

The cover features a central red circle with a white border. Inside the circle, the text 'Retrofitting' is written in a large, bold, white sans-serif font, and 'report' is written below it in a smaller, white sans-serif font. The background is a light blue and white gradient with abstract, flowing, wavy lines in shades of blue and green that create a sense of movement and depth.

Retrofitting report



National Retrofit Plan: 'A lot done, more to do'

Barry Quinlan, the Assistant Secretary leading the Energy function with responsibility for Built Environment, Retrofit and Heat Policy at the Department of the Environment, Climate and Communications (DECC), reflects on National Retrofit Plan delivery progress in 2023.

The Climate Action Plan and National Retrofit Plan set ambitious targets to retrofit the equivalent of 500,000 homes to a Building Energy Rating (BER) of B2/cost optimal and the installation of 400,000 heat pumps in existing homes to replace older, less efficient heating systems by end-2030.

Ireland is aiming to be a world leader in terms of our retrofit programme. We have set ourselves ambitious targets and we are serious about meeting them, but this is also a decade long project and is an iterative process. The first half of the decade is about significant scaling up activity year-on-year.



“The retrofits provided under the [Warmer Homes Scheme] are the best long-term approach to alleviating energy poverty.”

Barry Quinlan, Assistant Secretary, DECC

2023 demand

In recent years, demand across the SEAI grant supported schemes has been exceptionally high and this continued into 2023 which shows:

- **47,952** home energy upgrades were supported – an increase of **76** per cent on 2022;
- **17,599** homes achieved a B2 Building Energy Rating – up **107** per cent on 2022;
- **5,897** free upgrades the Better Energy Warmer Homes Scheme – up **33** per cent on 2022;
- **22,214** Solar PV Scheme domestic installations – up **122** per cent on 2022;
- **67,411** applications for grant support were received by SEAI – up **34** per cent on 2022;
- **18** One Stop Shops are now registered under the National Home Energy Upgrade Scheme;
- **7** additional contractors (**36** in total) on the Better Energy Warmer Homes Scheme; and
- **€324.5** million in expenditure – up **68** per cent on 2022.

Average cost of works and the average grant support provided by SEAI in 2023:

- Better Energy Warmer Homes Scheme: average cost of upgrades supported **€24,000**;
- Better Energy Homes: average cost of works **€6,883** and average grant paid **€2,935**;
- Solar PV: average cost of works **€11,838** and average grant paid **€2,344**; and
- National Home Energy Upgrade scheme (one-stop-shops): average costs of works for private homes **€62,099**; average grant paid **€22,689**.



To promote and incentivise the demand necessary to achieve these targets, the Government has launched a package of supports to make it easier and more affordable for homeowners to undertake home energy upgrades, for warmer, healthier, and more comfortable homes, with lower energy bills.

2024 capital funding

A record €437.2 million capital funding has been allocated to SEAI residential and community energy upgrade schemes, including the Solar PV Scheme, for 2024. The overall allocation will mean that the progress made in 2023 under the National Retrofit Plan will be further ramped up in 2024 and with very high applications the pipeline is strong.

Of the 2024 budget, a record capital funding allocation almost €210 million has been provided to the Warmer Homes Scheme, including funding from the European Regional Development Fund (ERDF). The retrofits provided under the scheme are the best long-term approach to alleviating energy poverty as set out in the Government's Energy Poverty Action Plan.

Testimonials from homeowners who have benefited from Warmer Homes Scheme can be found on the SEAI's YouTube channel.

Loan guarantee scheme

The Home Energy Upgrade Loan Scheme has been developed by the Department of the

Environment, Climate and Communications in conjunction with the Department of Finance, the Strategic Banking Corporation of Ireland, the SEAI, the European Investment Bank, and the European Investment Fund. An agreement with the European Investment Bank (EIB) Group underpinning the new Home Energy Upgrade Loan Scheme was announced in October 2023.

The €500 million scheme is the first of its kind for both Ireland and the EIB Group. Homeowners will be able to borrow from €5,000 to €75,000 on an unsecured basis for a term of up to 10 years. The interest rates will be significantly lower than those currently available on the market as a result of the combination of the EIB Group loan guarantee and a government-funded interest rate subsidy.

The Home Energy Upgrade loans will play a crucial role in helping homeowners to invest in energy efficiency, making their homes warmer, cheaper to run and helping to lower emissions. The loans can be used for comprehensive energy efficiency and renewable energy upgrades where those works are also being grant-aided by SEAI. These loans can be used by people who want to undertake a deep-retrofit or who might prefer to undertake individual measures, for example, external wall insulation or the installation of a heat pump.

It is anticipated that the loans will be available in Q1 2024 through participating retail lenders.

A lot done, more to do and strong momentum and commitment to get it done.

51,000 worker shortfall to meet retrofit and construction goals

51,000 workers will need to be newly recruited and trained by 2030 if the Government is to meet its retrofitting and construction targets, a government report claims.

Within the retrofitting sector specifically, the report, published by the Department of Further and Higher Education, Research, Innovation and Science, outlines that almost 23,000 workers would need to be trained and recruited just to meet retrofit targets.

The bulk of the 22,779 extra workers needed in order to satisfy workforce requirements for the meeting of the Government's target of retrofitting 500,000 homes to B2 BER standard by 2030 is made up of craft workers, with an estimated 12,266 needed between 2023 and 2030.

A further 8,142 workers in other trades are estimated to be needed, along with 2,369 professionally qualified workers.

The report, entitled, *Report on the Analysis of Skills for Residential Construction and Retrofitting, 2023 to 2030*, says that these new workers may be a combination of those currently employed in the industry who are seeking to upskill, or jobseekers who wish to pursue a career in building or retrofitting.

Using the report's base figure from 2019, when only 3,870 workers overall were employed to work on the retrofit scheme, the report reasons

that its 22,779 estimate for recruitment will mostly be accounted for by the expansion of the scheme – with 18,180 workers needed to address this expansion and the remaining 4,598 acting as replacements for those leaving the retrofit workforce.

The Government is targeting 500,000 homes to be retrofitted to B2 BER standard by 2030.

Data from the Department of the Environment, Climate and Communications and the Sustainable Energy Authority of Ireland (SEAI) states that 33,300 homes were retrofitted to such standard in the three-year period 2019-2021 and that it is expected that 14,400 will have been retrofitted in 2022. 71,300 homes are to be retrofitted to B2 standard in the three-year period between 2023 and 2025, meaning that 375,000 houses – 76 per cent of the total target – will be retrofitted in the five-year 2026-2030 period.

Achieving this goal would require an increasing of the average amount of homes retrofitted per year to 75,000 during this period, which would mark a large increase on the 26,400 houses to be retrofitted in 2025 and “presents a significant challenge to the education and training system”.

SSE AES: Making Irish homes cosier and more energy efficient



SSE Airtricity is working with governments, local authorities, and domestic customers to support the decarbonisation of homes across the island of Ireland.



Generation Green Home Upgrade

As a leading provider of cleaner, greener energy for homes and businesses across Ireland, we are all about making Ireland a more sustainable place.

Stuart Hobbs is the Director of SSE Airtricity Energy Services (AES), a business dedicated to delivering home energy upgrades and utilising energy efficiency technologies to deliver a cleaner greener environment. SSE AES offers home energy upgrades under a number of different government-funded programmes: SEAI One Stop Shop retrofit programmes, Better Energy Homes, Local Authority Energy Efficiency Retrofit Programs (EERP), and SEAI Warmer Homes. Up to 1.5 million homes in Ireland are in need of energy upgrades by 2050, as energy efficient buildings are essential to meet our climate action targets. These upgrades typically include external wall insulation, energy efficient windows and doors, attic insulation, heating controls, heat pumps, solar PV and battery

systems, and electric vehicle (EV) charging points.

Part of the Irish Government's Climate Action Plan includes a national retrofit programme aiming to see 500,000 homes, one-third of Ireland's housing stock, retrofitted to a B2 building energy rating by 2030. SSE AES is supporting the retrofit of 40,000 homes in Ireland over the next 10 years, with around 4,000 upgrades already completed. These works will drastically reduce the emissions of thousands of homes, saving millions on energy costs for consumers and making their homes warmer, healthier. Once delivered, this will equal approximately €20 million in reduced energy costs every year.

