

# Raising the Energy Renovation Run Rate

## EU experiences for inspiration

A presentation by:

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(Thank you Luke for the introduction) Good morning – it’s a joy to be here with you and to share some of the experiences of the EU in addressing the very poor energy performance of our residential building stock in the hope that it will inform the debates that are going on here in Australia on housing. But before I start (...acknowledgement of country and first nation peoples...(if appropriate)). I am the Director of the REC, and we have been communicating about the challenges and rewards of energy renovation since 2011 with quite some success. Our current effort is targeted at increasing the energy renovation rate from well under 1% per year to 3% per year by 2030 – in harmony with the title of today’s Conference. To reach our goal will take tenacity, creativity, and political courage at all governance levels of the EU.

## Questions Covered By This Presentation

The European Union – A quick introduction

An Overview of Housing in the EU

EU Legislation and the Energy Performance of Housing

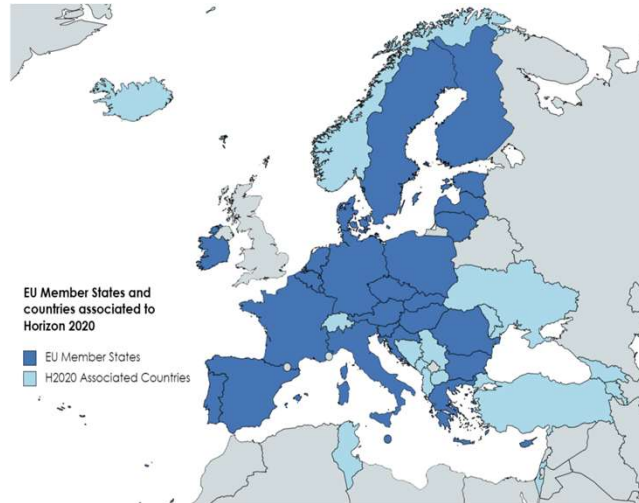
Good Practice Examples from the EU

Financing – EU Approaches

This morning, I will give you a speedy overview of the EU and how it adopts laws and regulations. Then I will share some selected information on the housing stock in the EU, focussing on the aspects that need attention. Following that I will speak about how the EU is addressing the challenges, first with a helicopter view of the key targets we have set and then by presenting several examples of successful approaches to renovation in the residential sector. I will finish by giving you a peek at some of the ways we are unlocking financing.

## The European Union

- **27 Sovereign States that willingly cooperate for mutual benefit**
- **23 official languages**
- **6 climate zones:**



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A quick introduction to the European Union as its structure is the context in which the Renovate Europe Campaign operates. As you know, the EU is not a Federal State like Australia, but a willing cooperation among sovereign states who have agreed to cede several competences to the EU level. First and foremost the EU is a peace project, secondly it is an economic project, and thirdly it is a social project built around freedom of movement across borders. For buildings, it is useful to recall that we have five distinct climate zones with which to reckon when designing our buildings. I have learnt that here in Australia the National Construction Code has defined 8 climatic zones for the purposes of its implementation. I guess that the process of cooperation among states and territories here in Australia has some similarities with the situation in the EU...

## The EU – A quick introduction

Beginnings in 1951



The Treaty of Paris established the Coal and Steel Community – 6 countries

Significant change in 1957



The Treaty of Rome established the European Economic Community – 6 countries

EU Founded in 1992



The Treaty of Maastricht established the European Union – 12 countries, now 27

After the World War, re-building was the top priority and having enough energy to undertake the mammoth task was essential. Hence the first treaty setting out the foundations of the Union was already about energy! The next big step was the treaty of Rome expanding the range of competences delegated to the collective community. The last Treaty that I want to highlight – because there are many more than shown on this slide – is the Maastricht Treaty which transformed the old EEC into a true Union of member states. At the time it was a Union of just 12 countries and the expansion has continued – with one notable exception – until today as we now count 27 member states in the Union.

## Governance of the EU

European Council

Consists of representatives of the 27 member states and meets regularly in differing formations

European Commission

The "civil service" of the EU, proposes legislation on the request of the Council – 32,800 staff

European Parliament

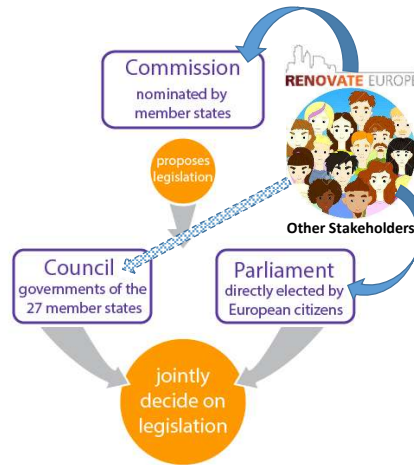
720 directly elected representatives from the member states of the EU – co-legislator with the Council

