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# Horizon Europe

## Cluster 5. Climate, Energy and Mobility Aviation

13 de febrero de 2023

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UNIÓN EUROPEA



# Contexto, selección de algunas políticas,...

Clima

Movilidad/Transporte

Energía



We propose to **reduce emissions** by at least **55%** by 2030



2020



**STRIA.** Strat. Transport and Innovation Agenda

3 x Paquetes de Movilidad

Estrategia **Industrial** Europea

Pacto **Verde** Europeo

Propuesta **Ley de Clima** Europea

Fit for **55** Package, **Chip Act**, etc

(...e. circular, declaraciones, estrategias sectoriales, etc)



2011  
**White Paper**  
Transport



2020  
**Strategy** for  
Sustainable and Smart  
Mobility



# Relación entre políticas y resultado de los proyectos

Strategic Planning and Programming (EC)

STRATEGIC PLAN

WORK PROGRAMME

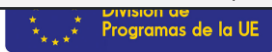
PROJECT PROPOSALS

Application process (researchers)

<b>EU POLICY PRIORITIES</b>	Overall priorities of the European Union (Green Deal, Fit for the Digital Age,...)
<b>KEY STRATEGIC ORIENTATIONS</b>	Set of strategic objectives within the EC policy priorities where R&I investments are expected to make a difference
<b>IMPACT AREAS</b>	Group of expected impacts highlighting the most important transformation to be fostered through R&I
<b>EXPECTED IMPACTS = DESTINATIONS</b>	<b>Wider long term effects on society</b> (including the environment), <b>the economy and science</b> , enabled by the outcomes of R&I investments (long term). It refers to the specific contribution of the project to the work programme expected impacts described in the destination. Impacts generally occur some time after the end of the project.
<b>EXPECTED OUTCOMES = TOPICS</b>	<b>The expected effects, over the medium term</b> , of projects supported under a given topic. The results of a project should contribute to these outcomes, fostered in particular by the dissemination and exploitation measures. This may include the uptake, diffusion, deployment, and/or use of the project's results by direct target groups. Outcomes generally occur during or shortly after the end of the project.
<b>PROJECT RESULTS</b>	What is generated during the project implementation. This may include, for example, know-how, innovative solutions, algorithms, proof of feasibility, new business models, policy recommendations, guidelines, prototypes, demonstrators, databases and datasets, trained researchers, new infrastructures, networks, etc. Most project results (inventions, scientific works, etc.) are 'Intellectual Property', which may, if appropriate, be protected by formal 'Intellectual Property Rights'



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# Horizonte Europa

## Climate, Energy and Mobility

Ppto (borrador dic 2020, incluye NGEU)

13.465

constante

15.123

corriente

Billion EUR



Partenariados

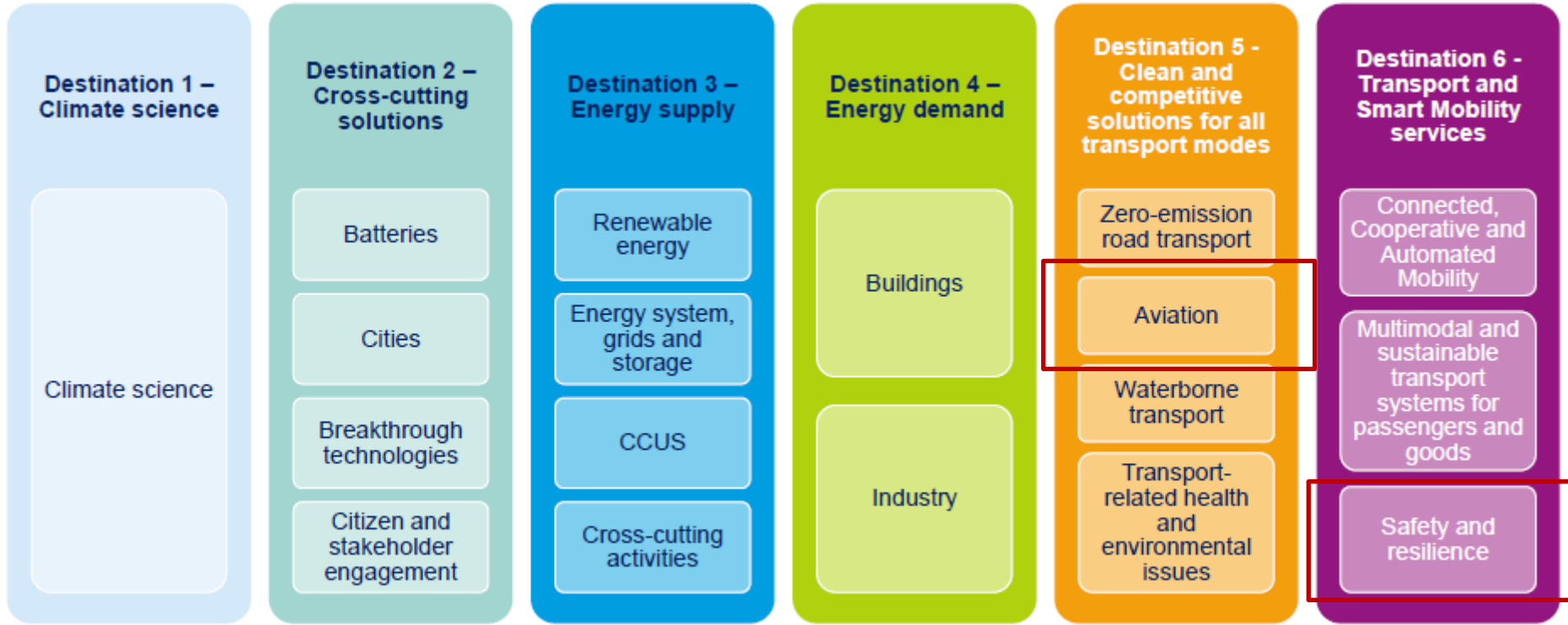
Programas Trabajo



Destinations



# WP. Climate, energy and Mobility



# Cluster 5. Climate, energy and mobility

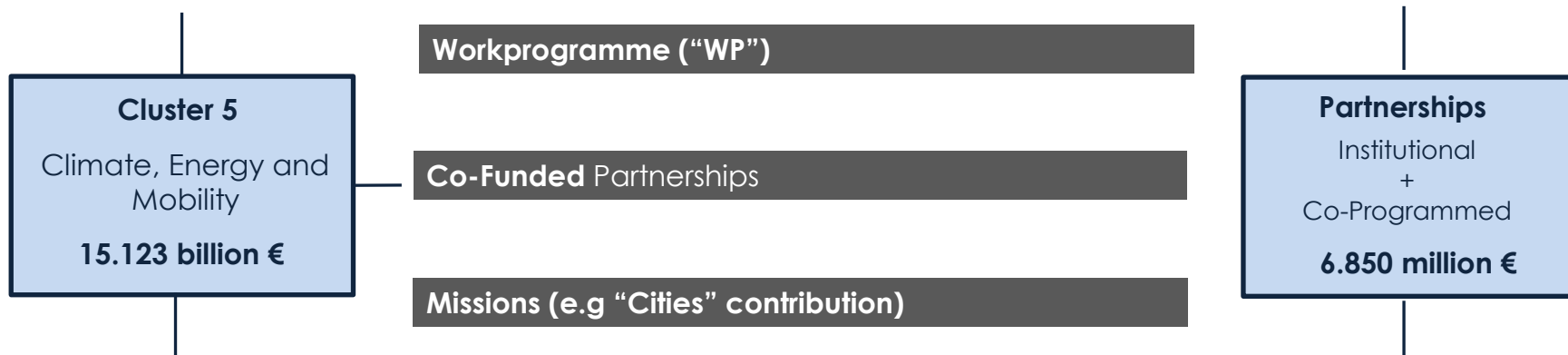
## 1. Institutional Partnerships HE EU Contribution (H2020 EU Contribution ): Convocatorias Propias