1. One Stop Shop:

A Generation Green Home Upgrade from SSE Airtricity is the perfect way to upgrade your home. Hobbs states: "We offer an award-winning retrofit service with a full range of home upgrade options, expert project management and a streamlined grant application process. We have partnered with Ireland's leading experts in energy efficiency upgrades. From solar PV to windows and doors, internal and external insulation, heat pumps, and EV chargers, we only work with the best. Our customers receive a free home consultation to discuss their home upgrade requirements and receive expert recommendations from our team of specialists. It is one call, it is one job, it is one point of contact."

2. Local Authority Energy Efficiency Retrofit Programmes (EERP)

SSE Airtricity has been providing home energy upgrades since 2012, working with SEAI, local authorities and other housing bodies on joint initiatives. SSE AES help local authorities deliver their

Energy Efficiency Retrofit Program (EERP) obligations by taking a lot of the hassle and complexity away, enabling them to deliver larger projects at a better cost and with more flexibility than their own resources might allow. “Over the last decade, we have delivered significant energy upgrades to fuel poor and social housing units, and we have significant ambitions to expand and increase these partnerships. SSE AES’s award-winning service provides a full EERP turnkey solution for local authorities, managing the works from start to finish on a partnership basis with local authorities or housing bodies. We offer pre- and post-BERs, full project design, guidance and preparation and management of all tender documents to be fully compliant with EU procurement requirements, including full end-to-end project management.” SSE AES also compiles all certificates and associated paperwork for the local authorities to make a successful claim to the department. In addition, SSE offers financial support to the project in the form of energy credits generated, as well as offering bridging finance for local authority EERP projects. SSE AES has a body of retrofit contractors and resources ready and able to deliver in all 26 counties in the Republic of Ireland.

3. SEAI Warmer Homes

Warmer Homes is a nationwide retrofit scheme administered by the SEAI delivering free energy upgrades for households in receipt of certain



“It is cosier. There was a desperate draught from that door and that is all gone. The heat – and being able to regulate it – is wonderful. It is excellent.” Local resident of Beaufort OAP Complex in Glashule.



SSE AES and Dún Laoghaire-Rathdown County Council receiving their SEAI Residential Energy Upgrade Award 2023 for the Beaufort Project. (L-R): Darrell Crowe (SSE AES), Stuart Hobbs (SSE AES), Willie Walsh (SEAI), Denis O’Callaghan, (Cathaoirleach, Dún Laoghaire-Rathdown County Council), James Ryan (DLR Co Co).



government benefits. Energy retrofit measures delivered under this scheme include high energy efficiency heating systems, ventilation, external wall insulation, attic insulation and in some cases windows and doors – making these homes warmer, healthier, and more economical to run. SSE AES is a registered SEAI Warmer Homes contractor to deliver energy upgrades under this national scheme. SSE AES has delivered over 270 home energy upgrades under this scheme since 2020 across a range of shallow and deep retrofit measures and have recently been successfully reappointed to the SEAI 2023 Warmer Homes Contract, to continue delivering energy retrofit upgrades on behalf of SEAI over the next four years.

Award winning service

SSE AES retrofit programs received awards and recognitions over the past

few years for their various retrofit services. Last year alone SSE AES received nominations and secured wins alongside their local authority partner, Dún Laoghaire-Rathdown, for their upgrade to 58 units in Beaufort OAP Complex in Glashule. These included winning the Residential Energy Upgrades Awards category at the SEAI Energy Awards 2023, the Local Authority Innovation Award category at the Chambers Ireland Excellence in Local Government Awards, and achieving the gold award in the Energy Initiative/Project of the Year at the All-Ireland Sustainability Awards.

For further information on SSE AES programme supports, contact Stuart Hobbs on:
T: 087 923 6404
E: stuart.hobbs@sse.com
W: www.sseairtricity.com



Modelling household decisions to adopt heat

UCD energy economist Lisa Ryan outlines some of the research being undertaken to understand household attitudes to adopting heat pumps.

Highlighting a context whereby many countries across the globe are targeting the electrification of heat and transport as part of national strategies to reduce greenhouse gas emissions, Ryan believes that research to help understand the drivers of behavioural change will be key to underpinning effective policy.

The UCD Energy Institute is home to multidisciplinary research and brings together a mix of academic disciplines, such as economists, electrical and mechanical engineers, political scientists, and finance experts to look beyond the technical solutions that are needed for a future decarbonised energy system.

The EMPower Project sees the Energy Institute provide electricity systems modelling services to the Climate Action Modelling Group within the Department of the Environment, Climate and Communications (DECC). Ryan's work, investigating the adoption of electricity-using technologies, utilises decision-based models to explore a range of

technologies from solar PV to electric vehicles, however, in this instance, she focuses on heat pumps and, in particular, the residential sector.

Electrification is widely recognised as the cleanest means to transition energy systems to renewables, but the scale of the challenge ahead can be seen in figures produced by Shell which show that the energy sector has electrified by just 2.3 per cent per decade between 1980 to 2020. In contrast, the Paris Agreement sets out that at least 8 per cent per decade will be required between 2030 to 2060.

"This means that between 2030 to 2050, we need to rapidly grow the rate of electrification, because, despite the emergence of other green fuels, renewable electricity is going to be a major driver of the decarbonisation of the energy sector," explains Ryan.

While Ryan's work is broadening into the commercial sector, the initial focus was on the residential sector. She explains that underpinning this decision

was the understanding of the potential for buildings to provide flexible load, as economies move into higher shares of renewables.

"Our whole energy system is flipping from being one where the supply has to meet whatever demand is required, to one where the demand needs to be able to be able to flexible when the supply is not available," she says.

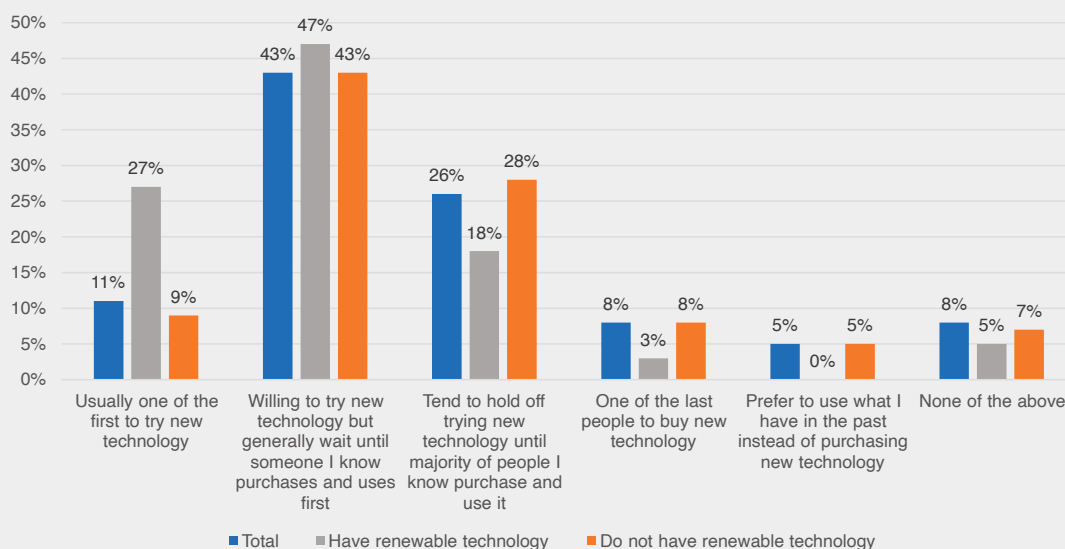
"We need much more flexible electrical load on the system and electrifying heat and transport can provide flexibility and storage for times when there is not any wind."

Additionally, as Ryan explains, greater electrification poses benefits of lessening air pollution, improving efficiency, and ideally, reducing costs for households.

Early adopters

However, despite these known truths, the characteristics of early adopters are not well established. The EMPower Project employs a set of models of deep

Attitudes and behaviours towards new technology



electrification, with three interacting modelling approaches, including the agent-based microsimulations of technology uptake. Ryan explains that these models are calibrated to Irish survey and historical data, and include the economic, social, and risk-aversion (barrier) effects that influence individual consumer decisions.