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The EU is governed by three well known institutions. The European Council which brings together the member states and has about 3,200 employees.. It meets in various formats depending on the subjects to be discussed and the Heads of State meet about 4 times a year in a Summit formation. I often think of the Council as being equivalent to the Cabinet of a member state government. Then we have the European Commission – the civil service – whose role is to propose legislation and to administer its implementation. It is the powerhouse of the Union with about 32,800 staff. The third Institution is the European Parliament consisting of 720 directly elected representatives of the people of the EU. It is the co-legislator with the Council negotiating and adopted legislation with the Council. It has about 8,100 employees. So in total the EU is run by an organisation that has about 44,100 employees. Note – the equivalent employees in the Australian Federal Government is about 185,000!!

## EU Laws – Who Decides?



EU Laws are proposed by the European Commission, usually at the request of the European Council. They are then decided via a negotiation procedure between the European Council and the European Parliament. As Ministers are usually elected politicians and members of the European Parliament are directly elected, this is a democratic process.

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The EU is not a Federation. It is better to think of it as a club of willing nation states that see the major advantages that come with in-depth cooperation. It was founded as a cooperation to ensure energy supply and a solid industrial base and today we see the 27 member states cooperating on a vast range of dossiers. There are still a good number of topics that are national competences (largely relating to cultural, social, educational and defence matters). The matters that can be legislated on by the EU institutions are contained in the Treaty for the Functioning of the European Union (TFEU) and the normal process for preparing or revising legislation goes like this: At a meeting of the Council of member states (this is like the Cabinet of a national government), a decision to ask the European Commission to prepare a proposal is taken. Once prepared and adopted by the European Commission, the proposal is sent to the European Parliament and to the Council who then negotiate together to revise the proposal until such point as a common text is agreed. Once adopted by Council and Parliament, the member states have a limited time (varies with the type of legislation and the topic) to transpose the EU legislation into national law. The process from request to full transposition usually takes 2-3 years. As shown in the slide above, stakeholders have multiple opportunities to feed into the process, but only organisations and companies that are on a register can lobby the EU institutions.

## Housing in the EU – An Overview

### 3 Typologies:

Owner-Occupied: 70%  
Private Rental Sector: 20%  
Social Housing: 10%

### Significant Problems

At least 75% are poorly performing  
47 million Europeans live in energy poverty  
70 million live in inadequate housing

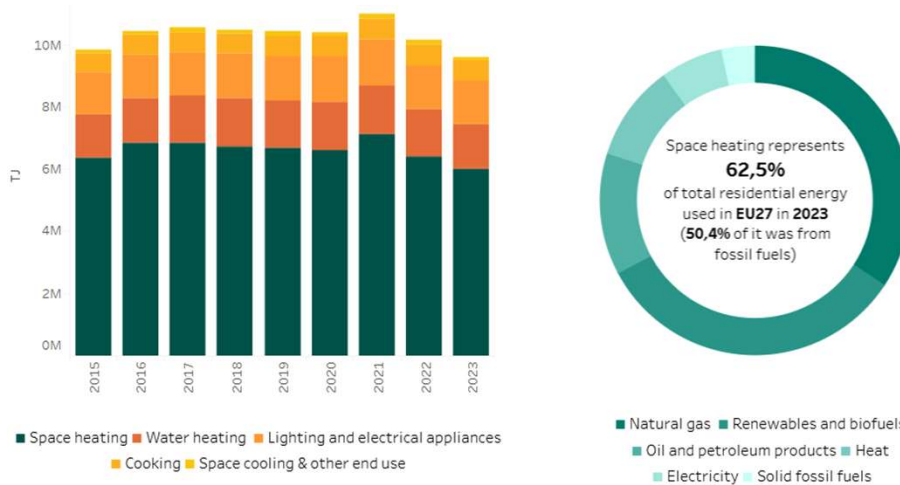
### Trends 2005 to 2023

34% less CO2 emissions (use of RES important)  
14% less energy consumption  
14% increase in total residential floor area

I cannot give you an exhaustive overview of the housing stock in the EU, but here, and on the next slides, are some key aspects that are critical to our concerns. Firstly, the ownership pattern has a big impact on what kind of legislation and rules we can deploy to ensure the stock is highly energy efficient. You will see that 70% is owner-occupied, 20% is rented (principally by the private sector, and just 10% is social (public) housing). The stock is very inefficient, largely because so much of it was built before any performance regulations were in place. It is also estimated that about 85% of the housing stock of 2050 is already built and occupied today. The EU is also plagued by energy poverty and inadequate housing. As you can see about 47 million Europeans live in energy poverty and about 70 million live in inadequate (damp, mouldy, draughty) homes. In addition to this there is a shortage of homes available in the market making homes expensive to buy or rent, particularly in cities.