Europe's Rail. **0.6 billion €** (0.45 billion €)

Single European Sky ATM Research **0.6 billion €** (0.58 billion €)

Clean Aviation **1.7 billion €** (1.7 billion € EU)

Clean Hydrogen **1 billion € + 200 million EUR** RePOWEREU (0.66 billion € EU)



## 2. Co-Programmed Partnerships (Workprogramme) (H2020 EU Contribution ) Convocatorias dentro de "WP"

Toward zero-emission road transport (2ZERO). **615 million €** (750 million €)

Batteries **925 million €** (N/A)

Zero-emission waterborne transport. **530 million €** (N/A)

C. C. Automated Mobility (CCAM). **500 million €** (N/A)

P. sustainable built environment (Built4People) **380 million €** (600 million €)

# Cluster 5. Climate, energy and mobility

## Trabajar con últimas versiones WP 2023 / 2024 Oficial

Introducción

WP Cluster 5

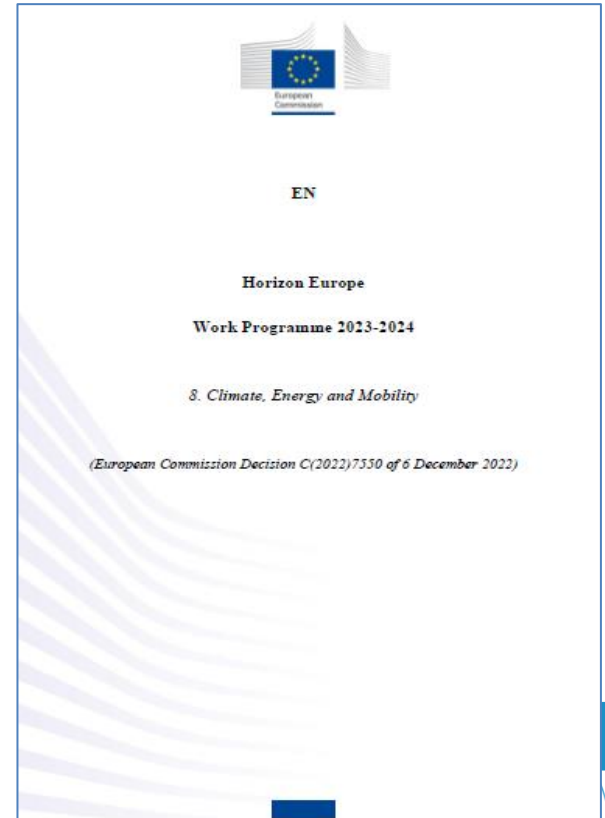
Anexos generales

+ Legislación, Strategic Programme 2021/2024

+ Out of H. Europe: Policy,

Presentaciones Infoday COM Cluster 5 15 December 2022 -  
16 December 2022

<https://research-innovation-community.ec.europa.eu/events/6wKEI7CncTdqVAWmeWEASd/programme>



# Summary. WP 2023 / 2024. Mobility. Budget

	Budget (Million EUR)			N° Topics		
	2023	2024	Total general	2023	2024	Total general
<b>DESTINATION 2</b>	<b>119</b>	<b>101</b>	<b>220</b>	<b>8</b>	<b>7</b>	<b>15</b>
Batteries	119	101	220	8	7	15
<b>DESTINATION 5</b>	<b>217</b>	<b>202,05</b>	<b>419,05</b>	<b>19</b>	<b>18</b>	<b>37</b>
2ZERO	59,5	77	136,5	6	6	12
Aviation	54	57	111	4	4	8
Cross-cutting	0,5		0,5	1	0	1
Transport-related health and environment	10	7	17	1	1	2
Waterborne transport	93	61,05	154,05	7	7	14
<b>DESTINATION 6</b>	<b>108,5</b>	<b>122,5</b>	<b>231</b>	<b>13</b>	<b>12</b>	<b>25</b>
CCAM	50	52	102	5	5	10
Cross-cutting	1,5		1,5	1	0	1
Multimodal transport, infrastructure and logistics	31	48	79	4	4	8
Safety and resilience	26	22,5	48,5	3	3	6
<b>Total general</b>	<b>444,5</b>	<b>425,5</b>	<b>870</b>	<b>40</b>	<b>37</b>	<b>77</b>



# Summary. WP 2023 / 2024. Mobility. Calls

Destination	Area	Call	Call opening	Call deadline
2	Batteries	HORIZON-CL5-2023-D2-01	13/12/2022	18/04/2023
		HORIZON-CL5-2023-D2-02	04/05/2023	05/09/2023
	Batteries	HORIZON-CL5-2024-D2-01	07/12/2023	18/04/2024
		HORIZON-CL5-2024-D2-02	07/05/2024	05/09/2024
5	2ZERO	HORIZON-CL5-2023-D5-01	13/12/2022	20/04/2023
	Aviation			
	Waterborne transport			
	Transport health and environment			
	Cross cutting	HORIZON-CL5-2024-D5-01	07/12/2023	18/04/2024
	2ZERO			
	Aviation			
	Waterborne transport			
Transport-related health and environment				
6	CCAM	HORIZON-CL5-2023-D6-01	04/05/2023	05/09/2023
	Mult transport, infrastructure and logistics			
	Safety and resilience			
	Cross cutting	HORIZON-CL5-2024-D6-01	07/05/2024	05/09/2024
	CCAM			
	Multimodal transport, infrastructure and logistics			
Safety and resilience				

# Work Programme cluster 5: Mobility

## Destination 5: Clean and competitive solutions for all transport modes

Zero-emissions road transport

Co-programmed partnership

Aviation

Waterborne transport

Partly from co-programmed partnership

Impact of transport on environment and human health



# Aviation. WP 2023 & 2024

Topic code	Topic title	ToA	Budget	Budget project	Nº Proj	TRL	LS
HORIZON-CL5-2023-D5-01-07	<b>Hydrogen-powered aviation</b>	IA	20,00	8-10	2	6	
HORIZON-CL5-2023-D5-01-08	Accelerating <b>climate neutral hydrogen-powered/electrified</b> aviation	RIA	17,00	3-4	4	2-3	
HORIZON-CL5-2023-D5-01-09	Competitiveness and <b>digital transformation in aviation</b> – advancing further capabilities, digital approach to design	RIA	15,00	3-5	4	2-4	
HORIZON-CL5-2023-D5-01-10	Aviation research synergies between <b>Horizon Europe, AZEA and National programs</b>	CSA	2,00	2	1		LS
HORIZON-CL5-2024-D5-01-07	Accelerating climate neutral aviation, <b>minimising non-CO2 emissions</b>	RIA	17,00	4-5	4	2-4	
HORIZON-CL5-2024-D5-01-08	Competitiveness and <b>digital transformation in aviation</b> – advancing further composite aerostructures	RIA	16,00	3-5	4	2-4	LS
HORIZON-CL5-2024-D5-01-09	Impact <b>monitoring</b> of EU Aviation R&I	RIA	8,00	8	1		
HORIZON-CL5-2024-D5-01-10	Towards a <b>flying testbed</b> for European leadership in aviation	RIA	16,00	16	1	4-5	

