THE EU RESEARCH & INNOVATION PROGRAMME
2021 – 2027

ISABELLA PIROLO
EU DELEGATION TO SINGAPORE

Horizon Europe Launch Event - ASEAN
21 July 2021
Horizon Europe Programme
The European Institute of Innovation & Technology (EIT) is not part of the Specific Programme EURATOM HORIZON EUROPE.

**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**

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

**Clusters**

- 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

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Horizon Europe Budget: €95.5 billion (2021-2027)
(including €5.4 billion from NGEU – Next Generation Europe – programme of EU for Recovery from COVID-19 crisis)

Political agreement December 2020
€ billion in current prices

- Excellent Science
- Global challenges and European ind. comp.
- Innovative Europe
- Widening Part and ERA
CLIMATE, ENERGY AND MOBILITY

Cluster 5
## EU Policy priorities

### European Green Deal
- Climate Action; Clean Energy; Sustainable Mobility; Eliminating pollution; Building and renovating; Biodiversity; Sustainable Industry

### A Europe fit for the digital age
- Artificial Intelligence; European data strategy; European Industrial Strategy; Cybersecurity

### An economy that works for the people
- Internal market; Jobs, Growth and investment

### Promoting our European way of life
- European Security Union; European Health Union

### A stronger Europe in the world
- International partnerships; Trade policy; EU Foreign policy

### A new push for European Democracy
- Strategic foresight; Future of Europe

### Recent Commission initiatives:
#### Climate Action
- Fit for 55 package
- EU Climate Law (EU climate neutral by 2050)
- 2030 Climate Target Plan (55% GHG reduction by 2030)
- Make sectoral legislation ‘fit for 55’
- EU Climate Adaptation Strategy
- Zero Pollution Action Plan

#### Energy
- EU Strategy for Energy System Integration
- Hydrogen strategy
- Renovation wave for Europe
- Offshore renewable energy

#### Mobility
- Sustainable and Smart Mobility Strategy

#### Research and Innovation
- A new European Research Area
Cluster 5 - overview

Cluster 5 “Climate, Energy and Mobility”
EUR 15.1 billion (2021-2027)

Legal base

Cluster 5 work programme
(including co-funded and co-programmed European Partnerships)

Institutional Partnerships
(Clean Hydrogen; Rail; Clean Aviation; Air Traffic Management)

Missions
(e.g. on Cities; Climate Adaptation; Oceans)

Climate Science and Solutions
Energy Supply
Energy Systems and Grids
Buildings and Industrial Facilities in Energy Transition
Communities and Cities
Industrial Competitiveness in Transport
Clean, Safe and Accessible Transport and Mobility
Smart Mobility
Energy Storage

Implementation
Cluster 5 – Links to other clusters

Cluster 1
- Health impacts of climate change, energy production/consumption, transport emissions and mobility patterns

Cluster 2
- Societal dimension of transformation

Cluster 3
- Protection of critical infrastructure
- Cybersecurity
- Climate-related disaster risk management

Cluster 4
- Manufacturing
- Low-carbon, clean, circular industries
- Artificial Intelligence and Robotics
- Advanced Materials
- Space

Cluster 6
- Bioeconomy
- Circular economy
- Environmental observation
CLIMATE, ENERGY AND MOBILITY

Cluster 5

Work programme 2021-2022
Programme intervention logic

- **Legal base**: May 2021
- **Strategic Plan (Programme-level)**: March 2021
- **Work programme (Cluster-level)**: June 2021

### Timeline
- **2021-2027**: Programme intervention logic
- **2021-2024**: EU policy priorities, Key Strategic Orientations for R&I, Expected impacts
- **2021-2022**: Destinations, Calls, Topics, Expected outcomes

### Years
- 2021-2027
- 2021-2024
- 2021-2022

### Notes
- **Entry into force**: May 2021
- **Adopted**: March 2021
- **Adopted**: June 2021
Cluster 5 – Expected impacts

Transition to a climate-neutral and resilient society and economy enabled through advanced climate science, pathways and responses to climate change (mitigation and adaptation)

Clean and sustainable transition of the energy and transport sectors towards climate neutrality facilitated by innovative cross-cutting solutions

Efficient and sustainable use of energy, accessible for all is ensured through a clean energy system and a just transition

Towards climate-neutral and environmental friendly mobility through clean solutions across all transport modes while increasing global competitiveness of the EU transport sector

Open strategic autonomy by leading the development of key digital, enabling and emerging technologies, sectors and value chains

Restoring Europe’s ecosystems and biodiversity, and managing sustainably natural resources