But all is not bad news: since 2005 the CO2 emissions from homes has fallen by 34%, the energy consumption (despite a 14% increase in floor area) has fallen by 14%.

## Residential Energy Consumption by End Use – EU



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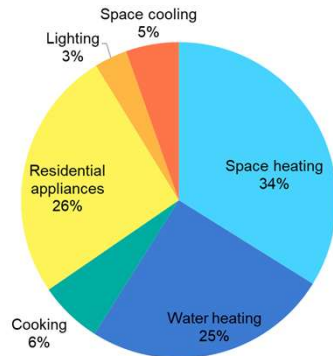
Source: Eurostat

Note: The specific source for residential energy consumption by end-use is Eurostat: Disaggregated final energy consumption in household dataset.

Turning to the energy consumption by end-use and by energy carrier, we can see that space heating is by far the biggest energy user. Homes also get just over 50% of their energy from fossil fuels. Note that in homes the largest type of RES is bio-mass (wood pellets). From this we can immediately see that without reducing the reliance of homes on fossil fuels, there is no chance of meeting long-term climate goals.

## Residential Energy Consumption by End Use – Australia

Residential energy consumption by end use, 2023, Australia



### In the EU:

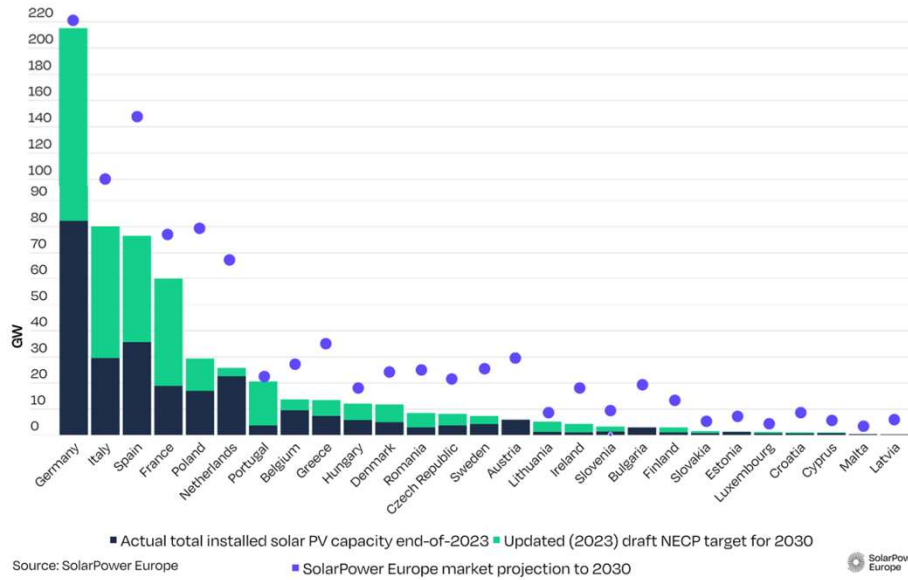
Space heating:	62.5%
Water heating:	15.0%
Cooking:	6.0%
Appliances and Lighting:	14.5%
Space cooling and other:	2.0%

Taken from Eurostat bar chart on previous slide.

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Here we see a comparison of the energy use by end-use for Australian homes and homes in the EU. You will see that your need for space heating is about half ours but your use for appliances is about double ours. Also, despite it being the fastest growing segment of use in the EU, cooling only accounts for 2% of energy use in homes!!

