

NEW STUDY REVEALS STAGNATION OF RETROFIT RATES AND BUILDING EMISSIONS AMONGST LEADING G20 NATIONS

- New research by 3Keel and Kingspan finds reductions in greenhouse gas (GHG) emissions from buildings are stalling in key EU countries, plateauing in the UK and reversing in the USA
- The new Global Retrofit Index study reveals while progress has been made, based on the current expected trajectory of building emissions reductions, none of the countries assessed will meet their net zero climate commitments
- Analysis shows that improvements in Energy Performance Certificate (EPC) ratings have stagnated across the UK, France and Ireland with the vast majority of certificates still rated as 'D' or 'C'. Similarly, Germany's housing stock remains over-reliant on fossil-fuel heating
- The study outlines sizeable barriers to retrofitting national building stocks including private investment, workforce skills shortages, and limited awareness among the general public
- The report identifies five key elements for a successful national retrofitting framework to deliver the solutions and innovations required to tackle retrofitting at scale

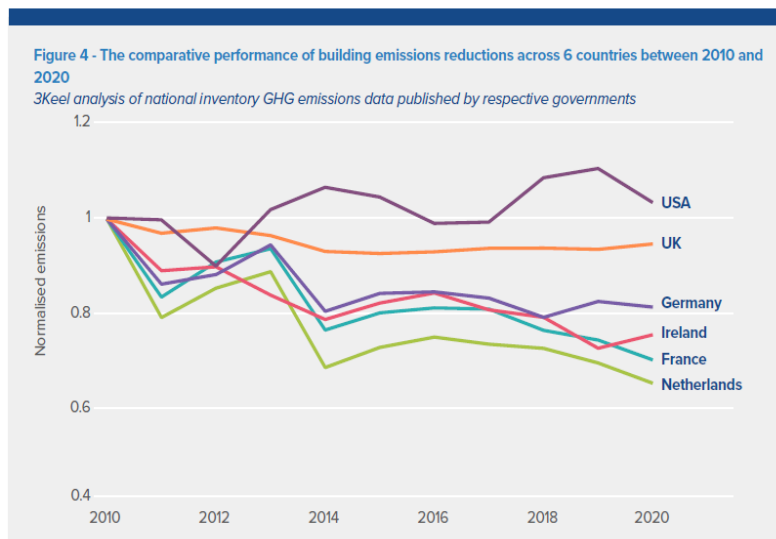
Strictly under embargo until 00.01am Tuesday 14 November 2023

Reductions in carbon emissions from buildings are stalling in several G20 countries in Europe (UK, France, and Germany) and emissions are now rising in the USA, warns a major new study from sustainability consultancy 3Keel for Kingspan, Kingspan is the global leader in high-performance insulation and energy-efficient building solutions.

The *Global Retrofit Index interim report* - a follow on to the inaugural 2022 study - examines historical buildings emission trends and retrofitting rates to identify the gaps between current action and what is required to meet the goals of the Paris Agreement*.

The publication includes a deep dive analysis of building emissions data of some of the highest performing countries in last year's inaugural study, with the addition of Ireland's relatively young building stock this year as an interesting EU-based case study.

Whilst progress has been made amongst EU economies - namely, the Netherlands, France, Ireland, and Germany - the analysis finds emission reductions in these countries are now stalling, whilst the UK's emissions are also beginning to plateau, and concerningly, in the USA, GHG emissions from buildings are increasing.



Analysis by 3Keel has revealed the reductions in building emissions over the past decade, and the additional cuts in building emissions required to align with the national net zero scenario of each country [see Table 1 below]

If each of the six countries continue with their current GHG emissions reduction trajectory and retrofitting rates over the past ten years, by 2040 these major global economies will be some distance from achieving their respective net zero pathways.

