

**Online “101” on Buildings**  
*Understanding the importance of the buildings sector*

Online – 27/03/2020

# Introduction and Guidance for Webinar



By

**Eva Brardinelli**

**Communications and Events Officer, REC**

# Agenda

**09H30**

Welcome and guidance for the session **Eva Brardinelli**

**09h35**

Presentation by **Adrian Joyce** Director of the REC

*Overview of REC and role of buildings in achieving EU goals*

**09h45**

Presentation by **Mariangiola Fabbri** Head of Research at the BPIE

**10h00**

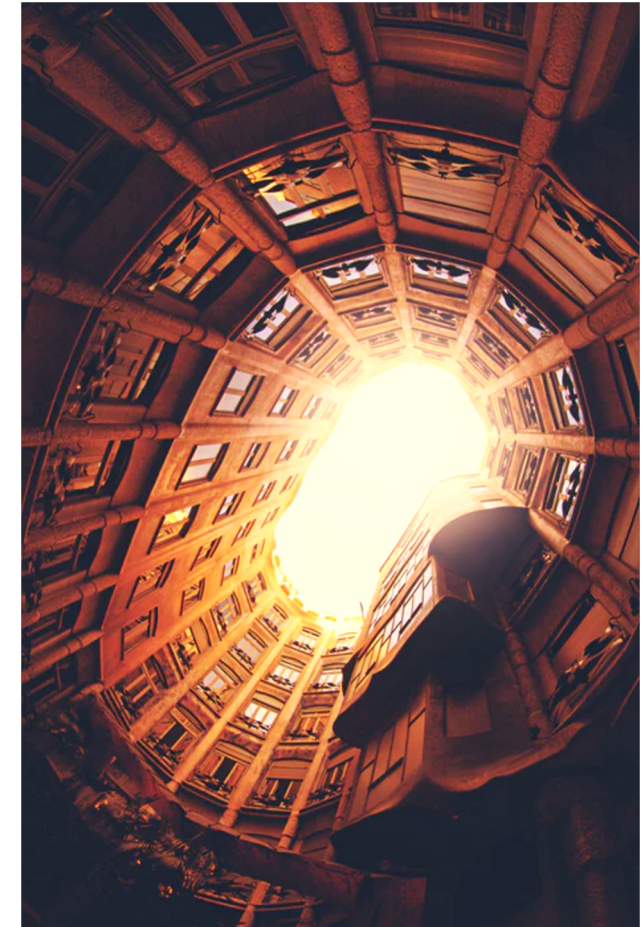
Presentation by **Pau Audi Garcia** Policy Officer DG Energy

**10h10**

Q&A Session moderated by **Eva Brardinelli** Communications and Events Officer at REC

**10h25**

Conclusions and wrap-up by **Adrian Joyce** Director of the REC



# Guidance

- You are kindly asked to remain muted
- No cameras for the whole duration of the webinar
- Only speakers and moderator will stay unmuted
- A 15-20 minutes Q&A session will follow the presentation
- Ahead and during the Q&A session, questions will have to be sent to “**Everyone**” in the **GoToMeeting chat box**.
- Questions should be as concise as possible
- The moderator will group questions and then address them to the speakers
- If time does not allow to cover all questions, they will be forwarded to the speaker for later response
- The PowerPoint presentation and questions will be shared with you in due course



# The Campaign and the Role of Buildings in EU Policy



Presentation by

**Adrian Joyce**

**Campaign Director**

# The Construction Sector in the EU

## Areas of Activity:

- New buildings – All types and sizes
- Works to existing buildings – From painting facades to deep renovations
- Infrastructures and services

## Economic Characteristics:

- Generates about 9% of GDP in the EU
- Directly employs around 16 million workers – Biggest industrial employer
- Consists of around 3 million enterprises – 97% are micro-enterprises
- Considered in many countries to be the lifeblood of the economy
- Creates 50% of all fixed capital assets each year

# The Buildings Sector

## During the Operational Life of Buildings:

- Consume 40% of primary energy
  - Of which over 60% for heating and hot water
- Emit more than 36% of energy-related CO<sub>2</sub>

## During the *Whole Lifetime* Buildings:

- Consume 50% of primary energy in the EU
- Emit about 50 of energy-related CO<sub>2</sub>
- Use around 50% of all resources taken from the planet

These characteristics imply that it is ***impossible*** for the EU to reach its long-term target of having a climate-neutral economy by 2050 if we ignore our buildings

# The Renovate Europe Campaign

- A **political communications campaign** beating the drum for deep energy renovation of the building stock in the EU
- Supported by **38 partners** from industry and civil society including **14 national partners**
- Our **ambition** is to reduce the energy demand of the building stock in the EU by 80% by 2050
- To achieve this, the **rate of deep energy renovation** in the EU will have to reach 3% annually (current levels estimated at 0.2%)

We address policy & decision-makers at the European and national levels

# Our Partners:



**14 National  
Partners**



# Champions Together for Renovation



**29 Current MEPs**  
**8 Former MEPs**  
**1 National MP**  
**3 Cities** → **41 Champions**



*Yannick Jadot (Greens/EFA, France)*  
*Theresa Griffin (S&D, UK)*  
*Ciarán Cuffe (Greens/EFA, Ireland)*  
*Pernille Weiss (EPP, Denmark)*  
*Tomáš Zdechovský (EPP, Czechia)*  
*Gina Dowding (Greens/EFA, UK)*



# The Multiple Benefits of Deep Energy Renovation

## **Societal Benefits:**

- Secure, local, quality jobs in many sectors
- Increased public finances

## **Environmental Benefits:**

- Reduced air pollution
- Significantly reduced CO<sub>2</sub> emissions

## **Economic Benefits:**

- Boost to local, national and European economic activity
- Opportunity to increase sustainable growth