## EU27 National PV Installation Targets

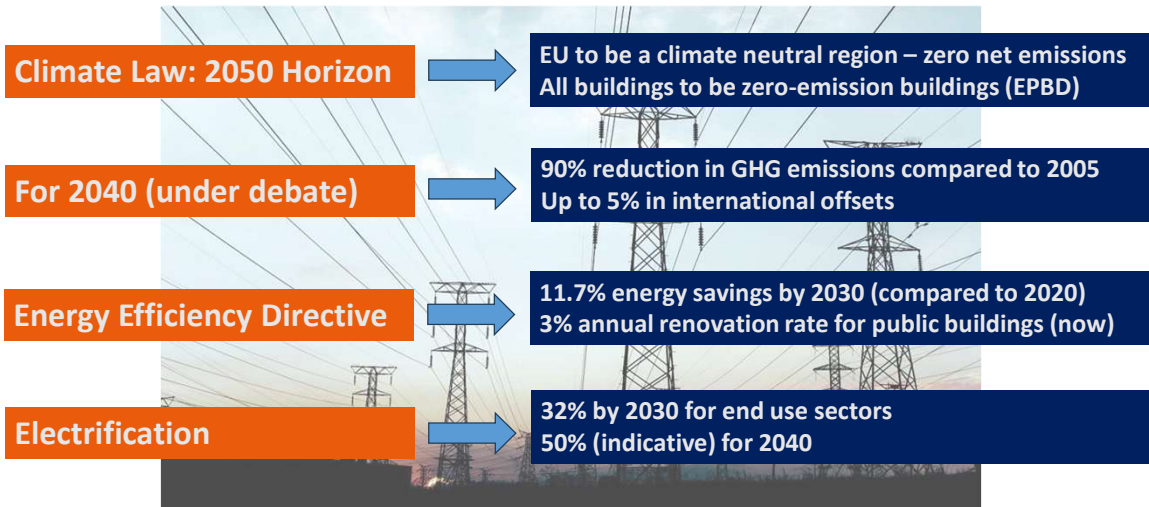


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Knowing that Australia has the highest penetration of solar PV and home batteries of any country in the world, I thought you would be interested to see what the situation is like in the EU. In the chart above, the dark blue represents the installed capacity today. The green represents the level to which each member state is committed to bring solar PV by 2030 and the blue dots are the market projections by Solar Power Europe for what is likely to happen. Unfortunately, I couldn't find any recent information on the roll out of home batteries in the EU.

Interestingly, the fact of having high levels of solar PV on homes in the EU has not meant that renovation of the buildings is put on the back burner. On the contrary, the installation of solar PV is often one of the interventions undertaken when doing an energy renovation. This is because the comfort and well-being achieved through energy renovation is very desirable and the lower energy needs means smaller loads and less solar PV, reducing costs. For Europeans, a comprehensive renovation with multiple interventions across products and technologies is what is most sought after.

## EU Targets in Climate and Energy



Turning back to EU legislation for a moment. There are many pieces of legislation that relate to energy and climate goals. Principal among them is the European Climate Law, which obliges member states to work towards a net-zero emissions economy by 2050. There are intermediate targets (55% for 2030 and 90% (under debate) for 2040). In the Energy Performance of Buildings Directive (EPBD) the goal is to transform the building stock to be zero-emission by 2050 and it contains measures that obliges member states to introduce mandatory energy performance standards by various earlier dates to ensure that the target is reached. Under the EPBD, the most powerful tool will be the national buildings renovation plans that each member state must prepare before the end of 2026. On energy efficiency, there is a target to reach a reduction in primary energy demand of 11.7% by 2030. It is binding on the EU as a whole, but not on individual member states, which must communicate their targets to the Commission in their national energy and climate plans. When the individual targets don't add up to the collective target, the Commission can introduce new regulations. Finally, we have electrification targets, as shown. These may be the hardest to reach as the level of electrification in the EU has stagnated at about 23% for some years.

## What are Successful Triggers for Energy Renovation?

### Legislation and Regulations



Mandatory Standards – BE  
Mandatory Targets – EED  
Technical Support – OSS (PT)

### Incentives



Subsidies & Grants – CZ  
Increased Property Values  
Greater Health and Comfort

### Other Factors



Safety – Orcasitas, ES  
Earthquakes – HR  
Accessibility – ES, Basque Region

In the EU we have thought a lot about the best way to mandate energy renovations and this slide gives you an insight into what we have come up with. A trigger in this context is the moment in the life of the building when is it best to intervene and undertake the renovation works. I have grouped them into 3: Legislation and regulations which can be mandatory requirements and/or mandatory targets. In both cases it is essential to ensure that there is adequate and well-resourced technical assistance available to all in the value chain, particularly the building owner.

Then there are incentives, which can be in many forms from grants and subsidies to tax breaks to increased property values. On top of this we find that many home-owners are incentivised by the promise of better living conditions. Finally, there can be external factors which are good hooks for undertaking energy renovation works – earthquakes, accessibility, and safety concerns. We will see examples in a few minutes for each of these cases.

## Why is Energy Renovation a Good Investment?

### Economic



Boosting local economy  
More quality jobs  
Higher public revenue

### Social



Reduced energy poverty  
Greater well-being  
Better health and comfort

### Environmental



Meeting climate and energy goals  
Reduced carbon footprint  
More resource efficient

I hope that this goes without saying, but undertaking energy renovation works brings multiple benefits across the three great pillars of sustainability. On the economic side, it generates a wide range of quality local jobs, boosting the local economy. Through increasing activity, the public purse gains via higher VAT receipts, increased income tax, and avoided costs related to health. From a social perspective, energy renovation alleviates energy poverty, bringing down energy bills. It also, when undertaken holistically, brings great health and well-being, also boosting productivity. Finally on the environmental side, we more easily reach our climate and energy targets. By renovating rather than demolishing and rebuilding, we dramatically reduce the life cycle carbon footprint of the building, and we can be more resource-efficient through good planning and by using innovative approaches.