“Essentially, we are modelling individual household decisions to purchase an individual technology, taking into account economic factors, social factors, and behavioural influences, such as risk aversion. The impact of behavioural influence is important, because more and more, there is a recognition that cost is not everything for consumers.”

Ryan explains that a range of factors influence household decision-making, including:

Spatio-technical factors: Building type, socio-demographic, household density, fuel economy etc.

Economic/non-economic (monetisable): Upfront price, annual operation, and maintenance cost. Government incentives and policies, energy cost savings, and non-financial benefits such as noise reduction, aesthetics, and emissions reductions.

Psychographic/behavioural: Awareness, technology interest, risk preference, and innovation attitude etc.

Socio-demographic: Home ownership, education, peer effects, image etc.

Ryan outlines that the research motivation was driven by conflicting evidence on factors characterising early adopters, tied into a recognition that more evidence was needed on the Irish

market, particularly in relation to heat pumps.

Initial work included focus groups, online surveys, the development of account-based marketing for each technology, and policy scenario modelling, via a nationally representative sample.

The initial survey in 2018 focused on people’s awareness of renewable energy technologies (RETs) and provided some interesting results; for example, while awareness of RETs was quite high, 82 per cent of people had not installed renewable technologies at all.

Solar thermal had the highest installation rate of all the technologies, correlating with the fact that this was the first technology to be awarded household government grants in Ireland.

A further finding was a correlation between whether or not neighbours or peers had installed technology, with those aware of other adopters more likely to install technology themselves. Only 11 per cent of people categorised themselves as innovators, in that they said they were usually one of the first to try new technology. Whereas the majority of people (43 per cent), said that while they were willing to try new technology, they generally wait until someone they know purchases or uses it first. A further 26 per cent said they tend to hold off trying new technology until the majority of people they knew purchase and use it.

As expected, early adopters tend to be innovators in their outlook, an important insight when trying to establish how best to ensure a technology is adopted on a large scale. However, not all trends are as easily identifiable, for example, 71

per cent expressed concern about the environment, yet many had not adopted any renewable technologies.

Summarising a statistical analysis of findings, Ryan says: “Looking at different adopters we found that generally, the type of person most likely to invest in renewable technologies are usually younger, full-time employed males, who have a higher socio-economic status. These people tend to live in newer residences, have higher energy uses, and have larger social networks.”

Alongside these surveys, researchers also developed an agent-based model, accounting for individual heterogeneity. Applied specifically to heat pumps, the model predicts that around 12.5 per cent of the 1.76 million Irish households will install a heat pump at their home in 2030 under current price and technological conditions. This figure can reach 17 per cent depending on cost and type of heat pumps.

In summary, younger households, homeowners, households in County Dublin, and households with a higher education, and a larger number of bedrooms are more likely to adopt a heat pump. However, Ryan caveats the findings by highlighting that the model is based on empirical data collected in 2018.

Concluding, she says that while models are not foolproof, evidence to date highlights that attitudes to sustainability are not sufficient predictors of uptake.

“Policies must help translate attitudes into pro-environment behaviour and all analyses show that monetary incentives are most important, especially in the short term.”

Further education and training: Driving innovation for the future of construction



As the world shifts towards a more sustainable future, it is crucial to develop the necessary skills in the Irish construction workforce. This will ensure that we meet the requirements of the construction industry's sustainability agenda and achieve the Government's climate action and retrofit targets in line with Ireland's green transition.

The green economy presents a massive opportunity to generate jobs, upskill employees, raise awareness, and expand sustainable areas such as retrofitting, renewable energy, and electric vehicles.

Given that Ireland's future competitiveness will increasingly be linked to its ability to decarbonise, the further education and training (FET) sector is playing a vital role in driving the green transformation of the economy and society, through the development of green skills programmes.



Delivered nationwide by the Education and Training Board (ETB) network, they have been designed to equip every learner with the right skills to play their part in the climate response, ultimately ensuring a sustainable future for everyone.

Construction is a key part of the green skills FET provision, with a focus on training and upskilling those in the sector in the latest green technologies, such as nearly zero energy building (NZEB), retrofit, and modern methods of construction. The provision of these courses in construction is crucial to respond to the future skills requirements of the green economy to ensure that Ireland can meet its net-zero greenhouse gas emissions targets by 2050.

NZEB centres of excellence have been established and strategically located across the country to deliver a broad range of NZEB and retrofit courses. Funded by SOLAS, the further education and training (FET) authority, training is available in City of Dublin ETB, Cork ETB, Laois and Offaly ETB, Limerick and Clare ETB, Mayo, Sligo, Leitrim ETB, and Waterford and Wexford ETB.

Contributing to building and developing the green construction supply chain, the NZEB centres of excellence provide training and upskilling in all areas of retrofit and NZEB construction starter programmes from the NZEB fundamental awareness course, right through to trade

specific NZEB courses suited for post-apprenticeship and upskilling programmes developed for site supervisors, carpenters, plumbers, plasterers, electricians, and bricklayers.

Since the establishment of the network of centres of excellence, the NZEB and retrofit training provision has increased rapidly and has reached over 8,000 enrolments nationwide. It is clear that the demand is there with the number of enrolments having doubled in 2023.

Collaboration with industry is at the heart of what the NZEB centres of excellence deliver to ensure that training is targeted to the current and future skills needs of the construction sector.

All courses delivered are developed in conjunction with industry such as Uisce Éireann, Construction Industry Federation, NSAI, SEAI, National Association of Scaffolding & Access Contractors (NASAC), Civil Engineers Contractors Association (CECA), and many more.

This collaborative approach with industry extends to the delivery model where many NZEB programmes are provided in a hybrid and flexible manner to accommodate work schedules of employees and employers, and to minimise the time spent off-site for companies. Many courses are available during evenings, weekends, and traditional operating hours and the theory element is delivered online when possible.

Upskilling opportunities has been further opened up to construction workers with demanding work schedules by the development of a new mobile NZEB training unit, by the National Construction Training Campus at Mount Lucas, under the provision of Laois and Offaly ETB.

This innovative approach is a real game-changer in training provision in that it has been designed to travel to construction companies and schools across the country, providing even greater flexibility in NZEB training delivery, as well as introducing students to modern methods of construction.

All courses are fully funded for both unemployed and employed learners and are City and Guilds assured or QQI validated and are delivered in a flexible way for both unemployed and employed learners at little to no cost.

FET continues to shift the dial in the construction sector in driving the expansion of the national training infrastructure to deliver on critical NZEB and retrofit commitments.

Discover NZEB and retrofit courses provided across the country at: thisisfet.ie/nzeb Locations include City of Dublin ETB, Cork ETB, Laois and Offaly ETB, Limerick and Clare ETB, Mayo, Sligo and Leitrim ETB, and Waterford and Wexford ETB.



The HSE's retrofitting journey

Vincent Brennan, estates manager, HSE Capital and Estates' Deep Retrofit Programme, outlines the progress being made with the programme and how other public and private sector organisations can learn from the HSE's journey.



The HSE estate is comprised of over 4,500 properties located on around 2,500 different sites throughout the State.

A chartered engineer with 25 years' experience working across the public and private sectors, Brennan has spent 11 years managing capital project delivery for the HSE, and over the last 12 months has been focused on his work as part of the climate action team.

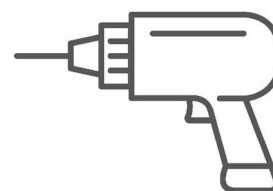
Currently, the HSE's deep retrofit programme is undertaking a series of 10 pathfinder projects, the lessons from this will inform the wider suite of measures to be adopted by the HSE, with Brennan mooted district heating

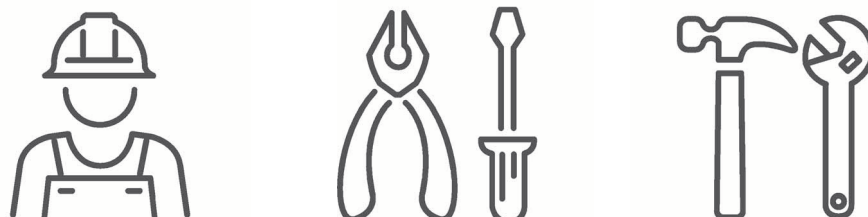
and geothermal as potential ways for the HSE to share the benefits of this costly exercise with other organisations.

