

# HOUSING FINANCE INTERNATIONAL

The Quarterly Journal of the International Union for Housing Finance



- ➔ **Retrofit policies, practices and pilots across Europe**
- ➔ **Building a better future: do Aotearoa New Zealand's housing decarbonisation policies stack up?**
- ➔ **Can decarbonisation of the Austrian building stock be achieved by 2040?**
- ➔ **Location of development: the strengths and shortcomings of the planning system in relation to the decarbonisation agenda**
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- ➔ **Interest rates, affordability and the cost of living in the Netherlands**

# International Union for Housing Finance

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### → Secretary General:

MARK WEINRICH  
E-mail: weinrich@housingfinance.org

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MARK WEINRICH

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For further details, please contact Mark Weinrich  
(weinrich@housingfinance.org)

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### International Union for Housing Finance

Rue Montoyer 25, B-1000 Brussels – Belgium

Tel: +32 2 231 03 71

Fax: +32 2 230 82 45

www.housingfinance.org

Secretary General: Mark Weinrich

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# Can decarbonisation of the Austrian building stock be achieved by 2040?

↳ By Wolfgang Amann

## 1. “You only can manage what you can measure”

The data situation on decarbonisation of the Austrian building stock is mixed. Reasonably robust data are available on the housing stock, main residences, new housing construction and housing subsidies. There are serious data gaps in relation to the thermal-energetic condition of existing buildings, for non-subsidised renovations and generally in terms of data on commercial and publicly used buildings. For a long time, there has been a legal basis for an energy certificate database, which could be used to close many of these gaps. However, no figures beyond regional partial solutions are available so far.

The uncertainties in the assessment of the need for remediation are correspondingly large. Based on varying data on historical construction quality and renovation rates, it is estimated that around one third of the four million main residences and a good half of the 0.9 million apartments without a main residence are in a thermally inadequate condition (IIBW & Umweltbundesamt, 2021). For public non-residential buildings, the need for renovation is likely to be even higher. Commercial

non-residential buildings (offices, retail, hotels, etc.) are newer in age and hence have less need for renovation.

For a long time, there was no suitable definition for the key indicator of the annual renovation rate – both in Austria and internationally. The European Union has recently favoured the formula “share of renovations with >60% reduction in primary energy demand” (EC, 2019 and EC, 2021), with the stumbling block that – probably not only in Austria – the statistical basis necessary for an effective policy instrument is far from being fully available.

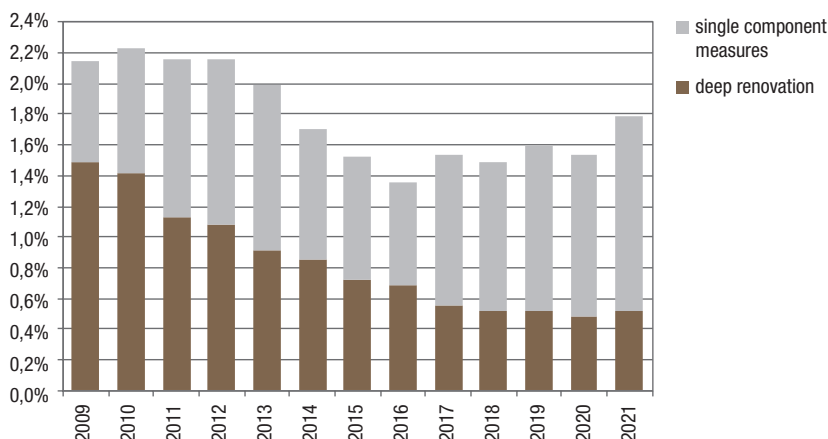
In a joint project on behalf of the construction products industry, IIBW and the Environment Agency Austria (Umweltbundesamt) developed a monitoring system on housing refurbishment in Austria (IIBW & Umweltbundesamt, 2021). The aim was a simple, a comprehensible and data-based definition of a refurbishment rate that allows regional and sectoral analyses of the effectiveness of policy instruments. In doing so, the definition of deep renovations as temporally coherent projects with at least three thermally or energetically relevant individual measures, which was used in the 2000s in building law and housing subsidies, was

applied. In order to reflect the contribution also of single thermal/energetic measures to achieve the climate targets, 4 of them are combined and added to a “deep renovation equivalent”. After peaks of well over 2% in the years around 2010, these analyses result in a sharp decline in the renovation rate to below 1.4% in 2016 and stabilization at a low level of around 1.5% since then (Figure 1). The decline mainly affected deep renovations, while single component measures have been developing positively for several years, especially in the non-subsidized sector.

