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# Horizon Europe

## Cluster 5. Climate, Energy and Mobility



UNIÓN EUROPEA

Fondo Europeo de Desarrollo Regional (FEDER)

*Una manera de hacer Europa*

4 de mayo de 2022  
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# Horizonte 2020 Transporte (incluye partenariados). CCAA

		Actividades (Nº)	Actividades (Líder)	Socios (Nº)	Participaciones (Nº)	Subvención (Euros)	Subvención (%Total ES)
1	MADRID (COMUNIDAD de)	286	64	118	446	190.615.291	36,4%
2	PAIS VASCO	182	64	67	272	150.348.099	28,7%
3	CATALUÑA	185	57	86	272	86.207.780	16,5%
4	ANDALUCIA	66	21	32	82	24.335.921	4,6%
5	COMUNIDAD VALENCIANA	47	9	24	60	15.690.898	3,0%
6	ARAGON	36	7	13	42	13.074.553	2,5%
7	GALICIA	32	8	15	37	12.579.218	2,4%
8	CASTILLA Y LEON	17	6	9	19	8.352.475	1,6%
9	NAVARRA (C. FORAL de)	9	4	5	9	6.615.037	1,3%
10	CASTILLA-LA MANCHA	8	0	4	9	4.501.303	0,9%
11	CANARIAS	4	0	8	8	3.511.133	0,7%
12	CANTABRIA	9	1	4	11	3.353.530	0,6%
13	ENTIDADES SIN CIF	10	0	11	11	1.498.149	0,3%
14	BALEARS (ILLES)	7	0	8	9	1.258.358	0,2%
15	ASTURIAS (PRINCIPADO)	4	0	4	4	969.111	0,2%
16	MURCIA (REGION de)	3	0	4	4	778.456	0,1%
17	EXTREMADURA	0	0	0	0	0	0,0%
18	RIOJA (LA)	0	0	0	0	0	0,0%

**TOTAL:**

**523.689.312**



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Fte. GPPCDTI. Programas: 8TRS, 8XCS, 8XGV, 8XSES, 8XS2R. 17/02/2021.

# (algunas) Políticas

**2011 Libro Blanco de Transporte**

**2016 Unión Energética: STRIA**

**2017, 2018 Mobility packages**

e.g 3er mobility package: fair&competitive, clean and connected

**2018 Alianza de Baterías**

**2020 Green Deal**

Sustainable Transport

- Adopt a strategy for **sustainable and smart mobility** by [2020]
- Revise the **CO2 emissions performance legislation** for light duty vehicles by June 2021
- Propose to **extend the EU's Emissions Trading System** to the maritime sector, and to reduce the free allowances for airlines by June 2021
- Support the **deployment of public charging points** with the launch of a funding call for alternative fuel infrastructure
- Consider legislative options to boost the production and supply of **sustainable alternative fuels** for the different transport modes
- Withdraw and resubmit a proposal to revise the Combined Transport Directive
- Review the **Alternative Fuels Infrastructure Directive** and the TEN-T Regulation
- Propose more **stringent air pollutant emissions standards** for combustion-engine vehicles



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Ftes: EC, T&E

**Paris Agreement and the United Nations Sustainable Development Goals**



**Europe fit for the digital age**



# 2020 S&S Mobility Strategy



## 1 Sustainable Mobility



greenhouse gas emissions in transport by 2050

Reducing its dependence on fossil fuels



**By 2030**, there will be at least 30 million zero-emissions cars and 80 000 zero-emission lorries in operation.



**By 2030**, there will be at least 100 climate-neutral cities in Europe. Scheduled collective travel under 500 km should be carbon neutral **by 2030** within the EU.



Zero-emission large aircraft will become ready for market **by 2035**.

Making alternative choices available



All large and medium-sized cities put in place their own sustainable urban mobility plans **by 2030**.



Traffic on high-speed rail will double **by 2030**. **By 2050** rail freight traffic will double.



Transport by inland waterways and short sea shipping will increase by 25% **by 2050**.

Pricing to reflect environmental impact



The internalisation of external costs of transport at the latest **by 2050** will ensure that those who use transport will bear the full costs rather than leaving others in our society to meet them.



## 2 Smart Mobility



Unleash full potential of **data**.



**By 2030**, integrated electronic ticketing facilitates seamless multimodal passenger transport. Freight transport will be paperless.



**By 2030**, automated mobility will be deployed on large scale.



## 3 Resilient Mobility

Transport has been one of the sectors hit hardest by the COVID-19 pandemic. The EU has now an opportunity to build a mobility system that is sustainable, smart, and resilient: a system for future generations.

Building a strong and resilient Single Market:



Investment in transport infrastructure across the EU Member States;



**By 2050**, a fully operational, multimodal Trans-European Transport Network for sustainable and smart transport with high speed connectivity.

Creating a mobility system that is fair and just for all:



Make mobility affordable and accessible in all regions and for all passengers;



Improve the conditions for transport workers.

Ensuring the highest standards of safety and security in European transport:



**By 2050**, the death toll for all modes of transport in the EU will be close to zero.

# Horizonte Europa

## Climate, Energy and Mobility

Ppto (borrador dic 2020, incluye NGEU)

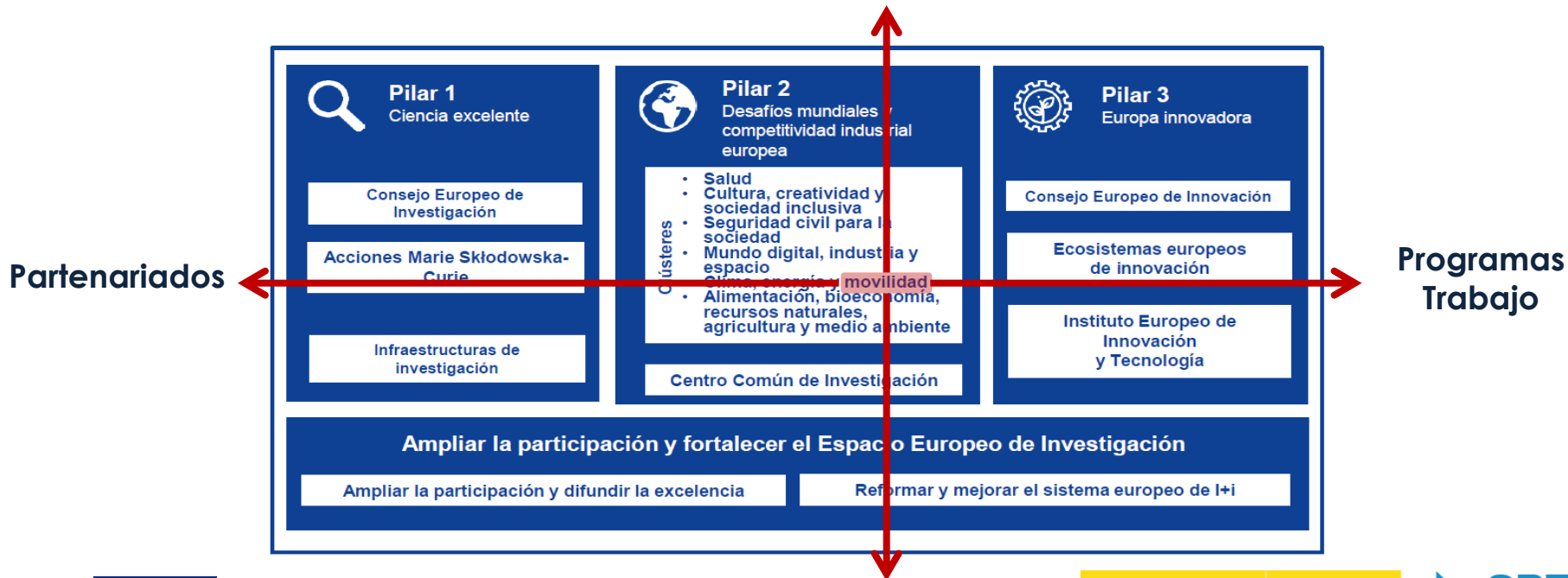
13.465

constante

15.123

corriente

Billion EUR



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**Destinations**



# Relación entre políticas y resultado de los proyectos

Strategic Planning and Programming (EC)

