

# Horizon Europe 2021-2027

Pillars I, III and IV

**HORISONTTI EUROOPPA**

— EU:N TUTKIMUS- JA INNOVAATIO-OHJELMA —

# Horizon Europe, ~95,5 billion euros for 2021 – 2027



## Pillar 1 Excellent Science

European Research Council

Marie Skłodowska-Curie Actions

Research Infrastructures



## Pillar 2 Global Challenges and European Industrial Competitiveness

### Clusters

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

Joint Research Centre



## Pillar 3 Innovative Europe

European Innovation Council

European innovation ecosystems

European Institute of Innovation  
and Technology

## Widening Participation and Strengthening the European Research Area

Widening participation and spreading excellence

Reforming and Enhancing the European R&I system

# Pillar I: EXCELLENT SCIENCE: reinforcing and extending the excellence of the Union's science base

## European Research Council (ERC)

- Supports excellence in frontier research through a bottom-up, individual-based, pan-European competition
  - Independent Scientific Council
  - Excellence as the only criterion,
  - Support for the individual scientist – no networks!
  - Global peer-review
  - Bottom-up, all fields of science

### ERC contact in Finland

**Annika Raitala**, Academy of Finland

## Marie-Sklodowska-Curie Actions (MSCA)

- Equipping researchers with new knowledge and skills through mobility and training
  - International mobility
  - Bottom up, open to all domains of R&I
  - Open to the whole world
  - Supervision, mentoring, career guidance and career development
  - Participation of both academic and non-academic (private) sector organisations

### MSCA contact in Finland

**Satu Huuha-Cissokho**, Academy of Finland

## Research Infrastructures

- Integrated and inter-connected world-class research infrastructures
  - Developing, consolidating and optimising European Research Infrastructures
  - Enabling an operational European Open Science Cloud (EOSC) ecosystem
  - For frontier research and for challenge-driven research (e.g. health research, and green and digital transformation)

### Research Infrastructure contact in Finland

**Merja Särkioja**, Academy of Finland

# Pillar III: European Innovation Council, EIC

Support to the full innovation cycle from **research and development** to **rapid scale up** of innovative technologies and companies (mainly start-ups and SMEs) at international level.

- **Pathfinder** (ex-FET): early stage research of breakthrough technologies by a multidisciplinary consortium
- **Transition**: develop market readiness of most potential research findings – open only to Pathfinder or ERC PoC projects
- **Accelerator** (ex SME Instrument): finalize the technology, commercialisation and scale-up by single innovative SMEs

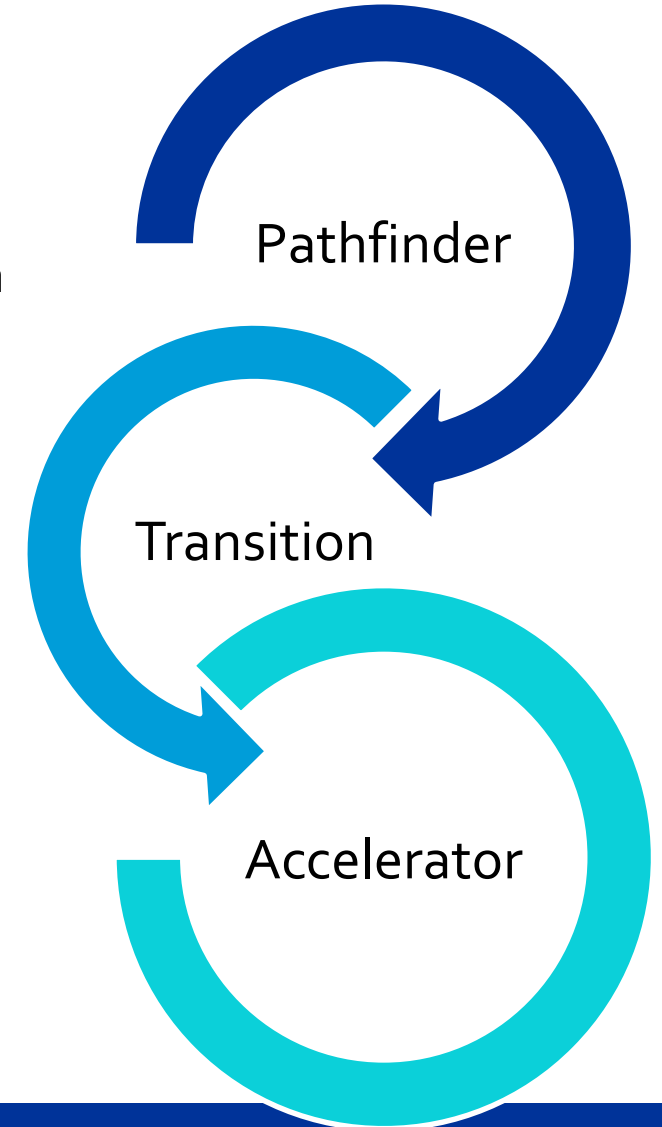
Funding mainly through **bottom-up schemes** – *Open Calls*