## What are the Features of a Good Renovation Programme



To bring all these factors together we must be able to design and implement good renovation programmes that are attractive to building owners and that have impact. There are at least 6 factors that I can point to from the experiences we have had in the EU: 1) The programme must support multiple, not single measures 2) It must provide stable financing over many years – stop-start financing kills the market 3) The programme must be accompanied by a continuous communications strategy to keep the opportunity fresh in the minds of building owners 4) Independent technical advice and assistance must be available to guide the choices of the building owners (they are not experts!) 5) There must be a list of certified installers to turn to so as to generate confidence in the market and finally 6) There must be a system of monitoring and evaluation that is publicly available and disseminated. From this monitoring a database of real results can be built, and the programme can evolve and improve over time.

On the next slides I will present several successful examples from across the EU.

## Good Practices: Mandatory Requirements: BE

MEPS for new homeowners of buildings with labels E, F, or G: (Flanders Region, 2023):

- Must reach at least “D” label within 5 years



Progressive tightening of requirement:

- In 2028 must reach label “C” or better
- From 2045 must reach label “A” by 2050



In the Flanders Region of Belgium, the government introduced a mandatory requirement for individual houses. All persons that buy a house with an energy label of D or worse are obliged to bring the house up to at least a label “C” within 5 years of taking possession. The requirement will be progressively tightened until in 2045, the requirement will be to reach label “A” within 5 years. One effect of this requirement is that houses with a label “D” or worse are getting a lower price than before, whilst those with a higher label attract a higher price than before. It is noteworthy that several banks have also introduced renovation loans that have a lower interest rate than standard loans. This encourages more investment.

## Good Practices: Technical Support: OSS: PT

86 One-Stop-Shops present across the country



### Services provided:

- Information and literacy
- Counselling and technical support
- Support on incentives and financing
- Advice on renewables and sustainability
- Data collection



Homeowners are not experts in energy renovation works and the prospect of undertaking works is usually daunting. This is the origin of so-called One Stop Shops (OSS), places to which a homeowner can turn to get a full range of services that lift the burden of renovation off their shoulders (and minds!). The newly recast Energy Performance of Buildings Directive requires that such OSS are rolled out across the EU in sufficient numbers that they are accessible to all within a reasonable distance. They are best if they are physical places that homeowners can visit to meet with advisors. There are many online places that provide some of these services, but they are less effective in incentivising action. Portugal is one of several EU countries that has an established network of OSS. The others are IE, ES, FR, and BE.

## Good Practices: New Green Savings Programme: CZ

One programme running since 2009



### Features:

- Stable continuous financing (including ETS revenue)
- Higher grant for deeper renovation works
- Exemplary geographical spread
- No deadlines for applying for a grant
- Regularly improved based on periodic evaluations
- >500,000 beneficiaries to date



Possibly the best example of a successful programme that I know. Started in 2009 it has been running continuously since then going through a number of changes to improve the programme, always based on evaluations of the impact achieved. In addition, a lot of the financing was derived from the sale of ETS credits under the EU ETS. The programme not only allows multiple measures to be grant aided, but the intensity of grant is increased with higher energy saving ambition. Do more, get more! The geographical distribution of projects is exemplary with all regions benefitting from the programme. Another feature is that there are no deadlines by which to apply, the process is continuous. To date more than 500,000 people have benefitted from this programme.

## Good Practices: Safety as Motivator: Orcasitas: ES

### Orcasitas social housing quarter in Madrid



#### Features:

- Community-led project with Madrid City Council
- Crumbling parapet motivated local community
- Blending of multiple public incentives & grants
- Comprehensive energy renovation works (>1,800)
- Removal of toxic materials (asbestos etc.)
- Energy bills cut by nearly 80%



A truly inspiring and very human story. A 600kg section of the parapet of one of the buildings in this neighbour fell to the footpath, narrowly missing a family that was out for a walk. This motivated one of the residents, Manuela Navarro, to complain to the local authority and get it to carry out urgent repairs to ensure that this would never happen again. Having received information on what could be done, Manuela discovered that there were substantial funds available to undertake energy renovation to the buildings at the same time as securing the panels. She set out to meet with all the residents and to convince them to agree to a comprehensive energy and structural renovation of the buildings. She succeeded and now, 6 years later, more than 1,800 dwellings have been renovated, and the energy bills of residents have been cut by 80%. The next phase for Manuela is to make the neighbourhood energy independent through solar PV and battery storage.