Deep retrofit pathfinder

Currently, the deep retrofit aspect of the HSE's plan is in early stages, with a pilot pathfinder programme currently underway to ascertain the best methods to bring the scale of change needed for the HSE.

Brennan outlines that there are 10 sites which encompass four acute hospitals, four long-term residential facilities, one primary care facility, and one office. He explains that the results which arise from these pathfinder projects will





inform how the HSE approaches the changes needed in at least 100 large scale sites that will be the initial areas of focus on the HSE's deep retrofit project.

Reflecting on the early stage lessons from these projects, Brennan says: "We see a lot of common themes in our buildings; we see a lot of our buildings from the 1940s vintage, and they are still in use today.

"I have continually reflected on what prompted building programmes from that time. At the time, there was not much money in the State, but what we can see from our ability to build back then is that there is always a way of making things happen. We still need to figure out what our equivalent building programme will be to enable us to do a deep retrofit, but with these things, where there is a will there is a way."

Maximising energy efficiency

Brennan outlines the seven action areas of the HSE's deep retrofit plan, explaining that he is currently focused on three of the action areas. Action area three, maximising energy efficiency, is listed as a priority which Brennan says the HSE is currently focused on.

"We have set up energy teams in place which has allowed us to have started the retrofit programmes. To date, there has been a fairly reasonable return on that; there has been approximately €30 million invested in the Shannon retrofit project and there around 500 projects in total have been completed and we have seen reasonable returns on that."

Whilst Brennan is satisfied with the returns seen on the investments outlined, he nonetheless

believes that wide-scale measures based on what has been tried and tested thus far will "only get us so far in reaching our 2030 targets".

"The only way we will meet our 2030 Climate Action Plan target is with a deep retrofit. We are looking at making our energy efficiency approach more integrated rather than the architect coming in on the design and providing a box of tricks which work for the building.

"We are trying to define our vision from an early stage, what we want to achieve from the building and the energy performance, we must be looking at the fabric first approach to achieving that including the building aspect where possible, and then building an environmental model for the building that we can define," he says.

"We can then see how the fabric and windows and ventilation can work, all the key aspects for a building that will make it an A-rated building in practice rather than one which works on paper but not in practice. That is key to us, we have set up our own energy efficiency design in line with the IS399 standard."

Concluding, Brennan admits that the challenge is vast, but that there is a much better understanding of sourcing the necessary finances and that the pathfinder projects will ultimately save money on the deep retrofit project.

"I am very positive about what I am seeing in the HSE. There is an overarching plan there to be part of this and lead out on climate action works which are badly needed. That will give us the tools and expertise to then get on with the projects and realise their potentially vast benefits."

A retrofit one-stop-shop for approved housing bodies and local authorities



The Large Projects Team – Front: Tracey Webb, Mike O'Rourke. Back: Joanne Quaid, Isolda Heavey, David Ahearne, Vanesa Carolina.

Electric Ireland Superhomes is a joint venture between Tipperary Energy Agency and ESB (Electric Ireland) established in 2021. We are an SEAI registered one-stop-shop looking after all the key stages of a home energy retrofit, from design, contractor selection, project completion, and management of SEAI grant funding to bring houses and apartments to a minimum of a B2 BER standard.

Electric Ireland Superhomes' vision is to empower our customers to achieve warmer, healthier, low-carbon homes with a renewable energy focused approach. We are currently on track to achieve our target of retrofitting over 30,000 homes by 2030.

Electric Ireland Superhomes delivers retrofit solutions with the support of a multi-disciplined staff of over 50 people comprised of retrofit advisors, energy engineers, surveyors, and BER assessors. We now have a dedicated team that specifically focuses on larger projects with special focus on housing owned and managed by local authorities, approved housing bodies, and non-corporate landlords. This team is led by Mike O'Rourke who has over 28 years' experience in building services

engineering, with the last seven years in the housing retrofit sector and supported by David Ahearne with over 25 years in project and account management roles and experience within the retrofit sector.

The dedicated large projects team bring a wealth of expertise in planning, execution, and oversight, ensuring that projects are delivered on time and within budget. With a keen understanding of the intricacies of project management, they can effectively navigate potential challenges, mitigate risks, and optimise available resources. Their ability to anticipate potential roadblocks and implement strategic solutions contributes to the overall success of the project. Ultimately, by entrusting Electric Ireland Superhomes with the oversight of their energy retrofit programme, a local authority or approved housing body stands to benefit from enhanced efficiency, cost-effectiveness, and successful project outcomes.

For local authorities, Electric Ireland Superhomes can provide a range of services to meet their needs from a full energy retrofit consultancy service to the provision of services expected under the Energy Efficiency Obligation Scheme.

From 2022 to date, our large projects team have been engaged by several local authorities, for the delivery of energy retrofit works of over 750+ units. Our minimum objective is to deliver a B2 post-BER rating on all homes and in 2023, 44 per cent of all our local authority houses achieved an A post-BER rating.

In 2024, we have been contracted by additional local authorities for their Energy Efficiency Retrofit Programme and are forecasting significant growth in this sector.

For approved housing bodies and non-corporate landlords, Electric Ireland Superhomes can provide a full one-stop-shop service that can avail of the SEAI grants for houses that were built and occupied before 2011 and have an existing BER of B3 or lower. SEAI grant supported retrofit measures include insulation upgrades (including roofs, walls, floors), replacement doors and windows, mechanical ventilation, airtightness, solar PV, and heat pumps.

The process for an energy retrofit starts with an initial consultation to establish your requirements followed by a detailed house survey that includes the building fabric and heating systems. An energy report is then prepared that recommends a package of measures. Once satisfied with the



David Ahearne and Mike O'Rourke.



Before Retrofit



After Retrofit

recommendations in the report, we can finalise the design of the works, prepare documents for tender or pricing, and manage the grant process. We carry out interim checks on the retrofit works in progress and a detailed final inspection once the project is completed. A health and safety file and post-works BER Certificate are provided on completion of the project.

For more information contact:
David Ahearne, Corporate Account Manager
T: 087 489 6572
E: david.ahearne@electricirelandsuperhomes.ie

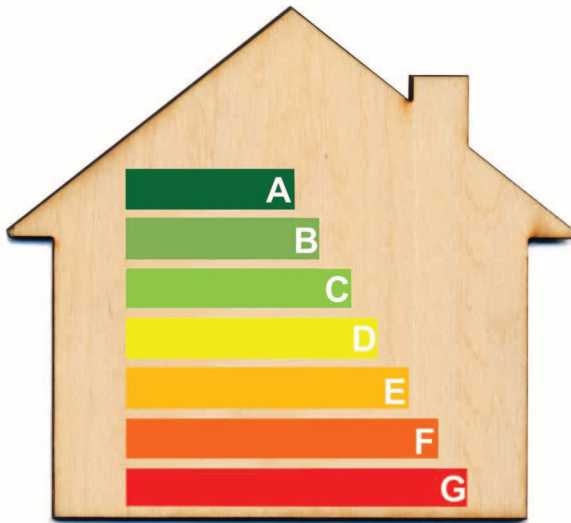
Mike O'Rourke, Head of Contracting and Safety
T: 086 440 2565
E: mike.orourke@electricirelandsuperhomes.ie
or
E: multiples@electricirelandsuperhomes.ie



Rialtas
na hÉireann
Government
of Ireland

Grants offered are provided by the Government of Ireland through the Sustainable Energy Authority of Ireland (SEAI).

'Refined energy performance system' recommended



Leading energy experts have argued that aligning energy efficiency investments to the achievement of a 'B2' BER standard is a necessary but not sufficient condition for meeting the State's retrofitting objectives.

Writing for *RTÉ Brainstorm*, Economic and Social Research Institute (ESRI) energy and economics experts Tensay Hadush Meles, Niall Farrell, and John Curtis argue that improving building energy efficiency, as measured by BER scales, leads to a reduction in energy use for home heating and an increase in home heat retention.