All instruments also contribute to **thematic priorities**: Health & Biotech, Digital, Energy, Climate & Environment – *Challenge Calls*

## EIC contacts in Finland

Elina Holmberg, Business Finland

Hannele Lahtinen, Academy of Finland



# Pillar IV: Widening participation and strengthening the European Research Area

A horizontal programme supporting

- 1) excellence and development of critical mass in the low R&I performing Member states (= widening countries), i.a. through collaboration with more R&I intensive MSs
- 2) mobility to widening countries (Inclusion Fellowships, ERA Chairs)
- 3) development of institutional policies and practices in ERA, related e.g. to open science, gender equality, citizen science, research integrity, science communication

**Widening/ERA contact in Finland**

Vera Mikkilä, Academy of Finland

# Up-coming Horizon Europe events in Finland

<https://www.businessfinland.fi/suomalaisille-asiakkaille/palvelut/rahoitus/horizontti-2020/lyhyesti>  
-> tapahtumat

- 13.1. Call information on HEU Cluster 1
- 14.1. Call information on HEU Cluster 5
- 14.1. Call information on HEU Cluster 2
- 19.1. Call information on HEU Clusteri 4
- 19.1. Euroopan innovaatio- ja teknologiainstituutti (EIT)
- 21.1. Call information on HEU Cluster 3
- 25.1. EOSC in Finland and in the European context
- 5.2. Horizontti Eurooppa: T&i-kumppanuudet



# Horizon Europe cluster 5

Meeting of the Expert Group E03662 - Sub group 'Climate, Energy and Mobility',

*Reijo Munther, Timo Ritonummi, Tanja Suni, Johanna Särkijärvi, Kaisa Pirkola*

# Where we stand and next steps *(tentative timeline, subject to MFF progress)*





# Destination 1: Climate sciences and responses

- Advancing climate science is essential to inform the societal transition towards a climate neutral and climate resilient society by 2050, both in the EU and globally. It must further our understanding :
  - On past, present and expected future changes in climate;
  - On its implications on ecosystems and society;
  - On the implementation of effective mitigation and adaptation solutions in a coherent manner.
- Building user-oriented knowledge, supported by improved Earth System and Integrated Assessment Models will inform human response to global change on all levels.
- Studying the interactions between climate change and ecosystems is essential for a more complete understanding of the Earth system and the effective deployment of solutions, including ecosystem-based ones.
- Incorporating and advancing social sciences and behavioural science methodologies will accelerate societal transformation and institutional development and thus enable an efficient and just transition.