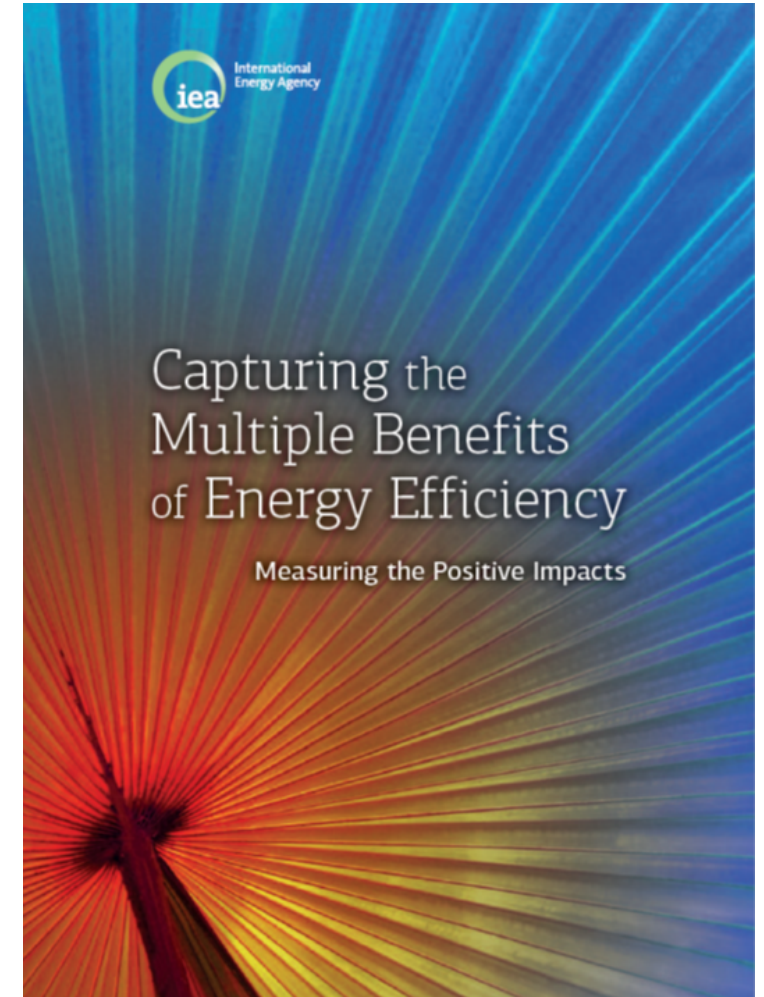
# The Multiple Benefits of Deep Energy Renovation - 2

## Personal Benefits

- Improved indoor environmental quality
- Reduced energy bills (even if unit prices increase)
- Greater well-being and improved health
- Higher productivity
- Increased property values
- Peace of mind in face of climate change (resilience)

For more read the IEA Publication on multiple benefits:

<https://webstore.iea.org/capturing-the-multiple-benefits-of-energy-efficiency>





# Conclusion

Thank you for your attention

Looking forward to your questions



# Title of Presentation



Presentation by

**Mariangiola Fabbri**

**Head of Research at the BPIE**



# Why buildings matter

Mariangiola Fabbri

Head of Research

*Buildings Performance Institute Europe*



## The Buildings Performance Institute Europe

European  
not-for-  
profit  
think-tank

Promotes policies and support  
instruments to increase the  
energy performance of  
buildings

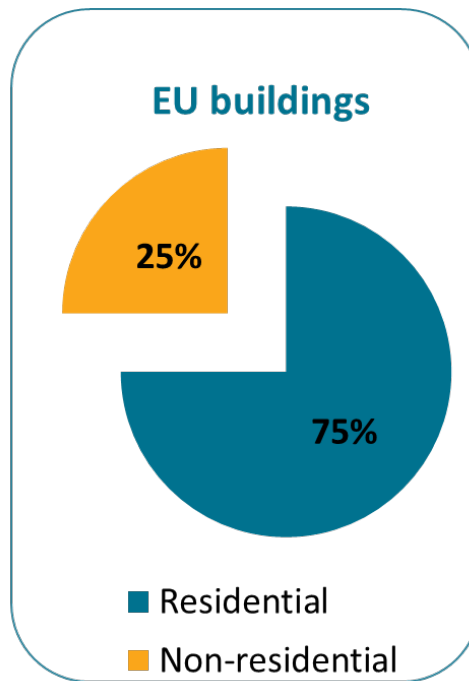
In operation  
since 2010

Brussels, Berlin  
and Warsaw

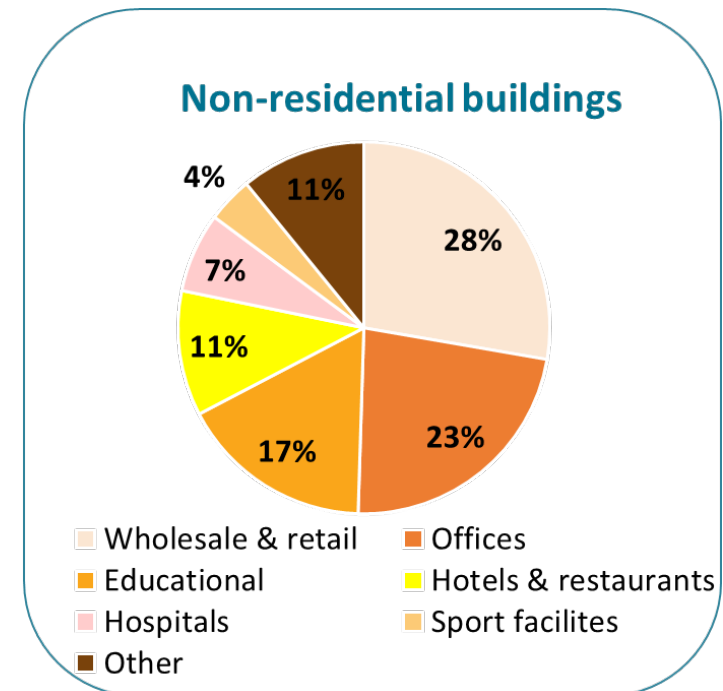
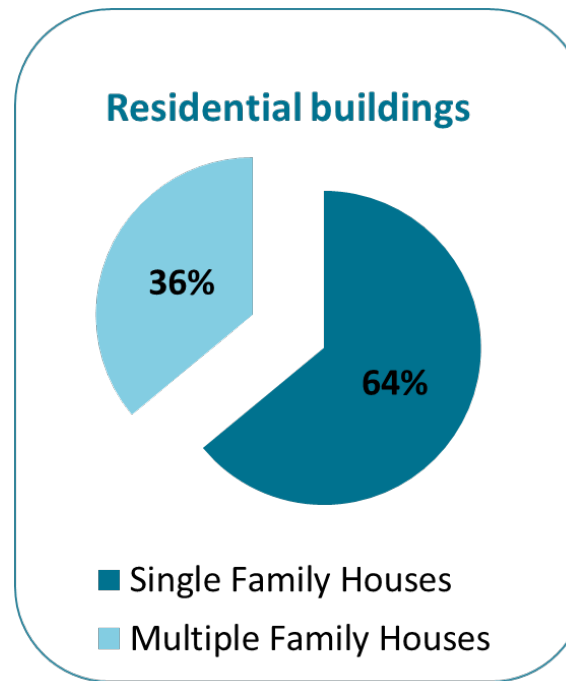
Knowledge, policy,  
implementation