# Work Programme cluster 5: Mobility

## Destination 6: Safe, resilient Transport and smart mobility services for passengers and goods

Connected, cooperative  
and automated mobility

Co-programmed partnership

Multimodal and sustainable transport systems for  
passengers and goods

Safety and resilience – per mode and across all  
transport modes

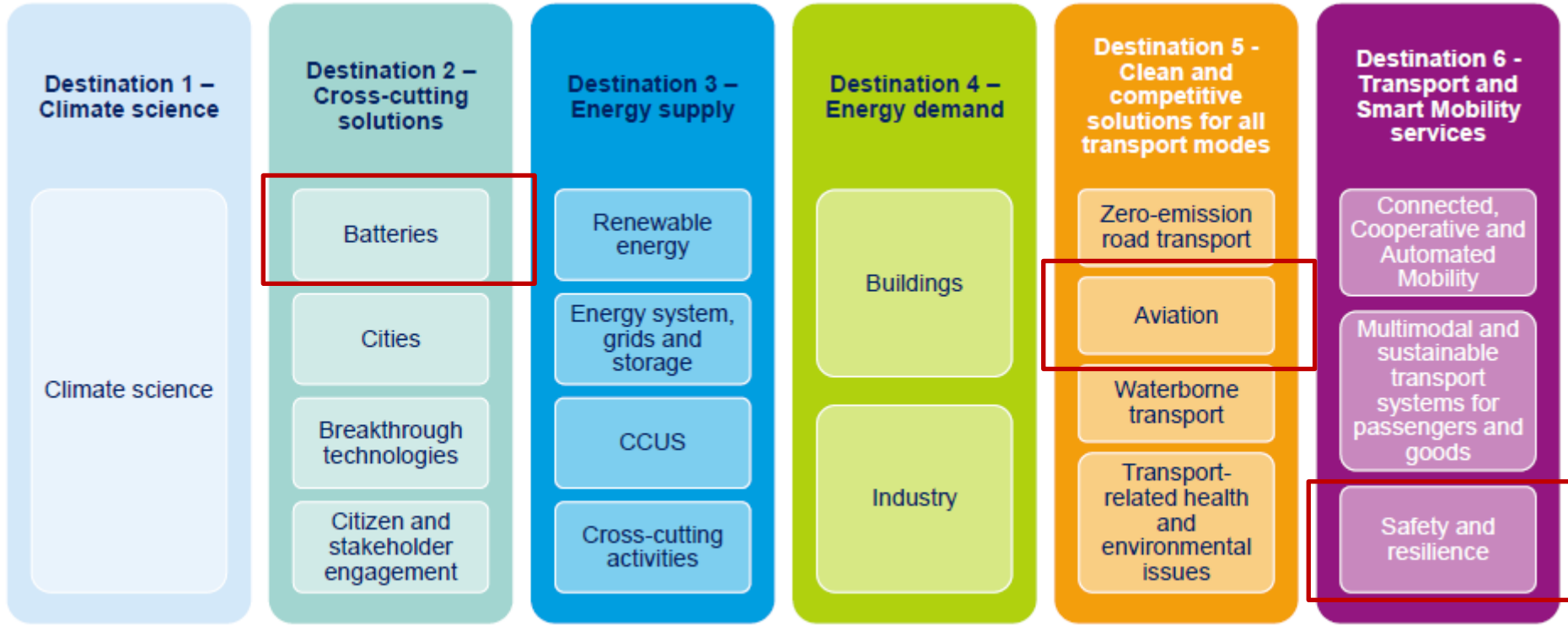


# Safety & Resilience. WP 2023 & 2024

Topic code	Topic title	ToA	Budget	Budget project	Nº Proj	TRL	LS
HORIZON-CL5-2023-D6-01-11	<b>Aviation safety - Uncertainty</b> quantification for safety and risk management	RIA	8,00	4	2	3-5	



# WP. Climate, energy and Mobility



# Batteries. WP 2023

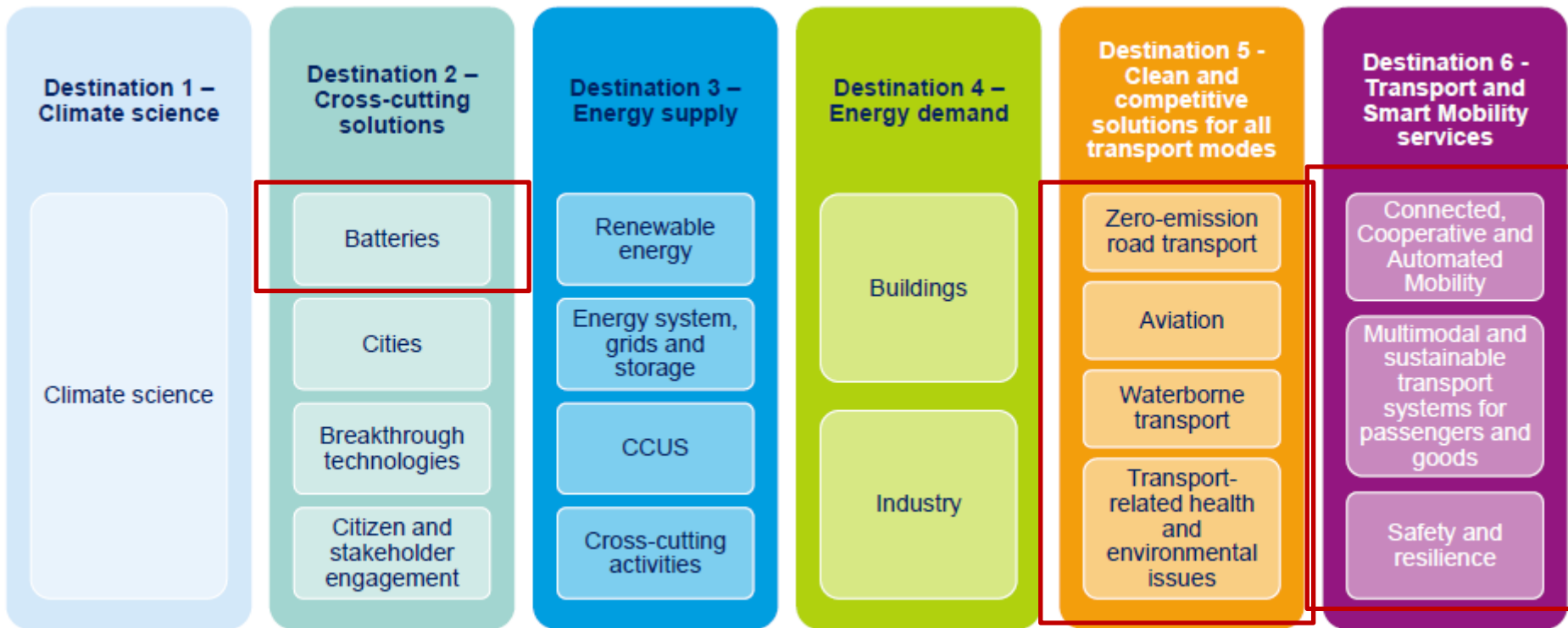
Topic code	Topic title	ToA	Budget	Budget project	N° Proj	TRL	LS
HORIZON-CL5-2023-D2-01-01	Technologies for sustainable, cost-efficient and low carbon <b>footprint downstream processing &amp; production of battery-grade materials</b> (Batt4EU Partnership)	RIA	21,00	7	3	5	
HORIZON-CL5-2023-D2-01-02	New processes for upcoming <b>recycling feeds</b> (Batt4EU Partnership)	RIA	15,00	5	3	4	
HORIZON-CL5-2023-D2-01-03	Advanced <b>digital twins for battery cell production lines</b> (Batt4EU Partnership)	RIA	14,00	7	2	4-5	
HORIZON-CL5-2023-D2-01-04	Battery management system ( <b>BMS</b> ) and battery system design for stationary energy storage systems ( <b>ESS</b> ) to improve interoperability and facilitate the integration of <b>second life batteries</b> (Batt4EU Partnership)	IA	15,00	7,5	2	6-7	LS
HORIZON-CL5-2023-D2-01-05	<b>Hybrid electric energy storage solutions</b> for grid support and charging infrastructure (Batt4EU Partnership)	IA	12,00	6	2	7	
HORIZON-CL5-2023-D2-02-01	Advanced <b>materials and cells</b> development enabling large-scale production of <b>Gen4 solid-state batteries</b> for mobility applications (Batt4EU Partnership)	IA	24,00	8	3	6	
HORIZON-CL5-2023-D2-02-02	New Approaches to Develop Enhanced <b>Safety Materials for Gen 3 Li-Ion</b> Batteries for Mobility Applications (Batt4EU Partnership)	RIA	10,00	5	2	5	
HORIZON-CL5-2023-D2-02-03	Creating a <b>digital passport</b> to track battery materials, optimize battery performance and life, validate recycling, and promote a new business model based on data sharing (Batt4EU Partnership)	IA	8,00	8	1	7	

