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# Tackling energy efficiency in multi-occupancy apartment blocks

BUILD UP Webinar, 8 March 2016



# Overview of the LEAF Project

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# Project aim

Improve the *energy efficiency* of *apartment blocks* under *multiple ownership* across Europe

# Project details

3 year project: March 2013 – March 2016

Project website: [lowenergyapartments.eu](http://lowenergyapartments.eu)

Co-funded by the Intelligent Energy Europe Programme and local co-funders

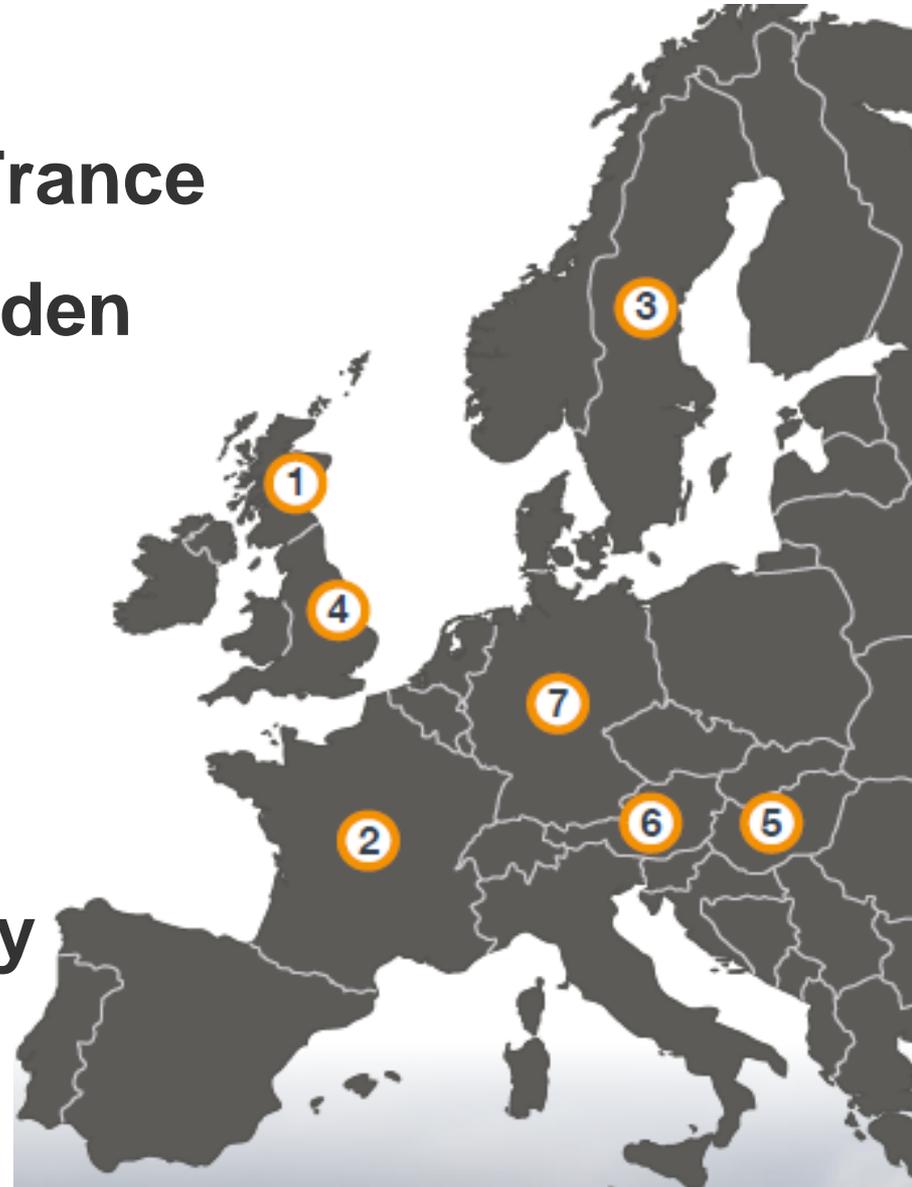


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Programme of the European Union