# Destination 1

Earth system science	CSR 1 – CSR 3
Analysis of pathways leading to climate neutrality	CSR 4 – CSR 9
Adaptation and climate services	CSR 10 – CSR 12
Social science to tackle climate change	CSR 13 – CSR 14
Climate-ecosystem interactions	CSR 15 – CSR 17

# Destination 2

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Batteries	Raw materials processing technologies	BAT 1 - 2
	Advanced materials	BAT 3 - 6
	Manufacturing processes	BAT 7 – BAT 10
	Battery Systems	BAT 11 – BAT 14
	Recycling technologies	BAT 15 – BAT 17
	Cross-cutting	BAT 17 – 20

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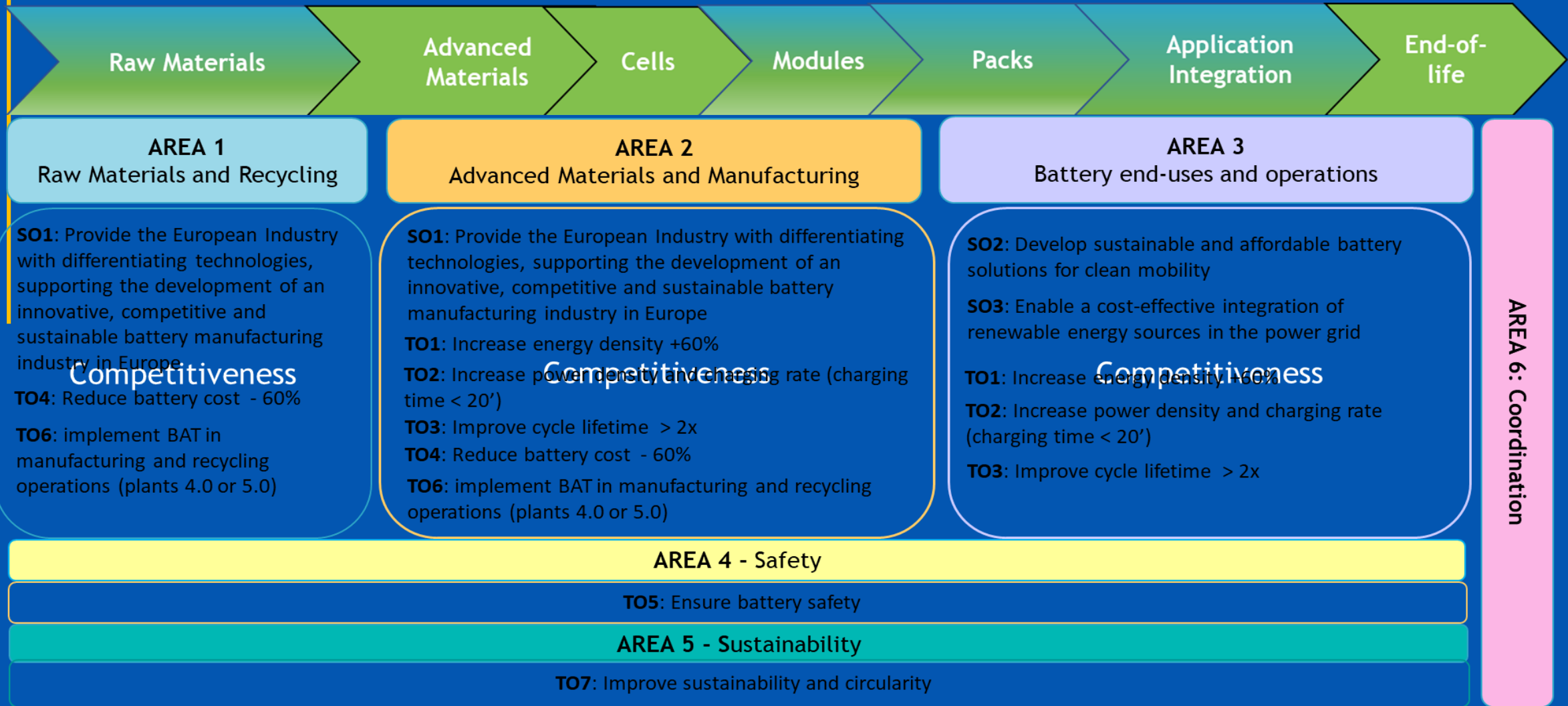
| Cities and Communities | CS 1 – CS 16 |