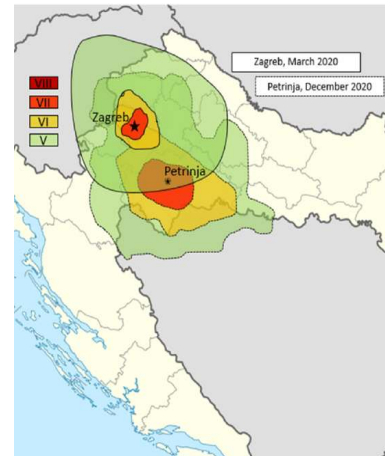
## Good Practices: Seismic Strengthening as Motivator: HR

### Two devastating earthquakes in 2020 in Croatia



#### Result:

- National programme for seismic strengthening
- Energy renovation works carried out at same time
- Funding from the Recovery and Resilience Facility
- Financing up to 80% for damaged homes
- 45,600 dwellings renovated to date
- €2.6 billion total spend



Following two devastating earthquakes that took place in 2020 in Croatia, the government introduced a programme that funds up to 80% of the cost of seismic strengthening IF the works are accompanied by energy renovation. It was introduced at the time that the EU launched its post-COVID Recovery and Resilience Facility which provided high volumes of public funding that the Croatian government dedicated to this programme. The programme continues today and is both popular and impactful.

## Good Practices: Accessibility as Motivator: Basque Region: ES

Aging population – inaccessible housing



### Result:

- OPENGELA project sets up one-stop-shops
- 425 dwelling renovated and made accessible
- Average savings over 60% achieved
- Two pilot neighbourhoods covered
- Follow-on scanned buildings in whole region
- Database established and used for planning



One last example – the mountainous region of the Basque Country in Spain with a rapidly ageing population. Many of the buildings are located on steep hillsides and many had no lifts. This made them very inaccessible to the older people in the population who had to be taken into care much earlier than needed. To address this problem, an EU-funded project, OPENGELA, established neighbourhood-based OSS and undertook works to make buildings accessible and energy efficient. It has been a resounding success and is being replicated across the Basque Country. It has also led to a pioneering approach of establishing the energy performance of all buildings via 3-d surveying coupled with geo-spatial information to create a complete picture of the building stock. The database contains information on the type of construction, type of roof, number of windows etc. and allows for detailed planning of future renovation programmes. It also allows for the most vulnerable to be identified early, permitting action to be undertaken in a timely manner.

## EU Approaches to Financing

### Cohesion Policy:

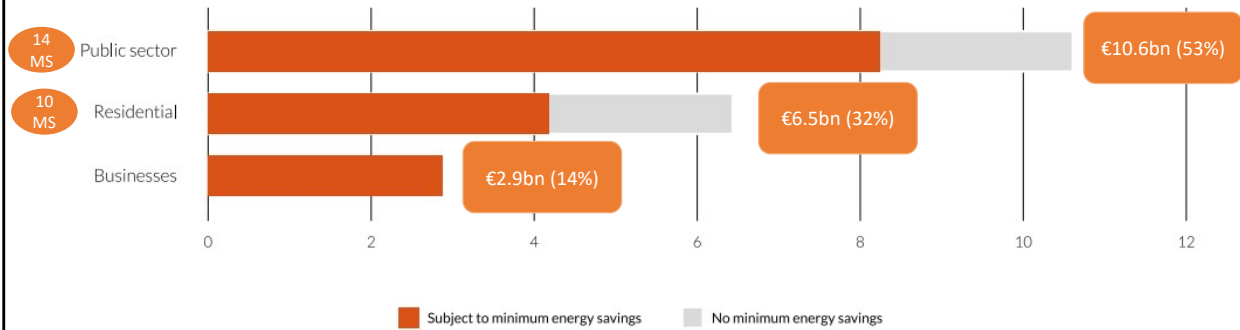
- Around **€20bn** (7%) of cohesion policy funding for energy renovation and energy efficiency out of €269bn (**€29bn with co-financing**)
- 175 programmes (out 297) across the EU contain energy renovation or energy efficiency investments

*\*Data extracted in April 2023*



Turning to financing, the EU agrees a budget every 7 years. It's known as the Multi-annual Financial Framework (MFF) and will exceed €2 trillion in the next funding period from 2028 to 2035. The MFF has many parts and one, known as Cohesion Policy, is the part from which funding can be dedicated to the renovation of buildings. The REC undertook a Study to find out how much of the funding was dedicated to energy renovation in the current period. This slide and the next 4 slides show what we found. From this analysis we can draw some lessons about how to improve the flow of EU funding to energy renovation in the next period, although there are many competing calls on the funding, including defence!