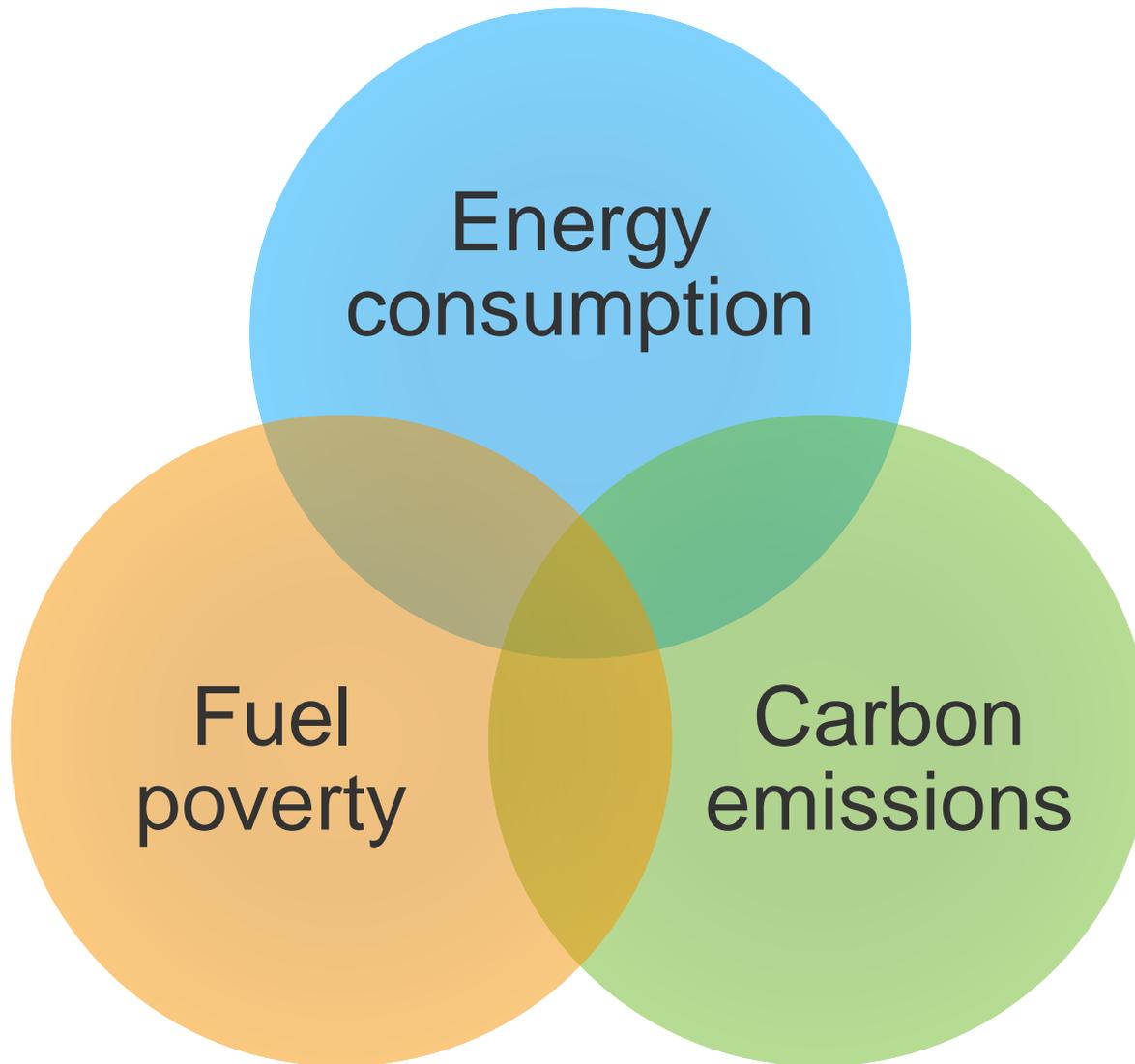
# Partners

- ① **Changeworks, UK**
- ② **ALE Lyon and FLAME, France**
- ③ **Uppsala University, Sweden**
- ④ **Centre for Sustainable Energy, UK**
- ⑤ **Energiaklub, Hungary**
- ⑥ **e7, Austria**
- ⑦ **Fraunhofer IBP, Germany**



# Background

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## EU 2020 targets:

- Increase energy efficiency by 20%
- Increase in renewable energy by 20%
- Decrease in CO<sub>2</sub> emissions by 20%

# Why look at apartment blocks?

25% of EU CO<sub>2</sub> emissions come from homes

43% of Europeans live in apartments

- Addressing the energy efficiency of apartments is essential to meeting EU targets
- There are also well-known **barriers** to doing so

**The project: what did we do?**

# What did we do?

**1. Background research to inform toolkits**



**2. Create toolkits**



**3. Work with 24 case study buildings**



**4. Evaluation**



**5. Policy recommendations**

# 1. Background research

## Establishing the current context

- Identify key barriers:
  - Shortcomings of EPCs
  - Difficulties of engaging multiple owners
- Commonalities and differences between the countries e.g. building management structures
- **Background reports available on the LEAF website**