Table 1:

Country	Reduction in building emissions between 2010 - 2020 (%)	Additional reduction in building emissions required between 2020-2040 to align with national net zero scenario (%)
US	+3%	-73%
UK	-6%	-71%
Germany	-19%	-81%
Ireland	-25%	-99%
France	-31%	-77%
Netherlands	-36%	-64%

[See appendix A for individual country net zero scenario charts]

Furthermore, detailed analysis of Energy Performance Certificate (EPC) data shows buildings in the UK, France, and Ireland have seen relatively little improvement in the past decade with the vast majority still rated C, D or below. This means they are not energy efficient enough to deliver the decarbonisation required by the Paris Agreement. Meanwhile, Germany’s residential building stock continues to be over-reliant on fossil-fuel heating.

Though retrofitting solutions already exist, the study identifies sizeable barriers preventing rapid and widespread implementation including insufficient private investment, an inadequately sized and skilled workforce, and limited awareness amongst citizens and building owners.

Despite retrofitting remaining a significant challenge, its importance in decarbonising the built environment has never been more evident - 80 per cent of the buildings that will be standing in 2050 have already been built¹.

Recognising the barriers to decarbonisation, the report also identifies five key elements that are central to delivering a successful retrofitting framework:

1. **Setting net zero building performance standards**
2. **Developing a national retrofit plan**
3. **Providing financial incentives and support**
4. **Upskilling the workforce and scaling the supply chain**
5. **Promoting best practice and data transparency**

Each of these elements is crucial to enabling effective, affordable, and at scale retrofitting of national building stocks. Retrofitting building stocks also offers significant opportunities and benefits beyond meeting climate targets, including job creation, reductions in social inequality, and improved health and quality of living.

Report author Olwen Smith of 3Keel said,

“With over a quarter of total global emissions stemming from the operation of our buildings, retrofitting is a pivotal lever for decarbonising the global economy. However, this study shows a

¹ World Economic Forum – Net Zero Carbon Cities <https://www.weforum.org/agenda/2022/11/net-zero-cities-retrofit-older-buildings-cop27/>

concerning stagnation of progress. Our analysis of six countries with old building stocks reveals that reductions in building emissions are now stalling and retrofitting rates are lagging far behind what is required to meet net-zero goals.

The tools and technologies required to improve energy performance in buildings already exist. Coordinated efforts between governments and the private sector are now needed to overcome implementation barriers and rapidly scale retrofitting to drive down building emissions globally.

Bianca Wong, Global Head of Sustainability at Kingspan said,

“This analysis again demonstrates the importance of retrofitting as a lever in decarbonising the built environment if we’re to limit global warming to 1.5°C and meet the objectives set out by the Paris Agreement.”

“With this report, we encourage policymakers and the construction industry to continue to work together to facilitate change, through innovation and regulation, to bring forward workable ideas to support retrofit solutions and reduce global building emissions.”

ENDS

** The Paris Agreement is a legally binding international treaty on climate change. It was adopted by 196 Parties at the UN Climate Change Conference (COP21) in Paris, France, on 12 December 2015. It entered into force on 4 November 2016. Its overarching goal is to hold “the increase in the global average temperature to well below 2°C above pre-industrial levels” and pursue efforts “to limit the temperature increase to 1.5°C above pre-industrial levels”.*

