

9 th ECTP Conference

The EU Construction Industry at the heart of the Green and Digital Transitions

OPENING PLENARY SESSION - Part I

*“Building our cities:  
Energy in construction and the  
built environment”*

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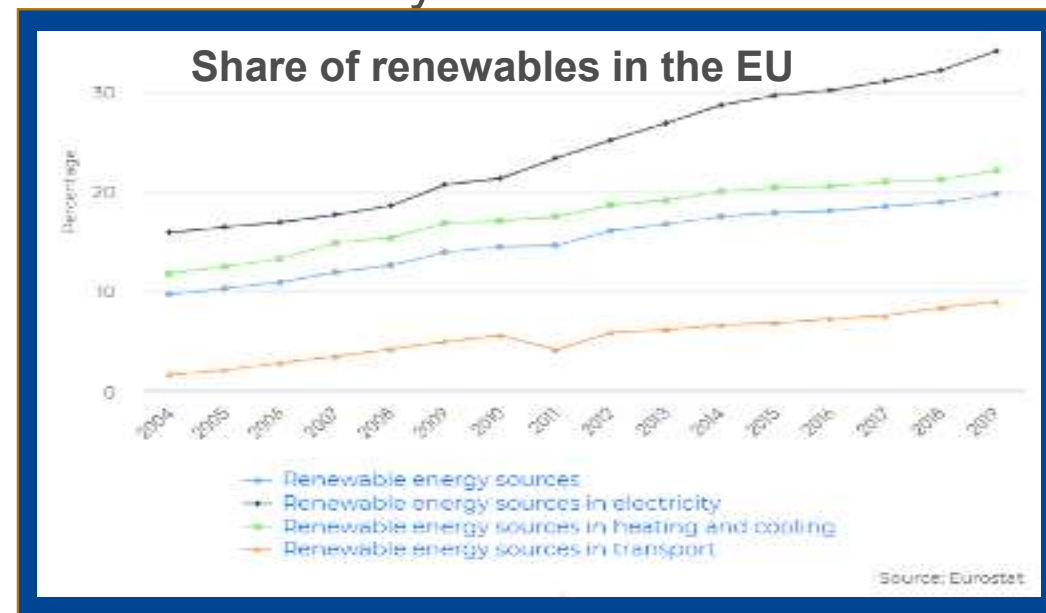


# Introduction



# Strategic context/global context **ENERGY SECTOR**

- People's well-being, industrial competitiveness & overall society functioning depends on **safe, secure, sustainable and affordable** energy.
- Employs in EU **1.6 M people**
- Added value: **4%** of non-financial EU business economy.
- Important purchaser & user of materials (technologies + infrastructures): huge potential for innovation for reducing mineral consumption and dependency.  
E.g. *Studies show that demand for critical minerals can grow by 4x in Sustainable Development Scenario (2040) and by 6x in Net Zero Emissions scenario (2050).*



# Strategic Context/Global Context

## Construction Sector

...including its extended value chain (e.g. material and equipment manufacturers, construction-service companies)

- the largest European single activity (EU 27: 9.5% of GDP and 43.2% of Gross Fixed Capital Formation)
- the biggest industrial employer. (12,7 Mill. workers)
- Main activities in 2019: non-residential (31,6%), rehabilitation/maintenance (28%) followed by new buildings and civil engineering works



- The built environment affects the quality of life and work of all EU-citizens.
- The construction sector is today on a critical path to help decarbonise the European economy by 2050.

# What are some of the Challenges?

- As part of the [European Green Deal](#), the Commission [proposed](#) (Sept. 2020) to raise the 2030 GHG reduction target, including emissions and removals, to at **least 55%** compared to 1990.
- To enable the EU to move towards a [climate-neutral economy](#) and implement its commitments under the [Paris Agreement](#) by updating its Nationally Determined Contribution.
- Key targets for 2030 from 1990 levels:
  - ✓ at least **40%** cuts in **greenhouse gas emissions**
  - ✓ At least **32%** share for **renewable energy**
  - ✓ At least **32.5%** improvement in **energy efficiency**
- The challenges placed on our energy systems and energy workers by the pandemic and the continuous need of keeping and developing skills and competences.
- To sustainably boost energy economic growth and renew Europe's energy related industry capacities in a **world of finite resources**. (*e.g. Clean energy technologies will account for more than 50% of overall demand of lithium, cobalt and nickel by 2040*)

