

# 워크프로그램 2025 클러스터 5 초안 주요 내용

<’25.04.29, 한-EU연구협력센터>

※ 동 내용은 공식 채택에 앞서 발간된 사전 [초안 문서](#)를 기반으로 하므로 ‘25년 5월 공개 예정인 최종 워크프로그램 내용과 다를 수 있음

## □ 워크프로그램 2025 개요

- 워크프로그램은 해당연도에 개시되는 과제 공고에 관한 정보를 담고있는 문서로 이에 따라 과제 공모가 진행됨
- 워크프로그램은 제시한 연구 주제의 필요성과 배경, 관련 EU 정책목표 등을 설명하고, 공고 개시 및 마감 일정과 예산 등 세부사항을 제시하며, 각 연구 주제의 범위, 기대 성과, 목표 등을 설명

클러스터5 워크프로그램 2025 목차	
Introduction	• 워크프로그램의 정책 배경 및 전반적인 방향성 설명
Calls (1-8)	• 공고 예산 및 일정, 연구 주제별 과제 수 및 예산 제시
Destinations (1-6)	• 도달목표(Destination)의 배경 및 필요성 설명, 이에 포함된 각 연구주제 별 세부내용 명시
Other actions	• (공고에 해당되지 않는 기타 사업)
Budget	• 워크프로그램 전체 예산표

### ※ 참고: Horizon Europe 사업 유형

- RIA(연구혁신과제): 주로 낮은 TRL(2-6)을 다루는 연구 프로젝트
- IA(혁신과제): 높은 TRL(6-8)을 다루며, RIA 펀딩 비율이 100%인데 반해 IA의 경우 영리 법인에 한해 70% 펀딩 비율을 적용(총 과제 비용의 70%만 지급)
- CSA(조정지원과제): 직접적인 연구는 아니지만 인식 제고, 소통, 네트워킹, 정책 대화, 상호 학습 및 연구와 같은 수반 과제
- COFUND 파트너십: EU, 국가연구자금지원기관, 공공당국을 중심으로 하는 공동 자금지원 파트너십, EU는 동 파트너십 예산의 30~70%를 지원, 각 파트너십은 자체 공고를 통해 연구 과제를 지원하며, 각국의 연구기관은 자국의 연구자금지원 기관이 파트너십에 참여하는 경우에 연구비를 신청할 수 있음

### ※ 참고: two-stage application procedure

- 2단계로 진행되는 신청절차에서는 1단계에서 컨셉트 노트(concept note)를 제출하고, 통과시 2단계에서 최종 제안서(full project proposal)를 제출하게 됨

## □ 2025년도 공고(call) 예산 및 예정일

공고번호	신청 기간(1단계)	예산(백만€)
HORIZON-CL5-2025-01-Two-Stage	5.6~9.2	24.00
HORIZON-CL5-2025-02	5.6~9.2	274.00
HORIZON-CL5-2025-03-Two-Stage	5.6~9.4	7.00
HORIZON-CL5-2025-04	5.6~9.4	174.10
HORIZON-CL5-2025-05-Two-Stage	5.6~9.4	18.00
HORIZON-CL5-2025-06	5.6~9.24	139.50
HORIZON-CL5-2026-01	9.16~1.20	188.00
HORIZON-CL5-2026-02	9.16~2.17	318.00
<b>총 계</b>		<b>1,142.60</b>

## □ 도달목표(DESTINATIONS)

구분	도달목표 (관련 분야)	주제 수 (개)	과제 수 (건)	예산 (백만€)
1	Climate sciences and responses for the transformation towards climate neutrality (기후과학, 기후대응, 기후중립)	7	15	101.5
2	Cross-sectoral solutions for the climate transition (기후전환 솔루션)	12	35	251.5
3	Sustainable, secure and competitive energy supply (에너지 공급)	27	61	407.0
4	Efficient, sustainable and inclusive energy use (에너지 사용)	6	17	84.0
5	Clean and competitive solutions for all transport modes (운송 솔루션)	19	25	162.6
6	Safe, resilient transport and smart mobility services for passengers and goods (운송 및 스마트 모빌리티 서비스)	15	24	136.0
<b>총계</b>		<b>86</b>	<b>177</b>	<b>1,142.6</b>

