

# RHC Renewable Heating & Cooling

European Technology Platform

RHC-Platform Annual Event

2030 Reasons to Integrate Renewable Heating and Cooling



Innovation, Technology Development, and Market Uptake

22 May 2014 9:30- 17:30 Free Event

## RHC Issues & the EeB Roadmap

Luc BOURDEAU  
ECTP/E2BA Secretary General



# PPPS IN HORIZON 2020



## Joint Technology Initiatives

- Innovative Medicines (IMI)
- Clean Sky
- Single European Sky ATM Research (SESAR)
- Fuel Cells and Hydrogen (FCH)
- Electronic Components and Systems (ECSEL - old ARTEMIS + ENIAC)

New:

- Bio-based Industries (BBI)

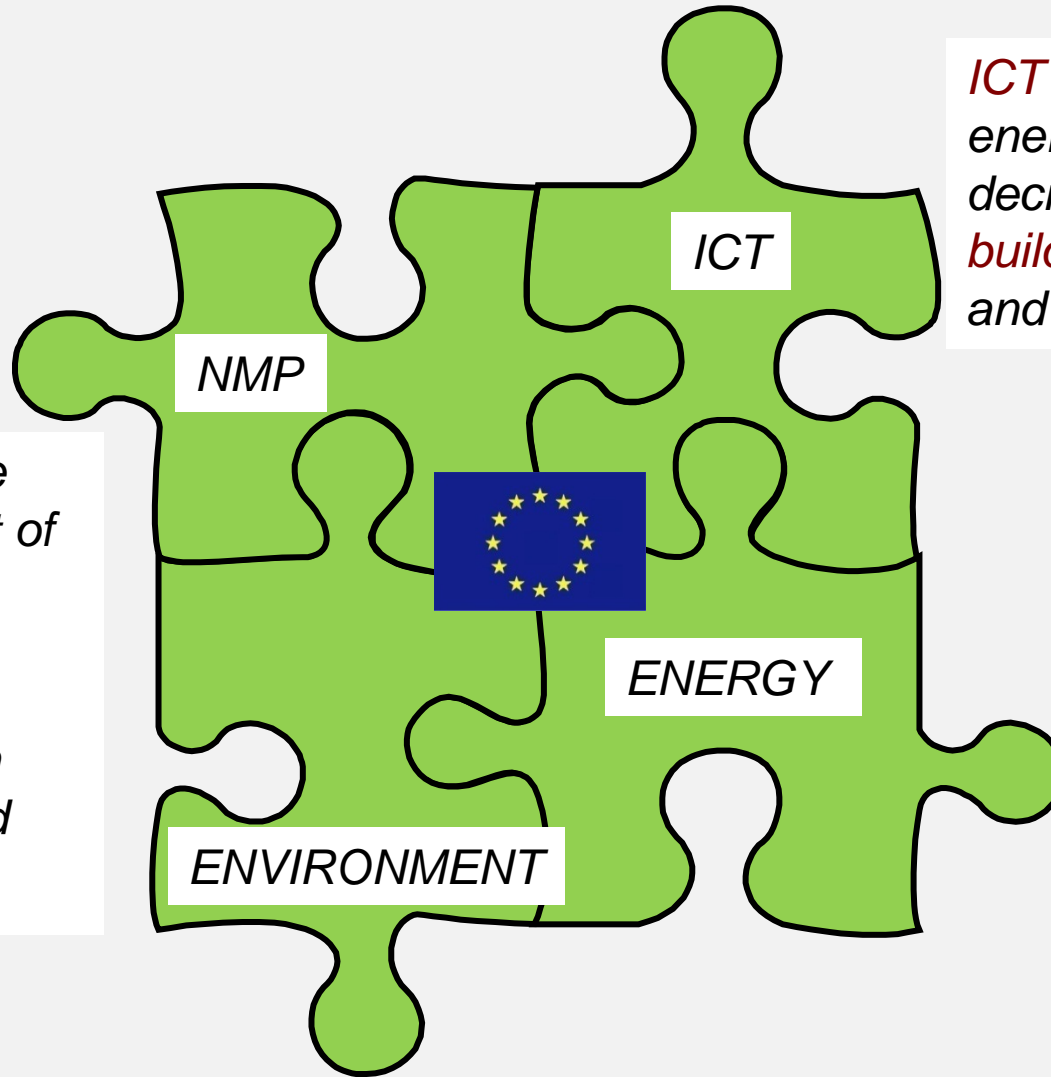
## Contractual PPPs

- Factory of the Future (FoF)
- Energy-efficient Buildings (EeB)
- Green Vehicles (EGVI)
- Future internet (5G)