In two studies published in 2023, the ESRI has examined the accuracy of Irish BER scales in capturing observed energy use for home heating and home heat loss.

The energy experts note the results of these studies carried out by the ESRI, which show that energy performance attributed to BER scales is "considerably lower" than what has been projected and strategised for by government.

"This does not imply that upgrading dwellings' energy efficiency is not beneficial," they say. "Instead, the

findings suggest that BER scales do not capture the insulative performance of dwellings as accurately as we would have anticipated."

The ESRI studies find that dwellings with better BER scales are expected to retain heat and minimise heat loss, thereby having relatively a lower drop in indoor temperature. Both studies focus on building fabric performance in isolation while excluding the influence of occupants' behaviour on energy consumption, as factors associated with occupants' energy consumption behaviour would complicate building energy performance comparisons.

The first study looks at the drop in indoor temperature during early morning hours (midnight to 6am) of winter months when the heating system is confirmed as being turned off.

The second study explores differences in boiler operation for home heating while the indoor temperature hovers

around the thermostat's set point temperature during the main winter heating months. This serves as a "proxy measure" of variations in energy use for home heating across the BER scales, attributed to building fabric performance alone.

The authors assert that dwellings with better BER scales are anticipated to have a shorter duration of boiler operation to maintain the indoor temperature within the thermostat set points.

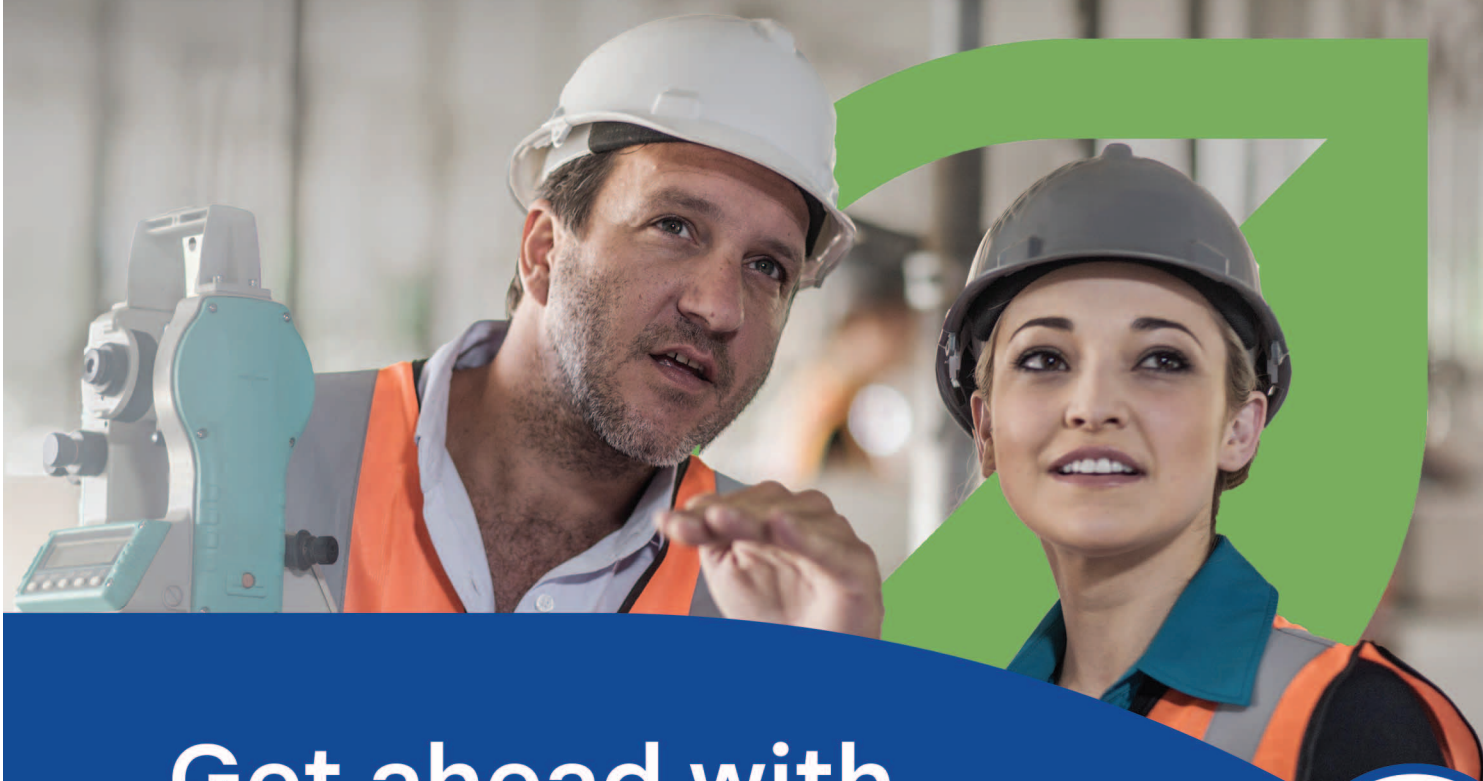
"The differences in observed energy performance attributed to BER scales are considerably lower than what is projected. This does not imply that upgrading dwellings' energy efficiency is not beneficial," they write.

"Instead, the findings suggest that BER scales do not capture the insulative performance of dwellings as accurately as we would have anticipated. This could be due to their reliance on standardised values and their nature as aggregate measures."

The findings from the two studies, the ESRI experts argue, present "significant implications for both policy and homeowner decision-making". "Aligning energy efficiency investments to the achievement of a 'B2' BER standard may lead to achieving targets at greater costs than necessary.

"A BER system that more accurately captures the insulative performance of individual dwellings could guide us toward a more cost-effective decarbonisation trajectory. This also affects homeowners, who factor in the change in BER, when planning home energy efficiency upgrades."

Concluding, the authors recommend that a refined energy performance system that more accurately captures the performance of each individual home could guide homeowners toward investments tailored to their dwelling's specific characteristics. This, they say, could involve "a more data-driven approach to evaluate and identify the most suitable upgrades".



Get ahead with NZEB Training courses

Develop the skills to build or retrofit buildings that are energy efficient and environmentally friendly in line with Nearly Zero Energy Building (NZEB) requirements. Discover flexible NZEB training programmes, with many courses delivered through a hybrid model on-site and online, and taking place during evenings and weekends.

Courses include:

- ✓ NZEB Retrofit
- ✓ NZEB Ventilation
- ✓ NZEB Site Supervisor
- ✓ Retrofit Insulation Skills
- ✓ NZEB Fundamental Awareness
- ✓ Certified Passive House Tradesperson

Training available nationwide in:

- City of Dublin ETB
- Cork ETB
- Laois & Offaly ETB
- Limerick & Clare ETB
- Mayo, Sligo & Leitrim ETB
- Waterford & Wexford ETB



Fully Funded

Find out more at thisisfet.ie/nzeb



CALOR

Mixed-technology approach to retrofitting rural homes could boost adoption rates



Catherine Hannon, Public Affairs and Sustainability Manager at Calor Ireland.

Catherine Hannon, Public Affairs and Sustainability Manager at Calor Ireland, explains the challenges linked to the existing ‘one size fits all’ solution to heat decarbonisation. She highlights that choice and affordability are key to empowering rural homeowners to play their part in Ireland’s energy transition.

Energy needs are changing in Ireland. There is a drive to reduce the environmental impact of our energy choices and to reduce carbon emissions. At this pivotal moment for meeting our climate targets, companies need to propose pragmatic solutions to

the energy and environmental challenges that our society faces.

Decision-makers and influencers must recognise that the success of Ireland’s ambitious retrofitting and decarbonisation targets lies in our ability to craft policies and solutions that are

not only environmentally sound, but also socially and economically viable.

Recent data underscores the urgency for a range of solutions, particularly in the retrofitting sector, as oil usage in households continues to rise. As key decision-makers and influencers, it is incumbent upon government and industry to partner and deliver a range of innovative and inclusive approaches.