# Overview of Europe's Building Stock

40% of EU energy consumption, 75% inefficient, 1% renovation rate = ~100 years to decarbonise\*



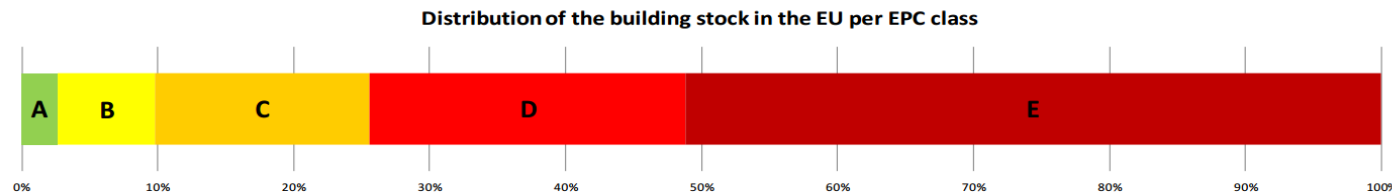
Source: "Europe's buildings under the microscope" (BPIE 2011)



\*Source: IA EPBD, 2017

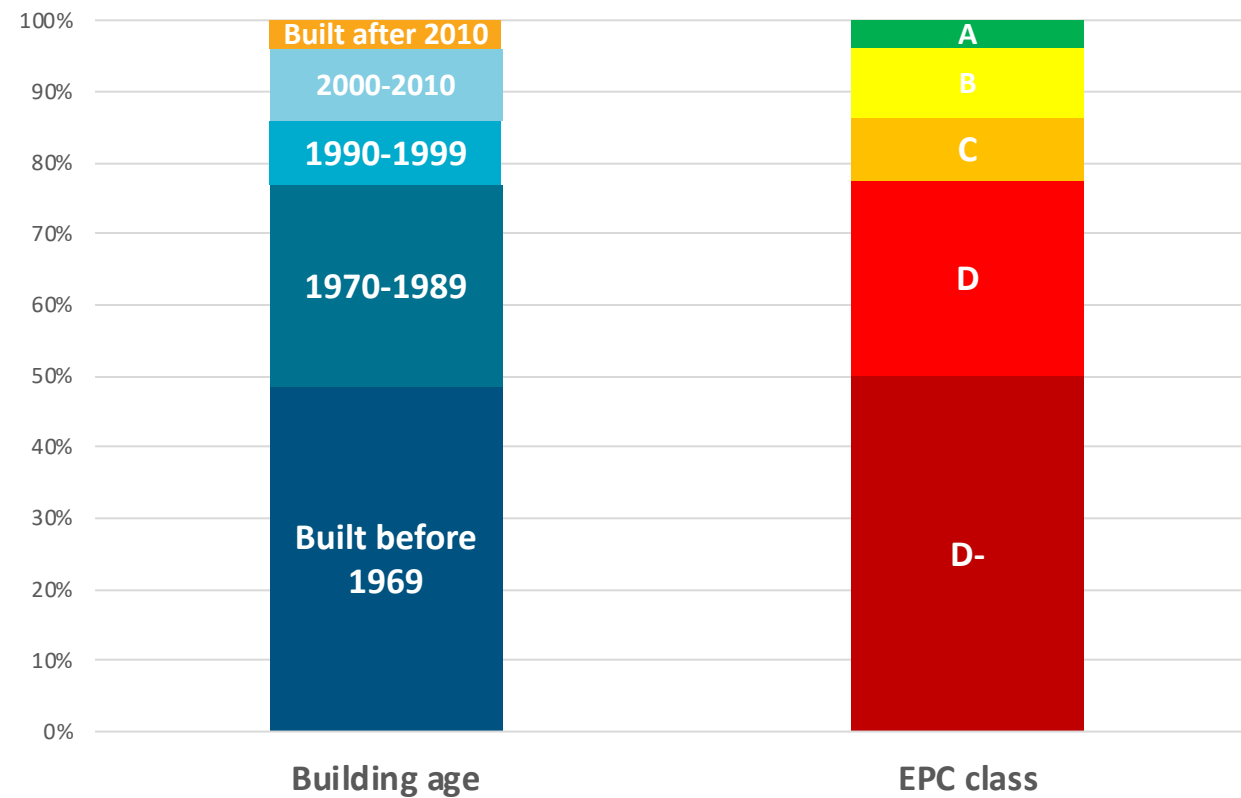
# The Challenge

- Diversified building stock across EU
- 97% of the buildings is not future proof