New:

- Sustainable Process Industry (SPIRE)
- Robotics
- Photonics
- High Performance Computing

# MORE THAN 100 PROJECTS SO FAR SUPPORTED BY THE EC AND INDUSTRY



*ICT integration* for effective energy management and decision making from *buildings to neighborhoods and cities*

Fostering the development of *new technologies* and their *integration* in buildings and districts

Large scale *demonstration* of most *promising solutions* and their contribution to future *smart cities*

# INTEGRATION AND DEMONSTRATION OF TECHNOLOGIES FOR ENERGY EFFICIENCY

## New Processes and Business models

Economic, Organisational & Social Innovation  
Business Performance-Based Models  
Interaction with Real Flagship Projects

## Building Interaction & Integration with Energy Networks at District Level



Micro-CHP & SOFC  
Waste Solutions  
Thermo Chemical Storage  
External Insulation  
Renewable Energies  
Matching Supply & Demand  
Integrated Concept of Interconnectivity

## Building Retrofitting

Systemic Renovation Packages  
Prefabricated Elements  
Integration Supervision & Evaluation  
SME Friendly Procedures for selecting Best Solutions

## Demonstration

Stuttgart



Cesena



Ballerup



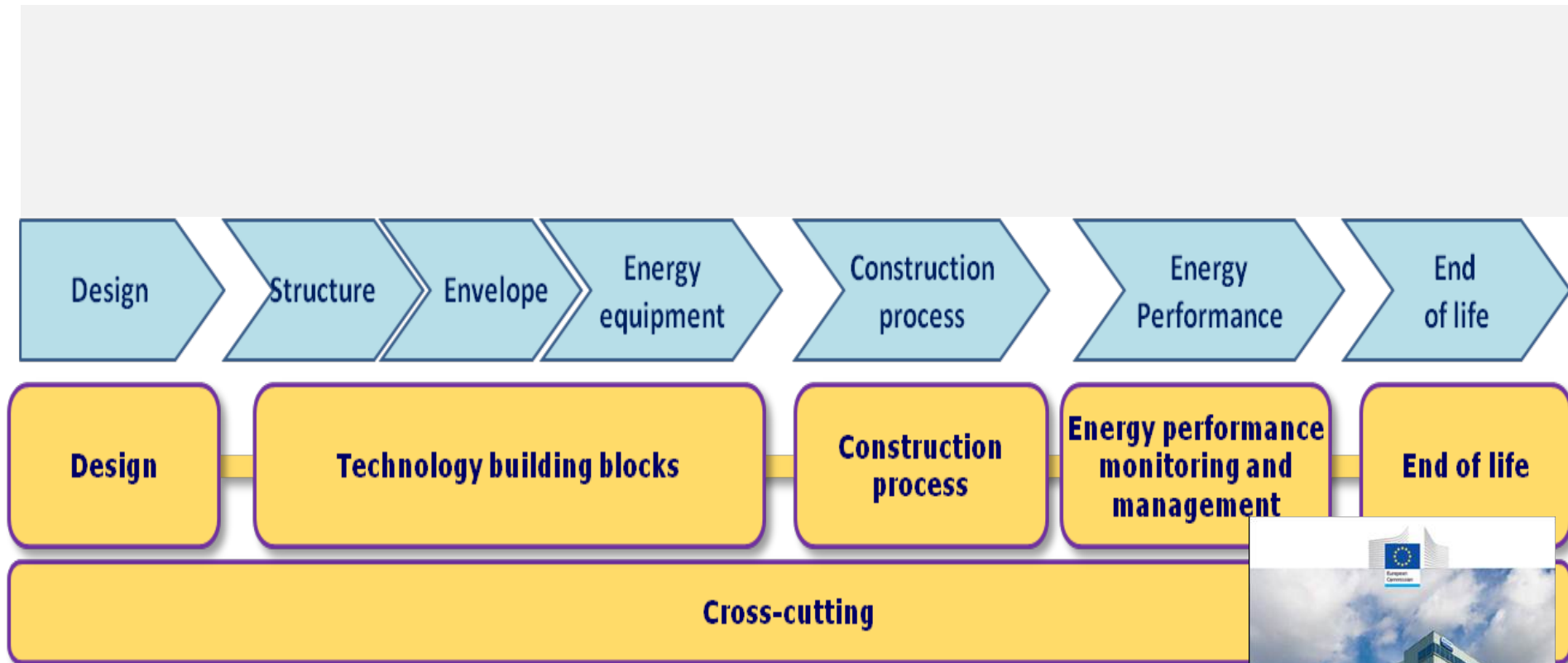
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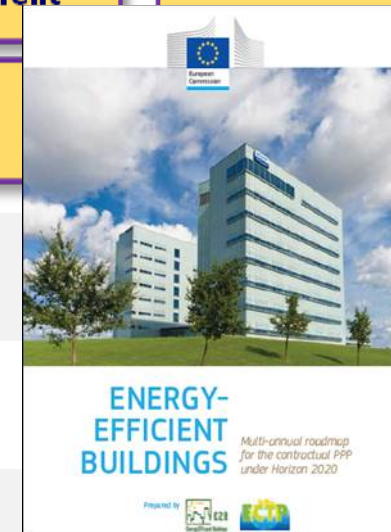
## Cultural Heritage