# The decisive moment for Clean Energy transition

## Success requires an enormous ramp up of deployment and support policies

- The **recovery fund** from EC (July 2020) dedicated €225 billion to the energy transition (next 3 y).
- The foreseen revision of **Fit for 55' package directives** RED, EED, ETS (July 2021) or the EPBD (end 2021) includes major updates of energy and climate legislation.
- The **EU sector integration strategy** addressing the links of the various energy carriers with each other and the **EU strategy on off-shore renewable energy** aiming at achieving substantial installation targets
- The recent announcements for **plans for hydrogen development and deployment**, at the EU and MS level, but also as part of Mission Innovation 2.0
- The **Renovation Wave for Europe** (aiming at transforming 75% of non-energy-efficient buildings by 2050) and the change of paradigm set by the **Mission on Climate-Neutral and Smart Cities**
- The new **Circular Economy Action Plan** and the updated **EU industrial strategy**

## Success also requires a massive additional investment in Research and Innovation

# Horizon Europe Programme

## Cluster 5

### Destinations 3 & 4



# HORIZON EUROPE

# EURATOM

## SPECIFIC PROGRAMME: EUROPEAN DEFENCE FUND

*Exclusive focus on  
defence research  
& development*

Research  
actions

Development  
actions

## SPECIFIC PROGRAMME IMPLEMENTING HORIZON EUROPE & EIT\*

*Exclusive focus on civil applications*



### Pillar I EXCELLENT SCIENCE

European Research Council

Marie Skłodowska-Curie

Research Infrastructures



### Pillar II GLOBAL CHALLENGES & EUROPEAN INDUSTRIAL COMPETITIVENESS

Clusters

- Health
- Culture, Creativity & Inclusive Society
- Civil Security for Society
- Digital, Industry & Space
- Climate, Energy & Mobility
- Food, Bioeconomy, Natural Resources, Agriculture & Environment

Joint Research Centre



### Pillar III INNOVATIVE EUROPE

European Innovation  
Council

European Innovation  
Ecosystems

European Institute of  
Innovation & Technology\*

## WIDENING PARTICIPATION AND STRENGTHENING THE EUROPEAN RESEARCH AREA

Widening participation & spreading excellence

Reforming & Enhancing the European R&I system

Fusion

Fission

Joint  
Research  
Center

\* The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme



# Activities targeting the energy demand side, & CCUS



## Buildings

Highly energy-efficient  
and climate-neutral  
European building stock

New European Bauhaus

Built4People



## Industry

Thermal energy  
management in industry



## Carbon capture, utilisation and storage

Tackling CO<sub>2</sub> emissions  
from fossil power and  
industry

2021-2022	Budget (Mio €)	Share of total Cluster 5 budget	N. of topics	Share of total n. of Cluster 5 topics
Energy supply	1226.3	40%	67	36%
Energy use	244.0	8%	18	10%

# Activities targeting a clean, sustainable, secure and competitive energy supply



## Renewable energy

Wind, photovoltaic, concentrated solar power, ocean, hydro, geothermal, renewable fuels, bioenergy



## Energy systems

Grids, energy system integration, electrification of demand side sectors  
Integration of energy storage and energy carriers such as hydrogen



## Cross-cutting

ERA, SET Plan (CET Cofund, ETIPs)  
International (Mission Innovation, Africa)  
Geological Surveys

# Cluster 5 Partnerships

## Institutional Partnerships

- Transforming Europe's rail system
- Integrated Air Traffic Management
- Clean Aviation
- Clean Hydrogen

## Co-funded Partnerships

- Driving urban transitions to a sustainable future (DUT)
- Clean Energy Transition

## Co-programmed Partnerships

- Built4People | People-centric sustainable built environment
- Towards zero-emission road transport (2ZERO)
- Batteries: Towards a competitive European industrial battery value chain for stationary applications and e-mobility
- Zero-emission waterborne transport
- Connected, Cooperative and Automated Mobility (CCAM)

# Furthers aspects to be considered



# Two important cross-cutting aspects to consider: sustainability and circularity



# International collaborations also important

- We see new momentum in international collaborations
- The second phase of **Mission Innovation** was launched two weeks ago. The **Innovation Platform** brings together policy-makers, funders, innovators and international organisations around topics of shared interest to support knowledge-sharing, a common understanding of global RD&D priorities and to identify collaboration opportunities. **Materials for energy** and **Affordable Heating and Cooling in Buildings** activities have their space in the platform.
- **Technology Collaboration Programmes** of the International Energy Agency are also a successful enabler of international collaborations

# EU Mission Cities





## WHY A MISSION ON CLIMATE-NEUTRAL CITIES?

- **75%** of EU citizens live in cities (projected to increase to about 85% in 2050)
- More than **65%** of energy consumption and more than **70%** of CO2 emissions worldwide
- Air and noise pollution; congestion; dangerous roads increasing problems in cities – not just GHG.
- The **European Green Deal** at local level – where policy meets people.
- Cities have the **ambitions** to go further – but few have declared readiness to be climate neutral by 2030. We have to help cities address the barriers they face.