STRATEGIC PLAN

WORK PROGRAMME



<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'

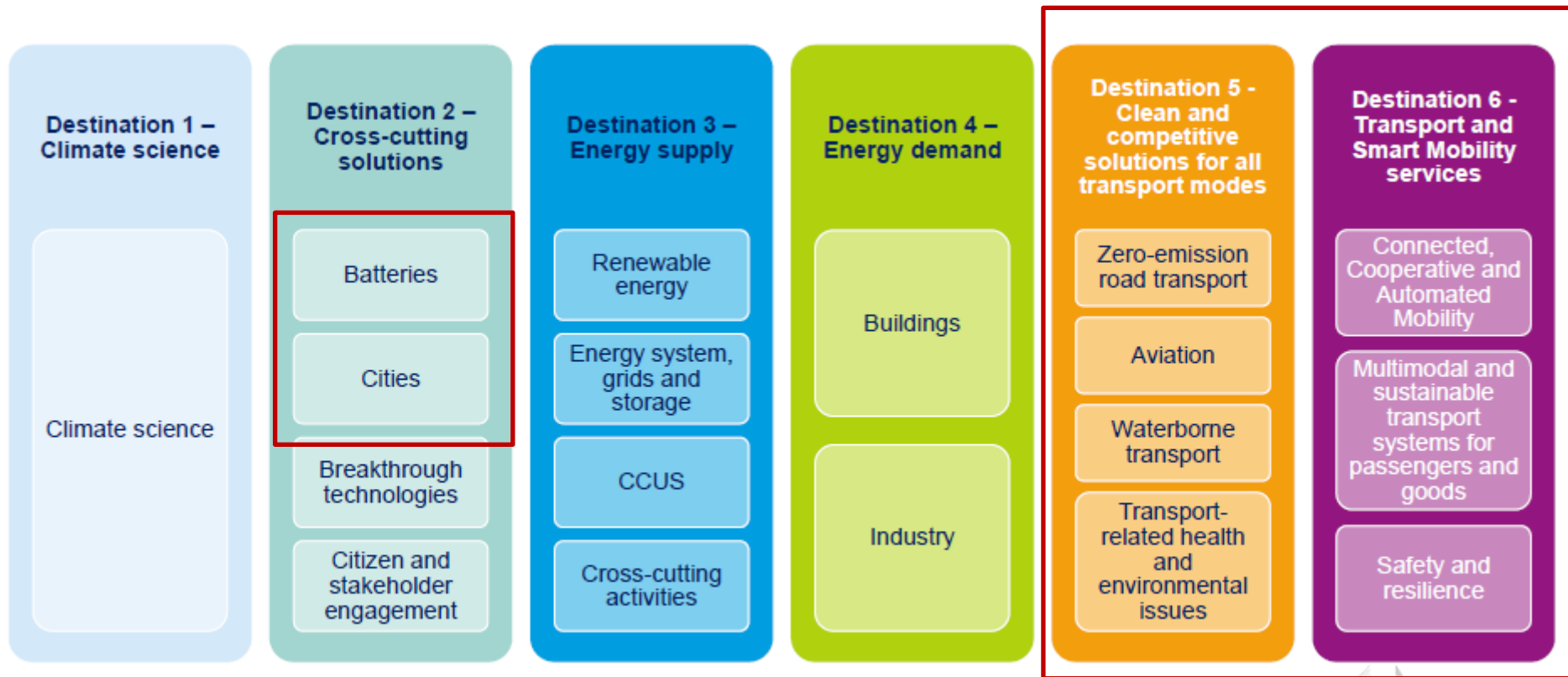
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PROJECT PROPOSALS

Application process (researchers)

# WP. Climate, energy and Mobility



# 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

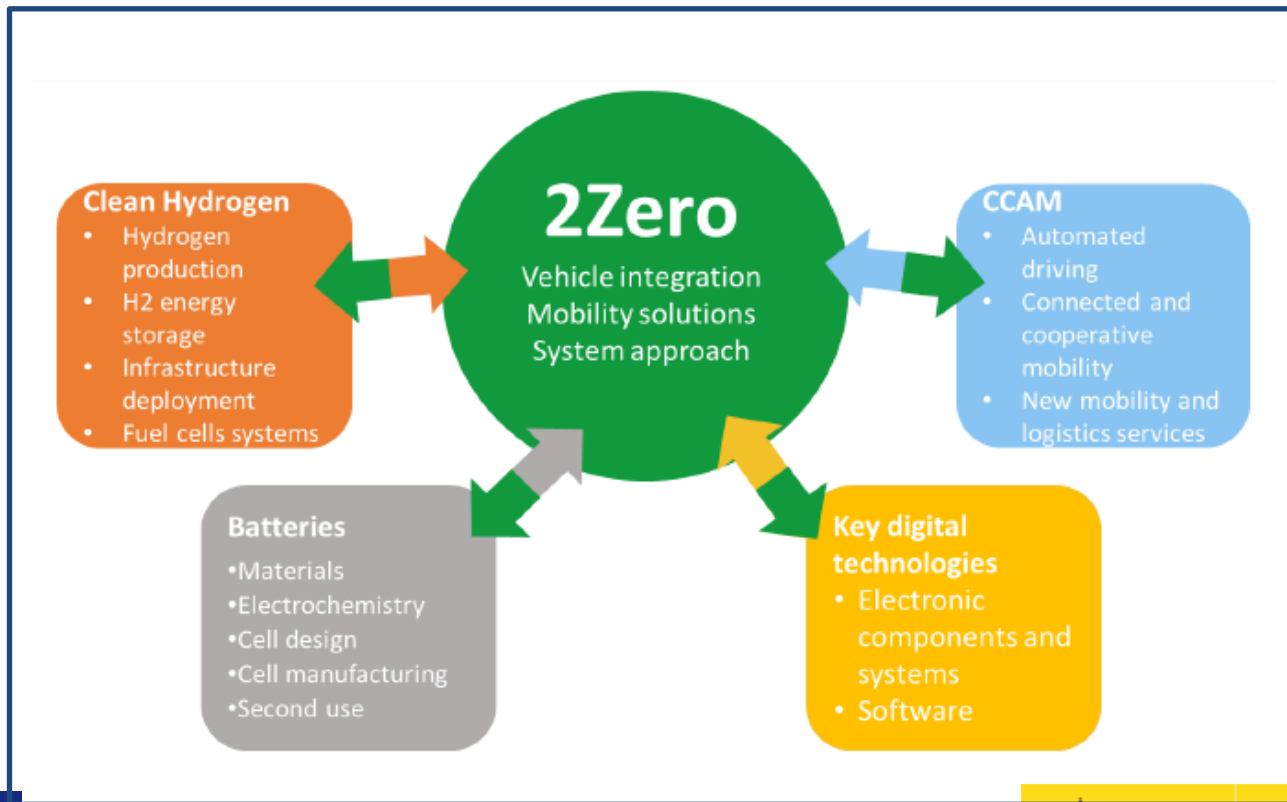


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# Toward zero-emission road transport (**2ZERO**)