## [부록] 전체 연구 주제 목록

### 1 DESTINATION 1 - 연구 주제

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

- HORIZON-CL5-2025-06-D1-XX
- HORIZON-CL5-2025-05-Two-Stage-D1-05

구분	공고 번호	유형	주제 (topic)	과제 수 (건)	과제당 예산 (백만 €)	총 예산 (백만 €)
1	01	RIA	Climate simulations data and knowledge for optimal support of IPCC Assessments and International Policy	1	30	30
2	02	RIA	Advancing Earth System Models to increase understanding of Earth system change	2	7.5	15
3	03	RIA	Modelling of mitigation pathways for F-gases	3	2.5	7.5
4	04	RIA	The attribution to climate change, and improved forecasting of extreme and slow-onset climate- and weather-related events and their impacts	2	6	12
5	05	RIA	Adaptation to Climate Change: Effectiveness and Limits	3	6	18
6	06	RIA	Fostering equity and justice in climate policies - Societal Readiness Pilo	3	5	15
7	07	CSA	Implementing the climate action pillar of the EU-African Union Partnership on Climate Change and Sustainable Energy	1	4	4
<b>총 7개 주제 / 총 15개 과제 / 총 101.5백만 유로</b>						

## 2 DESTINATION 2 - 연구 주제

※ Destination 2: Cross-sectoral solutions for the climate transition

- HORIZON-CL5-2026-01-D2-XX
- HORIZON-CL5-2025-01-Two-Stage-D2-02

구분	공고 번호	유형	주제 (topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
<b>Batteries</b>						
1	01	IA	Development of sustainable and design-to-cost batteries with (energy-)efficient manufacturing processes and based on advanced and safer materials (Batt4EU Partnership)	3	8	24
2	02	RIA	Cost-effective next-generation batteries for long-duration stationary storage (Batt4EU Partnership)	3	5	15
3	03	IA	Sustainable processing and refining of raw materials to produce battery grade Li-ion battery materials (Batt4EU Partnership)	2	10	20
4	04	RIA	Integrating advanced materials, cell design and manufacturing development for high-performance batteries aimed at mobility (Batt4EU Partnership)	3	10	30
5	05	IA	Accelerated multi-physical and virtual testing for battery aging, reliability, and safety evaluation (Batt4EU Partnership)	2	7.5	15
6	06	CSA	Fostering the European battery ecosystem by providing accurate and up-to-date information and stimulating excellence in the European battery R&I community (Batt4EU Partnership)	1	3	3
<b>Communities and cities</b>						

구분	공고 번호	유형	주제 (topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
7	07	COF UND	Driving Urban Transitions to a sustainable future (DUT) Co-Funded Partnership	1	56	56
<b>Cross-cutting</b>						
8	08	RIA	Coordinated call with India on waste to renewable hydrogen	2	5	10
9	09	CSA	Monitoring and Evaluation of the Societal Readiness Pilot	1	1.5	1.5
10	10	COF UND	Clean Energy Transition Co-Funded Partnership	1	69	69
11	11	CSA	Support to the SET Plan community	15	0.5	7.5
12	12	CSA	NZIA regulatory sandbox exchange forum support	1	0.5	0.5
<b>총 12개 주제 / 총 35개 과제 / 총 251.5백만 유로</b>						

### 3 DESTINATION 3 - 연구 주제

※ Destination 3: Sustainable, secure and competitive energy supply

- HORIZON-CL5-2025-02-D3-XX
- HORIZON-CL5-2026-02-D3-XX
- HORIZON-CL5-2025-01-Two-Stage-D3

구분	공고 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
<b>Global leadership in renewable energy</b>						
1	01	IA	Large-scale production of liquid advanced biofuels and renewable fuels of non-biological origin	3	11	33
2	02	RIA	Competitiveness, energy security and integration aspects of advanced biofuels and renewable fuels of non-biological origin value chains	2	4	8
3	03	IA	Novel approaches to geothermal resources development	2	10	20
4	04	RIA	Development of hydropower technologies and water management schemes allowing for win-win situation of flexible hydropower and biodiversity improvement - Societal Readiness Pilot	3	4	12
5	05	IA	Demonstration of thermal energy storage solutions for solar thermal plants and systems	2	7.5	15
6	06	IA	Innovative manufacturing of wind energy technologies	4	7	28
7	07	RIA	Improved reliability and optimised operations and maintenance for wind energy systems	3	5	15