## EU Funding for Renovation Works

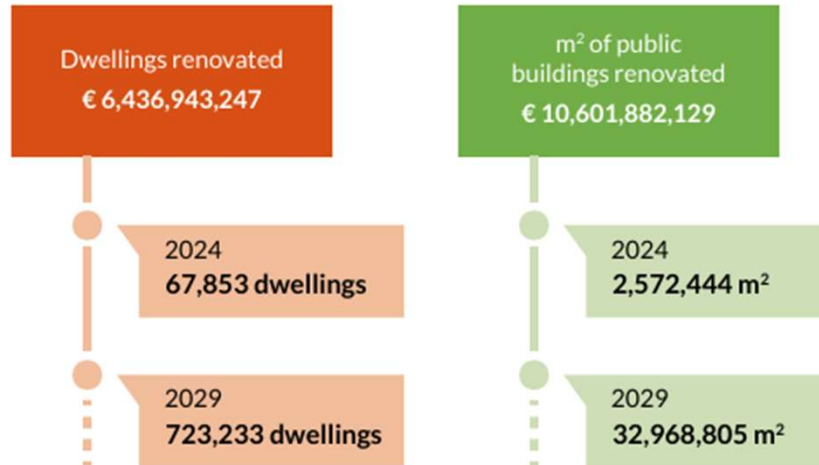


**Three quarters (€15.3bn out of €20bn)** with minimum energy savings criteria (over 30% primary energy savings)

Close to €1.4bn is allocated to SMEs and large enterprises outside of the scope of this study

DG REGIO estimates EU funding: EUR 10.4 billion on housing (of which EUR 8.9 billion for energy efficiency and EUR 1.5 billion for new social housing) including national cofinancing. Different DGs estimate different funding amounts – no official data.

## How Many Buildings?

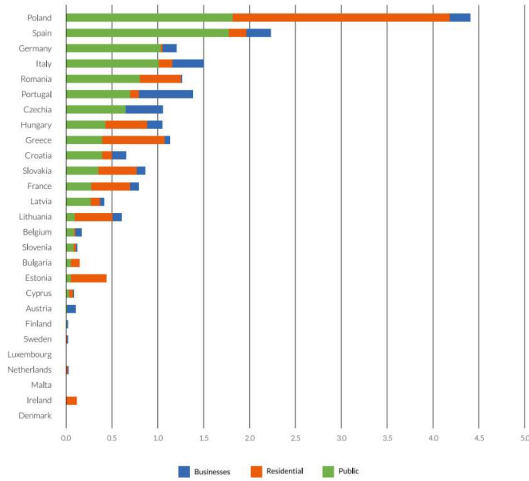


It is important to note that the member states must provide matching funding to be able to draw down funds from the Cohesion Policy. The amount of co-financing varies from just 20% in least-developed regions to 60% in most developed regions.

## Break-down by Member States

### In absolute terms:

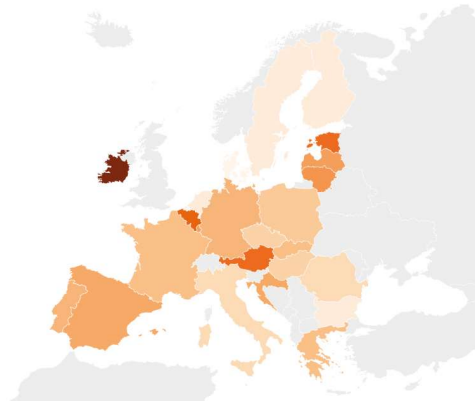
Largest in Poland (4.4), Spain (2.2), Italy (1.5), Portugal (1.4)



### In relative terms:

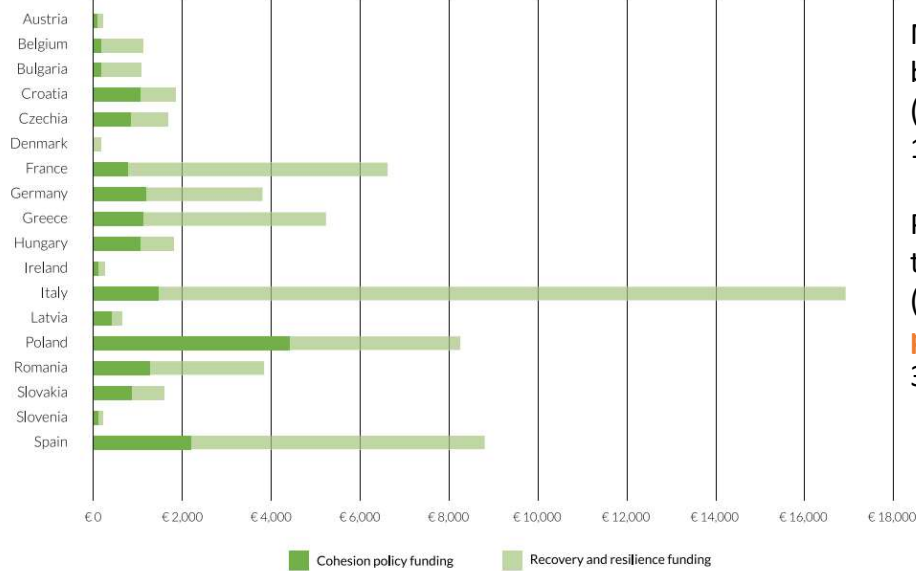
0% (DK) to 26% (IE)

Less than 3%: Bulgaria, Finland, Malta, the Netherlands and Sweden.