## 2ZERO

User-centric **design and operation** of **ZEV** for optimized energy efficiency

Innovative **battery management systems** for next generation vehicles

User-centred and co-designed shared, automated and zero-emission **mobility systems and services** for **people and goods**

**Frugal zero-emissions vehicles** concepts for the urban transport challenge

**Circular economy approaches** for zero emission vehicles

DRAFT WP 2023



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Impact of transport on environment and human health



## Aviation

Accelerating climate neutral **hydrogen-powered/electrified aviation**

Competitiveness and **digital transformation in aviation** – advancing further industrial **aircraft design** capabilities

Impact monitoring of EU Aviation R&I

DRAFT Wp 2023



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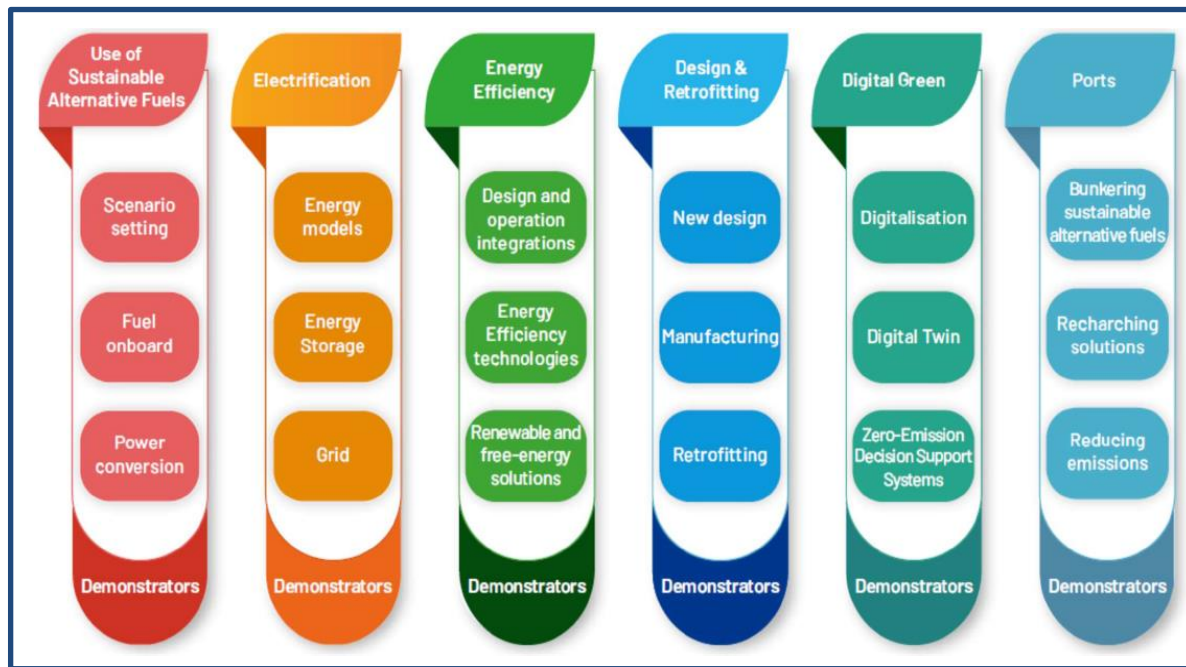
# Zero-emission **waterborne** transport

## Operational **objectives** of the Partnership:

Elimination of **GHG emissions**  
(both for retrofitting as well as new build)

Eliminating **air pollution**

Eliminating **water pollution**:



## Waterborne transport

Developing the next generation of **power conversion technologies** for sustainable alternative carbon neutral fuels in waterborne applications

Integrated **real-time digital solutions** to optimise navigation and port calls so as to reduce emissions from shipping

Structuring the Waterborne transport sector, including through changing **business and industrial models** in order to achieve commercial zero-emission waterborne transport

Developing a **flexible offshore supply of zero emission auxiliary power** for ships moored or anchored at sea deployable before 2030

DRAFT WP 2023



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Partly from co-programmed  
partnership

Impact of transport on environment and human health



# 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





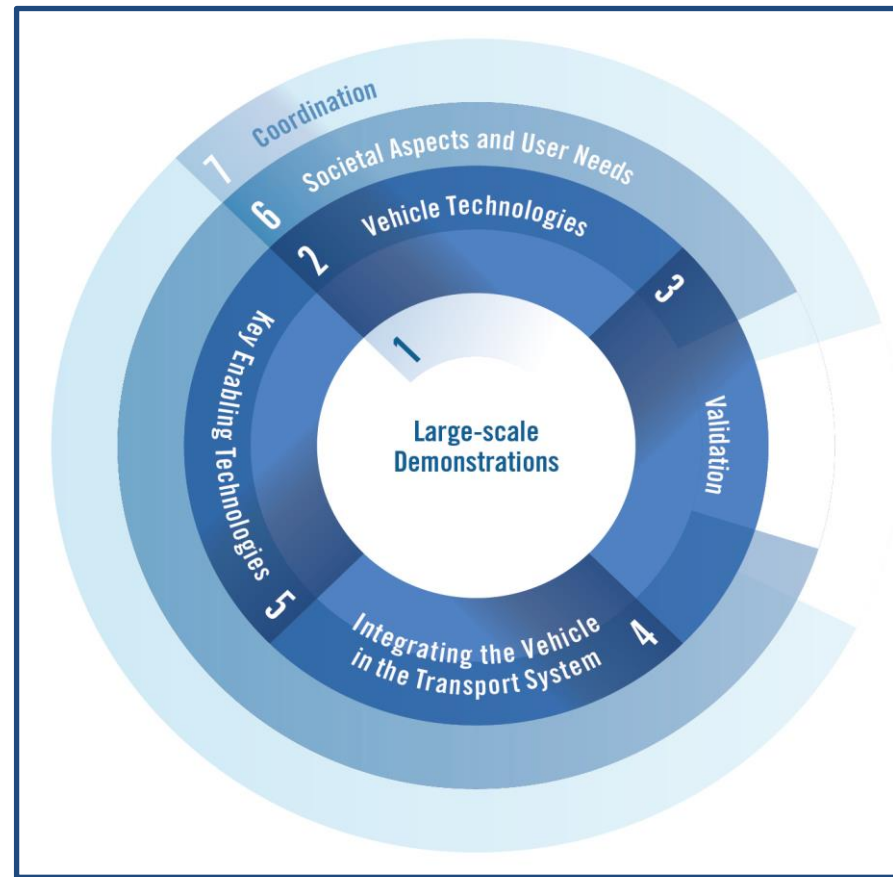
# C. Cooperative and Automated Mobility (**CCAM**)

The CCAM Partnership under Horizon Europe will operate in three phases:

**Phase 1 (2021-2024):** Developing building blocks

**Phase 2 (2025-2027):** Advancing technical maturity

**Phase 3 (2028-2030):** Further implementing in Large-scale Demonstrations all over Europe.



## CCAM

User-centric development of vehicle technologies & services to optimise the **on-board experience** and ensure inclusiveness