Solutions for Specific Issues  
Guidelines/Tools for Analysis & Design

# A VALUE CHAIN AND «CHALLENGE BASED» APPROACH



Roadmap 2014-2020

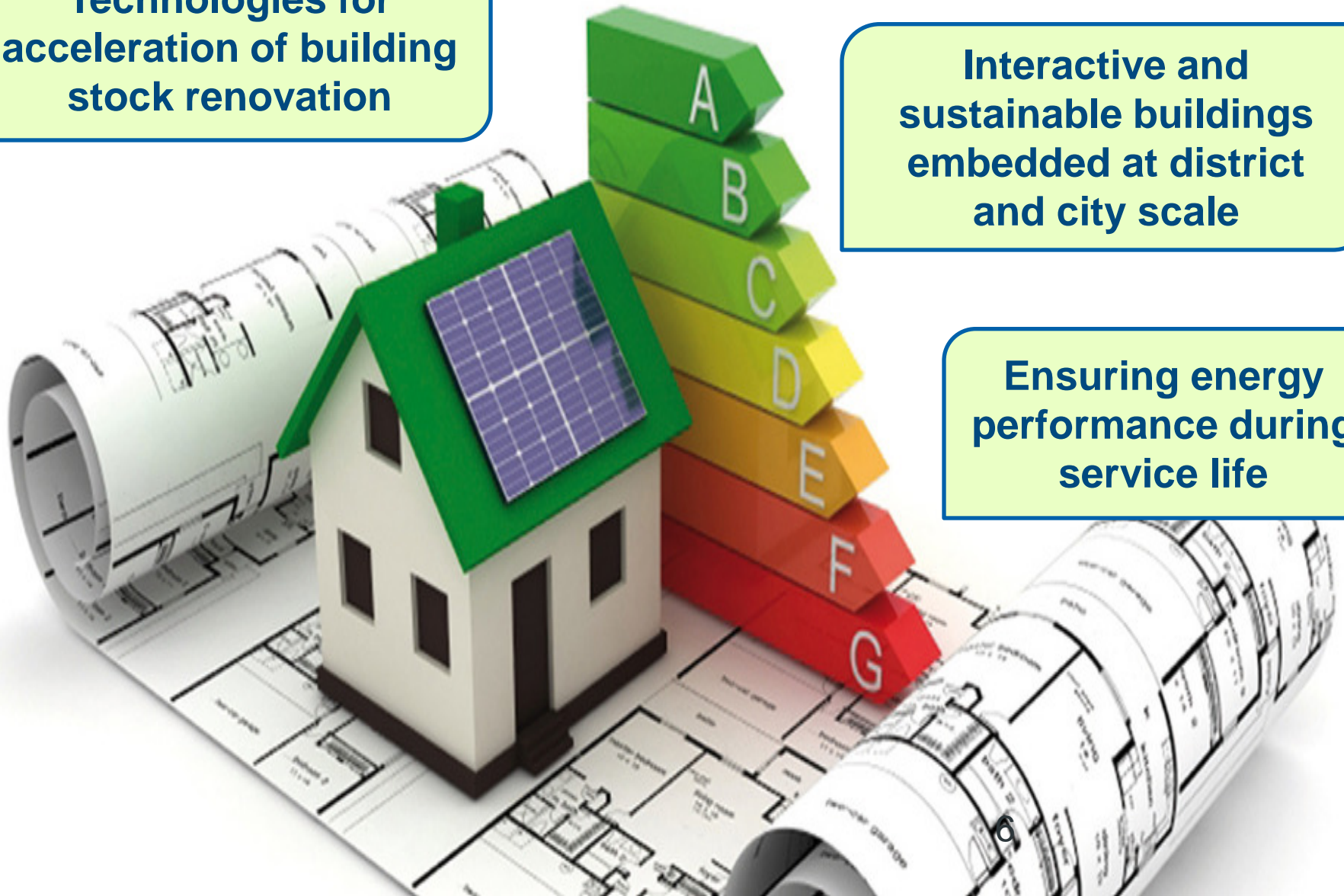


# KEY RESEARCH AREAS

**Technologies for acceleration of building stock renovation**

**Interactive and sustainable buildings embedded at district and city scale**

**Ensuring energy performance during service life**



# PRIORITIES

Core area	Priority	Short Term (2014-16)	Medium term (2017-18)
Design	Integrated (holistic) design	x	x
	Tools to disclose existing knowledge and technologies		x
Structure	Sustainability, adaptability and affordability of structures		x
Envelope (incl. finishes)	Energy and environmental performance	x	x
	Multifunctional and adaptive buildings	x	x
Energy equipment	Thermal storage		
	Distributed/decentralised energy generation on a district level		
	Advanced heating and cooling, domestic hot water including RES & heat recovery		
Construction process	ICT aided construction		
	Improved construction performance	x	x
	Automated Construction	x	x
Performance monitoring	ICT systems interoperability	x	
	Open data standards		x
	Prediction = reality (incl. occupancy models)	x	x