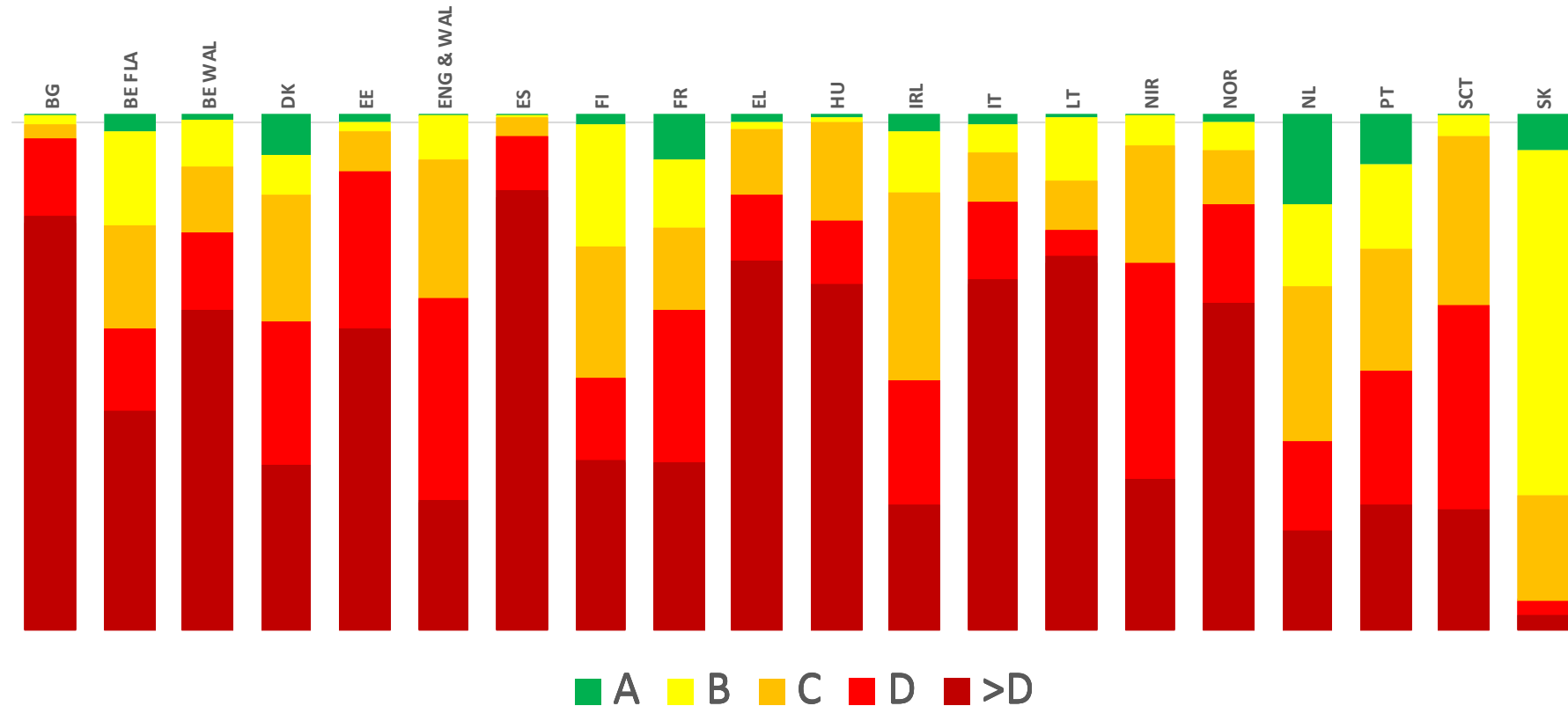


- Increase in energy consumption in 2015-2017 after generalised decrease in previous years (Eurostat)
- Slow rate of renovation (1% year)
- Around 10% of the total EU population lives in Energy Poverty]
- Indoor and outdoor air pollution

# EU building stock according to energy performance certificates (EPC) and building age



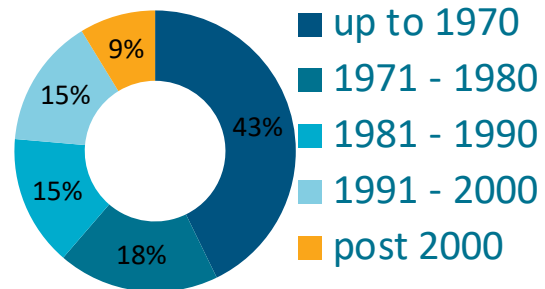
## 97% of EU buildings are not future proof





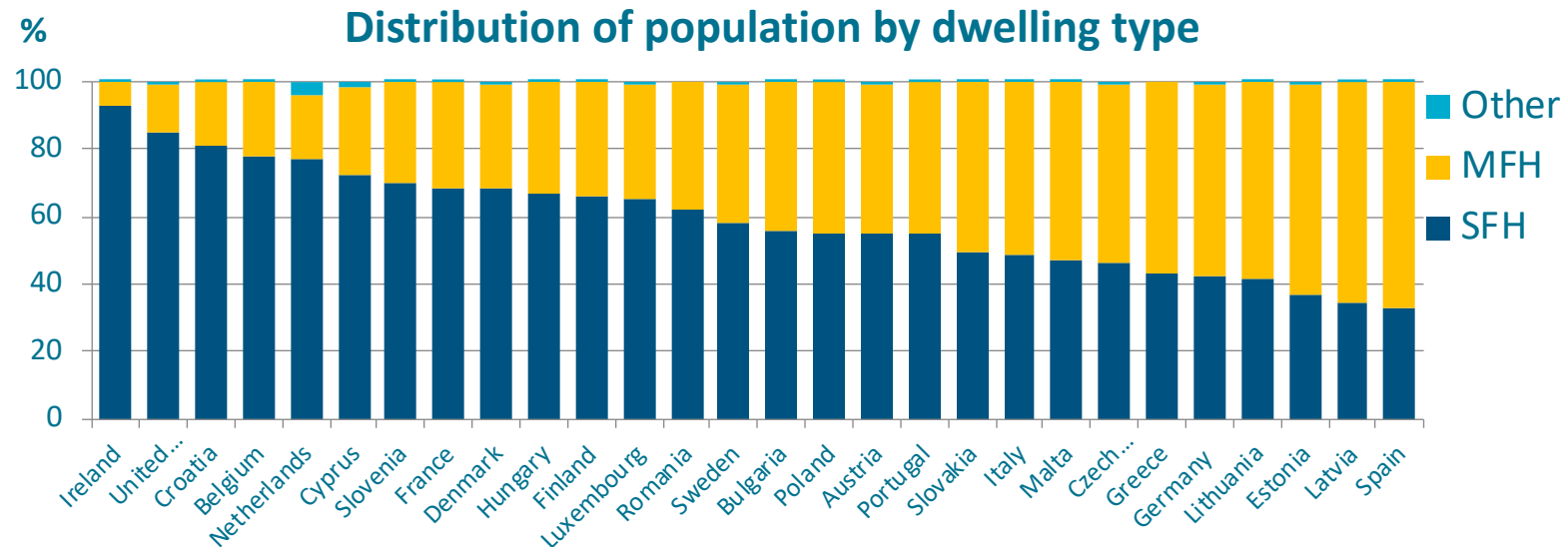
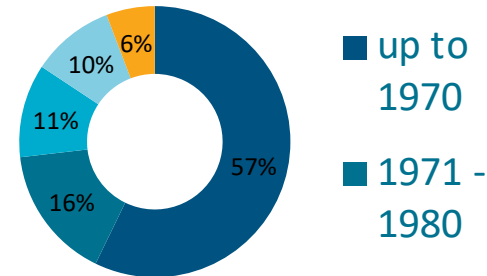
92 million Single Family Houses