**Generation of scenarios** for development, training, virtual testing and validation of CCAM systems

**Infrastructure-enabled solutions** (e.g. Digital Twins) for improving the continuity or extension of Operational Design Domains (ODDs)

Integrating **European diversity** in the design, development and implementation of CCAM solutions to support mobility equity

CCAM effects on jobs and education, plans for skills that match the CCAM development, and prerequisites for **employment growth**



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# Work Programme cluster 5: Mobility

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and automated mobility

Co-programmed partnership

Multimodal and sustainable transport systems for  
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Safety and resilience – per mode and across all  
transport modes



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Deadline: **06/09/2022**

<b>Multimodal transport, logistics, infrastructure</b>	<b>91.000.000</b>
Accelerating the deployment of <b>new and shared mobility services for the next decade</b> <b>IA</b>	20.000.000
Advanced multimodal <b>network and traffic management</b> for seamless door-to-door mobility of passengers and freight transport <b>RIA</b>	15.000.000
Logistics networks integration and harmonisation through operational connectivity to optimise <b>freight flows and drive logistics to climate neutrality</b> <b>IA</b>	15.000.000
New concepts and approaches for resilient and green freight transport and <b>logistics networks against disruptive events</b> (including pandemics) <b>RIA</b>	8.000.000
Smart and efficient ways to <b>construct, maintain and decommission with zero emissions from transport infrastructure</b> <b>IA</b>	10.000.000
Smart enforcement for resilient, sustainable and more efficient <b>transport operations</b> <b>RIA</b>	8.000.000
<b>Urban logistics and planning</b> <b>IA</b>	15.000.000



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DRAFT WP 3

## Safety and resilience

Effects of disruptive changes on **transport safety issues**

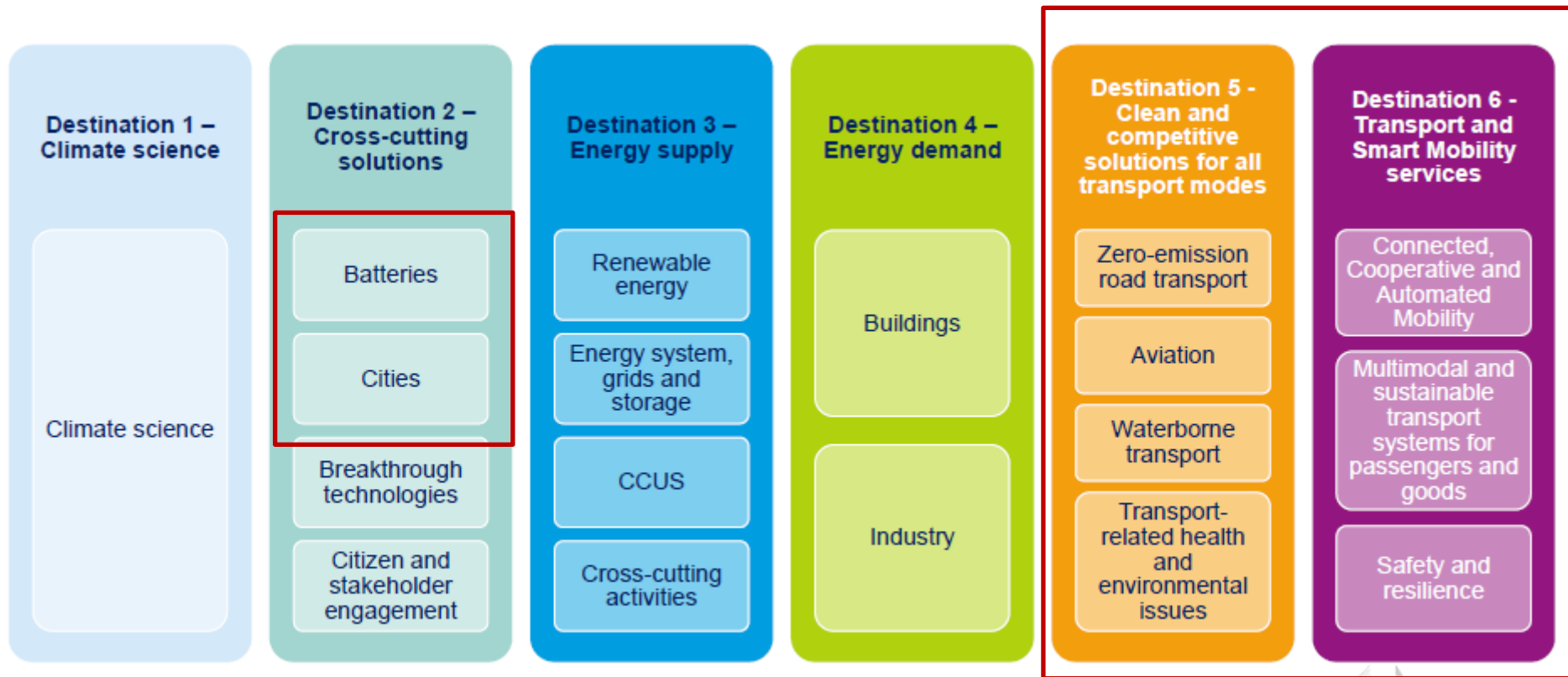
Establishing a framework to improve **traffic safety** culture in the EU

**Better infrastructure safety** on urban and secondary rural roads throughout a combination of adaptable monitoring and maintenance solutions

Ensuring the safety, resilience and security of **waterborne digital systems**

**Aviation safety** - Uncertainty quantification for safety and risk management

# WP. Climate, energy and Mobility



# Deadline: 06/09/2022

Batteries	133.000.000
Coordination of large-scale initiative on <b>future battery technologies</b> (Batteries Partnership)	3.000.000
Digitalisation of <b>battery testing</b> , from cell to system level, including lifetime assessment (Batteries Partnership)	15.000.000
<b>Embedding smart functionalities into battery cells</b> (embedding sensing and self-healing functionalities to monitor and self-repair battery cells) (Batteries Partnership)	15.000.000
Furthering the development of a <b>materials acceleration platform for sustainable batteries</b> (combining AI, big data, autonomous synthesis robotics, high throughput testing) (Batteries Partnership)	20.000.000
Interface and electron monitoring for the engineering of new and <b>emerging battery technologies</b> (Batteries Partnership)	10.000.000
Next generation technologies for <b>High-performance and safe-by-design battery systems for transport and mobile</b> applications (Batteries Partnership)	15.000.000
Physics and data-based <b>battery management for optimised battery utilisation</b> (Batteries Partnership)	15.000.000
<b>Streamlined collection and reversed logistics</b> , fully automated, safe and cost-efficient sorting, dismantling and second use before recycling (Batteries Partnership)	15.000.000
<b>Sustainable processing and refining of battery grade graphite</b> (Batteries Partnership)	10.000.000
Towards creating an integrated manufacturing <b>value chain in Europe</b>	15.000.000



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Deadline: **06/09/2022**

**Communities and cities**

CIVITAS 2030 – Coordination and support for EU funded **urban mobility innovation**

**5.000.000**

5.000.000



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# Summary. WP 2021 / 2022. Mobility