# Batteries. WP 2024

Topic code	Topic title	ToA	Budget	Budget project	Nº Proj	TRL	LS
HORIZON-CL5-2024-D2-01-01	Advanced sustainable and safe <b>pre-processing</b> technologies for End-of-Life ( <b>EoL</b> ) battery recycling (Batt4EU Partnership)	RIA	21,00	7	3	5	
HORIZON-CL5-2024-D2-01-02	<b>Non-Li Sustainable Batteries with European Supply Chains for Stationary Storage</b> (Batt4EU Partnership)	IA	21,00	7,5	3	6-7	LS
HORIZON-CL5-2024-D2-01-03	Development of <b>technical and business solutions to optimise</b> the circularity, resilience, and sustainability of the <b>European battery value chain</b> (Batt4EU Partnership)	RIA	5,00	5	1	5	
HORIZON-CL5-2024-D2-02-01	Sustainable <b>high-throughput production processes for stable lithium metal anodes</b> for <b>next generation</b> batteries (Batt4EU Partnership)	IA	8,00	8	8	6-7	
HORIZON-CL5-2024-D2-02-02	Post-Li-ion technologies and relevant manufacturing techniques for mobility applications ( <b>Generation 5</b> ) (Batt4EU Partnership)	RIA	15,00	5	5	4	
HORIZON-CL5-2024-D2-02-03	<b>Size &amp; weight reduction of cell and packaging of batteries system</b> , integrating lightweight and functional materials, innovative thermal management and safe and sustainable by design approach (Batt4EU Partnership)	IA	16,00	8	8	6-7	
HORIZON-CL5-2024-D2-02-04	Accelerated <b>multi-physical and virtual testing</b> for battery aging, reliability and safety evaluation (Batt4EU Partnership)	IA	15,00	7,5	7,5	6	



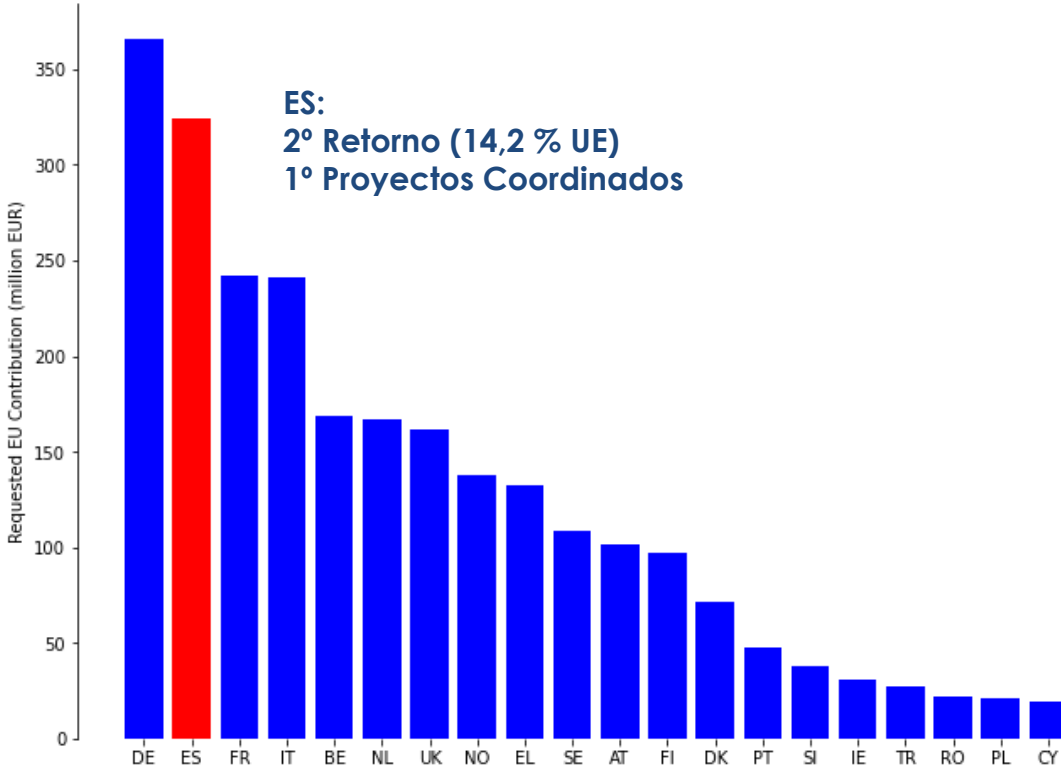
# WP. Climate, energy and Mobility



# Cluster 5. Resultados preliminares (NO OFICIAL)

Cluster 5. Global Results

## Global



ES:  
2º Retorno (14,2 % UE)  
1º Proyectos Coordinados

Destination 1 - Climate sciences and responses for the transformation towards climate neutrality

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

### Liderazgo Proyectos

ES	79
IT	42
BE	39
DE	30
FR	29

# Cluster 5. Resultados preliminares (NO OFICIAL)

## D5 y D6 (Movilidad)

Cluster 5. Mobility Results

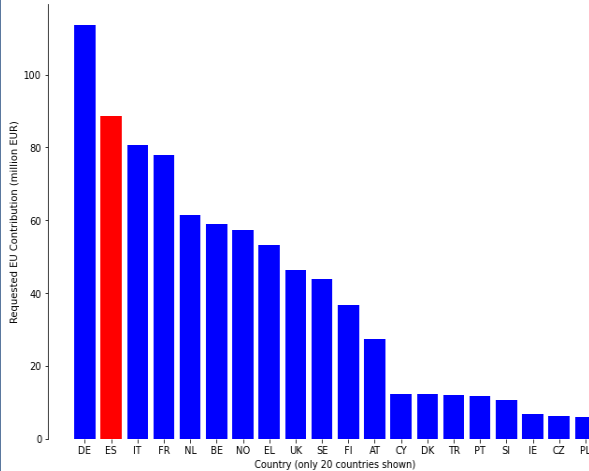
Destination 5 - Clean and Competitive Solutions for All Transport Modes

