



# Horizon Europe

Framework programme for research and innovation 2021–2027



# Våra kontaktuppgifter

## Kluster 5-område: NCP:

Energi Alexandro Caruso (Energimyndigheten)  
[Alexandro.caruso@energimyndigheten.se](mailto:Alexandro.caruso@energimyndigheten.se)

Mobilitet Annika Strömdahl (Vinnova)  
[Annika.stromdahl@vinnova.se](mailto:Annika.stromdahl@vinnova.se)

Klimat Malin Mobjörk (Formas)  
[malin.mobjork@formas.se](mailto:malin.mobjork@formas.se)

---

The Horizon framework programme is a **POLITICAL INSTRUMENT** where research and innovation are needed to achieve political priorities



# Horizon Europe – 95,5 billion euro



Climate action target, i.e. 35% of the programme's budget, refers to Horizon Europe as a whole. This requires that ALL programme parts (also pillar 1 and 3) address climate-related priorities.



# Cluster 5

## Climate, Energy and Mobility

# Global Challenges and European Industrial Competitiveness

Boosting key technologies and solutions, underpinning EU policies and Sustainable Development Goals



Health



Culture, Creativity and Inclusive Society



Civil Security for Society



Digital, Industry and Space



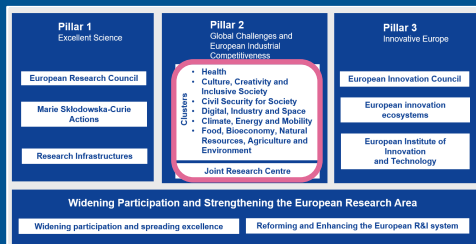
Climate, Energy and Mobility



Food, Bioeconomy, Natural Resources, Agriculture and Environment



Joint Research Centre



# 5. Climate, Energy and Mobility

---

## Aims

- accelerate twin green and digital transition
- climate neutrality in Europe by 2050
- deep reduction of greenhouse gas emissions
- zero pollution
- becoming a globally leading actor for sustainable technologies and services



# Related European priorities

*“Europe [...] is committed to keep delivering the knowledge for enabling efficient pathways and just transitions to climate neutrality”*



European Green Deal



Europe fit for the digital age



An economy that works for people



# Related strategies



European Climate Law & A Clean planet for all strategy



REPowerEU



EU Fit for 55



Sustainable and Smart Mobility Strategy

# Partnerships under Cluster 5

## Institutionalised

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

## Co-funded

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

## Co-programmed

- 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)

# Mission areas

Missions are not about R&I – they are about delivering a public good.  
They are used to agree on a European level what we want to change and deliver it in society.

1



**Adaptation to  
Climate Change,  
including Societal  
Transformation**

2



**Cancer**

3



**Healthy Oceans,  
Seas, Coastal and  
Inland Waters**

4



**Climate-Neutral and  
Smart Cities**

5



**Soil Health and  
Food**

# Missions connected to Cluster 5

Adaptation to climate change including societal transformation



 **SWEDEN**  
Blekinge  
Gothenburg  
Kristianstad  
Lysekil  
Värmland

Climate-neutral and smart cities



**SWEDEN**  
Gävle  
Gothenburg  
Helsingborg  
Lund  
Malmö  
Stockholm  
Umeå



# Cluster 5 - Destinations

# Cluster 5 – Destinations

Accelerating green and digital transformation of economy, industry and society achieving climate neutrality in Europe by 2050



**Destination 1**  
Climate sciences and responses



**Destination 2**  
Cross-sectoral solutions for the climate transition



**Destination 3**  
Sustainable, secure and competitive energy supply



**Destination 4**  
Efficient, sustainable and inclusive energy use



**Destination 5**  
Clean and competitive solutions for all transport modes



**Destination 6**  
Safe Resilient Transport and Smart Mobility services for passengers and goods

# Destination 1

## Climate sciences and responses

- Improving the knowledge for climate mitigation and adaptation and related societal transformation
- Contributing to international assessments, such as IPCC
- Strengthening the European research area on climate change



# Destination 2

## Cross-sectoral solutions for the climate transition

- Complex, cross-sectoral challenges
- Sustainable batteries and value chains
- Cities and communities
- Transformation empowering citizens





# Destination 3

Sustainable, secure and competitive energy supply

- European global leadership
- Sustainable solutions for specific sectors
- Stable and affordable renewable energy
- Carbon capture usage and storage



# Destination 4

## Efficient, sustainable and inclusive energy use

- Demand side solutions
- Energy- and resource efficient buildings
- Using industrial excess heat to reduce emissions and increase energy efficiency



# Destination 5

Clean and competitive solutions  
for all transport modes

- Transforming road transport to zero-emission mobility
- Reduction of all aviation impacts and emissions
- Low-carbon and clean solutions in the shipping sector
- Reducing emissions and their impacts