## OBJECTIVES OF THE MISSION

1

Deliver at least 100 climate-neutral and smart European cities by 2030;

2

Ensure that these cities act as experimentation and innovation hubs to put all European cities in a position to become climate-neutral by 2050.

*Actions to deliver climate neutrality will bring massive and more visible co-benefits: better air quality, less road congestion, more livable spaces*



## R&I CONTENT

- Portfolio of R&I activities targeting cities and communities will be launched in the **Horizon Europe Work Programme** for Missions
- **Goals**: develop capacity and showcase possibilities of scale-up and replicability
- **Complementarity** and **synergy** with ongoing and upcoming initiatives e.g. partnerships



## WHO CAN APPLY?

- Entities of more than 50 000 inhabitants.
- Participation of cities with at least 100 000 inhabitants is especially encouraged.
- For entities from Member States with five or less cities above 100 000 population, a lower threshold of 10 000 inhabitants will apply.
- By default, the applicant city commits the whole city to become climate-neutral. If duly justified, a city may propose to exclude one or more emission sources, but in this case needs to commit to a strategy of climate neutrality for these districts as soon as possible.



## HOW WILL THE APPLICATION PROCESS WORK?

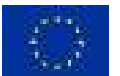
- October 2021: Publication of comprehensive info kit for cities to help cities prepare for the Call
- November 2021: Publication of Call for Expression of Interest addressed to cities (questionnaire)
- January 2022: Call closes
- By March 2022: Selection of participating cities
- As of mid 2022: Mission Platform works with first cities to develop Climate City Contracts

# New European Bauhaus



# What is the New European Bauhaus?

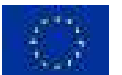
- The **New European Bauhaus** translates the **European Green Deal** into a **tangible, positive experience** in which all Europeans can participate and progress together.
- It **inspires a movement** to facilitate and steer the transformation of our societies along **three inseparable values**:
  - **Sustainability**, from climate goals, to circularity, zero pollution, and biodiversity
  - **Inclusion**, from valorising diversity, to securing accessibility and affordability
  - **Aesthetics**, quality of experience and style, beyond functionality
- The initiative's **approach is multi-level** from global to local, **participatory** and **transdisciplinary**.





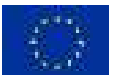
# Delivery of the NEB

- **Thematic axes of the transformation path:**
  - Reconnecting to **nature**;
  - Regaining a sense of **belonging**;
  - Prioritising the **places and people that need it the most**;
  - The need for **long term, life cycle thinking** in the **industrial ecosystem**
- **Three key interconnected transformations:**
  - Of **places on the ground**
  - Of the **enabling ecosystem for innovation**
  - Of **perspectives and ways of thinking** through **education and culture**
- **Cross-policy and cross-programmes**
  - Setting the policy context
  - Mobilising a set of EU programmes
  - Calling on Member States to mobilise EU resources in shared management
- **Working with the NEB Community**
  - **NEB Lab** to act as a 'think-and-do tank'
  - **NEB Festival** with the first edition in 2022



# Overview of research & innovation contribution

- **Horizon Europe is a key instrument to support the New European Bauhaus:**
  - Work Programme 2021-2022: **Clusters 2, 4, 5 and 6** contain actions that directly and indirectly contribute to the NEB
  - **Future Work Programmes will look to build on the first contributions** and better embed NEB principles and values in Horizon Europe
  - **EU Missions** share many policy and implementation characteristics with the NEB
  - **€25 million** cross-mission call for **lighthouse demonstrators**
- **Major R&I commitments in the NEB Communication:**
  - Organise a **high-level workshop on ‘research and innovation for the NEB’**, bringing together leading experts to provide a forward-looking research and innovation agenda supporting the NEB (30 November, Brussels)
  - From 2022 onwards, **pursue further synergies** with the activities launched under the **EU Missions**







EUROPEAN UNION



# Thank you!

**#EUmissions**

**#HorizonEU**

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