrofit pilot scheme - London School of Hygiene and Tropical Medicine, DECC (2024)[13].
- Perceptions of thermal comfort following deep energy retrofit in social homes in Ireland – Victoria Hogan, Marie Coggins et al. (2024 Annual AIVC Conference Proceedings) – University of Galway – HAVEN SEAI RDD funded project on Health Impact Assessment of Deep Energy rEnovations on Irish Domestic Dwellings[14].

[10] https://www.universityofgalway.ie/arden/. Final report to be published.
[11] https://www.tudublin.ie/research-innovation/research/discover-our-research/research-centres/beric/news/climate-change-related-domestic-retrofit-overheating-risk-mitigation-cc-dorm.php
[12] https://www.seai.ie/seai-research/research-database/research-projects/details/nzeb_101
[13] https://www.gov.ie/en/publication/191db-warmth-and-wellbeing-scheme/
[14] https://www.universityofgalway.ie/haven/

Whilst there is much research in the area of ventilation, a common conclusion from all reports is that the performance of ventilation systems depend directly and equally on correct design, installation and commissioning but also on correct and effective operation and maintenance by the end user.

Construct Innovate is developing a guidance document to ensure resilient buildings provide healthy and comfortable indoor environments for their occupants (incl. Overheating and Indoor Air Quality) to be published in 2025.

Whilst the above reports identify the move towards mechanical ventilation as a result of more air tight dwellings they also caution the potential Indoor Air Quality issues as a result of incorrect installation and improper commissioning. In order to address these issues TGD F 2019 introduced additional guidance to ensure proper installation of ventilation systems requiring that they be designed, installed and commissioned by competent designers and installers. In addition TGD F is requiring that ventilation installations are validated by independent third party testers. TGD F is extending these provisions to all ventilation systems installed as part of a major renovation, just like for a new NZEB dwelling.

It is noted that many natural ventilation systems are blocked by occupants and that mechanical systems can be switched off by occupants or can equally have air inlets blocked. Occupant behaviour needs to adapt as the dwelling ventilation strategy is upgraded during major renovation. In this regard, guidance for competent designers and user education has been strengthened in the draft TGD F and a guide and video in plain English was published by the Department in 2022[15]. Further research on the impact of occupant behaviour on ventilation and IAQ in Irish energy-efficient homes is under way[16].

Key Costs and Benefits of the Proposed Amended Building Regulations

It is estimated that for a typical semi-detached house with cavity walls, the average annual energy cost savings of €900.

Given the target number of homes and available budget, DHLGH has not supported so far the marginal cost of EERP works which were not eligible, overdesigned, over specified and/ or works which bring the homes to a rating which go beyond that of a BER of B2/ cost-optimal equivalent. So while not excluded and already supported on a case by case basis, the new energy efficiency measures associated with the air tightness improvement and ensuring adequate indoor air quality in major renovations to a BER of A3 will have to be readily included in the eligible works in social housing retrofit schemes (EERP) from 2025. Such works are already readily grant supported under SEAI OSS scheme.

[15] https://www.gov.ie/en/publication/938bf-home-ventilation/?referrer=https://www.gov.ie/homeventilation/

[16] https://www.seai.ie/seai-research/research-database/research-projects/details/bevent:the-impact-of-occupant-behaviour-on-ventilation-and-indoor-air-quality-in-irish-energyefficient-homes

However, Table 5 shows that in 2023, most national residential retrofit schemes – social housing or private homes - were already achieving over and beyond the minimum requirement of a BER of B2.

Table 5: Average cost and BER analysis of several national retrofit schemes supporting major renovation to over and beyond a BER of B2.