# Destination 6

## Safe, Resilient Transport and Smart Mobility services for passengers and goods

- Decrease transport accidents, incidents and fatalities
- Accelerate the implementation of innovative connected, cooperative and automated mobility systems (CCAM)
- Develop multimodal transport systems through sustainable and smart freight transport and logistics



# Indicative opening dates for topics

Call	Identifier	Opening
Call - Climate sciences and responses	HORIZON-CL5-2023-D1-01	13-dec-22
Call - Climate sciences and responses	HORIZON-CL5-2024-D1-01	12-sep-23
Call - Cross-sectoral solutions for the climate transition	HORIZON-CL5-2023-D2-01	13-dec-22
Call - Cross-sectoral solutions for the climate transition	HORIZON-CL5-2023-D2-02	04-maj-23
Call - Cross-sectoral solutions for the climate transition	HORIZON-CL5-2024-D2-01	07-dec-23
Call - Cross-sectoral solutions for the climate transition	HORIZON-CL5-2024-D2-02	07-maj-24
Call - Sustainable, secure and competitive energy supply	HORIZON-CL5-2023-D3-01	13-dec-22
Call - Sustainable, secure and competitive energy supply	HORIZON-CL5-2023-D3-02	04-maj-23
Call - Sustainable, secure and competitive energy supply	HORIZON-CL5-2023-D3-03	04-maj-23
Call - Sustainable, secure and competitive energy supply	HORIZON-CL5-2024-D3-01	12-sep-23
Call - Sustainable, secure and competitive energy supply	HORIZON-CL5-2024-D3-02	07-maj-24
Call - Efficient, sustainable and inclusive energy use	HORIZON-CL5-2023-D4-01	13-dec-22
Call - Efficient, sustainable and inclusive energy use	HORIZON-CL5-2023-D4-02	04-maj-23
Call - Efficient, sustainable and inclusive energy use	HORIZON-CL5-2024-D4-01	07-dec-23
Call - Efficient, sustainable and inclusive energy use	HORIZON-CL5-2024-D4-02	07-maj-24
Call - Clean and competitive solutions for all transport modes	HORIZON-CL5-2023-D5-01	13-dec-22
Call - Clean and competitive solutions for all transport modes	HORIZON-CL5-2024-D5-01	07-dec-23
Call - Safe, Resilient Transport and Smart Mobility services for passengers and goods	HORIZON-CL5-2023-D6-01	04-maj-23
Call - Safe, Resilient Transport and Smart Mobility services for passengers and goods	HORIZON-CL5-2024-D6-01	07-maj-24

ALWAYS consult the Funding and Tenders Portal for the updated information: [Funding & tenders \(europa.eu\)](https://europea.eu)



# Framework for participation

Search by key words

Energy

 Match whole words only GRANTS TENDERS

## Submission status

Forthcoming

Open for submission (16)

Closed

## Programming period

2021 - 2027 (16)

Horizon Europe (HORIZON)

## Programme part

Select a Programme part...

## Mission

Select a Mission...

## Destination

Select a Destination...

## Quick search on specific priorities

Select a Priority...

## Funding and tenders (16)

 Need help?

Sort by:

Submission status

## More sustainable buildings with reduced embodied energy / carbon, high life-cycle performance and reduced life-cycle costs (Built4People)

HORIZON-CL5-2022-D4-02-05

Call for proposal

Grant

Programme Horizon Europe (HORIZON)  
Type of action HORIZON Innovation Actions  
Opening date 06 September 2022

Status Open for submission  
Deadline model single-stage  
Deadline date 24 January 2023 17:00:00 Brussels time

## Support to the activities of technology areas of the SET Plan: Action dedicated to energy efficiency in industry

HORIZON-CL5-2022-D4-02-06

Call for proposal

Grant

Programme Horizon Europe (HORIZON)  
Type of action HORIZON Coordination and Support Actions  
Opening date 06 September 2022

Status Open for submission  
Deadline model single-stage  
Deadline date 24 January 2023 17:00:00 Brussels time

## Development of digital solutions for existing hydropower operation and maintenance

HORIZON-CL5-2022-D3-03-08

Call for proposal

Grant

Programme Horizon Europe (HORIZON)  
Type of action HORIZON Research and Innovation Actions  
Opening date 06 September 2022

Status Open for submission  
Deadline model single-stage  
Deadline date 10 January 2023 17:00:00 Brussels time

## Recycling end of life PV modules

HORIZON-CL5-2022-D3-03-09

Call for proposal

Grant

Programme Horizon Europe (HORIZON)  
Type of action HORIZON Innovation Actions

Status Open for submission  
Deadline model single-stage

# Funding and Tenders Portal

The screenshot shows the 'Horizon Europe (HORIZON)' portal. The top navigation bar includes 'SEARCH FUNDING & TENDERS', 'PROJECTS & RESULTS', and 'WORK AS AN EXPERT'. Two dropdown menus are highlighted with red boxes: 'HOW TO PARTICIPATE' (containing 'Key steps', 'Reference documents', 'Participant register', and 'Partner search') and 'SUPPORT' (containing 'Support overview', 'Guidance & Manuals', 'FAQ', and 'Helpdesk & Support Services'). A 'clear filter' button is visible on the right.