The data from the Austrian Environment Agencies greenhouse gas inventory, as incorporated into its climate protection reports (Umweltbundesamt, 2022 and previous years), point in a similar direction. Emissions from the “buildings” sector developed sideways in the almost two decades from 1990 to 2006, which is not so bad in view of an increase in conditioned living space by almost 40%. In the following eight years to 2014, emissions in this sector fell by no less than 36%, representing an average annual decline of more than 5%. Austria thus significantly undercut the EU average. The reasons for the very positive performance at that time are not fully understood, but correlate with climatic changes (decline in heating degree days). In the following seven years until 2021, there was again stagnation. Phases of stagnation have thus alternated with phases of massive reductions in emissions. Although this does not allow any conclusions to be drawn about the future, the hope remains: If similar annual declines in emissions were achieved to those between 2006 and 2014 i.e., by about 0.5 million tonnes of CO<sub>2</sub>eq per year, the “buildings” sector would already be at net zero by the mid-2030s!

With the positive performance from 2006 onwards, the “buildings” sector undercut the requirements of the Climate Strategy 2002 as well as those of 2007 (BMLFUW, 2002; Lebensministerium, 2007) and for a longer time also the requirements of the still valid Climate Protection Act 2011 (KSG, Klimaschutzgesetz 2011, BGBl. I Nr. 128/2015). So far, the other

FIGURE 1 Refurbishment rate 2011-2020 (main residences)



Note: Deep renovation equivalents (share per year based on main residences).  
Source: IIBW, Environment Agency Austria.

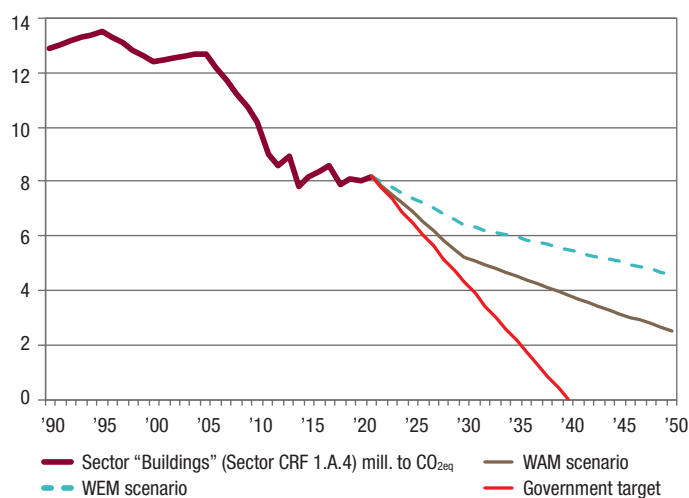
sectors, especially "transport" and "energy and industry", have been mainly responsible for the overall failure to meet Austria's climate targets. This is likely to have changed in 2021. Presumably, the sector "buildings" did not reach the specified targets recently.

## 2. Where are we going?

In implementation of the internationally binding targets of the Paris Agreement 2015 (EU, 2016), several EU regulations have been adopted that will massively influence the existing Austrian targets. The most important are:

- The "European Climate Law 2021" (EU 2021/1119) not only prescribes climate neutrality by 2050, but also -55% greenhouse gases by 2030 compared to 1990 levels ("Fit for 55") and corresponding implementation mechanisms. Several of the twelve proposed measures concern construction, housing and real estate.
- In December 2021, the Commission presented the draft of a new Energy Performance of Buildings Directive as part of the "Fit for 55" package (EPBD, EC, 2021). Accordingly, from 2030, the zero-energy standard should be mandatory for new buildings according to the new definition. The renovation rate is to be increased by issuing a ban on letting and selling the approximately 15% of the portfolio with the highest energy consumption in the near future and in a time-graduated manner for other parts of the portfolio. At the same time, funds will be made available for low-income households to cushion the social impact of this measure.
- From 2026, buildings are to be included in the EU emissions trading system. In conjunction with the already decided CO<sub>2</sub> pricing, this will make heating with oil and gas more expensive.
- The tightening of the Renewable Energy Directive (recast, EU 2018/2001) continues to put national legislation under pressure to promote the phase-out of oil and gas not only with subsidies, but also with regulatory law.
- With the tightened Energy Efficiency Directive (EU 2018/2002), it will finally become more difficult to avoid the long-standing renovation target of 3% for public buildings.
- The tightening of the Effort Sharing Regulation (EU 2018/842) leads to significantly stricter emission reduction targets.
- The new ESG (Environmental/Social/Governance) rules and the EU taxonomy are likely to become game changers for commercial real estate by making it massively