## 2. Create toolkits

- Support tools for improving the energy efficiency of apartment blocks
- Aimed at property managers, housing associations, local municipalities, owners
- Partner country versions

Engagement  
toolkit

Technical  
toolkit

# Engagement toolkit

- Support and advice on retrofitting apartment blocks
  - Step-by-step guide
    - Initiation to evaluation
  - Further sources of info
  - National versions and EU version
- Available on the LEAF website



# Technical Toolkit

Contains four sections:

A. What is an Energy Performance Certificate (EPC)?

+

B. Recommended Improvement Measures in EPCs

+

C. Impact of user behaviour

+

D. Possible additional savings

+



# Technical Toolkit

## A. What is an Energy Performance Certificate (EPC)?



- Guidance on EPCs in each country such as:
  - What an EPC is
  - How much it costs
  - How long they are valid
  - Where to get an assessor



# Technical Toolkit

## B. Recommended Improvement Measures in EPCs



- Interactive tool
- User inputs data from EPCs and gets a tailored document outlining:
  - Further detail about recommended measures
  - Suitability of measure and considerations
  - Required permissions
  - Payback times



# Technical Toolkit

## B. Recommended Improvement Measures in EPCs



### Package of measures: Information to be taken from EPC

Package 1

Package 2

Package 3

Package 4

Package 5

Package 6

### Selected Measure(s)

Add Measure

Delete measure

Size of measure

0.00

-

Cost of measure

0.00

-



# Communal EPC tool

- Summarises multiple EPCs from individual apartments into a whole block EPC (UK and France only)

## Communal Energy Performance Certificate (EPC)

Number of domestic archetypes:	<input type="text"/>	Number of commercial archetypes:	<input type="text"/>
Number of domestic dwellings:	<input type="text"/>	Number of commercial properties:	<input type="text"/>
Build type:	<input type="text"/>	Primary Energy Indicator:	<input type="text"/> kWh/m <sup>2</sup> /year
Total floor area:	<input type="text"/> m <sup>2</sup>	Total Energy Use:	<input type="text"/> kWh
Main heating*:	<input type="text"/>	Fuel type:	<input type="text"/>

Estimated energy cost for your home for 3 years**	<input type="text"/>	See your recommendations report for more information
Over 3 years you could save**	<input type="text"/>	

\*calculated using domestic EPCs only  
\*\*based upon the cost of energy for heating, hot water, light and ventilation, calculated using standard assumptions

Very energy efficient - lower running costs

(92 plus)	A
(81-91)	B
(69-80)	C
(55-68)	D
(39-54)	E

### Domestic Energy Efficiency Rating

Current SAP Score:

Current Rating Band\*:

Potential SAP Score:

Potential Rating Band\*:

Intro & Guidance Domestic Communal EPC **Dom&Commercial Communal EPC** EPC 1 EPC 2 EPC 3 EPC 4 EPC 5 Non-Dom EPC

# Technical Toolkit

## C. Impact of user behaviour



- Highlights what impact residents' behaviour may have on energy savings and payback times
  - i.e. are they high use or low use consumers?
- Provides advice on reducing energy use through behaviour



# Technical Toolkit

## D. Possible additional savings



- Advice on other potential energy savings in apartment blocks such as:
  - Heating of common stairways
  - Lighting in common areas
  - Elevators / lifts



# 3. Case studies

- 24 buildings across Europe
- Worked towards energy efficiency retrofit

➤ **Case study reports available on the website**



Austria



Hungary



France



Germany



Sweden



England

# Les Mouliniers, France

Engage residents



Identify suitable measures



Advise on funding availability



Agree measures



Support installation process



Provide behaviour change advice



# 4. Results and evaluation

- Case study results:
    - Energy, financial and CO<sub>2</sub> savings
    - Participant feedback (surveys)
    - Identify barriers, challenges and successes
  - Stakeholder evaluation:
    - Via workshops and/or interviews
    - Feedback on the toolkits
    - Perspectives on retrofitting multi-apartment blocks
- Results in next presentation

# 5. Policy recommendations

- Results and evaluation have fed into a series of policy recommendations:
  - EU level
  - Partner countries



- Overview presented in final presentation today

# Thank you

## Questions?

Project website: [lowenergyapartments.eu](http://lowenergyapartments.eu)

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