The main content area features a title: 'More efficient and effective multimodal freight transport nodes to increase flexibility, service visibility and reduce the average cost of freight transport'. Below this is the 'TOPIC ID: HORIZON-CL5-2021-D6-01-07'.

A 'Grant' label is present above a sidebar menu on the left, which is also highlighted with a red box. The sidebar includes: 'General information', 'Topic description', 'Destination', 'Conditions and documents', 'Partner search', 'Submission service', 'Topic related FAQ', 'Get support', and 'Call updates'.

The main content area is divided into sections, with the 'General information' section highlighted by a red box. It contains the following details:

- Programme:** Horizon Europe Framework Programme (HORIZON)
- Call:** [Safe, Resilient Transport and Smart Mobility services for passengers and goods \(HORIZON-CL5-2021-D6-01\)](#) (with a 'See budget overview' button)
- Type of action:** HORIZON-IA HORIZON Innovation Actions
- Type of MGA:** HORIZON Action Grant Budget-Based [HORIZON-AG] (with an 'Open for submission' button)
- Deadline model:** single-stage
- Opening date:** 24 June 2021
- Deadline date:** 19 October 2021 17:00:00 Brussels time

The 'Topic description' section is also highlighted with a red box. It includes an 'ExpectedOutcome:' section and a list of project results:

- More efficient, effective and sustainable management of goods and freight flows in (air)ports and inland terminals, taking into account all costs (economic, social and environmental) of the proposed solutions/innovations, including externalities and possible rebound effects.
- Expanded throughput of the nodes thanks to increased operational efficiency and optimised use of assets and infrastructures, without expanding the physical facilities.
- Improved access to transshipment services at reduced costs.
- More visible and standardised services provided within the multimodal freight transport nodes, seamlessly accessible by end users to maintain continuous door-to-door tracking of freight locations

A 'Go back to search results' button is located at the bottom left, and a 'show more...' button is at the bottom center.



# Work Programme (WP)

Destinations

Call areas

Topics

<b>Destination – Cross-sectoral solutions for the climate transition.....</b>	<b>70</b>
<b>Call - Cross-sectoral solutions for the climate transition.....</b>	<b>74</b>
Conditions for the Call .....	74
A competitive and sustainable European battery value chain.....	75
HORIZON-CL5-2021-D2-01-01: Sustainable processing, refining and recycling of raw materials (Batteries Partnership) .....	76
HORIZON-CL5-2021-D2-01-02: Advanced high-performance Generation 3b (high capacity / high voltage) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership) .....	78
HORIZON-CL5-2021-D2-01-03: Advanced high-performance Generation 4a, 4b (solid-state) Li-ion batteries supporting electro mobility and other applications (Batteries Partnership) .....	80
HORIZON-CL5-2021-D2-01-04: Environmentally sustainable processing techniques applied to large scale electrode and cell component manufacturing for Li ion batteries (Batteries Partnership) .....	82
HORIZON-CL5-2021-D2-01-05: Manufacturing technology development for solid-state batteries (SSB, Generations 4a - 4b batteries) (Batteries Partnership) .....	84
HORIZON-CL5-2021-D2-01-06: Sustainable, safe and efficient recycling processes (Batteries Partnership) .....	86
HORIZON-CL5-2021-D2-01-07: Support for establishment of R&I ecosystem, developing strategic forward-looking orientations to ensure future skills development, knowledge and technological leadership for accelerated disruptive technology exploration and uptake (Batteries Partnership) .....	88
<b>Emerging breakthrough technologies and climate solutions .....</b>	<b>90</b>
HORIZON-CL5-2021-D2-01-08: Emerging technologies for a climate neutral Europe.....	90

Topic

**HORIZON-CL5-2021-D2-01-06: Sustainable, safe and efficient recycling processes (Batteries Partnership)**

**Specific conditions**

<i>Expected EU contribution per project</i>	The Commission estimates that an EU contribution of between EUR 9.00 and 10.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
<i>Indicative budget</i>	The total indicative budget for the topic is EUR 30.00 million.
<i>Type of Action</i>	Research and Innovation Actions
<i>Technology Readiness Level</i>	Activities are expected to achieve TRL 5-6 by the end of the project – see General Annex B.