End of Life	Innovative solutions and decision-support on renovation or new building		x

Shallow & Deep Geothermal

Thermal Energy Storage

District Heating & Cooling

Polygeneration

Large scale CHP

Micro and small scale CHP

Solar Active House

Solar Compact Hybrid System

Hybrid Systems

Heat Pumps & Sorption Cooling

# TARGETS

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## Target 10

Energy efficient, interoperable, self diagnostic and scalable storage, HVAC, lighting and energy solutions in-line with energy consumption standards are available for integration into new and refurbished buildings

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## Target 22

A supply chain of adaptable refurbishment solutions is structured taking into account the use value of building users in districts

## Target 23

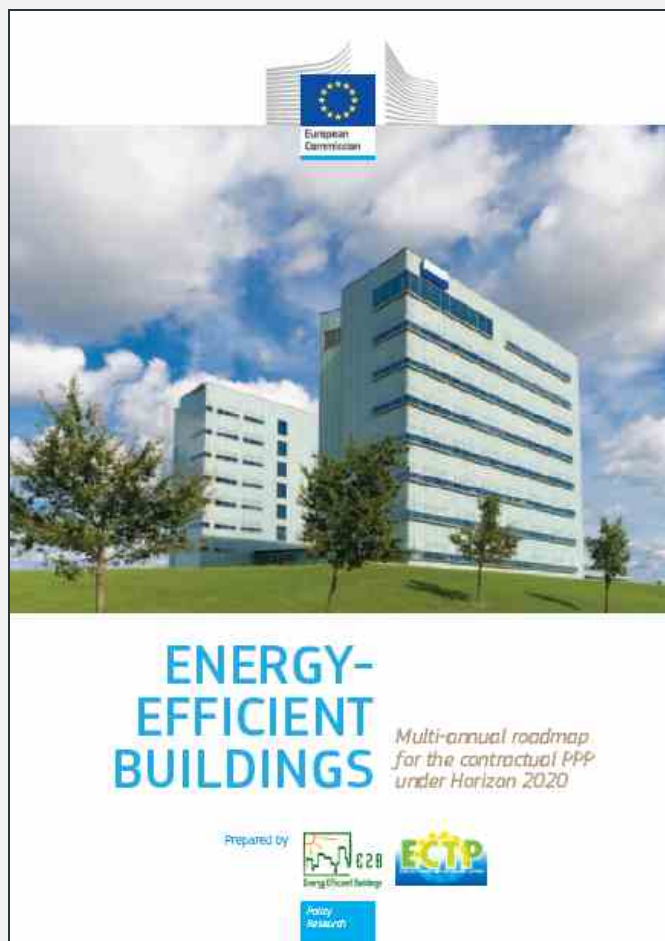
The systemic integration of components and sub-systems (e.g. structure, envelope, energy equipment in a smart grid/city environments) covers the whole building value chain

## Target 25

Integration technologies allow the full interoperability among stakeholders and systems



# THANKS FOR YOUR ATTENTION



[www.e2b-ei.eu](http://www.e2b-ei.eu)  
secretariat@e2b-ei.eu