



# Information Day of the cPPPs

Brussels 16<sup>th</sup> of October 2015

**Energy Efficient Buildings in Horizon  
2020**

**Calls 2016 in Work programme 2016-17**



**A joint presentation by Project Officers of  
DG RTD & DG ENER and EASME**

# Energy Efficient Buildings Call Objectives

- "Rejuvenate the business of Buildings"
  - Drive the creation of High Tech. Building Industry – Improve its Competitiveness and Job creation
  - Deployment of best use of innovative, reliable and affordable technologies.
- More environment-friendly and competitive manufacturing:
  - Drastic Reduction of energy consumption ( 50 %) and CO2 emissions ( 90%) for new and renovated buildings in line with EU Energy Strategy ( long term target - 2050)
  - Minimize the embodied energy of main materials, Less waste generated, Recycling – Re Use of materials for new products
- R&I to integrate & demonstrate innovative technologies in:
  - Materials and components for energy savings , Efficient monitoring and management tools and systems , New innovative integrated thermal supply systems for buildings and districts, exploitation of recycled- re-used materials for production of pre-fabricated elements.

# EeB PPP calls 2016 In Work Programme 2016-17

- EeB 1 :** *Highly efficient insulation materials with improved properties, IA, TRL 5 -7 (Suitable for SMEs)*
- EeB 2 :** *Performance indicators and monitoring techniques for energy-efficiency and environmental quality at building and district level, CSA (only one project will be funded)*
- EeB 3 :** *Integration of advanced technologies for heating and cooling at building and district level, IA, TRL 5-7 (SMEs encouraged)*
- EeB 4 :** *New technologies and strategies for the development of pre-fabricated elements through the reuse and recycling of construction materials and structures, RIA, TRL 4-6 (Suitable for SMEs)*
- EE10-:** *Supporting accelerated and cost-effective deep renovation of buildings, IA, TRL 6 - 8*

# EeB 1 Highly efficient insulation materials with improved properties

## *Specific Challenge:*

- Improved insulation is expected to strongly reduce energy consumption and CO2 emissions at European level
- Develop affordable advanced insulation materials which exceed the performance of presently used materials, and also respect strict sustainable principles.

# EeB 1 Highly efficient insulation materials with improved properties

## ***Scope:***

- New insulation materials and solutions based on nanotechnologies and/or advanced sustainable materials
- Well beyond State of the Art, taking into account final performance properties of materials and components
- Enhanced durability, sustainability, reduced embodied energy, new built and renovation, ease of installation, competitive price, improve indoor air quality, comfort and noise reduction, deconstruction, end of life...
- Standardisation as appropriate
- Proof of concept, information & installation guides, training...

**IA**  
70%

**TRL**  
5-7

# EeB 1 Highly efficient insulation materials with improved properties

## ***Expected Impacts:***

- Improvement by at least 25% of the insulation properties at component level
- Reduction by at least 20% of the total costs compared to existing solutions
- Improvement by at least 20 % of durability at component level
- Respect of sustainability principles
- Improvement in indoor air quality
- Proof of high replication potential both in new built and renovation in Europe
- Easier implementation
- At least a 15% reduction of the energy spent during the whole life cycle of a building
- Contribution to standardisation and certification activities.

**IA**  
70 %

**TRL**  
5-7

## EeB 2

# Performance indicators and monitoring techniques for energy-efficiency and environmental quality at building and district level

### ***Specific Objective:***

Reduce the overall Building energy consumption and CO2 emissions – contributing to de-carbonise the EU economy

- Develop KPIs and methodologies to quantify and Benchmark performances

## **EeB 2** Performance indicators and monitoring techniques for energy-efficiency and environmental quality at building and district level

### ***Scope:***

- Provide a Geo- clustered analysis of latest generation buildings
- Analyse sectorial Indicators, develop models for decision making from design to operational phase
- Propose operational, harmonised protocols to characterise the performances in real operational conditions
- Identify causes of sub-optimal performances and promote best practices ( from design to construction/ operation).