“Choice and affordability are crucial for rural energy consumers who are located off the natural gas grid, or those living in older homes using higher carbon fuels like oil, coal and peat,” explains Hannon. “Consumers should be made aware of all options, including the benefits of using cleaner, lower carbon and renewable liquid gases in their current heating system, along with improved energy efficiency measures.”

For almost 90 years, Calor has ensured that homes and businesses across Ireland – and particularly rural Ireland – have had access to clean, reliable, lower carbon energy, regardless of location. Calor’s purpose is to drive Ireland’s energy transition and create a sustainable future for generations to come. That purpose is underpinned by Calor’s achievement of the coveted Business Working Responsibly Mark in 2020, Ireland’s Environmental, Economic, Social and Governance (EESG) standard.

Calor’s responsible product strategy is to ensure that the source and supply of its products becomes increasingly renewable and sustainable, to meet its

customer's future needs. With the launch of a certified renewable liquid gas (BioLPG) in 2018, Calor demonstrated its commitment to playing an active role in Ireland's transition to a decarbonised economy.

Recent government figures suggest that the national retrofitting and heat pump targets as set out in the National Retrofit Plan, could be missed. The Sustainable Energy Authority of Ireland (SEAI) reported that 9,946 energy upgrades were completed, and 3,304 homes were upgraded to a BER B2 or higher, through government-funded SEAI grant schemes in the first quarter of 2023. By widening the choices available to homeowners, those figures could be accelerated.

At present, the scale of the task risks overwhelming consumers living in rural off-grid areas, leading to disengagement and inaction. Recognising the significance of factors influencing adoption is crucial, especially when acknowledging that climate targets require behavioural changes among citizens and urgent, transformative actions in key industries such as housing, transportation, and power generation.

In a recent report, Liquid Gas Ireland (LGI) analysed the latest census data and found that 46 per cent of all households are still reliant on high carbon fuels including oil, peat, and coal for heating. There has also been a national increase in the number of homes using oil since 2016. While the overall national proportion of households using these high carbon fuels has decreased slightly from 2016, the total number of housing units using oil has increased by 28,173 to 714,177.

"When scrutinising the data in more detail, it is clear that in some counties, especially those located off the natural gas grid, homeowners are extremely reliant on oil for heating. The LGI report shows that 66 per cent of homeowners in Donegal are reliant on oil, this is replicated across other counties too, for instance in Mayo (61 per cent), Monaghan (75 per cent), and Kerry (63 per cent)."

A further consideration is the age of Ireland's housing stock, 65 per cent of all houses were built before 2001, according to CSO figures analysed by LGI. This equates to just over 1.2 million



homes, which are typically less energy efficient and more costly to heat.

This ageing infrastructure poses a substantial challenge and often requires more extensive and costly interventions. It is not just about environmental impact; it is about the economic feasibility for homeowners.

"Many off-gas-grid buildings are older and difficult to electrify. For heat pumps to operate effectively, it requires the home to be well-insulated and this often requires an expensive, deep retrofit for rural homeowners and often the inconvenience of vacating the property during construction. This is not a viable option for all, therefore, solutions offered to decarbonise these households should be flexible enough to meet their needs," states Hannon.

Calor's traditional LPG product allows rural off-grid consumers to transition from higher carbon and more polluting fuels such as heating oil, coal and peat to a cleaner and lower carbon alternative. Continuing innovation by the liquid gas sector, has led to the development of rDME, a low carbon, sustainable liquid gas which is complimenting the advances being made by BioLPG.

rDME can be produced via gasification and catalytic synthesis, using feedstocks such as municipal solid waste, forest residues, animal waste,

sewage/industrial sludge, and energy crops. It offers a versatile and flexible decarbonisation route for domestic and industrial heating, cooking applications, and the transport sector. rDME can also be blended with LPG or BioLPG and used in existing infrastructure, making it a more flexible and affordable option for homeowners and businesses in off-gas grid areas.

Calor advocates for a technology neutral approach to decarbonisation, which recognises that there are alternative, clean, lower carbon solutions available, including off-grid liquid gases – LPG, BioLPG and rDME. Renewable ready gas boilers combined with solar PV and moderate retrofitting measures, can also result in increased energy efficiency and lower carbon emissions, but at a significantly lower upfront cost. LPG and BioLPG can also be used seamlessly in cutting edge heating systems, such as hybrid heat pump installations.

Calor is committed to partnering with policymakers, industry and consumers to achieve an affordable, progressive, and step-by-step 'just transition' to decarbonisation.

T: +353 153 32081

E: Catherine.hannon@calorgas.ie

W: www.calorgas.ie



Winning the hearts and minds of residents

Winning the support of residents in retrofitting transitions means that landlords and property developers must understand that a zero carbon house is not necessarily a zero carbon home, writes Emma Gilbank, vice chair of the Chartered Institute of Housing Futures (CIH Futures).

Picture this: holding a hot cup of tea, you settle into your sofa, surrounded by the familiar walls of your home; a safe place despite life's challenges. Now, imagine your landlord proposes changes to those walls, they are using terminology and technology that you are not familiar with and disrupting your life, all in the name of a greener future. Convincing residents about the benefits of retrofit and educating them on the urgency of climate change poses a challenge for housing professionals. However, there are strategies that increase the chance of success.

Let us rewind; in the above scenario, housing professionals had been planning, assessing, modelling, surveying, and securing funding for retrofit work long before the resident became aware of it. Unsurprisingly, they feel a lack of control and barriers emerge. Research indicates that the ease of a task strongly motivates people, with disruption to their lives being a major obstacle.

The 'fabric-first' approach is commonly discussed, usually focusing on the energy efficiency measures needed before a heat pump can be installed. Many factors will be assessed: the financials, the carbon savings, smart monitoring and technology, renewables, DMC, fire safety. What is often overlooked is that placing someone in a zero-carbon ready house does not guarantee a low-carbon lifestyle. Behaviour

“Residents must be able to influence the process and be empowered to adopt the necessary behaviour changes.”

change is crucial for actual carbon footprint reduction and increased comfort.

Embracing a collaborative ‘resident-first’ approach, which involves residents in the retrofit journey, can yield co-benefits such as enhanced comfort, better health, increased resilience, and a reduced environmental impact. Residents must be able to influence the process and be empowered to adopt the necessary behaviour changes.

To effectively engage residents and drive behaviour change, three key methods of framing communications have proven successful:

- 1. Language:** Simplify the message by eliminating jargon and explaining concepts in an easy-to-understand manner. This is harder than it sounds, retrofit itself is a word few understand.
- 2. Message:** Make it relevant and keep it local. Do not refer to global issues or impacts. Instead, discuss the impact on loved ones and their own community emphasising the multiple benefits including reduced bills, improved comfort, and better health (all of which rely on behaviour change after retrofit).
- 3. Messenger:** People are more likely to trust those they know: their opinion will be influenced by friends and family, their community and even what they think of the housing professional they are speaking to. We upskilled a technician as a TLO (technical liaison officer) because they knew our customers better than anyone else. If you can get someone in the community on board, even better.

An argument I hear regularly from professionals is that people do not need to care about climate change, they just need to see it in the same way as home improvement works like a new kitchen or bathroom replacement. They tell me about their (often older) friend or relative who would never care about the impacts of climate change and so it is not even worth trying. Instead, we should just talk of increased comfort and reduced bills. I do not deny that these messages are an important part of the puzzle but there are three main problems with this argument.

Firstly, the complexity of retrofitting means that decisions vary widely from property to property and a one-size-fits-all would not achieve the desired outcomes for resident or planet. The resident may not see an improvement to the physical appearance of the property which sells most other planned improvement works.

Secondly, those benefits rely on influencing behaviour change similarly to reducing carbon footprint: lower bills and increased comfort are not always direct result of retrofit.

Thirdly, we simply do not have the luxury of leaving climate out of the conversation anymore. We will pass 1.5°C of warming in 2024, the limit, which was agreed as irreversible, harmful level beyond which tipping points would be triggered and suffering would worsen. This language and global scale might not mean much to you, but if I frame it differently it might make it clearer.

Have the young people in your life seen many snow days? Do you remember playing in the snow more regularly when you were younger? Have you noticed winters are warmer and wetter? Was your community impacted by the recent storms, and did you feel unsafe? Do you think about the cost before you put the heating on?

