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Business Finland, EU Funding and Cluster 5 - what's happening in the batteries and electrification domain

SIX POWER event, 26. lokakuuta 2026

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Horizon Europe 2021 - 2027

Pillar 1
Excellent Science

- European Research Council
- Marie Skłodowska-Curie Actions
- Research Infrastructures

Pillar 2
Global Challenges and European Industrial Competitiveness

Clusters

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

- Joint Research Centre

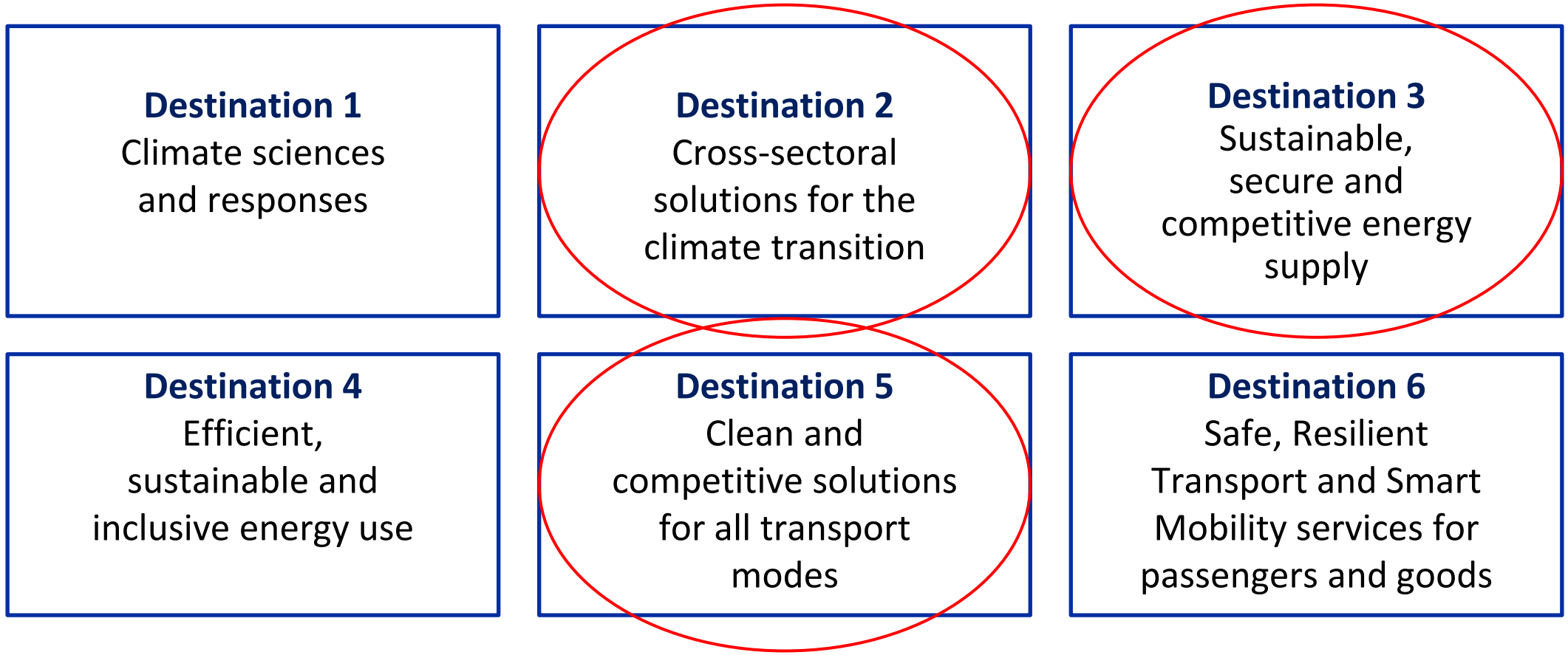
Pillar 3
Innovative Europe

- European Innovation Council
- European innovation ecosystems
- European Institute of Innovation and Technology

Widening Participation and Strengthening the European Research Area

- Widening participation and spreading excellence
- Reforming and Enhancing the European R&I system