SFH breakdown by age bands



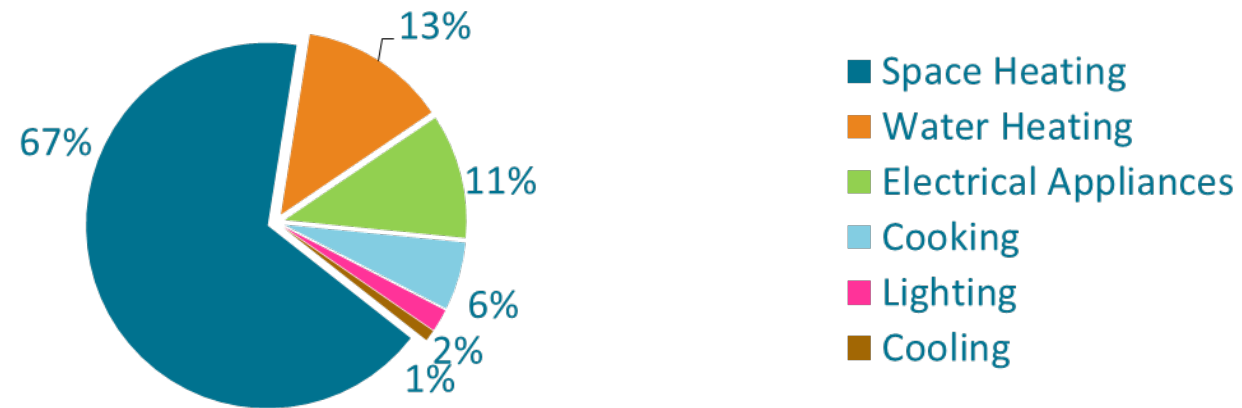
25 million Multi Family Houses

MFH breakdown by age bands

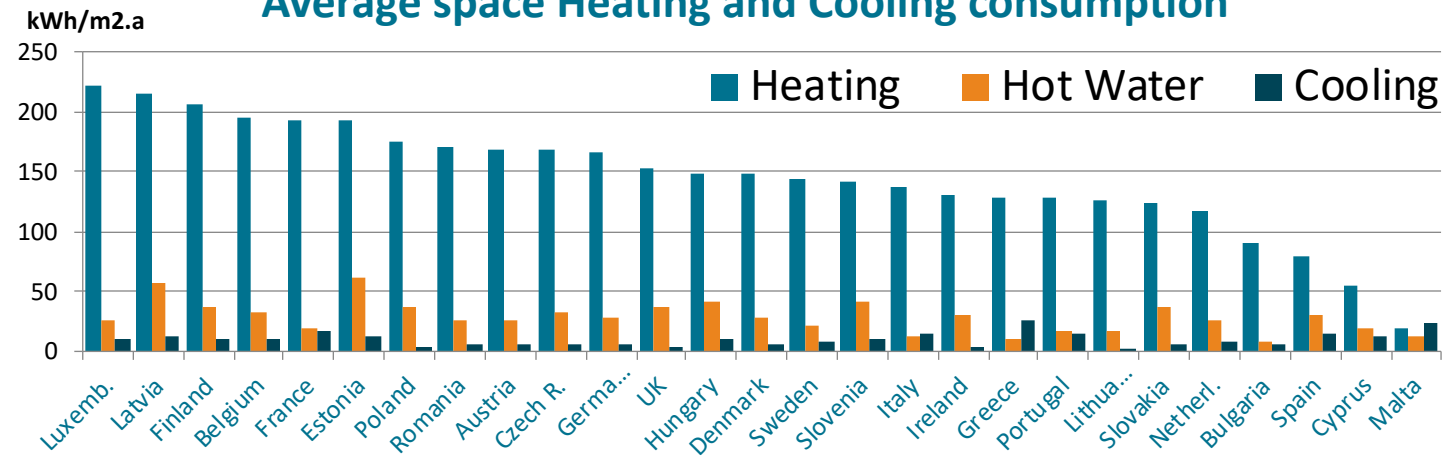


# Energy consumption

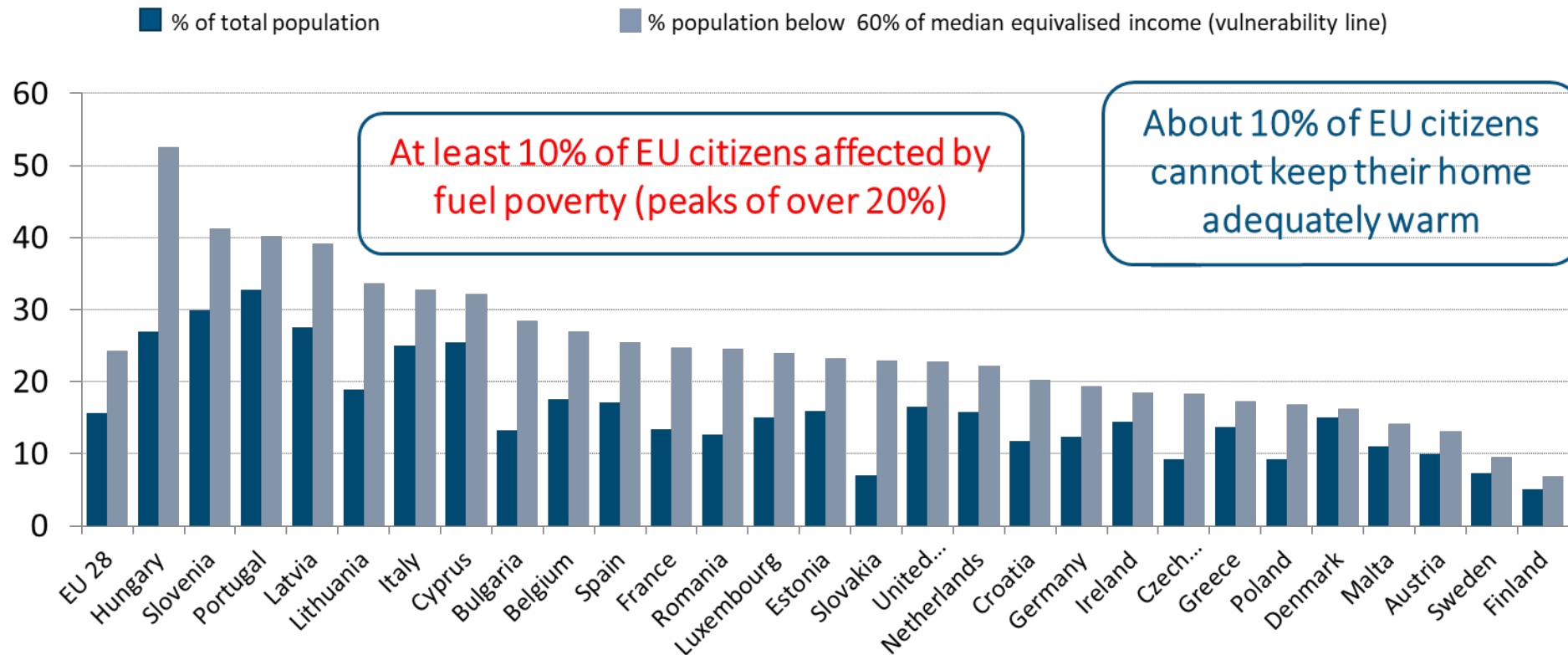
Breakdown of household energy consumption by end use in the EU

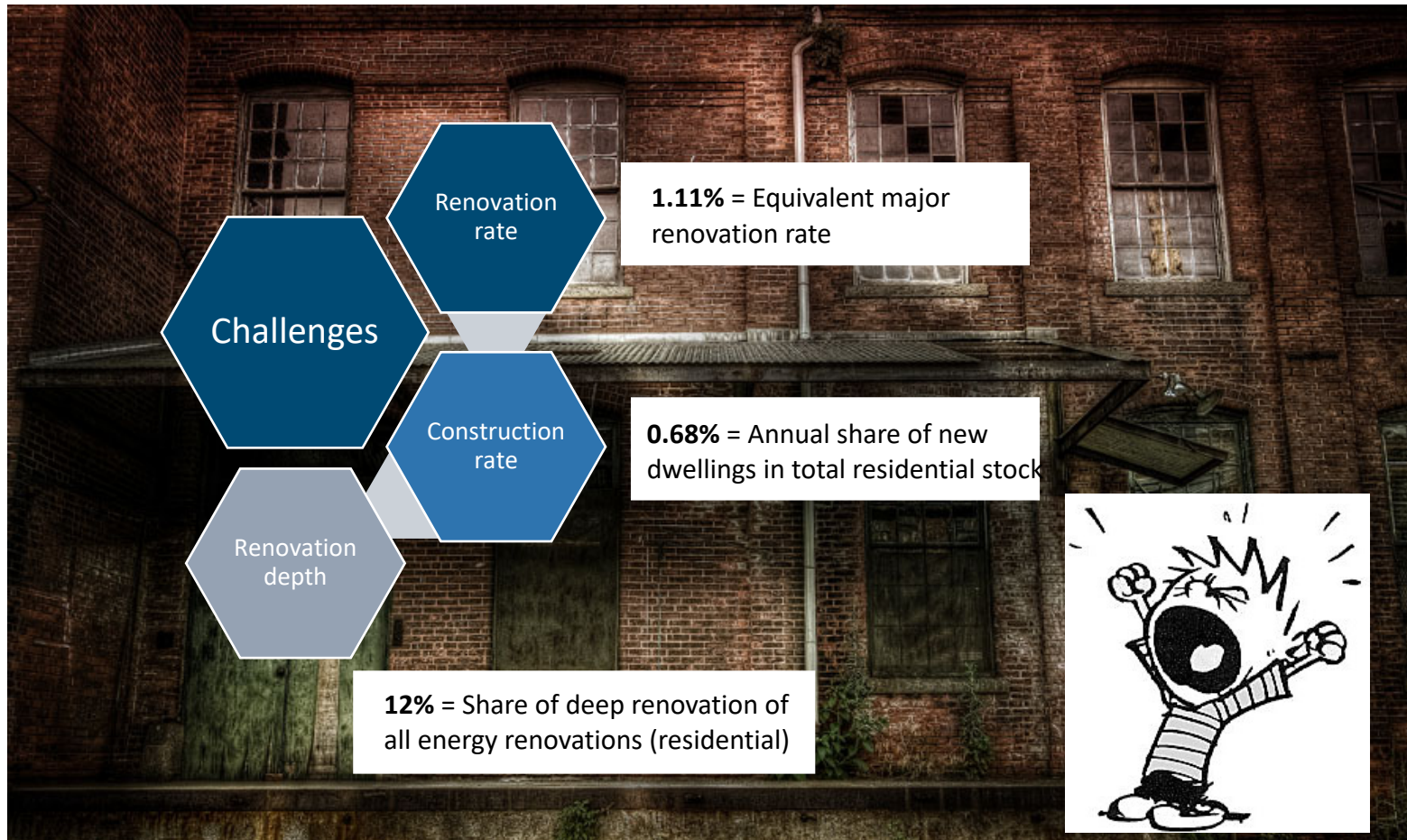


Average space Heating and Cooling consumption



## Share of population living in a dwelling with a leaking roof, damp walls, floors or foundation, or rot in window frames (in % of total population)





# Renovation rates update

- Step-by-step renovations dominate the market
- Deep renovations are sporadic in EU28: 0.2% - 0.3% of affected floor area
- Average annual renovation rate is 1%