**FIGURE 2 GHG emissions sector „buildings“ until 2050 (Mio. t CO<sub>2eq</sub>)**



Note: Emissions 2021: IIBW estimate;  
Sources: Umweltbundesamt, 2022 and previous years; Government Programme 2020; IIBW.

more difficult to finance thermally inferior properties and thus depressing their value.

- In response to the oil and gas supply crisis triggered by Russia's war of aggression against Ukraine and global supply chain problems, the European Commission has published the REPowerEU Plan, which includes measures to diversify energy supply, save energy, accelerate clean energy transition and provide funding.

## 3. The Austrian way so far

The Environment Agency Austria has developed scenarios for the further development of Austrian greenhouse gas emissions in the "buildings" sector. With existing measures, a reduction of as much as 42% to 4.6 million tonnes of CO<sub>2eq</sub> can be achieved by 2050, and with additional measures by as much as 68% to 2.5 million tonnes of CO<sub>2eq</sub> (WEM/WAM Scenarios, Figure 2). In fact, however, a reduction of 100% is needed, according to the government program by 2040! More than obviously, "business as usual" is not an option for achieving climate targets.

## 4. Action

The existing and foreseeable measures in the building sector are comprehensive:

- Subsidies are already available in large volumes. In addition to the housing subsidy schemes of the "Länder" (provinces), which in recent years have initiated expenditures of around € 500 million annually, the federal government has introduced various

measures, which are expected to add up to a similar level. With the EU Development and Resilience Plan (BMF, 2021), up to € 3.5 billion in EU subsidies will be brought to Austria over the next five years, at least some of which are to be used in a climate-relevant manner. If necessary, further funds would be available from European sources.

- There are several major regulatory provisions before promulgation. The Renewable Heat Act (Erneuerbares Wärme Gesetz) may be highlighted. It legally anchors the exit path from oil and gas for heating by 2040. It also provides a legal basis to force tenants to accept an exchange of the heating system. A decarbonisation path must be decided on a building-by-building basis by owners and residents. If no agreement is reached, a conversion from fossil fuel to central regenerative systems is deemed to have been agreed. If existing fossil fuel heating systems get broken, they have to be replaced by regenerative ones. Later on, fossil fuel devices systematically have to be replaced dependent to their age.
- In the understanding that the necessary effects can only be achieved with a broad package of measures, housing regulations have been adapted (Limited Profit Housing Associations Act in 2019/22, Condominium Act in 2022) and tax incentives have been created (income tax deductibility in the course of the 2021 tax reform, investment premiums in the commercial sector).
- A variety of initiatives are aimed at providing organisational support for renovation projects, e.g., the programme "Hauskunft" (a neologism combining "house" and

“information”) in Vienna and a wide range of advisory services for residential building renovation in the Länder.

These initiatives will probably not be enough. Further measures include, without claiming to be exhaustive:

- It will be necessary to take "political stakes" beyond the duration of legislative periods, for example through constitutionally defined state goals.
- For a federal State such as Austria, division of tax incomes between the different levels of the State (federal state, Länder/provinces, municipalities) is key. This is basically done with financial equalisation laws, which are negotiated and concluded on a regular basis, usually every five years or so. As a matter of fact, this agreement is the central regulatory instrument for mixed competences between the federal state and the Länder. Many areas relevant to achieving the climate targets in the "buildings" sector are affected, in particular spatial planning, land transfer law, housing subsidy schemes and social policy. The financial equalisation, which was originally valid until 2021, has been extended until 2023. A further extension would be a major setback. But if a bigger throw succeeded, a jolt would go through the republic.
- Spatial planning must be geared much more strongly than hitherto to compact town centres and a reversal of the previous land consumption in settlement development. Land transfer law must be used more strongly against building land hoarding. For many decades, housing subsidies have been an extremely efficient instrument for implementing policy goals, but must be put much more at the service of climate protection. The instruments for the objective of leaving no one behind on the way to climate neutrality are also predominantly in the hands of the Länder.
- Political courage and constitutional skill will be required to enforce the planned conversion obligations to regenerative heating systems in order to avoid the situation that the intended goals are thwarted by conflicting court rulings.
- In addition to the Renewable Heat Act, housing law reforms are unavoidable. In particular, the Tenancy Act, which has so far been largely resistant to reform, is challenging. In addition to the obligations to tolerate decarbonisation of the heating system, it is above all about fair burden sharing

between residents and landlords. But the Condominium Act also needs further reform.