## Prox. Deadlines

12/01/2022

26/04/2022

06/09/2022

	Budget (EUR million) 2021	Nº Projects 2021	Budget (EUR million) 2022	Nº Projects 2022	Budget (EUR million). <b>Total</b>	Nº Projects <b>Total</b>
<b>2ZERO</b>	94	11	105	9	199	20
<b>Aviation</b>	54	11	45	13	99	24
<b>Batteries</b>	160	21	133	22	293	43
<b>CCAM</b>	74	10	88	8	162	18
<b>Multimodal transport, logistics, infrastructure</b>	53	7	91	15	144	22
<b>Safety and resilience</b>	40	9	34	6	74	15
<b>Transport - cross- cutting</b>	1,5	1			1,5	1
<b>Transport - health and environment</b>	15	3	7	3	22	6
<b>Waterborne transport</b>	93,5	13	96	14	189,5	27
<b>Total general</b>	<b>585</b>	<b>86</b>	<b>599</b>	<b>90</b>	<b>1184</b>	<b>176</b>

**Co-Programmed Partnerships topics**  
**IA. Private for Profit: 60%**

(FEDER)



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# Cluster 5 WP Final

European Commission Decision C(2021)4200 of 15 June 2021

[https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-8-climate-energy-and-mobility\\_horizon-2021-2022\\_en.pdf](https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/horizon/wp-call/2021-2022/wp-8-climate-energy-and-mobility_horizon-2021-2022_en.pdf)



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# Del Programa del trabajo al topic

Aviation	
Proposals are invited against the following topic(s):	
<b>HORIZON-CL5-2021-D5-01-05: Greenhouse gas aviation emissions reduction technologies towards climate neutrality by 2050</b>	
<b>Specific conditions</b>	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 2.00 and 6.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 25.00 million.
Type of Action	Research and Innovation Actions
Technology Readiness Level	Activities are expected to achieve TRL 2-4 by the end of the project – see General Annex B.
Expected Outcome:	Project results are expected to contribute to at least one of the following expected outcomes:
<ul style="list-style-type: none"><li>Deliver transformative technologies that will substantially reduce non-CO<sub>2</sub> emissions. The selection of technologies should be compatible with operational procedures and aligned with a potential inclusion of non-CO<sub>2</sub> emissions in EU and International aviation market-based measures (e.g. EU Emissions Trading System and ICAO CORSIA) and other potential relevant policy tools (e.g. European Green Deal) and studies<sup>210</sup>. Foster in-flight measurement of non-CO<sub>2</sub> emissions.</li><li>Deliver transformative technologies for aircraft engines, systems and structures that will maximise the life cycle environmental impact reduction.</li><li>Explore new modular aircraft and/or component configurations, optimised for the lowest possible environmental impact and noise footprint at take-off and landing operations, allowing 24/7 operations.</li><li>Deliver improved aircraft performance technologies (including engine, hybrid-electric systems, electric &amp; electromechanical systems, integrated H<sub>2</sub> storage, management systems, light-weight multi-functional materials and structures and/or morphing capabilities), compatible with aviation climate reduction operational-mitigation strategies, in areas with high climate cost. The selection of technologies should deliver intermediate benefits and bridge the aviation climate neutrality gap towards 2050.</li></ul>	

**Scope:** The impact of aviation to environment and climate is driven by long-term effects from CO<sub>2</sub> emissions and shorter-term ones from non- CO<sub>2</sub> emissions (water vapour, nitrogen oxides, sulphur oxides, aerosols, contrails and contrail cirrus). The CO<sub>2</sub> effects are well understood and are proportional to the fuel used, while the non-CO<sub>2</sub> effects are still insufficiently understood and carry large uncertainties. The total climate impact of aviation has been estimated<sup>211, 212</sup> to two to four times higher than the effect of CO<sub>2</sub> emissions alone. R&I activities in Horizon Europe will pay adequate attention to CO<sub>2</sub> and non-CO<sub>2</sub> emissions, as well as their interdependencies.

Regarding the reduction of full-flight fuel burn and CO<sub>2</sub> emissions, the selection of technologies should have a holistic approach to aviation ecosystem, considering aircraft (including engines) technologies, improved air-traffic management solutions (input and synergies with ATM partnership), new fuel options (input and synergies with hydrogen partnership) and operational improvements. Timely alignment with European medium-term industrial roadmaps (beyond 2030) should be established.

Regarding the reduction of aviation non- CO<sub>2</sub> emissions, the selection of technologies and operational measures should consider climate optimised flight trajectory planning avoiding sensitive areas, should be compatible with operational procedures and aligned with a potential

[...]

Y...dar respuesta a los *Expected Impacts* (a uno o a varios) a nivel de “Destination”

Cubrir el “topic” al 100%, dar respuesta a todo lo que se indica en los distintos apartados:

- *Specific conditions*
- *Expected outcomes*
- *Scope*



# Condiciones de elegibilidad

## Consortium composition (collaborative projects)

- at least one independent legal entity established in a Member State, and
- at least two other independent legal entities each established either in a different Member State or an Associated Country.

NEW

## Gender Equality Plan (applicable only from 2022 on)

NEW

Participants that are public bodies, research organisations or higher education establishments from Members States and Associated countries **must have a gender equality plan**, covering minimum process-related requirements.

- A self-declaration will be requested at proposal stage (for all types of participants).
- Included in the entity validation process (based on self-declaration)



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# Condiciones de admisibilidad

## Same general admissibility conditions

- Applications must be submitted before the call deadline, **electronically** via the Funding & Tenders Portal
- Applications must be **complete, readable, accessible and printable**, and include a **plan for the exploitation and dissemination of results**, unless provided otherwise in the specific call conditions.

## Proposal page limit

Substantial reduction in maximum length:



- RIAs and IAs type of actions: limit for a full application is **45 pages**
- CSAs: limit is **30 pages**
- First stage proposals: limit is **10 pages**
- Exceptions, if any, would be specified in the call text.