**Shallow or light renovations: up to 30% of primary energy savings**

**Medium renovations: 30 to 60% of primary energy savings**

**Deep renovations: at least 60% of primary energy savings**

**Full-time employees in renovation of (2012-2016):**

**Residential buildings  
~ 4.6 million per year**

**Non-residential buildings:  
~1.9 million per year**

Source: Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU (Navigant Consulting 2019)

# What triggers renovation

- Most common triggers for renovation\*:
  - a) Necessary maintenance
  - b) Replacement of a defective component
  - c) Budget becoming available to carry out the renovation
  - d) Will to counter shortcomings that lead to health issues

**Quality of dwelling, energy poverty, health and cost savings more relevant than energy savings**

\* Source: Comprehensive study of building energy renovation activities and the uptake of nearly zero-energy buildings in the EU (Navigant Consulting 2019)

# Building 4 People: Discovering the benefits of energy renovation in schools, offices and hospitals

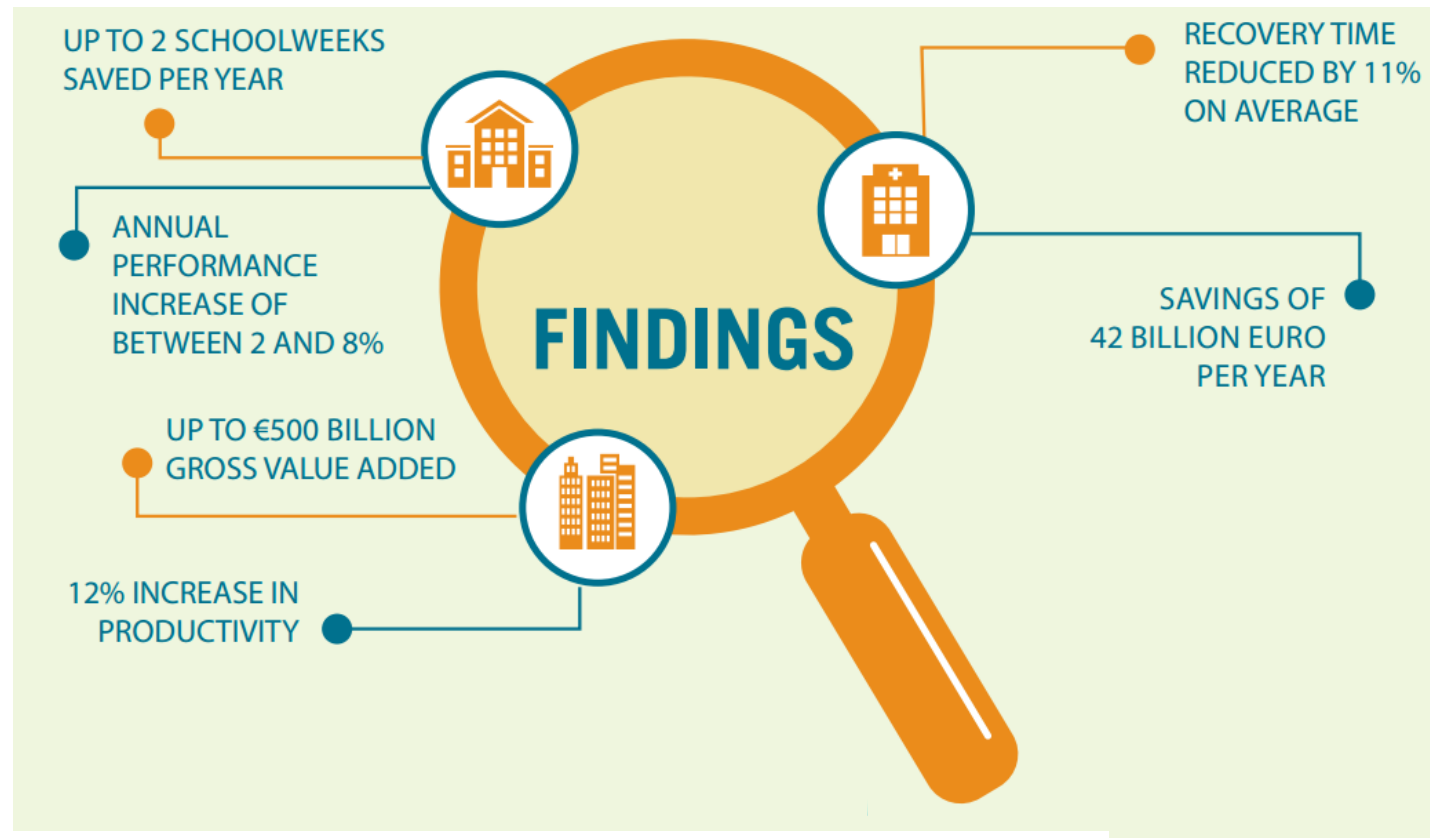


## Why is this important?



- **1/3** of European employees work in an office
- Companies spend around **90%** of their operating costs on staff
- Research shows that poor indoor environmental quality can significantly affect occupants' health, attendance, concentration and working or learning performance







# Thank you...

Mariangiola Fabbri

[mariangiola.fabbri@bpie.eu](mailto:mariangiola.fabbri@bpie.eu)

[WWW.BPIE.EU](http://WWW.BPIE.EU)

#### NEWSLETTER

Subscribe to our contact list



[Newsletters archive >](#)