Destination 6 - Safe, Resilient Transport and Smart Mobility Services for Passengers and Goods

HORIZON-CL5-2021-D5-01  
 HORIZON-CL5-2021-D6-01  
 HORIZON-CL5-2022-D5-01  
 HORIZON-CL5-2022-D6-01  
 HORIZON-CL5-2022-D6-02

### Liderazgo Proyectos

<b>ES</b>	<b>20</b>
DE	15
BE	15
EL	14

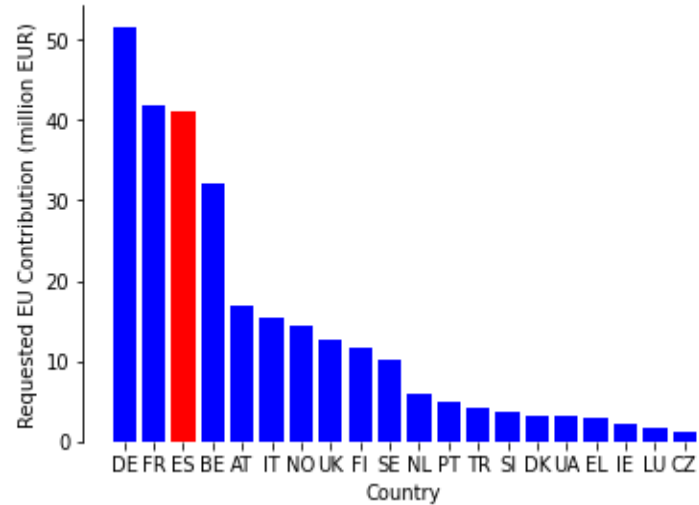


## Baterías

### Destination 2 - Cross-sectoral Solutions for the Climate Transition Batteries

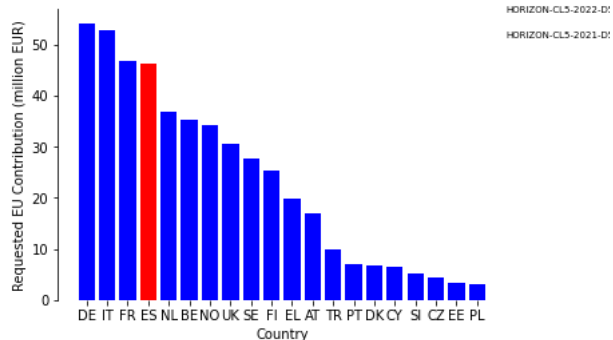
HORIZON-CL5-2022-D2-01

HORIZON-CL5-2021-D2-01

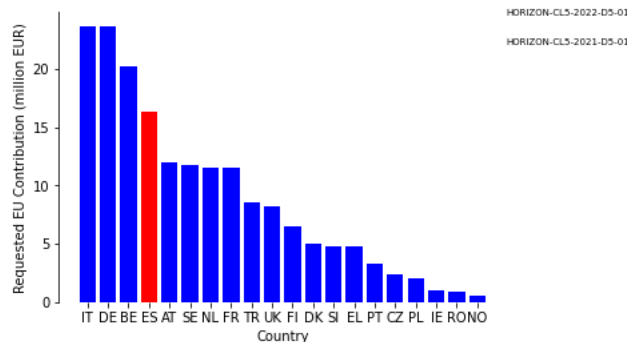


# Cluster 5. Resultados preliminares (NO OFICIAL)

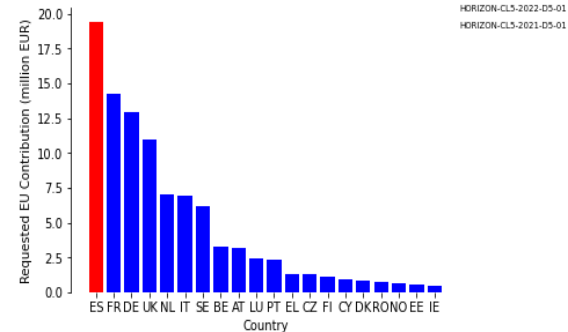
Destination 5 - Clean and Competitive Solutions for All Transport Modes



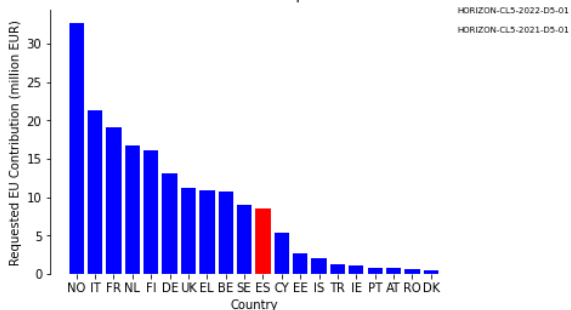
Destination 5 - Clean and Competitive Solutions for All Transport Modes  
ZZERO



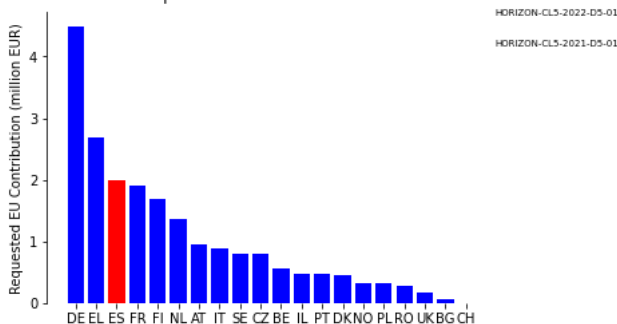
Destination 5 - Clean and Competitive Solutions for All Transport Modes  
Aviation



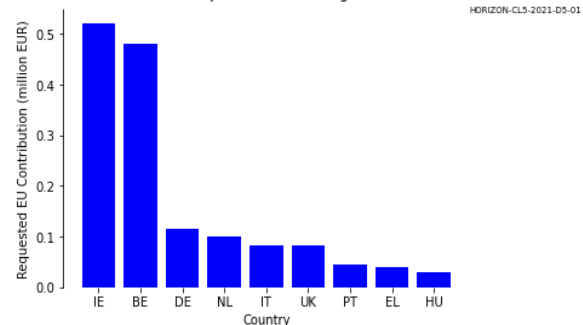
Destination 5 - Clean and Competitive Solutions for All Transport Modes  
Waterborne transport



Destination 5 - Clean and Competitive Solutions for All Transport Modes  
Transport - health and environment