I have experienced all of these changes in my lifetime. Almost all our residents will either live to experience catastrophic climate change or their loved ones alive today will – this is no longer about future generations.

Using the three tips above to try and frame conversations will mean that not only will we have residents who are more comfortable and healthier, but also who are more resilient and hopefully a society that has a safe and habitable future.

Emma Gilbank is the vice chair of the Chartered Institute of Housing Futures (CIH Futures) which represents young housing professionals across the UK and Ireland. She joined the sector in 2020 after graduating from the University of Leeds, and has been shortlisted for a Women in Housing Award.



Grant supporting skills development with diversification of training



Keith Scully, Grant Technical Sales and Training.

Renowned for its innovative range of heating technologies, leading manufacturer Grant continues to support the journey towards sustainable home heating and the deployment of renewables throughout Ireland.

Headquartered in Birr, County Offaly, Grant is at the cutting edge of innovation with an evolving product portfolio which includes air to water air source heat pumps, solar thermal panels, underfloor heating, hot water cylinders, aluminium radiators, HVO biofuel ready boilers, and condensing wood pellet boilers.

The company's award-winning Grant Aerona³ R32 air to water, air source heat pumps are being installed in social housing projects, new build developments and retrofit projects throughout the country due to their cleaner, more environmentally friendly performance, and ability to lower a property's overall carbon footprint.

To support the move to heat pump technology, Grant has diversified its education offering for

installers, architects, engineers and local authorities, to include heat pump focused CPD courses via its onsite Training Academy and online eLearning Academy.

Keith Scully, Grant Technical Sales and Training, says: "We have seen great interest in our education offering during the last 12 months and as demand continues to increase we are working on new renewables-focused courses to launch this year. As interest in renewable technology, in particular heat pumps increases, we are delighted to be in the position to play a key role in supporting the training and development of installers, architects, BERs and engineers so that they can learn more about heat pump technology and best practice in terms of installation."

Grant Aeronas³ heat pumps

Whilst air to water heat pumps like the Grant Aeronas³ R32 models are commonly installed in new build properties, they are also being installed as part of a deep retrofit project in older homes.

Barry Gorman, National Renewables Sales Manager at Grant says: "Installing a heat pump as part of a retrofit does pose more challenges due to the existing heating design, layout and construction of older buildings where a high temperature heating system would have been traditionally installed. Therefore, for an older building to become heat pump ready, upgrades need to be made to the building fabric and air tightness to ensure that the heat pump can work effectively and efficiently – which is a costly process."

Gorman adds: "When installing a heat pump as part of a deep retrofit, generally Grant Afinia aluminium radiators would be the selected heat emitters. The Afinia range is designed to work effectively with low temperature heating systems and pairs easily with the Grant Aeronas³ heat pump range. It is essential however that both the heat pump and radiators are correctly sized and specified to ensure maximum efficiency for the property."

This is an important reason why Grant offers a heating design service free of charge for new build and deep retrofit projects. Upon submission of property plans Grant's technical specialists undertake in-depth heat loss calculations to enable the heat pump, supporting hot water storage and heat emitters to be sized and specified correctly, to ensure a fully integrated, highly efficient heating system.

Grant continues to play an important role with its innovative range of heating technologies in helping homes throughout Ireland to reduce carbon emissions and become more sustainable in the journey towards a zero-carbon future.

T: 057 912 0089

E: info@grant.ie

W: www.grant.ie

X: @GrantIRL

Instagram: @Grant_IRL

LinkedIn: Grant Engineering ULC



About the Grant Aeronas³ R32 air to water, air source heat pump

- Award winning
- Highly efficient A+++ energy rating
- Available in four outputs (6kW, 10kW, 13kW, and 17kW)
- 13kW and 17kW models recognised by Quiet Mark for their quiet operation
- Offers a superior seasonal coefficient of performance (SCOP) even at colder temperatures
- Can help achieve compliance required under building regulations
- Sized and specified by Grant as part of their free home heating design service
- Works effectively with Grant Afinia aluminium radiators and Grant Uflex underfloor heating
- Every Aeronas heat pump is commissioned by Grant at no extra cost

About the Grant Training Academy

Grant's onsite training facilities are based at the company's headquarters in Birr and include a dedicated auditorium and training suite. Both the onsite training courses, which run throughout the week and the online eLearning offering are developed and taught by Keith Scully, Grant Technical Sales and Training.

Grant offers a diverse range of training courses both onsite and online through their eLearning academy to advance knowledge on Grant's heating technologies, develop installation experience, and to continue professional development.

To view Grant's training courses and to book a course visit www.grant.ie/professional



CAP24: Retrofitting targets remain unchanged

In the latest Climate Action Plan update (CAP24), the Government has retained its targets on retrofitting

Overall, the plan claims that it provides a “roadmap towards achieving” the State objective of halving Ireland’s emissions by 2030 and reaching net zero by no later than 2050, as government must legally strive towards under the Climate Action and Low Carbon Development (Amendment) Act 2021.

Under policy commitments outlined in Climate Action Plan 2021, by 2030, the Government is committed to:

- achieving 80 per cent of electricity demand from renewable sources;
- retrofitting 500,000 homes to a BER

B2 or cost optimal equivalent standard; and

- installing 680,000 heat pumps.

Although there are no new specific objectives outlined, CAP24 nevertheless hypothesises that government must adopt new approaches to address emission reductions, particularly in areas such as retrofitting and renewable energy. It is likely that the need to innovate will be at the heart of any new retrofitting policy developments to come.

The action plan document also outlines the importance of the newly established

Heat and Built Environment Taskforce, which it states will “accelerate and drive delivery in relation to retrofitting, renewable heat, district heating and decarbonisation of the building stock”.

With fossil fuel prices remaining volatile, in addition to the need for their phaseout amid the State’s carbon reduction obligation, CAP24 outlines the role that retrofits can play is ensuring that there is heightened energy efficiency.

Informed by ESRI analysis on the distributional impacts of increasing carbon tax, the Department for the

Environment, Climate and Communications, through CAP24, asserts that the Government has ensured that the proceeds of increases in the carbon tax are “used to protect households most exposed to higher fuel and energy costs, and to invest in new climate action programmes”.

“This includes expenditure on a socially progressive national retrofitting programme, and agri-environment programmes, to encourage and incentivise farmers to farm in a greener and more sustainable way,” CAP24 states.

On retrofitting of public sector buildings, the CAP24 document outlines that there are between 12,500 and 13,700 buildings in the public sector, including approximately 4,000 schools in the school sector and 1,000 buildings in the commercial semi-state sector. Buildings account for 44 to 50 per cent of the energy consumed by the public sector and almost half of total energy related GHG emissions. While this does not lead to new policies in retrofit, it underlines the scope for change which is achievable within the public sector.

Although there are frequent challenges with public opinion and getting public buy-in for retrofitting schemes, CAP24 optimistically states that, according to data from the Climate Conversations, the majority of Irish people (73 per cent) “understand the importance of retrofitting their homes to deliver on climate action”.

“Two-thirds of people have improved their attic insulation and the same proportion have improved their home insulation. Awareness of grants and supports for retrofitting is high, also at 66 per cent,” the report states.

Progress

Looking back on progress made in retrofitting, CAP24 shows that the policies and measures introduced under the National Residential Retrofit Plan have led to an increase in retrofit delivery. In 2023, under the SEAI residential and community schemes, there were:

- 27,200 home energy upgrades supported, which represents a 79 per cent increase year-on-year;
- 4,438 homes delivered across the energy poverty schemes, which represents an increase of 85 per cent year-on-year; and
- 8,481 homes upgraded to a post works BER or B2 or better in 2022, representing a 95 per cent increase year-on-year.

CAP24 further outlines that progress has been accelerated by the reforms previously introduced to the National Residential Retrofit Plan, which was originally published under CAP21.

The Government has a target of retrofitting the equivalent of 500,000 homes to a Building Energy Rating (BER) of B2 or cost optimal and installing 400,000 heat pumps in existing homes to replace older, less efficient fossil fuel heating systems by the end of 2030.