**NEW**

**NEW**

# Cluster 5: Climate, Energy and Mobility

## Institutional Partnerships: Mobility



Clean Aviation

SESAR3



Europe's rail

## Other opportunities

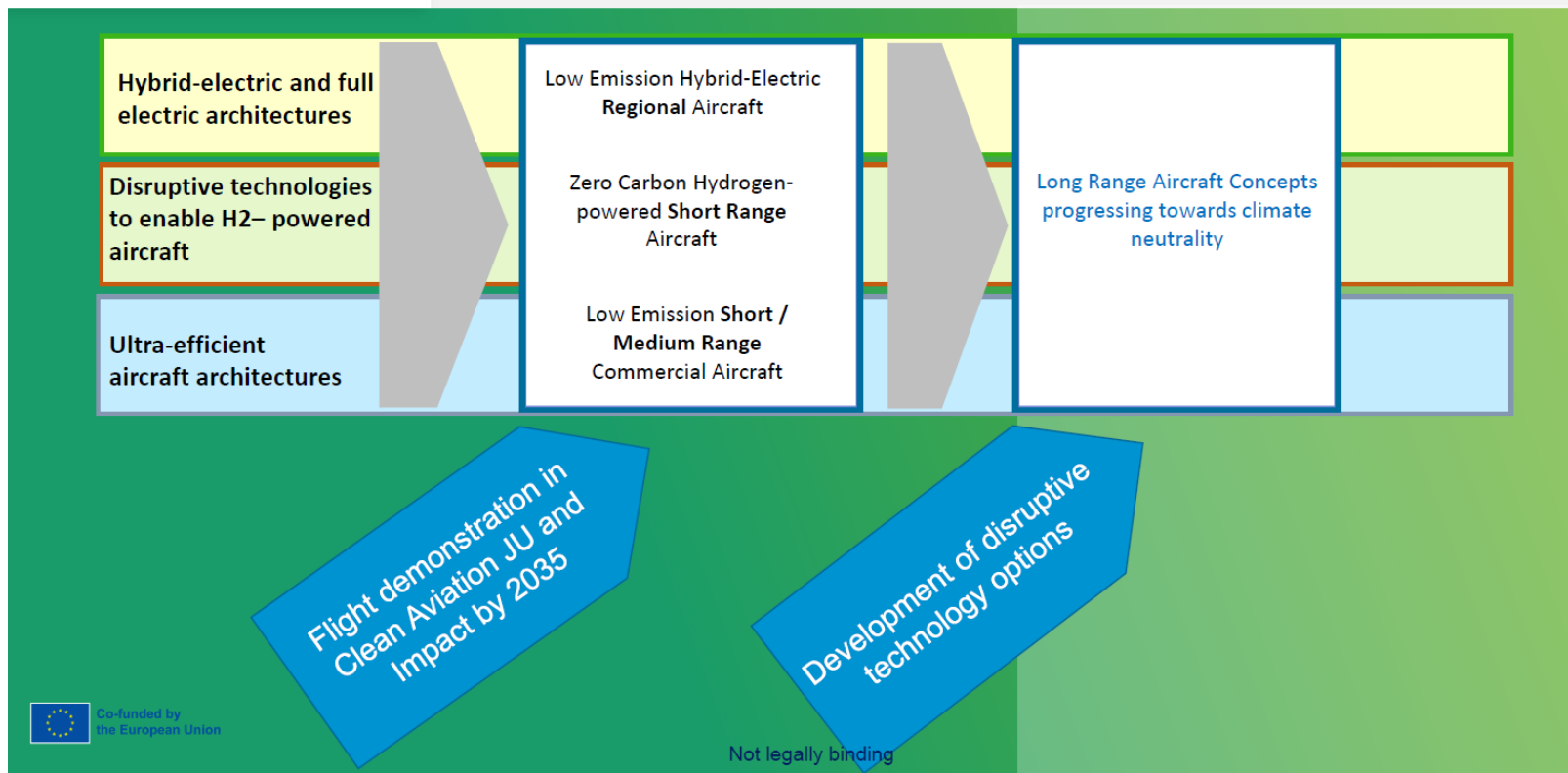
Clean hydrogen  
(institutionalised  
Partnership)



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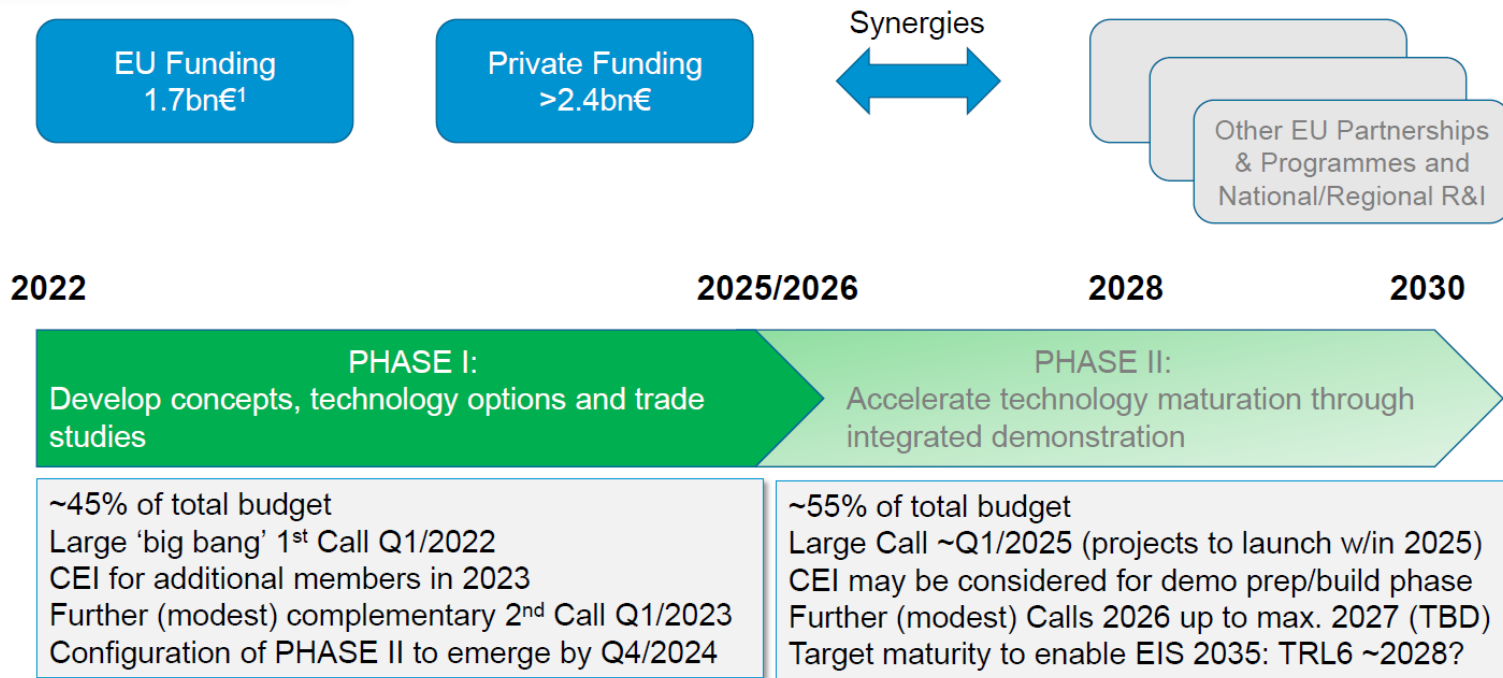


# CLEAN AVIATION – LINCHPIN IN EUROPE'S R&I FOR THE TRANSITION





# THE PROGRAMME SETUP IN A NUTSHELL



▪ <b>Call Launch</b>	23 March 2022
▪ <b>Submission System open</b>	Mid-April 2022
▪ <b>Call Closure</b>	23 June 2022
▪ <b>Q&amp;A opens until*</b>	23 May 2022
▪ <b>Evaluation Phase</b>	July-Aug 2022
▪ <b>Results outcomes</b>	September 2022
▪ <b>Grant Signature</b>	15 December 2022
<i>*Q&amp;A will be published on the Funding and Tenders Opportunities Portal.</i>	

The call **contains 14 Topics** with an indicative total funding of **~736 M€**.

For questions: [CFP-2022-01@clean-aviation.eu](mailto:CFP-2022-01@clean-aviation.eu)

Find out more:

- **Clean Aviation JU website:** [Calls for Proposals](#)
- **Call Page via the Funding and Tenders Opportunities Portal:** [CAJU Call 01](#)