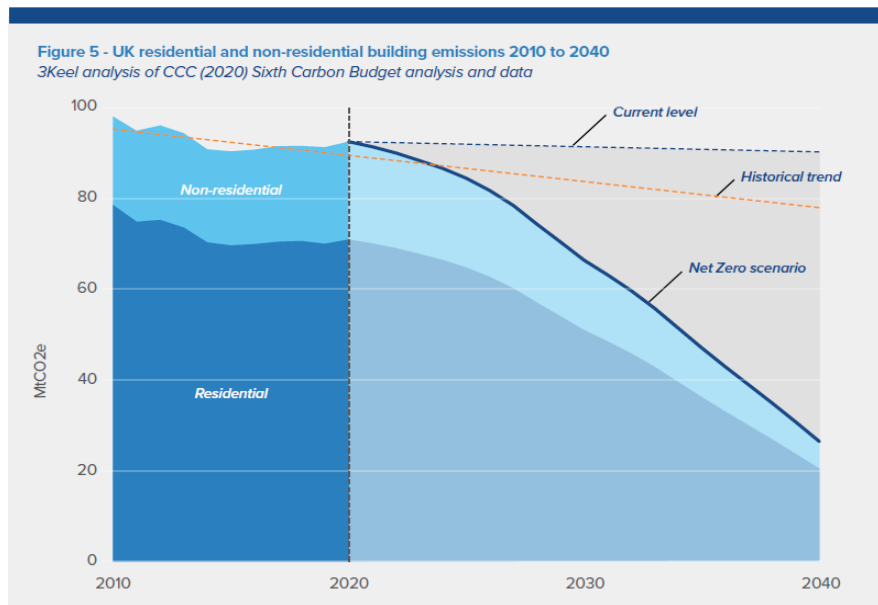
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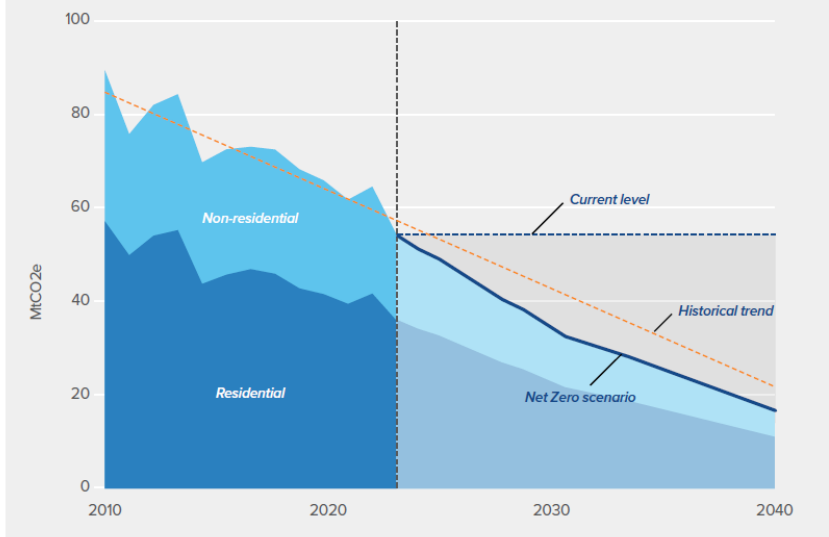
APPENDIX A:

 **United Kingdom**



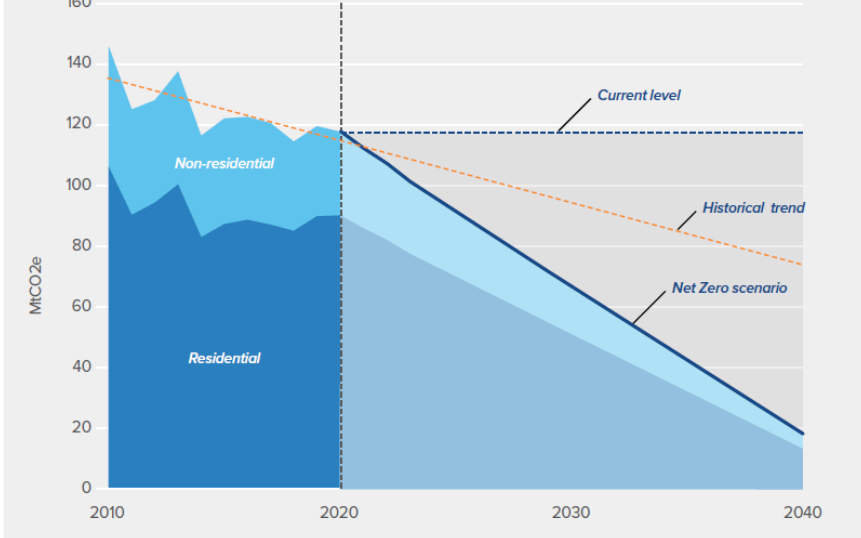
 France

Figure 7 - French residential and non-residential building emissions from 2010 to 2040
3Keel analysis of CITEPA (TBD) SNBC analysis and data