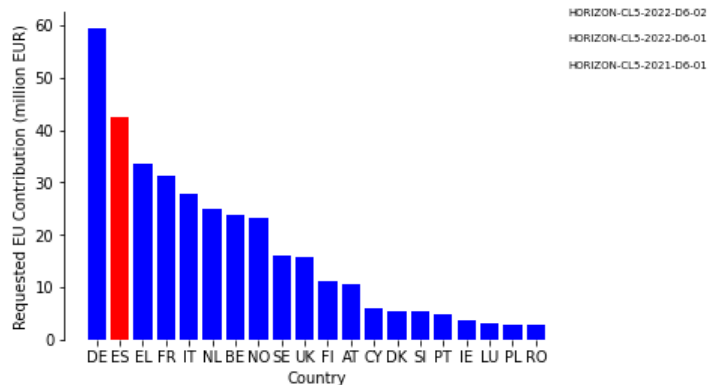
Destination 5 - Clean and Competitive Solutions for All Transport Modes  
Transport - cross-cutting



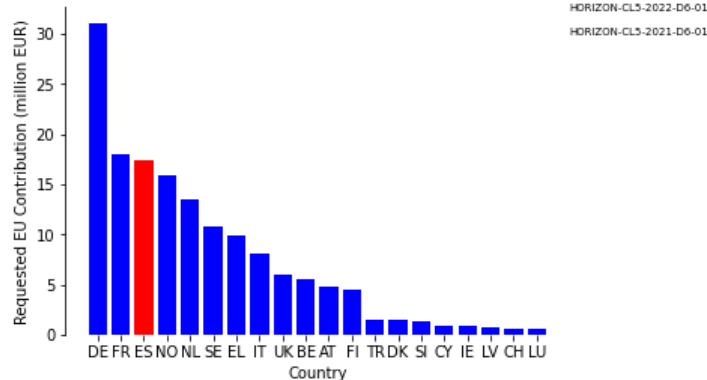
**Notas:** Resultados de evaluación propuestas anteriores G. Agreements. UK EU Contribution en G. Agreements deberá ser nula / Representado solo 20 mayores países con Req. EU Contribution

# Cluster 5. Resultados preliminares (NO OFICIAL)

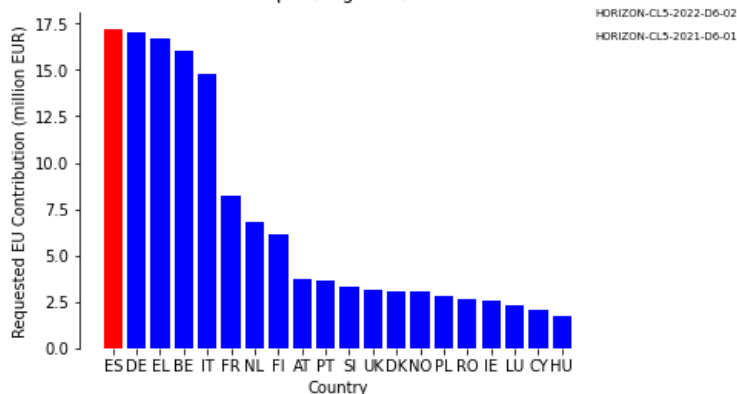
Destination 6 - Safe, Resilient Transport and Smart Mobility Services for Passengers and Goods



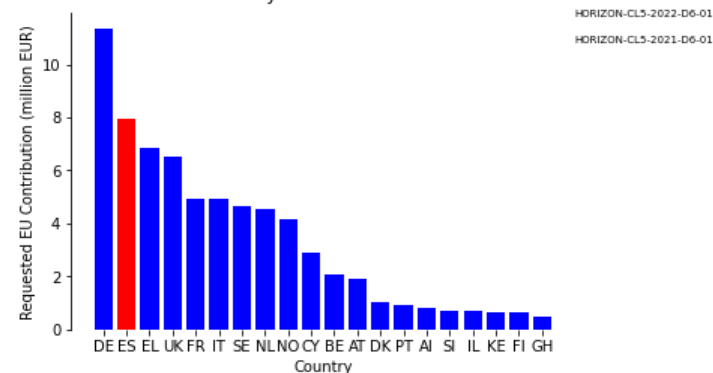
Destination 6 - Safe, Resilient Transport and Smart Mobility Services for Passengers and Goods  
CCAM



Destination 6 - Safe, Resilient Transport and Smart Mobility Services for Passengers and Goods  
Multimodal transport, logistics, infrastructure



Destination 6 - Safe, Resilient Transport and Smart Mobility Services for Passengers and Goods  
Safety and resilience



# Cluster 5: Climate, Energy and Mobility

## Institutional Partnerships: Mobility



Clean Aviation

SESAR3



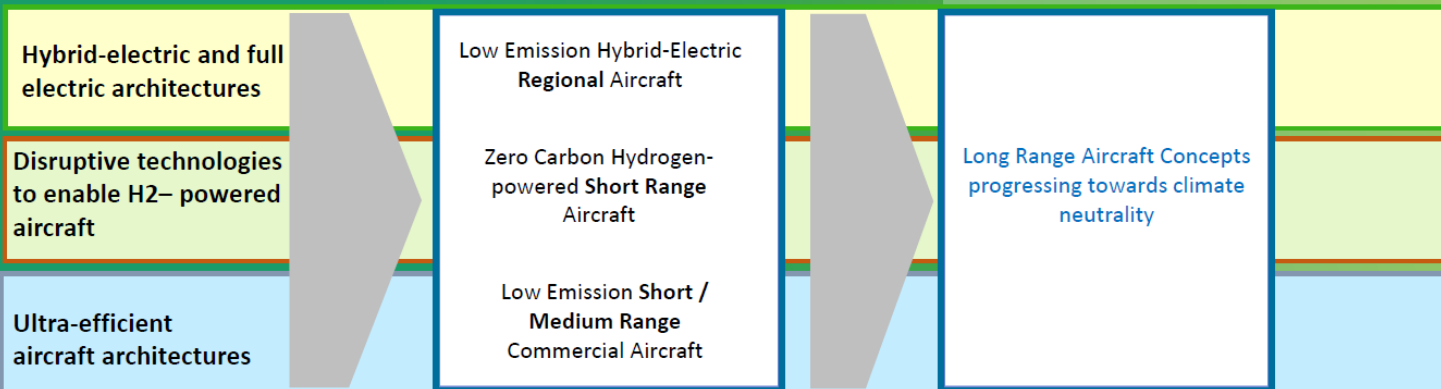
Europe's rail

### Other oportunities

Clean hydrogen  
(institutionalised  
Partnership)