Scheme	Average cost per dwelling	Average Pre-works BER	Average Post-works BER
2023 Energy Efficiency Retrofit Programme – DHLGH	€31,188	D2	B1[17]
2023 Midlands Retrofit Programme - DHLGH	€34,638	E1	A3
2023 One Stop Shop Private Homes - SEAI	€59,734	E1	A2
2023 One Stop Shop Approved Housing Bodies – SEAI	€30,046	C3	A3

Although the amendment of the major renovation performance requirement from a BER of B2 to A3 is expected to add to the current allowable works and energy efficiency measures to require grant support, it is not expected to have a significant impact on the overall cost of existing retrofit schemes. Rather, it is expected to strengthen the performance requirements for major renovation to existing residential buildings to effectively phase out fossil fuel boilers, where practical. In 2023, 91% of major renovations carried out under the EERP were achieved with the installation of a heat pump, indicating a strong effective phase out of fossil fuel in social housing, the same ratio stands at 95% for major renovations carried out under SEAI OSS to A3 or A2[18]. SEAI launched at its 2024 Energy Show new behavioural research on heat pumps. The research found that homeowners in oil-heated homes that are considered “heat pump ready” are willing to switch from a fossil boiler to an electric heat pump but only when their current heating system needs replacing[19]. The proposed amendments in TGD L Dwellings clause 2.3.3 (b) to replace old and inefficient space heating systems in

[17] Actual value of 78 kWh/m^2.yr, just outside of A3 class that spans from 75 to 50 kWh/m^2.yr.
[18] SEAI One Stop Shop information.
[19] https://www.seai.ie/news-and-events/news/heatpump-behaviour-report/

major renovations with heat pumps or a connection to an efficient district heating system will support the new campaign launched by SEAI. This will further strengthen the effective phase out of fossil fuel in residential major renovations, where practical.

Health benefits have been reported in several studies[10,13,14]. The Warmth and Wellbeing pilot scheme was an interdepartmental and inter-agency project led by DECC, in collaboration with the Department of Health (DoH), the Sustainable Energy Authority of Ireland (SEAI) and the Health Service Executive (HSE). The project was established to produce research on how extensive energy efficiency upgrades to homes can improve the health and wellbeing of people living with chronic respiratory conditions. The London School of Hygiene and Tropical Medicine (LSHTM) were recruited to carry out independent analysis of the health impacts. Participants' health and wellbeing was assessed and tracked over a 3-year period following their upgrade. The pilot, provided fully funded upgrades to 1,600 homes including attic and wall insulation, window and door replacement and heating system upgrades where needed. The participants reported fewer GP consultations, fewer emergency room visits and fewer hospital admissions, particularly in relation to respiratory conditions. Drug prescriptions for the participants' respiratory conditions, as recorded through the Primary Care Reimbursement Service, were also reduced following the energy efficiency upgrades.

9. Other Impacts

Impact on construction industry skills level

The improvement in the energy performance of dwellings will require an improvement in skills levels for both designers and builders. DEAP assessors will also need to update their knowledge in line with TGD F and TGD L Dwellings 2025. The following section considers the current capacity of the construction and education sector to provide these skills.

Design professionals

Third level institutions are currently providing NFQ levels 7, 8 and 9 energy and sustainability related courses for construction professionals. Professional Bodies and other Continuing Professional Development organisations are also providing additional training for existing professionals. Domestic BER Assessors must have a minimum NFQ level 6 qualification in a building or construction related discipline or a recognised equivalent. Equivalence may be defined as a combination of an appropriate construction related qualification and significant related experience. They must complete the SEAI Domestic BER Assessor training course and pass the examination. There are currently 951 registered Domestic BER Assessors who are trained to apply the Dwelling Energy Assessment Procedure (DEAP) methodology.

NSAI and SEAI have created several registers of competent professionals that will support the proposed amendment on major renovation in TGD L Dwellings 2025 and TGD F 2025.

Table 6: NSAI registers of competent professionals supporting proposed major renovation amendments.