- The tax system offers many other opportunities to stimulate climate action, especially in the commercial sector, as the "COVID-19 Investment Premium" has shown.
- The repeatedly postulated exemplary effect of the public sector in the renovation of its building stock must be filled with life. As a large-scale subsidy program ("Gemeindemilliarde") in 2021 has shown, this is not just about financial incentives. In the implementation of renovations in the municipal sector, an expansion of the legally allowed field of business of Limited-Profit Housing Associations could have a great effect.
- An underestimated barrier to a renovation wave is the boom in new construction. In view of lower added value in refurbishment, greater risks and the higher qualification requirements of employees, the construction industry prefers new construction as long as the order books are full. Measures to dampen new construction, such as more demanding procedures or construction bans, are not very popular, but nevertheless indispensable.
- The glaring shortage of skilled workers in the construction industry hits renovation even harder than new construction. A remedy can only be foreseen in the medium to long term by greatly expanding and making more attractive the proven Austrian model of dual vocational training (young craftsman have for 3 or 4 years an education both in practice and theory).
- Admittedly, major challenges have to be overcome in the technical implementation of the energy transition, in particular in the expansion of local and district heating networks and in expanding the capacity of heater manufacturers.

### 5. Can it be done?

From today's perspective, decarbonisation of the building stock requires a massive reduction in the energy demand of buildings and a conversion to renewable energy sources, the former through measures on the building envelope, the latter through the replacement of the heating systems.

Simulations by IIBW come to the conclusion that with a quick increase in the renovation rate from currently 1.8% to 2.8%, the entire

thermally inadequate stock will be completely renovated by 2040. Single component measures will be of particular importance. Given that a similar dynamic has already been achieved around 2010, the challenge seems manageable.

At the same time, almost 700,000 oil-heated apartments will have to be converted by 2035 and an additional one million gas-heated apartments by 2040 (main residences). This can succeed if the number of apartments heated with district heating increases from the current 1.2 million to 2.2 million by 2040 and the housing stock conditioned with biomass or heat pumps is doubled from just over 1 million today to about 2.1 million. Such a development requires around 50,000 additional district heating connections and more than 100,000 additional heating systems operated from renewable sources every year, about half of which are conversions of fossil fuels and half replacement requirements. Here, too, the challenge is enormous, but seems manageable.

Ceterum censeo: regardless of party-political skirmishes and political perspectives in legislative periods, action is required in terms of responsibility for future generations. The climate targets in the building sector are achievable, for the benefit of future generations, for economic advantage, in social balance.

### SOURCES

**BMF** (2021): Österreichischer Aufbau- und Resilienzplan (Austrian development and resilience plan) 2020-2026 (Austrian Federal Ministry of Finance).

**BMLFUW** (2002): Klimastrategie (climate strategy) 2008/2012 (Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management).

**EC** (2019): Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU (European Commission).

**EC** (2021): Proposal for a Directive of the European Parliament and of the Council on the Energy Performance of Buildings (EPBD recast; COM(2021) 802 final).

**EU** (2016): Paris Agreement (official journal of the European Union, L 282/4, 19.10.2016).

**IIBW & Umweltbundesamt** (2021): Monitoring-System zur Sanierungsmaßnahmen in Österreich (monitoring system on housing refurbishment in Austria) (on behalf of several Austrian federations of the construction products industry).

**IIBW, Energy Institute of the JKU Linz** (2021): Kapazitätsanpassung der Bauwirtschaft für eine erhöhte Sanierungsrate (improvement of capacities of the construction industry for an increased renovation rate) (on behalf of the Austrian Ministry of Climate Protection).

**Lebensministerium** (2007): Anpassung der Klimastrategie Österreichs zur Erreichung des Kyoto-Ziels 2008-2012 (adaptation of Austria's climate strategy to achieve the Kyoto target 2008-2012) (Austrian Federal Ministry of Agriculture, Forestry, Environment and Water Management).

**Umweltbundesamt (ed.)** (2008-2022): Klimaschutzberichte (climate protection reports) 2008-2022 (Environment Agency Austria).