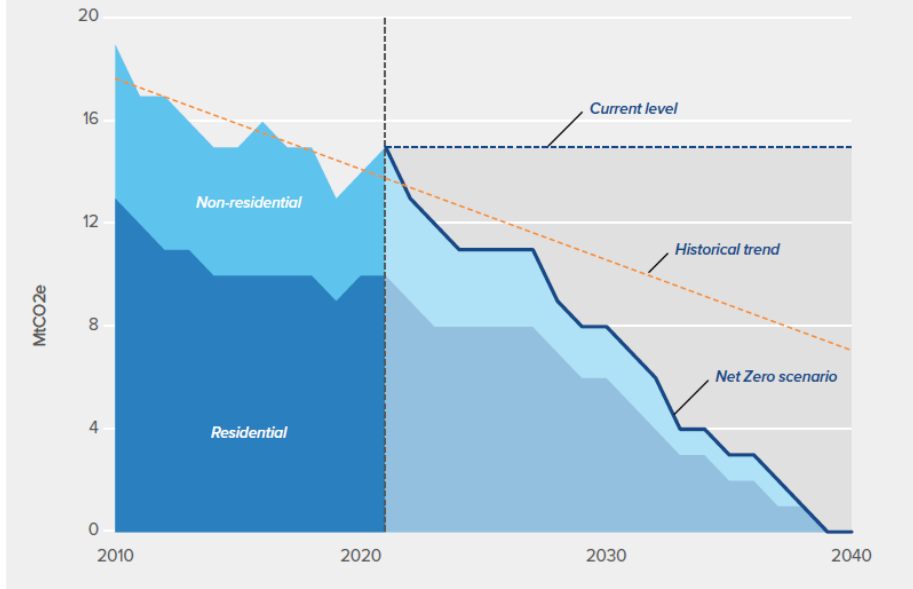
 Germany

Figure 9 - German residential and non-residential building emissions from 2010 to 2040
3Keel analysis of data published in the Bundes-Klimaschutzgesetz (Federal Climate Protection Act) (2019; amended in 2021)



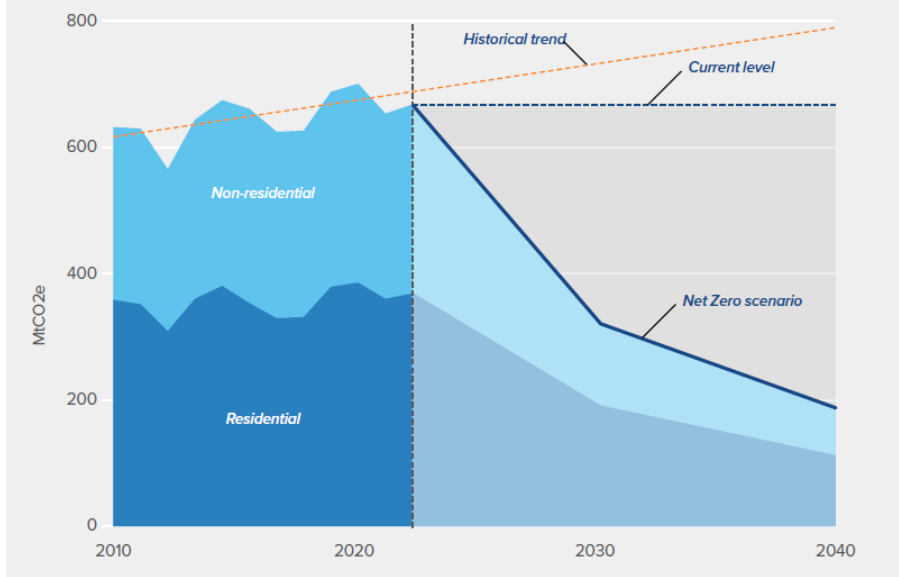
 Ireland

Figure 11 - Irish residential and non-residential building emissions from 2010 to 2040
Analysis completed by O'Hegarty et al. at University College Dublin