NSAI Registers	2019	2024
Air Tightness Testers Scheme	62	102
Ventilation Validation Registration Scheme	0	56
Thermal Modellers Scheme	15	16
Registered ETICS installers[20]	128	315
ETICS Agrément Certificates	18	22
Registered Cavity wall insulation installers[21]		100

Table 7: SEAI registers of competent professionals supporting proposed major renovation amendments.

	2019	2024
BER Assessors	518	951
Technical	-	422

[20] https://www.nsai.ie/certification/agrement-certification/agrement-registered-installers/search-registered-etics-installation-companies/

[21] https://www.nsai.ie/certification/agrement-certification/agrement-registered-installers/search-registered-cavity-wall-insulation-installers/

Advisors[22]		
One Stop Shop Service Providers[23]	-	20
Renewable energy installers[24]:	-	1144
Small scale biomass boilers	-	44
Solar Photovoltaic	-	631
Solar Thermal	-	160
Shallow geothermal systems and heat pumps	-	452

District Heating

DECC has established a Centre of Excellence for district heating in the SEAI which supports all providers in the development of district heating, and currently working on the development of 14 projects nationwide. South Dublin County Council Efficient District Heating network is due to deliver heat to its first residential units in 2025: 133 cost rental apartment units. The Climate Action Plan targets the delivery of 2.7 TWh by 2030, of which 20% is expected to be for dwellings.

Construction Industry Register Ireland (CIRI[25])

In early 2023, the Minister for Housing, Local Government and Heritage appointed the Construction Industry Federation (CIF) as the CIRI Registration Body. An Admissions and Registration Board was established by the CIF in late 2023, including appointments by the Minister, and a Registrar was appointed in January 2024.

As a result of the 2022 Act, a new statutory register is in development, making it mandatory for all providers of building works to be registered. This register will be known as the Construction Industry Register Ireland (CIRI). CIRI will be an online register of competent builders, contractors, specialist sub-contractors and tradespersons. The register will be recognised as the primary online resource used by consumers in the public and private procurement of building construction services.

The construction industry will require time to adapt to these new requirements. It is envisaged that it will be mandatory for builders will be able to join the statutory register from 2025. The first categories who will be required to register will likely be house builders and non-residential builders. Registration for various trades will happen subsequently.

[22] https://www.seai.ie/grants/find-a-registered-professional/SEAI-Registered-Technical-Advisors.pdf
[23] https://www.seai.ie/grants/find-a-registered-professional/one-stop-shop-providers/
[24] https://www.seai.ie/grants/find-a-registered-professional/
[25] https://cif.ie/ciri/

Construction Trades

The early implementation of ambitious mandatory national energy performance standards and renewable requirements in respect of dwellings has given the construction industry a period of time to adjust and a lot of experience will have been acquired during this time. There is however a requirement for builders to pay specific attention to the construction of junctions in order to achieve reduced air permeability levels and thermal bridging heat loss. Whilst improvements in these areas do not require additional material costs, an increased level of awareness and attention to detail will be required on site.

The following training and supports are in place to facilitate the development of the required additional skills:

- Government policy has supported the upskilling of professionals through Springboard funding of a DIT Postgraduate Certificate in Digital Analysis and Energy Retrofit course.
- Qualibuild was established in 2013 and is running Foundation Energy Skills Courses in the major Irish cities.
- SOLAS has currently over 50 programmes with a focus on Green Skills available for learners nationwide, with new programmes developed on an ongoing basis by Education and Training Boards (ETBs) across the country[26]:
    - NZEB Courses and
    - Upskilling and reskilling in Renewable Energy courses.
- Integration of revised Part L guidance into apprenticeship courses in Institutes of Technology.
- NSAI Window Energy Performance Scheme (WEPS).
- Waterford Institute of Technology has designed a 5-day Engineers Ireland approved CPD programme focusing particularly on the recommendations set out in NSAI S.R. 54 "Code of Practice – Methodology for the Energy Efficient Retrofit of Existing Dwellings"[27].