Not legally binding



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HORIZON-JU-CLEAN-AVIATION2022-01-	Title	Max Number of projects	Ind. Topic Value (Funding in M€)
<b>Hydrogen-powered aircraft topics</b>			
HPA-01	Direct Combustion of Hydrogen in Aero-engines	2	115
HPA-02	Multi-MW Fuel Cell Propulsion System for Hydrogen-Powered Aircraft	2	50
HPA-03	Large Scale Lightweight Liquid Hydrogen Integral Storage Solutions	1	10
HPA-04	Near Term Disruptive Technologies for Hydrogen-Powered Aircraft	2	7
<b>Hybrid-electric powered regional aircraft topics</b>			
HER-01	Multi-MW Hybrid-Electric Propulsion System for Regional Aircraft	2	75
HER-02	Thermal Management Solutions for Hybrid-Electric Regional Aircraft	1	40
HER-03	Electrical Distribution Solutions for Hybrid-Electric Regional Aircraft	1	40
HER-04	Innovative Wing Design for Hybrid-Electric Regional Aircraft	1	20
<b>Short/short-medium range aircraft topics</b>			
SMR-01	Ultra Efficient Propulsion Systems for Short and Short-Medium Range Aircraft	3	175
SMR-02	Ultra Performance Wing for Short and Short-medium Range Aircraft	2	55
SMR-03	Advanced Low Weight Integrated Fuselage and Empennage for Short Range and Short-Medium Range Aircraft	1	40
<b>Transversal activity topics</b>			
TRA-01	Aircraft concepts for regional, short and short-medium range aircraft enabling 30 to 50% reduction in emissions	3	90
TRA-02	Novel Certification Methods and Means of Compliance for Disruptive Technologies	1	18
<b>Coordination and Support Actions</b>			
CSA-01	Developing a European Clean Aviation Regional Ecosystem (ECARE)	1	0.72
<b>TOTAL</b>	<b>14 topics</b>	<b>up to 23 projects</b>	<b>735.72M€</b>

### 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

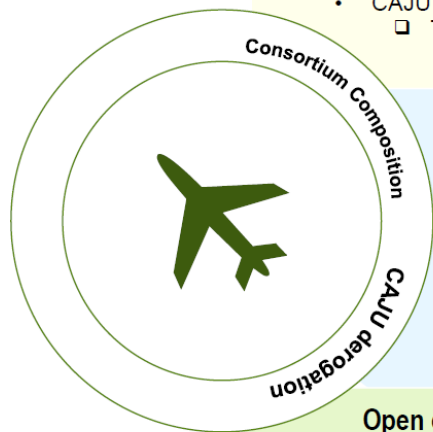
Ref. Art. 61 of the Council Regulation (EU)  
[2021/2085](#)

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.

# ADMISSIBILITY AND ELIGIBILITY SPECIFITIES

## CAJU WORK PROGRAMME



### 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

# 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)

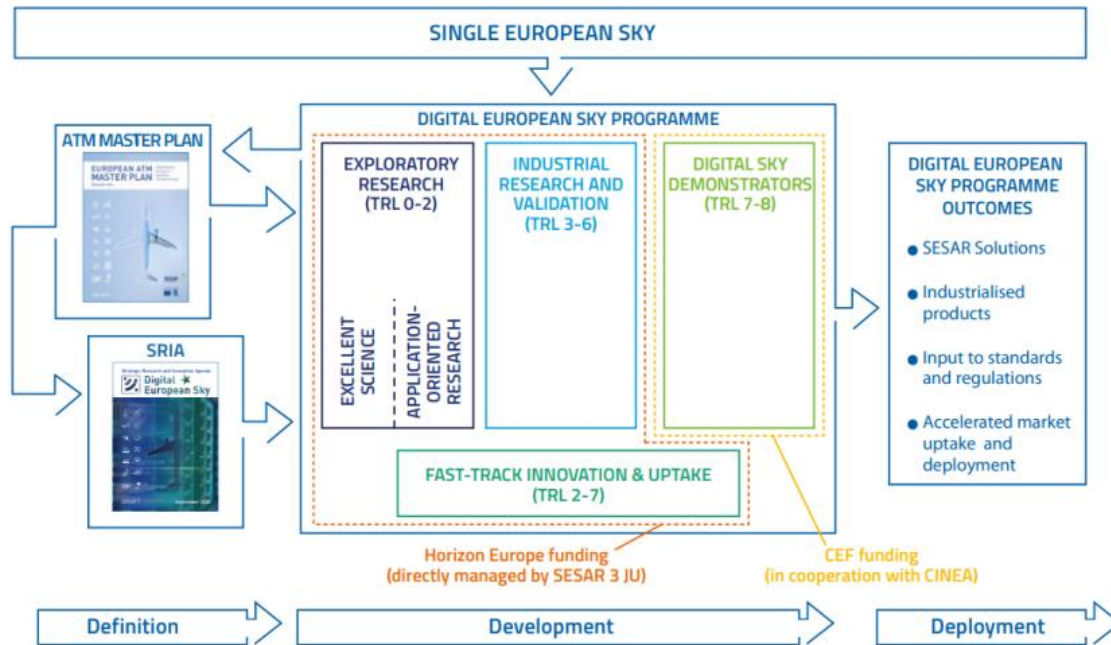
*Additional funds via Connecting Europe Facility (in coordination with CINEA) to the value of at least EUR 200 million.*



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





# Work Areas and budget allocation

EXPLORATORY RESEARCH			
Work Area	Full title	Type of Action	BUDGET
WA1	Fundamental science and outreach	RIA	€10.000.000
WA2	ATM application oriented research	RIA	€10.000.000
WA3	Knowledge transfer network	CSA	€3.750.000
<b>TOTAL</b>	<b>€23.750.000</b>		

INDUSTRIAL RESEARCH			
Work Area	Full title	Type of Action*	BUDGET
WA1	Transversal activities	CSA	€4.000.000
WA2	Industrial research for Green Deal	RIA	€30.000.000
WA3	Next generation of enabling platforms and service	RIA	€55.000.000
WA4	FTIU for U-Space & UAM	IA	€35.000.000
WA5	FTIU for capacity on demand and dynamic airspace, virtualisation and cybersecure data-sharing, multimodality and passenger experience, and the aviation green deal.	IA	€22.000.000
WA6	Industrial research for European ATM Master Plan 2020 phase C	RIA	€25.000.000
<b>TOTAL</b>	<b>€171.000.000</b>		

\* a standard reimbursement rate of 70% applies to all type of actions for this call

Send your questions to the SESAR 3 JU Call Helpdesk:

[info-call@sesarju.eu](mailto:info-call@sesarju.eu)



## EASA in your proposals



- Along the development and validation of the SESAR Solutions, care shall be taken on the need to **engage with the National Authorities and EASA (when required)**, to address the regulatory issues and to consider the need for developing standards.
- When relevant, projects shall **anticipate the contribution of EASA in the Grant** as Participant (Beneficiary or Third party).
- EASA contribution may include:
  - Coordinating the **review of the safety argumentation** with the competent authorities involved
  - **Provide guidance** to support the safety review.
  - Supporting the **approval and endorsement** of the safety cases
- Contact during the proposal elaboration phase: [SESAR\\_requests@easa.europa.eu](mailto:SESAR_requests@easa.europa.eu)

3



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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

# EU-Rail Work Programme 2022 2024 Budget



Year 2022	Type of call	Value of the actions	Maximum EU-Rail co-funding	Non-funded activities	Target contributions from Members in case of award	Indicative publication date
Multi-annual Call for Proposals	Open	390.0	234.0	156.0	302.0	Q1
Call for Proposals– Exploratory Research	Open	14.5	12.5	2.0	4.3	Q3
Call for Tenders	Open	15.5	13.7	1.8	0.0	Q1–Q4 & implementation of new and ongoing contracts/framework contracts



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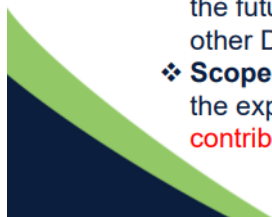
# EU-Rail Call 2022-1