구분	공고 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
8	08	RIA	Understand and minimise the environmental impacts of offshore wind energy	3	5	15
9	09	IA	Optimised/Alternative Silicon Growth Technologies (from either liquid or gaseous phase) for PV Applications (EUPI-PV Partnership)	2	9	18
10	10	IA	Towards commercialisation of Perovskite PV and development of dedicated manufacturing equipment (EUPI-PV Partnership)	3	8	24
11	11	IA	Novel inverter technologies and flexibility in PV systems (EUPI-PV Partnership)	3	6	18
12	12	RIA	Extending the lifetime of crystalline silicon PV modules (EUPI-PV Partnership)	2	4	8
13	13	PCP	De-risking wave energy technology development through transnational pre-commercial procurement of wave energy research and development	1	20	20
14	14	CSA	Development of innovative solutions strengthening the security of renewable energy value chains	3	2	6
15	15	CSA	Building a Long-Term Africa Union (AU) and European Union (EU) Research and Innovation joint collaboration on Sustainable Renewable Energies	1	4	4
<b>Energy systems, grids &amp; storage</b>						
16	16	CSA	Support to the BRIDGE initiative	1	1	1
17	17	IA	Control and operation tools for a RES-based energy system	2	10	20

구분	공고 번호	유형	주제 (topic)	과제 수 (건)	과제당 예산 (백만 €)	총 예산 (백만 €)
18	18	IA	Next generation distribution substation for increasing the system resilience	2	9	18
19	19	IA	Innovative solutions for a generative AI-powered digital spine of the EU energy system	2	8	16
20	20	IA	Innovative tools and services to manage and empower energy communities	2	10	20
21	21	IA	Cross-regional network and market model for optimisation of long duration storage	2	7	14
22	22	IA	Underground Thermal Energy Storage in dense urban areas	2	9	18
23	23	RIA	Critical elements for energy security of grid and storage technologies	3	3	9
<b>Carbon Capture, Utilisation and Storage (CCUS)</b>						
24	24	RIA	New CO2 capture technologies	3	6	18
25	25	RIA	Effects of CO2-stream impurities on CO2 transport and storage	2	5	10
26	26	RIA	European investment atlas of potential CO2 storage sites	1	5	5
27	27	IA	Using captured CO2 as a resource to replace fossil hydrocarbons in industrial production	2	7	14
<b>총 27개 주제 / 총 61개 과제 / 총 407백만 유로</b>						



## 4 DESTINATION 4 - 연구 주제

※ Destination 4: Efficient, sustainable and inclusive energy use

### ○ HORIZON-CL5-2026-02-D4-XX

구분	공고 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
<b>Highly energy-efficient and climate neutral European building stock</b>						
1	01	RIA	On-site innovative robotic and automated solutions and techniques for more sustainable and less disruptive building renovation and construction	3	5	15
2	02	IA	Smarter buildings as part of the energy system for increased efficiency and flexibility - Societal Readiness Pilot	3	4	12
3	03	RIA	Innovative pathways for low carbon and climate resilient building stock and built environment (Built4People Partnership)	3	5	15
4	04	IA	Innovative approaches for the deployment of Positive Energy Districts	3	5	15
5	05	RIA	Optimal combination of low embodied carbon construction products, technical building systems and circularity principles for climate neutral buildings (Built4People Partnership)	3	4	12
<b>Industry</b>						
6	06	IA	Phase out fossil fuel in energy intensive industries through the efficient integration of renewable energy sources	2	7.5	15
<b>총 6개 주제 / 총 17개 과제 / 총 84백만 유로</b>						

## 5 DESTINATION 5 - 연구 주제

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

### ○ HORIZON-CL5-2025-04-D5-XX

구분	연구 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
<b>Zero-emission road transport</b>						
1	01	IA	Efficient wireless stationary bidirectional charging solutions for road Light Duty Vehicles (2ZERO Partnership) - Societal Readiness Pilot	2	10	20
2	02	IA	Cybersecure and resilient road e-mobility ecosystem (2ZERO Partnership)	1	10	10
3	03	IA	Safe post-crash management of road Light Duty Battery Electric Vehicles (BEVs) (2ZERO Partnership)	1	5	5
4	04	RIA	Extended lifetime of road Battery Electric Vehicles (BEV) (2ZERO Partnership)	1	7	7
5	05	IA	Road Battery Electric Vehicles (BEV) optimised user-centric solutions for energy efficiency design and consistent range throughout weather conditions (2ZERO Partnership)	2	6	12
6	06	IA	Strategies, tools and concepts for optimised road Battery Electric Vehicles (BEV) long-haul logistics use cases (2ZERO Partnership)	1	5	5
7	07	CSA	Accelerating the circular transformation of the EU automotive industry	1	2	2
<b>Aviation</b>						
8	08	RIA	Next generation testing capabilities in strategic EU wind tunnels	1	15	15