# CLEAN AVIATION – LINCHPIN IN EUROPE'S R&I FOR THE TRANSITION



Flight demonstration in Clean Aviation JU and Impact by 2035

Development of disruptive technology options

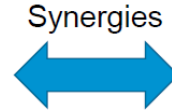
Not legally binding



# THE PROGRAMME SETUP IN A NUTSHELL

EU Funding  
1.7bn€<sup>1</sup>

Private Funding  
>2.4bn€



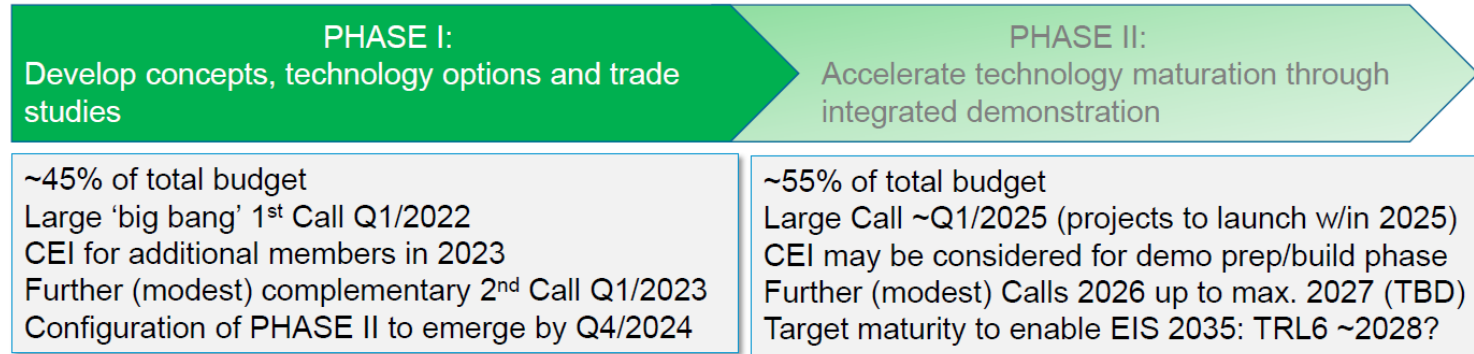
Other EU Partnerships  
& Programmes and  
National/Regional R&I

2022

2025/2026

2028

2030



Co-funded by  
the European Union

<sup>1</sup> Revision possible in case of additional associations to Horizon Europe







## Regulation (EU) 2021/2085:

- Adopted by the Council of the European Union on 19/11/2021 - Establishes the Joint Undertakings (JU) under Horizon Europe (HE).  
 ↳ Single Basic Act (SBA).

## JU Membership:

- Commitment Letter & Membership Agreement → All private Members
- Governing Board (GB) → 15 private Members + EU
- Technical Committee (TC) → All private Members + EU
  - Founding Members: 27
  - Associated Members: 12 (status at March 2022)

## Members main "Rights & Obligations":

- Governance rights (GB and TC);
- Contribution to SBA objectives and SRIA HLGs;
- Collective In-Kind Contributions commitment: total minimum requirement = EUR 2.4 billion (IKOP & IKAA)
- Admin costs (Financing Agreement) between PM and the JU to cover 50% of the total JU admin costs

### FOUNDING MEMBERS

Aciturru Aeronáutica  
 Aernnova Aerospace  
 Airbus  
 Collins Aerospace  
 Dassault Aviation  
 Fokker Technologies  
 GKN Aerospace  
 GE Avio  
 Honeywell  
 Industria de Turbo Propulsores  
 Leonardo  
 Liebherr  
 Lufthansa Technic  
 MTU Aero Engines  
 Piaggio Aero Industries  
 Pipistrel Vertical Solutions  
 Rolls-Royce Deutschland  
 Safran  
 Thales  
 CIRA  
 DLR  
 Fraunhofer  
 ILOT  
 INCAS  
 Royal NLR  
 ONERA  
 University of Patras

### ASSOCIATED MEMBERS

Hellenic Aerospace Industry  
 Israel Aerospace Industries  
 Siemens  
 SINTEF  
 Solvay  
 Tecnam  
 TECNALIA  
 NTNU  
 Politecnico di Torino  
 TU Braunschweig  
 TU Delft  
 University of Stuttgart

## In-Kind Contribution (IKC) to the Programme

- Members vs. Non-Members
- Two types of IKC:
  - IKC to operation activities (IKOP)
  - IKC to additional activities (IKAA)
- Required min. level of in-kind contributions: 1.5 times the funding request in aggregate for the proposal

Ref. Art. 61 of the Council Regulation (EU)  
[2021/2085](#)

The proposal should include:

- a description of the IKC provided by the Members (IKOP + IKAA) and the non-Members (at the stage of the proposal submission) who clearly express the ambition to become a member before project end;
- include a list the actions implemented and envisaged to ensure an adequate level of IKC as defined in the topic as well as to demonstrate their reliability and associated risks.

# Clean Aviation call II

- Call launch: 9 February 2023
  - Submission system open: 9 March 2023
  - Q&A open until: Mid-April 2023 (indicative date)
  - Call closure: 11 May 2023 17:00 Brussels Time
- 
- All questions should be sent to: CFP-2023-02@clean-aviation.eu.
  - Questions received up until Mid-April 2023
  - The first release is planned on or soon after 9 March 2023 (indicative date)
  - The second release on or soon after Mid-April 2023 (indicative date)



# Clean Aviation call II

Identification Code	Title	Type of Action	Ind. Value (Funding in M€)
<b>Hydrogen-powered aircraft topics</b>			
HORIZON-JU-CLEAN-AVIATION-2023-02-HPA-01	Hydrogen fuel system for direct burn engine ground test execution and flight test preparation	IA	20
HORIZON-JU-CLEAN-AVIATION-2023-02-HPA-02	Aircraft Liquid Hydrogen Fuel Distribution System Technologies for Direct Burn Applications	IA	10
HORIZON-JU-CLEAN-AVIATION-2023-02-HPA-03	Multi-MW Fuel Cell Propulsion System for Hydrogen-Powered Aircraft	IA	35
<b>Hybrid-electric powered regional aircraft topics</b>			
HORIZON-JU-CLEAN-AVIATION-2023-02-HER-01	Innovative Fuselage/Empennage Design for Hybrid-Electric Regional Aircraft	IA	25
HORIZON-JU-CLEAN-AVIATION-2023-03-HER-02	Open Digital Platform for Hybrid-Electric Regional Aircraft Design	IA	7
<b>Short/short-medium range aircraft topics</b>			
HORIZON-JU-CLEAN-AVIATION-2023-02-SMR-01	High-TRL Flight Demonstration Means for Ultra Efficient Propulsion Systems for Short and Short-Medium Range Aircraft	IA	20
HORIZON-JU-CLEAN-AVIATION-2023-02-SMR-02	Ultra Performance Wing Technologies and Integration for Short and Short-medium Range Aircraft	IA	13
HORIZON-JU-CLEAN-AVIATION-2023-02-SMR-03	Advanced Cabin and Cabin Systems Integration for Short Range and Short-Medium Range for Hydrogen-Powered Aircraft	IA	7
<b>TOTAL</b>	8 topics		

<b>HORIZON-JU-CLEAN-AVIATION-2023-01-CSA-01</b>	<b>Aviation Climate and Technology Impact Monitoring Methodology</b>	<b>CSA</b>	<b>0.75</b>
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## Admissibility

- Proposals to be submitted via Commission Funding & Tenders
- CAJU WP - Conditions and management of the calls
  - The limit for a full application is **120 pages**
    - ↳ 'Coordination and support' actions (CSA) → Limit 30 pages

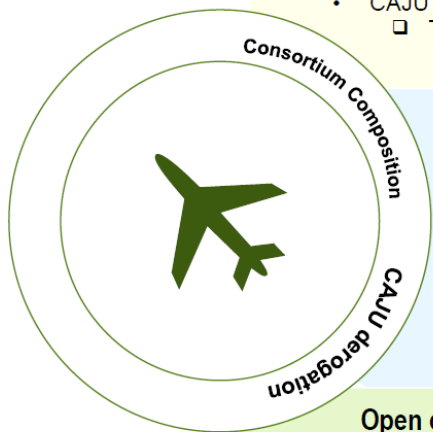
## Eligibility conditions applying to the 1<sup>st</sup> call:

- At least 1 independent legal entity established in a Member State (MS), and
- 2 other independent legal entities each established in a different MS or in an Associated Country (AC).
- CSA: submitted by 1 or more legal entities, established in a MS, AC or 3<sup>rd</sup> country (exceptional cases)
- When duly justified in CAJU WP → A single legal entity established in a MS, AC or Consortia not meeting the conditions under Article 22(2) of the HE Regulation shall be eligible.
  - ~~not applicable to the 1<sup>st</sup> CAJU call (I)~~

**Specific condition** → Legal Entities established in Russia, Belarus or in any occupied territory of Ukraine are not eligible to participate in any capacity

## Open calls

- Consortia may be composed by CAJU private members and non-members
- The same applies to the Model Grant Agreement (MGA) – private members and other participants (non-members) will be part of the same action and grant agreement



CLEAN  
AVIATION  
ANNUAL  
FORUM

23

From Low Carbon to Zero-Emission Aviation

# UNLEASHING DISRUPTION

22-23 March 2023

HYBRID EVENT:  
BRUSSELS & ONLINE



# SESAR 3 JU a new instrument to implement the vision



Accelerate through research & innovation the delivery of an inclusive, resilient & sustainable Digital European Sky



50+ founding members representing entire aviation value chain (incl. new entrants)



- Horizon Europe - EUR 600 million
- Eurocontrol – up to EUR 500 million (in-kind & financial contributions)
- Industry - EUR 500 million minimum (in-kind & financial contributions)

*Additional funds via Connecting Europe Facility (in coordination with CINEA) to the value of at least EUR 200 million.*




5

# Digital European Sky research and innovation flagships ("Destinations" for Horizon Europe)



Connected and automated ATM




Multimodality and passenger experience



Air-ground integration and autonomy



Aviation green deal



Capacity-on-demand and dynamic airspace



Artificial Intelligence for aviation



U-space and urban air mobility



Civil/military interoperability and coordination

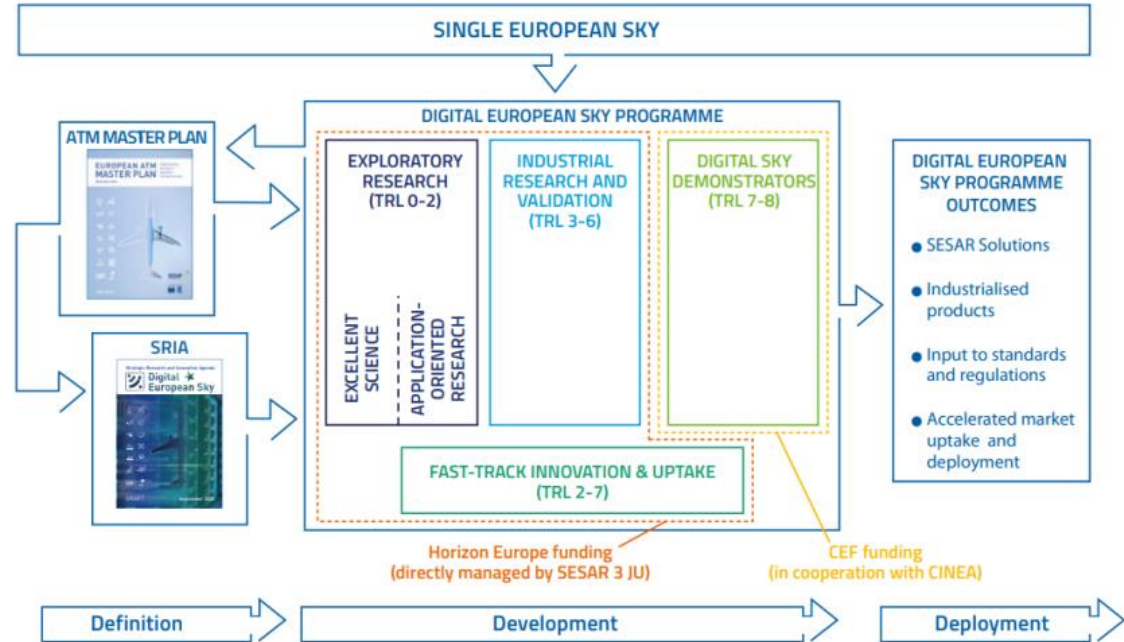


Virtualisation and cyber-secure data sharing



# Connected to policy and regulation

The SESAR 3 JU innovation pipeline is part of the broader SESAR project (covering definition) and of the Single European Sky initiative





DELIVER AN INTEGRATED EUROPEAN RAILWAY NETWORK BY DESIGN



DEVELOP A UNIFIED OPERATIONAL CONCEPT AND A FUNCTIONAL SYSTEM ARCHITECTURE FOR INTEGRATED EUROPEAN RAIL TRAFFIC AND CCS/AUTOMATION



DELIVER A SUSTAINABLE AND RESILIENT RAIL SYSTEM



DELIVER A COMPETITIVE, GREEN RAIL FREIGHT FULLY INTEGRATED INTO THE LOGISTICS VALUE CHAIN



DEVELOP A STRONG AND GLOBALLY COMPETITIVE EUROPEAN RAIL INDUSTRY

# EUROPE'S RAIL: ONE INTEGRATED R&I PROGRAMME

## SYSTEM PILLAR

OPERATIONAL CONCEPTS

FUNCTIONAL SYSTEM ARCHITECTURE

**A SINGLE COORDINATING BODY FOR THE WHOLE SECTOR EVOLUTION**

OPEN INTERFACES TO OTHER TRANSPORT MODES AND BUSINESSES

SYSTEM REQUIREMENT SPECIFICATIONS

## INNOVATION PILLAR

*TECHNOLOGICAL AND OPERATIONAL SOLUTIONS FOR SERVICES OF FUTURE*

FLAGSHIP PROJECTS

LARGE-SCALE DEMONSTRATIONS

EXPLORATORY AND FUNDAMENTAL R&I

1

EUROPEAN RAIL TRAFFIC AND MOBILITY MANAGEMENT

Manage and improve rail traffic at EU level

Adjust rail traffic management in function of the mobility demand

2

DIGITALISATION & AUTOMATION IN TRAIN OPERATIONS

ATO implementation

Digital train operations

3

SUSTAINABLE AND DIGITAL ASSETS

Integrated assets testing & life-cycle framework

Zero-emission, silent rail system

4

COMPETITIVE, DIGITAL, GREEN RAIL FREIGHT

New digital customer interaction & innovative rail freight services

Multimodal and rail freight innovation integration

5

REGIONAL RAIL SERVICES IN LOW DENSITY AREAS

New system approach to regional rail services in low density areas

## DEPLOYMENT GROUP

FUTURE SOLUTIONS DEPLOYED IN A COORDINATED AND CONSISTENT WAY AT EUROPEAN LEVEL, TAKING INTO ACCOUNT ALTERNATIVE ROLLOUT SCENARIOS, BEHAVIOURAL AND ORGANISATIONAL CHANGES, SYNERGIES WITH OTHER MODES OF TRANSPORT



UNIÓN EUROPEA



# Lump sum – main differences with standard MGA

The grant agreement will set out the lump sum (Max contribution: co-funding) corresponding to the **full accomplishment of the work committed in Annex 1**.

The lump sum for the grant is set out at its signature.



# Help. Cluster 5. Climate, energy and mobility

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## Climate

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+info sobre programas y ayudas CDTI  
para  
proyectos de I+D empresarial e innovación



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