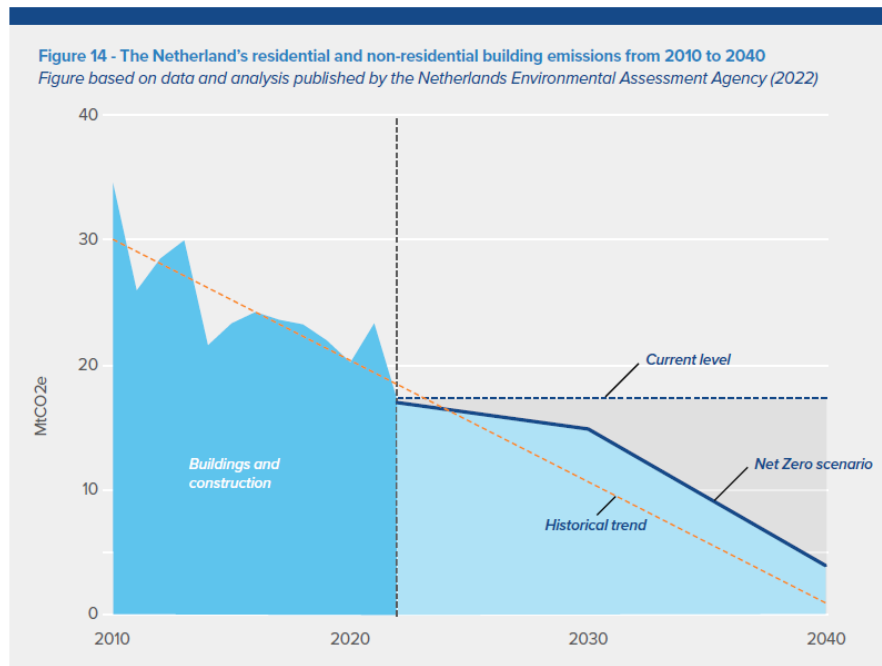


 USA

Figure 13 - The USA's residential and non-residential building emissions from 2010 to 2040
3Keel analysis of GHG emissions data published by sector by the US EPA



Netherlands



Notes to Editors

About 3Keel

3Keel is an award-winning Oxford-based sustainability consultancy specialising in six areas including climate change. 3Keel helps organisations at all stages of their climate change journey: from understanding their climate impact through to tracking progress against targets and communicating results.

We're proud to have received recognition from clients and independent bodies for the work we've been doing, and the impact we've been making. We're delighted to have received certification as a B Corp, and to have been recognised by the Financial Times as one of the UK's Leading Management Consultants for Sustainability. We see these awards both as an honour and as motivation to continue to drive positive changes around the world. The name 3Keel comes from the keel of a boat - giving it stability in rough seas - and this is how we see our work helping to give organisations resilience in changing times."

About Kingspan

Kingspan is the global leader in high-performance insulation and energy efficient building solutions. The companies in the Kingspan Group are united by a vision of a better built environment - one that reduces carbon emissions, promotes wellbeing, and is circular by design. As the global leader in high-performance insulation and building envelope solutions, our mission is to accelerate a net zero emissions future-built environment with the well-being of people and planet at its heart. The goals in our Planet Passionate sustainability programme include net zero carbon manufacturing by 2030 and a 50 per cent reduction in CO₂ intensity in our primary supply chain partners, also by the end of the decade.

Kingspan Group companies are active in over 80 countries and employ in excess of 22,000 people in more than 200 manufacturing facilities. The Group is headquartered in Ireland. www.kingspan.com/group