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Breakthrough technologies	BT 1 – BT 5
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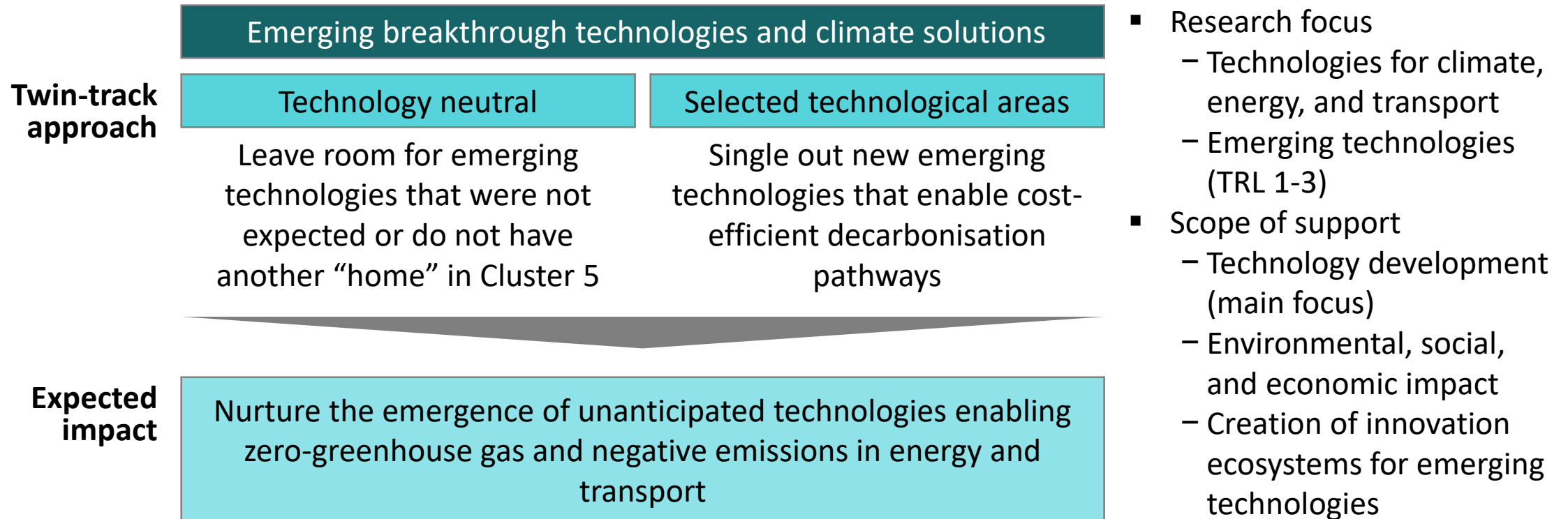
# Batteries



# Cities and Communities

- Promote an **integrated approach** to city development, maximising synergies and cross-fertilisation across sectors **for transformation to a decarbonised and sustainable society**, with **citizens always at the centre of actions**
- Proposed topics reflect **collective thinking** and **co-creation** among 10 DGs (RTD, ENER, MOVE, CNECT, JRC, ENV, CLIMA, EMPL, HOME, MARE,) and 2 EAs (EASME, INREA); **fully aligned to orientation document and Commission’s political priorities**; take **full account of MS’ comments** to the **issue paper**
- **15 topics** (10/2021, 5/2022); **1 co-funded partnership** (Driving Urban Transitions to a sustainable future); **optimal use of types of activities** (9 IA, 4 RIA, 2 CSA) to cover entire “value chain”: development, piloting, demonstration, replication and up-taking of new knowledge and innovative solutions

# Emerging breakthrough technologies and climate solutions



# Destination 3

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Renewable energy      RES 1 – RES 69

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Energy systems, grids and storage      ESGS 1 – ESGS 21

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Carbon capture, utilisation and storage      CCUS 1 CCUS 5

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Cross-cutting issues      CC 1 – CC 2

# Destination 4

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Highly energy-efficient and climate neutral EU building stock