Expected Outcome

**Expected Outcome:** Projects are expected to contribute to the following outcomes:

- Improved access to battery materials and strengthened European raw material independency by increased circularity of material flows and use of the secondary raw materials in new batteries produced in Europe.
- Increased European competitiveness offering sustainable, safe, energy efficient and low carbon footprint battery recycling technologies and upscaleable solutions.
- Reduced recycling cost and environmental impacts through new and disruptive concepts for very high efficiency recycling.
- Improved health and safety aspects of recycling.
- The industry is prepared to meet the new regulatory targets for the recycling.

Scope

**Scope:** In order to effectively exploit the vast amounts of EV and stationary battery waste emerging in the next decades, as well as the increasing amounts of production scrap resulting from larger manufacturing, it is important to create innovative feasible and holistic recycling processes in Europe.

# Why participate?

Development of cutting-edge ideas

Access to new knowledge and skills

Strategic partnerships and collaborations

Access to advanced technologies and methods

Solutions to global challenges



# Röster från verkligheten

Större projekt möjliggör större satsningar och kan tackla svårare utmaningar

Internationellt perspektiv på samhällsutmaningar

Ömsesidigt lärande

Tillgång till spetskompetens och infrastruktur som inte finns i Sverige

# NCP?



National EU-node

## NCP

National contact points



- Answers questions on Horizon Europe
- Helps to find matching calls and topics
- Legal and financial advice
- Spreads information
- Strategic advice

Information from SE system to EC  
via NCP networks, experts and PC

# Summering

---

- Det finns många möjligheter inom Horisont Europa
- All information finns tillgänglig på Funding and Tenders Portal
- Du kan alltid kontakta oss NCPer med dina frågor!

Syfte: ge en övergripande förståelse för innehållet i Kluster 5 samt vilket stöd som finns när du skriver din ansökan.

Icke-mål: detaljerad information om utlysningar eller regelverksfrågor



# Användbara länkar

## Information om programmet

[Funding and Tenders](#) – EU-kommissionens portal för utlysningar, topics och ansökan

[Vinnovas webbplats om Horisont Europa](#) – information om programmet och kontakt på Vinnova

[EU:s ramprogram Horisont Europa - Vetenskapsrådet \(vr.se\)](#) – information om programmet och kontakt på Vetenskapsrådet

[Horisont Europa \(energimyndigheten.se\)](#) – information om programmet och kontakt på Energimyndigheten

[Europeiskt samarbete – Formas](#) – information om programmet och kontakt på Formas

[En nationell strategi för svenskt deltagande i Horisont Europa 2021–2027 - Regeringen.se](#) – nationell strategi för deltagandet i Horisont Europa

[Horisont Europa](#) – övergripande information om programmet från EU-kommissionen

[Missions](#) – EU-kommissionens information om Missions

[Partnerships](#) - EU-kommissionens information om europeiska partnerskap (inkl. kontakt)

[Funding & tenders \(europa.eu\)](#) – Databas för statistik och beviljade project

[EU-kommissionens Dashboard | Vinnova](#) – Instruktionsfilm till Dashboard

# Användbara länkar

## Att skriva en ansökan

[Reference Documents](#) – regelverk, mallar, guider etc.

[How to prepare a successful proposal in Horizon Europe](#) – inspelat webinarie anordnat av EU-kommissionen

[The Funding & tenders Portal for beginners](#) – webinarie anordnat av EU-kommissionen

[Främja svenskt deltagande i Horisont Europa: planeringsprojekt inom Hållbar industri 2023 | Vinnova](#) – Erbjudanden om planeringsbidrag för vissa utlysningar inom Horisont Europa

## Verktyg för nätverkande och stöd

[EUSME](#) – svenskt supportkontor för små och medelstora företag

[EEN Match](#) - matchmaking

# Användbara länkar

## Fördjupad information om policy

[European Green Deal](#)

[55 %-paketet – EU:s plan för en grön omställning - Consilium \(europa.eu\)](#)

[A Clean Planet for All](#)

[REPowerEU \(europa.eu\)](#)

[Europe Fit for the Digital Age](#)

[Mobility Strategy \(europa.eu\)](#)

## EU Partnerskap

[DUT Call 2022 - DUT Partnership](#)

[Home | CETPartnership](#)

[Home | Clean Aviation \(clean-aviation.eu\)](#)

[Hydrogen Europe Home](#)

[Home - Europe's Rail \(europa.eu\)](#)

[SESAR Joint Undertaking | Delivering the Digital European Sky \(sesarju.eu\)](#)

[Home - 2Zero Emission](#)

[CCAM - European Partnership on Connected, Cooperative and Automated Mobility](#)

[Welcome to Waterborne - Setting the agenda for Maritime Research in Europe - waterborne.eu](#)