Table 8: Enrolments in the ETB NZEB Ventilation course[28]

Year	Learner enrolments	Learner completions

[26] https://www.solas.ie/programmes/green-skills

[27] https://www.engineersireland.ie/Professionals/CPD-Careers/CPD-training-courses-by-theme/Energy-and-Environmental-Training-Courses/Retrofitting-Domestic-Buildings-for-Energy-Efficiency-CPD-Programme#:~:text=Retrofitting%20Domestic%20Buildings%20for%20Energy%20Efficiency%20CPD%20Programme,-Details&text=This%20programme%20focuses%20particularly%20on,divided%20into%205%20distinct%20modules.

[28] DFHERIS data.

2018	0	0
2019	16	16
2020	124	124
2021	212	208
2022	194	188
2023	222	219
2024 to September	192	188
2024 September to December	39	tbc
2025 projections	320	tbc

With regards to building services trades the following supports are in place under SOLAS Green Skills courses:

- Upskilling courses for existing trades through SOLAS and Institutes of Technology
- Renewables training modules from SOLAS

Impact on Climate

The increased performance requirements will lead to a reduction in the use of fossil fuels for those dwellings undergoing major renovations. This will contribute to the effort to achieve our goals of achieving net-Zero emissions no later than 2050, and a 51% reduction in emissions by the end of this decade.

Impact on Supply Chain

A good supply of energy efficient construction materials will be required to achieve improved energy performance requirements. The early implementation of ambitious mandatory national energy performance standards and renewable requirements in respect of dwellings has given suppliers time to adjust to meet changing future demand for materials, components and fabric elements. Advanced performance requirements have been in place since 2008.

Impact on National Competitiveness

There will be no negative impact on Ireland's competitiveness. If anything, the amended Building Regulations are likely to encourage Irish business and industry to develop new innovative energy saving products and systems. This will provide opportunities to reduce the need to import such technologies and may provide export opportunities in future years.

The contribution towards the achievement of national CO_2 emissions reduction targets and the reduced dependence on imported energy will improve the overall efficiency and competitiveness of the Irish economy.

There are no significant areas where issues of competition, restriction or imbalance have been identified. The DHLGH considers that the proposed amendments to TGDs F & L would have no significant effect on competition in

any markets. It is considered that the proposals to change the regulations apply in a proportional and equitable way

Compliance/ Regulatory Burden
It is generally accepted in the industry that regulatory requirements, national and European standards as well as codes of practice evolve over time in the light of technological advancements, new product developments and changes in construction practices.

It is not anticipated that there will be any significant impact on design and supervision fees or compliance burden associated with the additional conformity-checking the amended Building Regulations will impose on Building Control Authorities and Assigned Certifiers.

Assigned Certifiers
The Assigned Certifier, in accordance with the Building Control (Amendment) Regulations 2014 (S.I. No. 9 of 2014), must certify (jointly with the builder) that the construction works are in compliance with the new Parts F & L of the Building Regulations upon completion.

10. Enforcement and Compliance

Under the Building Control Act 1990, enforcement of the Building Regulations 1997 to 2024 is the responsibility of the 31 local building control authorities who have a broad range of powers under the Act to investigate and, where appropriate, take action in the event that non-compliances are identified in buildings.

The Building Control Regulations 1997 to 2024 set out the system of administrative controls to support compliance with the Building Regulations by requiring, inter alia, the submission of Commencement Notices, Fire Safety Certificates, Disability Access Certificates and the more recent Certificates of Compliance on Completion (introduced under S.I. No. 9 of 2014 which came into effect on 1 March 2014).

Responsibility for compliance with the requirements of the Building Regulations 1997 to 2024 is primarily a matter for the owners, designers and builders of buildings.

gov.ie/housing

The Department of
Housing, Local Government and Heritage

An Roinn Tithíochta,
Rialtais Áitiúil agus Oidhreachta
Department of Housing,
Local Government and Heritage