Making Europe the first digitally enabled circular, climate-neutral and sustainable economy

Creating a more resilient, inclusive and democratic European society

Safe, seamless, smart, inclusive, resilient, climate neutral and sustainable mobility systems for people and goods

More efficient, clean, sustainable, secure and competitive energy supply through new solutions for smart grids and energy systems based on more performant renewable energy solutions

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### Cluster 5 Work Programme - Overview

<table>
<thead>
<tr>
<th>Destination 1 – Climate science</th>
<th>Destination 2 – Cross-cutting solutions</th>
<th>Destination 3 – Energy supply</th>
<th>Destination 4 – Energy demand</th>
<th>Destination 5 – Clean and competitive solutions for all transport modes</th>
<th>Destination 6 – Transport and Smart Mobility services</th>
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</thead>
<tbody>
<tr>
<td>Climate science</td>
<td>Batteries</td>
<td>Renewable energy</td>
<td>Buildings</td>
<td>Zero-emission road transport</td>
<td>Connected, Cooperative and Automated Mobility</td>
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<td></td>
<td>Cities</td>
<td>Energy system, grids and storage</td>
<td>Industry</td>
<td>Aviation</td>
<td>Multimodal and sustainable transport systems for passengers and goods</td>
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<td>Breakthrough technologies</td>
<td>CCUS</td>
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<td>Waterborne transport</td>
<td>Safety and resilience</td>
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<td>Citizen and stakeholder engagement</td>
<td>Cross-cutting activities</td>
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<td>Transport-related health and environmental issues</td>
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**CCUS**

**Cross-cutting activities**
Cluster 5 Work programme - overview

<table>
<thead>
<tr>
<th>Destination</th>
<th>Budget (Mio €)</th>
<th>Share of total</th>
<th>Number of topics</th>
<th>Share of total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Climate science</td>
<td>274.0</td>
<td>9%</td>
<td>17</td>
<td>9%</td>
</tr>
<tr>
<td>Cross-sectorial solution</td>
<td>387.5</td>
<td>13%</td>
<td>25</td>
<td>13%</td>
</tr>
<tr>
<td>Energy supply</td>
<td>1226.3</td>
<td>40%</td>
<td>67</td>
<td>36%</td>
</tr>
<tr>
<td>Energy use</td>
<td>244.0</td>
<td>8%</td>
<td>18</td>
<td>10%</td>
</tr>
<tr>
<td>Clean and competitive transport modes</td>
<td>511.0</td>
<td>17%</td>
<td>31</td>
<td>17%</td>
</tr>
<tr>
<td>Smart mobility systems for people and goods</td>
<td>380.0</td>
<td>13%</td>
<td>28</td>
<td>15%</td>
</tr>
<tr>
<td>TOTAL</td>
<td>3022.8</td>
<td></td>
<td>186</td>
<td></td>
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EU contribution per Destination and type of action (2021-2022, in Mio EUR)

![Bar chart showing EU contribution per destination and type of action](chart.png)
Cross-cutting priorities

Contribution of cluster 5 topics to cross-cutting policy priorities
(percentage of total call budget; WP 2021-2022)

Budget share dedicated to climate action in other HE parts:
- Cluster 1: 300 M€ (17%)
- Cluster 2: 30 M€ (7%)
- Cluster 3: 40 M€ (10%)
- Cluster 4: 1235 M€ (41%)
- Cluster 5: 2630 M€ (87%)
- Cluster 6: 1345 M€ (72%)

Budget share dedicated to digital agenda in other HE parts:
- Cluster 1: 600 M€ (34%)
- Cluster 2: 95 M€ (22%)
- Cluster 3: 220 M€ (54%)
- Cluster 4: 1840 M€ (61%)
- Cluster 5: 605 M€ (20%)
- Cluster 6: 375 M€ (20%)
International Cooperation

• General opening of Horizon Europe to international cooperation
  • Low- and middle-income countries can participate with EU funding
  • Other countries can participate, normally without EU funding, except in justified cases

• International cooperation explicitly encouraged in 42 topics of the cluster
  • Flagged on portal as ‘A Stronger Europe in the World’

• Association of third countries
  • Key novelty of Horizon Europe
Important websites

Cluster 5 draft work programme 2021-2022

Information event on cluster 5 calls
https://www.horizon-europe-infodays2021.eu/event/cluster-5-climate-energy-mobility

Funding & Tender Portal
https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/programmes/horizon
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Horizon Europe website: http://ec.europa.eu/horizon-europe

European Innovation Council: http://ec.europa.eu/research/eic

European Research Council: https://erc.europa.eu/
Thank you!

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