On the left, we see the actual amount planned to be spend by each member state. On the right we see the percentage of available EU funding that is spent on energy renovation. It varies from 0% in DK to a high of 26% in IE.

## Comparison with Recovery and Resilience Facility



More funding for buildings in the RRF (approx. €46bn across 18 MS)

Preference in RRF for the residential sector (€23bn, 58%), then public sector (€13bn, 34%)

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Interesting to see that the amount of money from the Recovery and Resilience Facility for energy renovation far outweighs the amounts from the MFF.

## Financing in the European Affordable Housing Plan?



- **Target grants** where they are needed the most (vulnerable, schools)
- **Attract and leverage private finance**, via Financial Instruments
- **Ensure careful coordination with other (EU) public funds** – between segments, ministries to ensure **absorption**
- **Technical assistance** available
- **Lead by example**, drive high standards and help identify barriers/ gaps
- **Use annual and mid-term reviews** to align programmes to new policy objectives



Importance of a strong regulatory framework to send long-term investment signals for the construction and financial sectors

Although it is not a competence of the EU, the housing crisis in the EU is so great that we now have a Commissioner for Energy and Housing and he has been charged to prepare a European Affordable Housing Plan, due to be released on the 16<sup>th</sup> of December. Whilst we have not seen a leak of the Plan, we know that it will be an exercise in coordination, more than an action plan. It will point to where EU policies can help member states address their challenges and one key area will be financing. Drawing lessons from the Study of the Cohesion Policy, we have made the recommendations contained in this slide as guidance to be given to member states. It remains to be seen if they will be included!

## EU Level Approaches to Financing

### **New Sustainable Financing Platform – European Investment Bank (EIB)**

Climate bank roadmap – increase climate financing to 50% by 2025

Paris Agreement Alignment – all financing aligned to Paris Agreement goals

Core Investment Priorities – 8 including energy, environment, and climate action

Technical Expertise – maintains teams of experts to bring support to projects

InvestEU – a fund bringing public and private financing together

### **European Energy Efficiency Financing Coalition**

Recently established – General Assembly, Expert Platform, and National Hubs

Aims:

Improve public-private cooperation and market conditions

Focus on SME's and real estate

Support national-level solutions via national hubs



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Finally, there are two more approaches to financing that I would like to inform you about. The first is financing from the European Investment Bank (EIB) where the directors and shareholders are the member states. It is a bank that is on the path to becoming the climate bank of the EU with an objective to ensure that all of its investments are Paris Agreement aligned by 2030. It has recently established a sustainable financing platform which should see the amount of funding going to energy renovation jump significantly in the years to come.

Another recent initiative in which the EIB is closely involved is the establishment of the European Energy Efficiency Financing Coalition. Again, it is more of a coordinating action, but one of its main components is a network of national financing hubs, usually managed by a ministry or government agency. There is hope that it will rationalise access to funding and lead to greater uptake in the market. A final instrument that has been proposed and developed by one of the partners of the REC, Climate Strategy & Partners, is the European Renovation Loan. This is a no-coupon loan that is backed by an EU guarantee. This means that homeowners can get cash upfront at no cost as the capital and interest are all paid at the end of the term or on sale of the asset. It promises to be an instrument that will help finance a great proportion of the owner-occupied homes that I mentioned at the start of this presentation.

## EIB Group's Impact 202-2024 (housing)

### EIB Group impact 2020-2024

Over the past five years, we provided €15.6 billion in financing for affordable and sustainable housing. We created more liveable, sustainable cities across Europe.



#### 265 000 newly built homes

Affordable homes that create thriving neighbourhoods. They give families a place to build their futures.



#### 400 000 homes renovated

Energy-efficient upgrades cut household bills and environmental damage. They improve living conditions and quality of life.



#### 665 000 households with better housing

Better housing improves daily life, social stability and opportunities for Europeans.



Self-explanatory slide on the impact of EIB funding on housing in the period 2020-2024. It shows that EIB funding is ensuring the delivery of 700 new or renovated homes every single day of the week!!

# The Renovate Europe Campaign

## 50 Partners:



National Partners



## Who are we?

- A **political communications campaign** beating the drum for deep energy renovation of the building stock in the EU
- Supported by **50 partners** from industry and civil society including **18 national partners**
- **Champions** from politics, businesses and communities
- Launched in **2011** as an initiative of **Efficient Buildings Europe**
- **Call to Action:** For the benefit of all, [...] policymakers and stakeholders must take immediate bold actions to rapidly accelerate deep renovation to 3% per year



Self-explanatory slide. Visit our website to stay in touch with our actions!

Thank you for your attention!



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[#PrioritisePeople](#)  
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