구분	과목 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
9	09	RIA	Next generation aircraft autonomy technologies for cockpit / pilot assistance applications	2	3.5	7
<b>Waterborne transport</b>						
10	10	IA	Innovative solutions for energy conversion and safety of low and zero-carbon fuels in waterborne transport (ZEWT Partnership)	2	11.25	22.50
11	11	IA	Demonstration of battery energy storage systems in existing and new vessels via novel energy storage and ship design concepts (ZEWT Partnership)	2	7.5	15
12	12	RIA	Real-time, adaptative and innovative energy management solutions to optimise fuel consumption and lower emissions pollutants in waterborne transport (ZEWT Partnership)	1	4	4
13	13	IA	Novel holistic intelligent tools for variable retrofit and decarbonised scenarios (ZEWT Partnership)	1	4	4
14	14	IA	Flexible and mobile solutions for Onshore Power Supply (ZEWT Partnership)	1	5	5
15	15	IA	Optimal integrated onboard renewable energy solutions, by considering Wind-Assisted Propulsion Systems (ZEWT Partnership)	1	7.5	7.5
16	16	CSA	Support of the new EU renewable and low carbon fuel ecosystem for waterborne transport	1	2	2
<b>Transport-related health and environment</b>						

구분	연구 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
17	17	IA	Real time monitoring of regulated and non-regulated emissions from all types of vessels and other port activities in order to enforce emission limits in waterfront cities	2	8	16
<b>Cross-cutting</b>						
18	18	CSA	Support to the organisation and dissemination of the Transport Research Arena (TRA) conference	1	1.6	1.6
19	19	CSA	Knowledge sharing and dissemination to support road transport R&I in EU and around the world increasing global EU competitiveness	1	2	2
<b>총 19개 주제 / 총 25개 과제 / 총 162.6백만 유로</b>						

## 6 DESTINATION 6 - 연구 주제

※ Destination 6: Safe, Resilient Transport and Smart Mobility services for passengers and goods

### ○ HORIZON-CL5-2025-04-D6-XX

구분	공고 번호	유형	주제 (topic)	과제 수 (건)	과제 당 예산 (백만€)	총 예산 (백만€)
<b>Connected, Cooperative and Automated Mobility (CCAM)</b>						
1	01	RIA	Advancing remote operations to enable the sustainable and smart mobility of people and goods based on operational and societal needs (CCAM Partnership) - Societal Readiness Pilot .	2	6	12
2	02	CSA	Preparing for large-scale CCAM demonstrations (CCAM Partnership) - Societal Readiness Pilot	1	4.5	4.5
3	03	RIA	Next-generation environment perception for real world CCAM operations: Error-free and secure technologies to improve energy-efficiency, cost-effectiveness, and circularity (CCAM Partnership)	2	4	8
4	04	RIA	Integration of human driving behaviour in the validation of CCAM systems (CCAM Partnership)	1	5	5
5	05	RIA	Approaches, verification and training for Edge-AI building blocks for CCAM Systems (CCAM Partnership)	1	4	4
6	06	IA	Federated CCAM data exchange platform (CCAM Partnership)	1	4	4
<b>Multimodal transport, infrastructure and logistics</b>						
7	07	IA	Innovative construction and maintenance, with the use of new materials and techniques, for resilient and sustainable transport infrastructure	2	11	22

구분	공고 번호	유형	주제(topic)	과제 수 (건)	과제당 예산 (백만€)	총 예산 (백만€)
8	08	IA	Accelerating freight transport and logistics digital innovation	2	7.5	15
9	09	CSA	Reliable data and practices to measure and calculate transport emissions in multimodal transport chains	1	3.5	3.5
10	10	IA	Integrating inland waterway transport in smart shipping and multimodal logistics chains	2	8	16
11	11	RIA	Innovative air mobility and services for sustainable and smart urban, peri-urban transport - Societal Readiness pilot	2	5	10
<b>Safety and resilience</b>						
12	12	IA	Safe Human-Technology Interaction (HTI) in the vehicle systems of the coming decade - Societal Readiness Pilot	2	4	8
13	13	RIA	Safety of Cyclists, Pedestrians and Users of Micromobility Devices	2	5	10
14	14	RIA	Predicting and avoiding road crashes based on Artificial Intelligence (AI) and big data	2	5	10
15	15	RIA	Icing in the context of sustainable aviation	1	4	4
<b>총 15개 주제 / 총 24개 과제 / 총 136백만 유로</b>						