**CSA**  
**100%**



# **EeB 2** Performance indicators and monitoring techniques for energy-efficiency and environmental quality at building and district level

## ***Expected Impact:***

- **Collect EU data on real performances of new and renovated buildings**
- **Set up guidance for all types of buildings: used by design teams/ for public procurement**
- **Analyses supporting to bridge the gap between design and operational performances.**

# EeB 3 Integration of advanced technologies for heating and cooling at building and district level

## ***Specific Objective:***

- Develop and integrate high efficiency equipments for supplying space heating/ cooling , hot water with high share of renewables in Buildings- districts
- Support retrofitting with cost effective, practical, affordable solutions
- Residential buildings: urgent need for integrated solutions ( e.g. fit with gas boilers dominating the EU market)

**IA**  
70%

**TRL**  
5-7

## **EeB 3** Integration of advanced technologies for heating and cooling at building and district level

### ***Scope:***

- Integration of Hybrid systems combining fossil based/ renewables equipments
- Exploit waste energy sources
- Focused approach on easy installation, integration and maintenance
- Ensure High control, monitoring of entire system (matching supply with demand). For DHC, operating at low T° with centralised/ de-centralised hybrid sources
- Provide detailed information on energy data of buildings

**IA**  
**70 %**

**TRL**  
**5-7**

# EeB 3 Integration of advanced technologies for heating and cooling at building and district level

## ***Expected Impact:***

- Demonstrate a high potential of replication to reach market before 2025 ( performant tool kits)
- Cost effective equipments (pay back below 10 years) ,
- High energy efficient equipment (reduction of 20 -30%)

**IA**  
70 %

**TRL**  
5-7

## **EeB 4** New technologies and strategies for the development of pre-fabricated elements through the reuse and recycling of construction materials and structures

### ***Specific Challenge:***

- Because CDW has become a serious environmental problem large-scale reuse and recycling in building refurbishment is needed.
- The development of pre-fabricated elements containing a high share of recycled materials is needed.
- By 2020 the preparation for re-use, recycling and other material recovery shall be increased to a minimum of 70%.

# EeB 4 New technologies and strategies for the development of pre-fabricated elements through the reuse and recycling of construction materials and structures

## **Scope:**

- Building concepts with new or adapted prefabricated components need to be developed.
- Material flows and the gathering of information from all different stakeholders need to be addressed in order to modify the construction process.
- Development of solutions for recycle and reuse together with the optimisation of materials recyclability properties need to be addressed.
- Solution should consider not only construction but also installation processes showing clear evidence not just of technical but also of economic viability of the solution (structural and non-structural components).

**RIA**  
100 %

**TRL**  
4-6

## **EeB 4** New technologies and strategies for the development of pre-fabricated elements through the reuse and recycling of construction materials and structures

### ***Expected Impact:***

- CO2 savings, energy savings and resource efficiency
- Creation of new value chains (also by properly tackling non-technological barriers)
- High replication potential with the possibility to export technology worldwide.
- Contribution to the objectives of the European Innovation Partnership on Raw Materials.

**RIA**  
100 %

**TRL**  
4-6



# H2020 - Societal Challenge 3: Secure, clean and efficient energy

## **Energy Efficiency Calls 2016-2017**



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# SC3 /WP 2016-2017 /Energy efficiency

*1. responds to **policy** challenges & priorities :*

➤ **Energy Union**, its third pillar – **Energy Efficiency**

Concrete actions :

-Energy Efficiency **legislation implementation and review** :

**EPBD review** : public consultation open until 31/10/2015

-EU Strategy for **Heating and Cooling**

-EU framework to finance Energy Efficiency :

**Smart Finance for Smart Buildings**

*2. addresses **market barriers** by building capacity and fostering uptake of innovative technologies*

# EE10

## Supporting accelerated and cost-effective deep renovation of buildings

### ***Specific Challenge:***

- EU buildings are inefficient and contribute too little RES
- Renovations are too few, too infrequent and too expensive
- Need to demonstrate faster, cheaper, more practical ways of achieving deep renovation
- Need to demonstrate a holistic optimized approach

# EE10

## Supporting accelerated and cost-effective deep renovation of buildings

### *Scope:*

- Demonstrate cheaper, higher quality, holistic and faster deep renovation
- Minimize disturbance of building occupants
- Increase rates of renovation in a specific district/city/region
- Innovative integrated process, packaged using commercially available technology
- Guarantee high indoor environmental quality
- Consider embodied energy and material life cycles

**IA**  
70 %

**TRL**  
6-8

# EE10

## Supporting accelerated and cost-effective deep renovation of buildings

### *Expected Impact:*

- 60% reduction in net primary energy use
- 15% cost reduction compared with "typical renovation" that meets current building regulations
- Increase rate of renovation of a defined building typology in a specific district/city/region
- Reduce the time to renovate by half

**IA**  
70 %

**TRL**  
6-8

Topic identifier	Deadline 2016	Budget (EUR million)
EeB 1 – 4 (2016)	21/01/2016	49.00
EE 10 (2016)	21/01/2016	8.00



# Thank you for your attention

## More information:

HORIZON 2020:

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

Contractual Public-Private Partnerships in research and innovation:

[http://ec.europa.eu/research/industrial\\_technologies/ppp-in-research\\_en.html](http://ec.europa.eu/research/industrial_technologies/ppp-in-research_en.html)

HORIZON 2020