Non-partnership related topics

BEE 1 – BEE 10

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Partnership-related topics

B4P 11 – B4P 18

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Industrial facilities

IND 1 – IND 4



# Destination 5

Zero-emission  
road transport

ZERT 1 – ZERT 13

Aviation

AVI 1 – AVI 5

Waterborne  
transport

WAT 1 – WAT 16

Impact of  
transport on  
environment and  
human health

THE 1 – THE 3

# Destination 6

## Connected, Cooperative and Automated Mobility (CCAM)

- CCAM 1 - CCAM 14

## Multimodal and sustainable transport systems for passengers and goods

- MSTs 1 – MSTs 12

## Safety and resilience - per mode and across all transport modes

- **Safety in Urban Areas/ Road Transport Safety**
  - SAFE 1 – SAFE 3
- **Waterborne Safety and Resilience**
  - SAFE 4 – SAFE 5
- **Aviation Safety and Resilience**
  - SAFE 6 – SAFE 7



# European Partnerships

State-of-play

# Candidate partnerships' state-of-play (1/2)

<b>Clean Hydrogen</b>	<ul style="list-style-type: none"><li>• SRIA final version ready in few weeks by Hydrogen Europe and Hydrogen Europe Research</li><li>• Preparations underway by Hydrogen Europe/Research &amp; EC of multi annual work programme</li></ul>	<b>Transforming Europe's rail system</b>	<ul style="list-style-type: none"><li>• SRIA: work in progress</li><li>• Launched call for expression of interest for potential founding members - deadline 01/10/2020</li></ul>
<b>Clean Aviation</b>	<ul style="list-style-type: none"><li>• Final draft SRIA publically available</li><li>• Call for expression of interest for partners and ideas ongoing (until 30/11/2020)</li><li>• SRIA may be updated based on call for expression of interest outcomes</li></ul>	<b>Clean Energy Transition</b>	<ul style="list-style-type: none"><li>• SRIA: 6 Stakeholder Dialogues, public consultation over summer. Planned to be adopted at SET-Plan Conference on 23-24/11/2020</li></ul>
<b>Integrated Air Traffic Management</b>	<ul style="list-style-type: none"><li>• SRIA: public consultation in July, stakeholder workshop in September</li><li>• Call for expression of interest for new partners to be launched</li></ul>	<b>Driving Urban Transition</b>	<ul style="list-style-type: none"><li>• SRIA 2.0 of JPI Urban Europe, several online public consultation events</li><li>• Membership: indicative list of potential partners</li></ul>

# Candidate partnerships' state-of-play (2/2)

<b>2ZERO</b>	<ul style="list-style-type: none"><li>• SRIA: revision with stakeholders ongoing</li><li>• Stakeholders consultation/event under definition (Nov- Dec 2020)</li></ul>	<b>Batteries</b>	<ul style="list-style-type: none"><li>• SRIA: finalised end September; public consultation workshops: 9-14/09/2020</li><li>• &gt;300 interested organisations for private side association members</li></ul>
<b>CCAM</b>	<ul style="list-style-type: none"><li>• 2<sup>nd</sup> version of SRIA finalised in Nov 2020</li><li>• Stakeholder info &amp; consultation event in Nov 2020</li></ul>	<b>Built 4People</b>	<ul style="list-style-type: none"><li>• SRIA: development with B4P partners (&gt;30 entities: RTOs, NGOs and industry) and 9 DGs, followed by enlarged consultation: 140 entities (ECTP) &amp; all GBCs in Europe (21 countries) deadline 25/09/2020</li></ul>
<b>Zero Emission Waterborne Transport</b>	<ul style="list-style-type: none"><li>• Follow up Workshop held on 27 Nov 2020p</li><li>• Open public consultation results and 2<sup>nd</sup> revised draft SRIA <a href="#">published</a></li><li>• Final SRIA to be annexed to MoU</li></ul>		

***Partnerships' proposals and contact points' details on [HE website](#)***

# Kiitos!

## Horizon Europe 2021-2027

Lisää tietoa: [www.horisonttieurooppa.fi](http://www.horisonttieurooppa.fi)

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