The Government, in not updating or overhauling policies for retrofitting, has clearly asserted that the policies published in previous iterations of the Climate Action Plan provide a satisfactory framework for the Government to meet its retrofit targets.

Minister for the Environment, Climate and Communications, Eamon Ryan TD, told *eolas Magazine* in October 2023 that he was confident that the Government will meet its retrofitting targets. “We are going to make this leap in retrofitting because the Irish public like it,” Ryan said.

However, if the Government is to meet its retrofitting targets in the residential sector, it will need to find a way to alleviate the cost burden to working and lower-middle class people for whom existing retrofitting schemes remain unaffordable.

Infrastructure for Good: Retrofitting for sustainable buildings



Stephen Prendiville, Partner, Real Assets, Sustainable Infrastructure Leader, Deloitte.

Met Éireann declared 2023 as the country's warmest year on record by a large margin. The year saw unprecedented temperatures, surpassing records set in 2022, eleven named storms and the wettest March and July on record. These alarming statistics underscore the need for decisive action to mitigate the worst potential outcomes of climate change.

The climate crisis is accelerating at an alarming rate. Our buildings are significant emitters, currently responsible for 39 per cent of global energy related carbon emissions, according to the World Green Building Council. There is no credible path to net zero without significant changes to our built environment. Ireland's Climate Action Plan, including the 2024 action plan, recognises this, calling for further acceleration of the various retrofitting programmes in place.

The momentum is building across the industry to do more in 2024. The European Parliament also recognised the importance of addressing emissions from the built environment and has developed an ambitious plan, the Energy Performance of Buildings Directive (EPBD), to bring the energy ratings of every building in the European Union to at least an A rating through retrofitting on a scale never before seen.

For years now our team at Deloitte has been helping clients understand their decarbonisation requirements, and energy efficiency opportunities, helping to analyse client situations, design roadmaps, all to support clients' decision-making. However, often the constraints of time and resources (human and capital), stand as barriers for even those clients most committed to action.

At Deloitte, our goal is to make an impact that matters. Providing analysis and support for clients up to a point, is simply not enough when we need to make such a dramatic shift in our society for climate action. So, drawing together our skilled professionals in real estate, corporate finance, sustainability, people and business operations, and infrastructure delivery, we have created a holistic, end-to-end, buildings retrofit solution. Building owners can engage with our team and not only receive a tailored retrofitting programme that is cost optimal and EU taxonomy aligned for green/sustainable finance, but we will

also raise the necessary finance for the works and execute the programme.

We have team members that can even help with the people and operations aspect of the housed business, ensuring in for example, a floor-by-floor approach, that the day-to-day business functions are least impacted as the programme advances. Time, resources, and business continuity concerns need not be a barrier any longer. Indeed, in most instances we can structure the programme to repay the financing and professional services from the energy savings created through the retrofitting programme. Following the retrofitting programme, the building owner in most cases will receive a nearly net zero building (saving on potential carbon costs anticipated through the European ETS), with energy volume related savings between 50 per cent and 90 per cent.

“Of the approximately 124,000 commercial/office buildings in Ireland according to SEAI, we believe our solution could be a very strong fit for a large portion,” says Stephen Prendiville, Deloitte’s Sustainable Infrastructure Leader. “The solution is collaborative in nature. We need building owners to reach out, and our team is ready to engage and take that bold action together.”

Prendiville knows what it takes to deliver complex projects. He spent nearly a decade in Canada and the US, working for major cities such as Toronto, Edmonton, and Los Angeles, major state and federal authorities and large private industry, delivering critical disruptive infrastructure programmes.

“Even before we had the language of the sustainable development goals, most of my clients in North America had that implicit understanding that there is a delicate balance between economic, social, and environmental sustainability. From 2016 on, alignment to the Sustainable Development Goals and the Paris Agreement became foundational aspects of our work in urban development, public transport, and social infrastructure delivery.”

Prendiville returned to Ireland in 2020 and joined Deloitte as a Partner in late 2023, focused on sustainable infrastructure solutions, as part of Deloitte’s continued commitment to making a significant impact in climate action and sustainability this decade.



Prendiville joins Deloitte’s real assets team, which brings together experienced professionals in debt and corporate finance, infrastructure planning and delivery, business case analysis, economics, procurement, project managers, financial modelling, valuations, chartered surveyors, real estate, and chartered town planners, among others.

The expertise of our real assets team has positioned Deloitte as thought leaders on delivering sustainable infrastructure. As an example, Deloitte supported Duke University’s Nicholas Institute for Energy, Environment, and Sustainability and Economist Impact to develop the Infrastructure for Good Barometer. This first-of-its-kind research initiative aims to drive awareness of the broad-based benefits of smart and responsible infrastructure, establish what “good” looks like and create a roadmap to enable better decision-making for infrastructure delivery. In Ireland, we scored in sixth place, with a score of 65.5 out of 100, with plenty of room to improve, particularly in being more deliberate about wider community outcomes from our infrastructure programmes.

With *Infrastructure for Good* as our guide, and our commitment to making an impact that matters, we are constantly striving to ensure that the expertise and professionalism of our people is engaged in the most critical challenges of the day. Deloitte’s retrofitting solution for sustainable buildings is only one example of the innovative and critical solutions that our teams are delivering for clients every day. Together, we can play a pivotal role in mitigating climate change and creating a more sustainable future.

Stephen Prendiville
Partner | Real Assets
Sustainable Infrastructure Leader
T: 01 417 1379
E: sprendiville@deloitte.ie
W: deloitte.ie

Deloitte.



Colin O'Hanlon, Indaver; Caoimhín Ó Ciaruáin, Department of Transport; Gail Kinkead, Energy Ireland; Neil Walker, Walker Energy Consulting; Mike King, Irving Oil; and Lucien Mattieu, Transport and Environment.

The Energy in Transport Forum, sponsored by Indaver, took place in Dunboyne Castle Hotel on 8 February 2024. The event brought together over 130 key stakeholders and focused on the use of energy by the transport sector and how we can increase the amount of renewable energy used, either directly or through electrification.

Expert speakers included Caoimhín Ó Ciaruáin, Department of Transport; Shane McDonagh, International Energy Agency; Lucien Mattieu, Transport and Environment, Brussels; Teresa Fallon, Zero Emissions Vehicles Ireland; Colin O'Hanlon, Indaver and Emer Barry, Sustainable Energy Authority of Ireland. A massive thank you to our conference exhibitors, speakers and delegates who joined us and made the conference a huge success.



Fran McFadden, Gas Networks Ireland asks the panel a question.



Caroline O'Reilly and Sinead Leonard, Iarród Éireann.



Naoise Greenwood, Department of Transport and Jennifer Sherry, Transport Infrastructure Ireland.



Teresa Fallon, ZEVI, Department of Transport addresses delegates.



Delegates visit the Flogas exhibition stand.



Paul Schutze, Bord na Móna with Nicholas Lincoln, Nephin Energy.



ENERGY IRELAND® 2024

22 AND 23 MAY • Croke Park, Dublin

Energy Ireland 2024 will bring together all the key stakeholders in the Irish energy sector to discuss and debate the key drivers of the energy transition and energy security. Ireland's main energy conference will look at the developments that will decarbonise Ireland's increasingly integrated energy system.



Speakers confirmed so far:

Eamon Ryan TD

Minister for the Environment, Climate and Communications

Catherine Banet

Centre on Regulation in Europe (CERRE) and University of Oslo

Aoife MacEvilly

Commission for Regulation of Utilities

Dave Kirwan

Bord Gáis Energy

Niamh McGovern

Arthur Cox

John Reilly

Bord na Móna

Tanya Harrington

Renewable Energy Ireland

Richard Murphy

Pinsent Masons

William Walsh

Sustainable Energy Authority of Ireland

Brian Ó Gallachóir

UCC

Laura Brien

Maritime Area Regulatory Authority (MARA)

Colm O'Neill

KPMG

Tara Reale

Goodbody

Cathal Marley

Gas Networks Ireland

Major Sponsors



Sponsors



Sponsorship & exhibition opportunities available!

Register now



Online

www.energyireland.ie



By email

registration@energyireland.ie



By telephone

+353 (0) 1 661 3755