# Title of Presentation



Presentation by

**Pau Audi Garcia**

**Policy Officer at DG Energy**

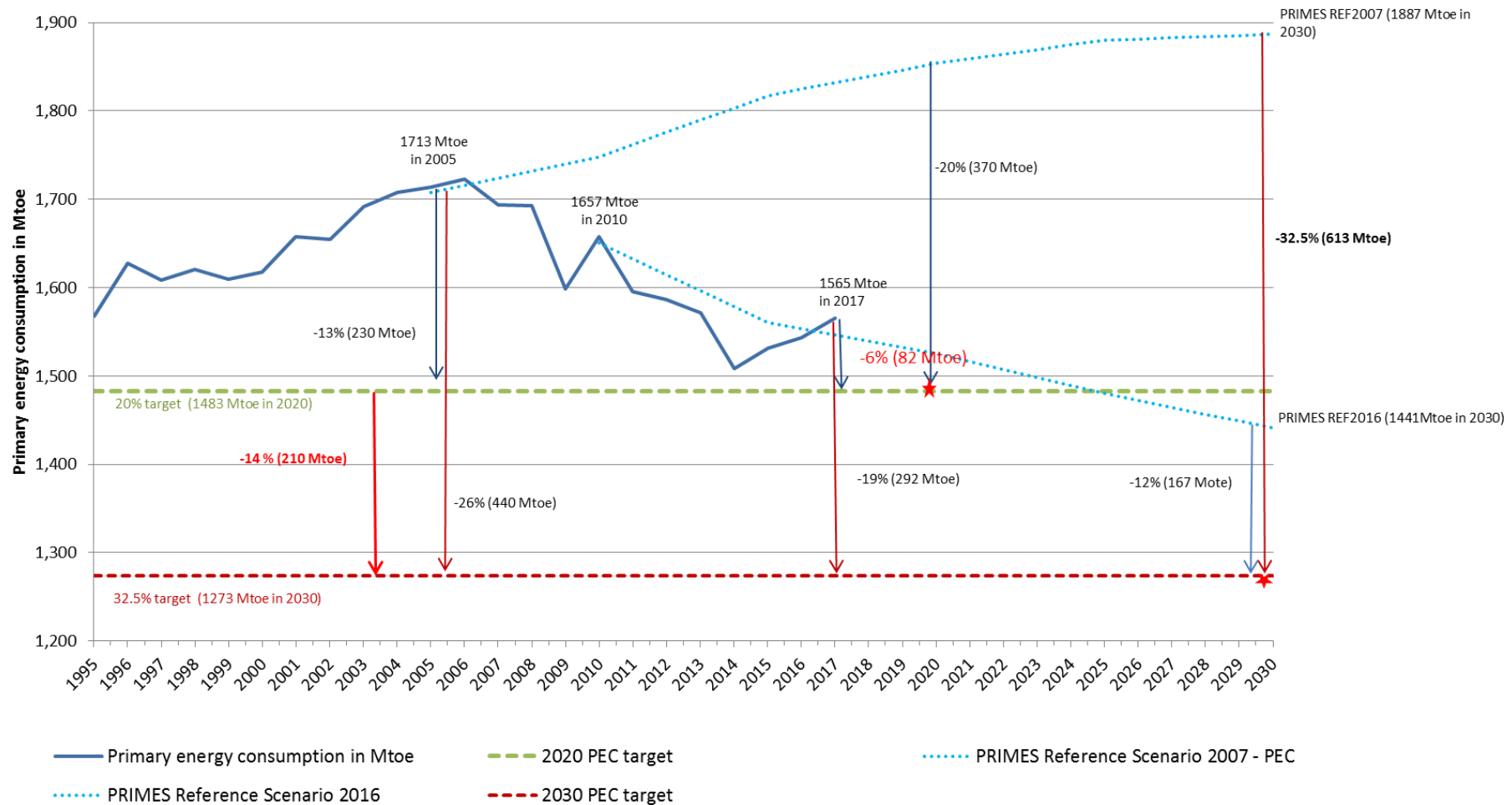
# **Building 101 Renovate Europe Campaign**

## **Policy background**

**27 March 2020  
Brussels**

***Pau Garcia, Policy Officer  
Directorate-General for Energy  
Energy Efficiency, Buildings and Products***

## EU 32.5% Primary Energy Consumption Target













### Energy Efficiency Directive (EED)

- ✓ Energy Efficiency objectives: at least 32.5% energy efficiency improvement
- ✓ Article 5: Exemplary role of public bodies buildings. Member States must ensure 3% of floor area is renovated each year to meet minimum energy performance requirements (buildings owned and occupied by central governments)

### Renewable Energy Sources Directive (RES Directive)

- ✓ Renewable Energy objective: at least 32% of final energy consumption
- ✓ Article 15: Member States must require the use of minimum levels of RES in new buildings and existing buildings subject to major renovations

### Key building facts

-   Buildings represent 40% of energy consumption and 36% of CO2 emissions
-   75% of existing housing stock is energy inefficient
-   60-70% of energy is used in heating, cooling and domestic hot water
-   Need to accelerate and finance building renovation investments
-   Need to support use of smart building technologies

## Energy Performance of Buildings Directive (EPBD)

- ✓ **Calculation methodology**
- ✓ **Minimum energy performance requirements**
  - New building and building renovation
  - Building component and system level
  - Revised at regular intervals
- ✓ **Nearly Zero Energy Buildings (NZEBS)**
  - High energy performance and renewable energy sources
- ✓ **Energy Performance Certificates (EPCs)**
  - Obligatory for new buildings and buildings sold or rented
  - Must be shown in advertising media
- ✓ **Inspections of heating or cooling systems**



## Energy Performance of Buildings Directive (EPBD) – 2018 revision

- ✓ **Support to renovation and modernisation of buildings**
- ✓ **Long Term Renovation Strategies**
  - De-carbonisation of the building stock by 2050
- ✓ **Reinforcement of building automation**
  - Temperature controls and Building Automation and Control Systems (BACS)
- ✓ **Support to Smart technologies**
  - Smart Readiness Indicator for buildings
- ✓ **Targeted support to e-mobility**
  - High energy performance and renewable energy sources

## RENOVATION WAVE

- ✓ **EU Green Deal aims to de-carbonise Europe by 2050**
- ✓ **Buildings are a key element (36% of CO2 emissions)**
- ✓ **Current energy renovation rate around 1%**
- ✓ **The renovation rate needs to at least double**
- ✓ **Need to address multiple elements:**
  - Tackling worst performance buildings
  - Finance
  - Skills
  - Other: information, best practice, owner-tenant dilemma, etc.
  - Focus on: social housing and energy poverty, schools and hospitals
- ✓ **Commission Communication by end of Q3**

# Thank you!

**Pau GARCIA AUDÍ**  
**C4 - Energy Efficiency – Buildings and Products**  
**DG ENER, European Commission**

# Questions and Answer Session

Moderated by:  
**Eva Brardinelli**

**Please wait for your question  
to be read out...**





**Thank you for attending!**

**More information? Visit:**  
[www.renovate-europe.eu](http://www.renovate-europe.eu)