DESTINATION Topics	Type of Action	Expected TRL	Expected EU contribution per project (EUR million)	Number of projects expected to be funded
Opening: 10 March 2022; Deadline: 23 June 2022				
HORIZON-ER-JU-2022-FA1-TT-01	IA	5 to 7	38.0	1
HORIZON-ER-JU-2022-FA2-01	IA	5 to 7	54.3	1
HORIZON-ER-JU-2022-FA3-01	IA	5 to 8	46.3	1
HORIZON-ER-JU-2022-FA4-01	IA	5 to 7	38.3	1
HORIZON-ER-JU-2022-FA5-01	IA	5 to 8/9	40.6	1
HORIZON-ER-JU-2022-FA6-01	IA	5 to 7	16.5	1

## Call structure (see also annex VII of the EU-Rail [Work Programme 2022 2024](#)):

- ❖ **Destination:** indicates the objectives as well as clear and quantified targets in term of KPIs to be reach with the R&I activities.
- ❖ **Expected outcome:** describes the expected demonstrations, the expected preparatory works to be launched for the future set of demonstration foreseen in the MAWP and the **input/output expected with the linked actions** from other Destinations.
- ❖ **Scope:** identifies the expected capabilities/enablers that should be developed through R&I activities for achieving the expected demonstrators. It also highlight other requirements, as the need to **measure and monitor KPI**, **contribute to standards** and **interact with the System Pillar activities**.



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# Single Basic Act (SBA) & In-kind contribution

- Contributions from members other than the Union and contributing partners as per Art 11 of SBA - the contributions of private members shall consist of IKOP, IKAA and financial contributions.
- Programme approach:

“Total Project Costs”		
HE Eligible costs		IKAA
HE Max Contribution (co-funding) – funding rate 60% and = [44.5% Total Project Costs]	IKOP – 40%	“If Applicable – linked to the project or activities” - Own accounting practice
HE eligible costs		
Funded by the JU		

- Letter of Commitments and Final contributions per Members agreed with expected leverage effects calculated at Programme level

# 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.



## Clean Hydrogen partnership

### Deadline: 31/05/2022

HORIZON-JTI-CLEANH2-2022-03-02: Innovative and optimised MEA components towards next generation of improved PEMFC stacks for **heavy duty vehicles**. **RIA**

HORIZON-JTI-CLEANH2-2022-03-03: Large scale demonstration of European H2 **Heavy Duty Vehicle** along the TEN-T corridors. **IA**

HORIZON-JTI-CLEANH2-2022-03-04: Liquid Hydrogen tanks for **heavy-duty vehicles**. **RIA**

HORIZON-JTI-CLEANH2-2022-03-05: Large scale demonstration of hydrogen fuel cell propelled **inland waterway vessels**. **IA**

HORIZON-JTI-CLEANH2-2022-03-06: Development and optimisation of a dedicated **Fuel Cells for Aviation**: from dedicated stack (100s kW) up to full system (MWs). **RIA**

HORIZON-JTI-CLEANH2-2022-03-07: Development of specific **aviation cryogenic storage system** with a gauging, fuel metering, heat management and monitoring system. **RIA**

HORIZON-JTI-CLEANH2-2022-03-08: Development and optimisation of a dedicated **Fuel Cells for Aviation**: disruptive next-gen **high temperature Fuel Cells** technology for future aviation. **RIA**

### Deadline: 20/09/2022

HORIZON-JTI-CLEANH2-2022-03-01: Development and optimization of reliable and versatile **PEMFC stacks** for **high power range** applications. **RIA**

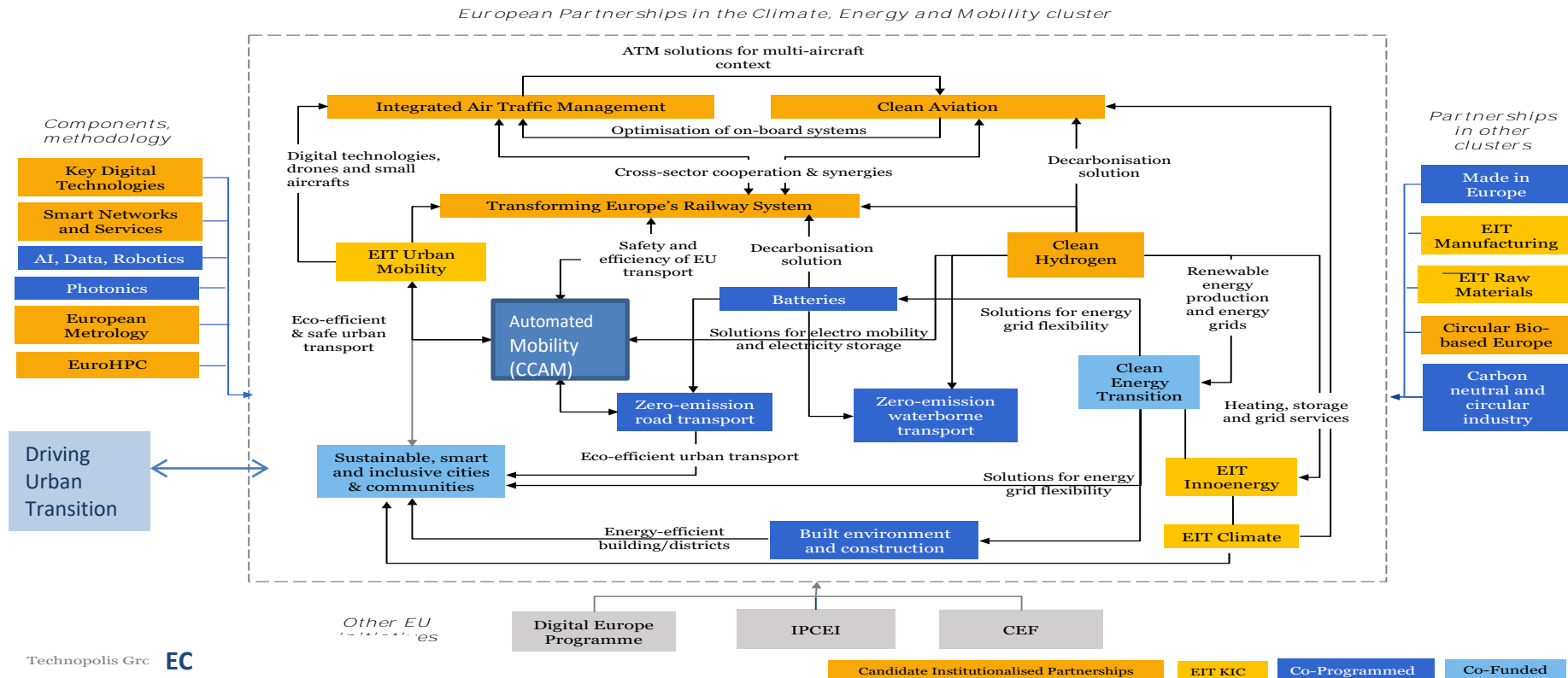


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# Sinergías. Clima, Energía y Movilidad

↑ Integración entre partnerships (desarrollo tec, integración sistema, despliegue, etc)





# Help. Cluster 5. Climate, energy and mobility

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## Climate

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Juan Carlos García, [juancarlos.garcia@cdti.es](mailto:juancarlos.garcia@cdti.es)

## Energy

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Cristina Garrido, [cristina.garrido@cdti.es](mailto:cristina.garrido@cdti.es)

## Mobility

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Julio Dolado, [julio.dolado@cdti.es](mailto:julio.dolado@cdti.es) (Surface and waterborne)

Telf: 915815562



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para  
proyectos de I+D empresarial e innovación



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