CLUSTER 5 (PILLAR II) – CLIMATE, ENERGY AND MOBILITY

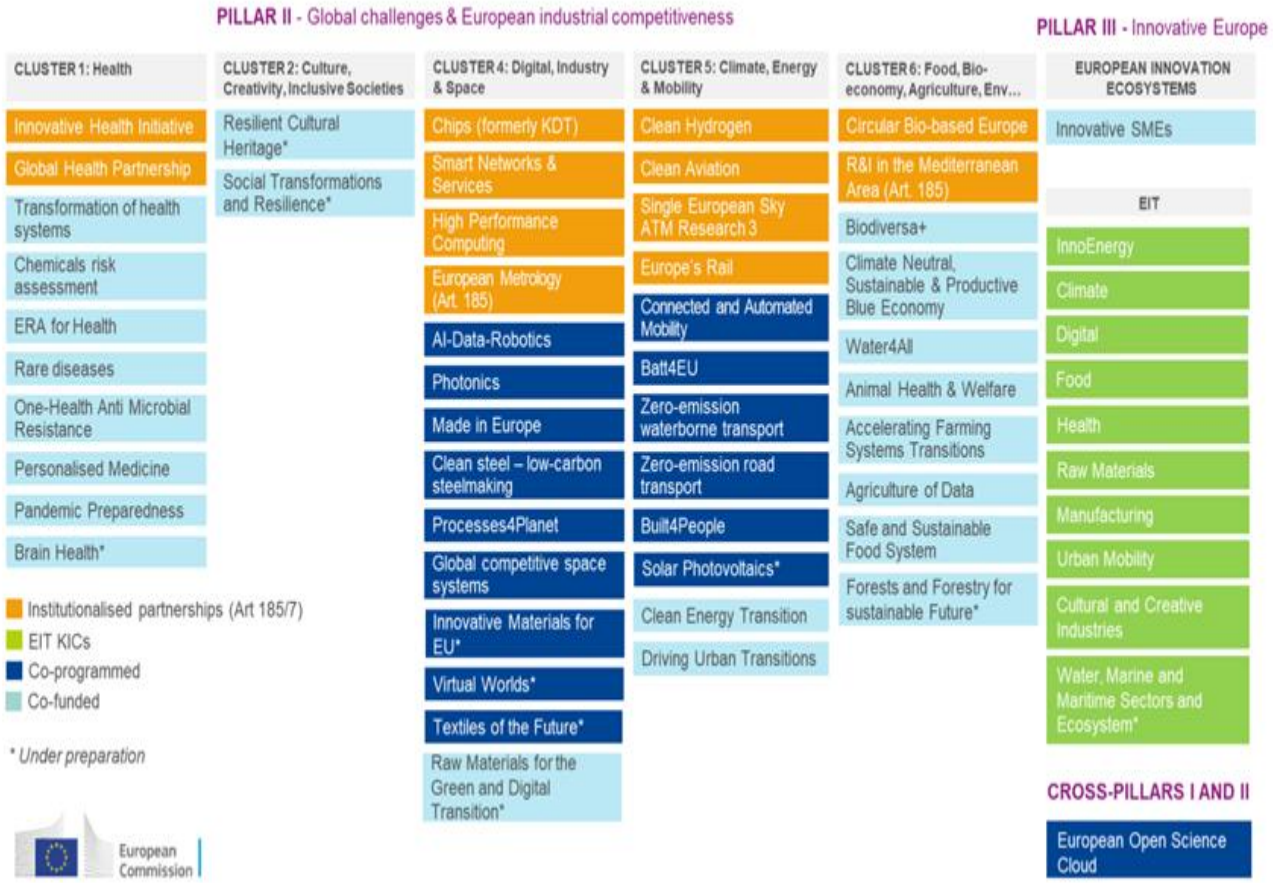


EUROPEAN PARTNERSHIPS UNDER HORIZON EUROPE

- **Key implementation tool of Horizon Europe** to achieve the EU's political priorities, such as the **green and digital** transition (¼ of HE funding).
- Strategic instruments, which enable **long-term collaboration** between the EU's various partners, i.e. the Commission and relevant actors. The priority is to enable to develop a **common vision**, build a **critical mass of investments** and implement them through a program of **joint activities**.
- Depending on the implementation model, **calls can be open to everyone** or only to **participants from countries committed to funding the partnership's call**.

Benefits for companies:

- ✓ *Integration into European networks, visibility, opportunities to influence R&I agendas*
- ✓ *Possibility for technology development (at higher TRLs) in international collaboration integrated into the whole value chain*



[European Partnerships in Horizon Europe]

[Horisonttieurooppa.fi - Tutustu ohjelmaan - Kumppanuudet]

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Key characteristics of Horizon Europe funding

Typical Horizon R&D project in figures (per Finnish participation as of May 2026):

- **Total budget 12.5M€**
- **EU contribution 8.8M€**
- **21 participants on average (median = 17)**
- **Average EU contribution per participant ~500k€**
- **Typical project duration: ~3.5 years**

Majority of the funding volume goes to **consortia**, not just individual actors

- Minimum criterion for consortium projects: The project involves **at least three independent partners from three different Member States or Associated Countries** (note: a typical consortium is much larger than this)

- **Top-down** dynamics: Projects respond to calls for proposals defined by the Commission: "deliver what the Commission asks"
  - The Commission defines the scope, content and desired outcomes of the project described in the calls for proposals
  - Proposals must correspond to the description of the call for applications (comparable to a tendering process)
- Typical evaluation criteria: Excellence, (quality and efficiency of) Implementation, Impact
  - Technological state-of-the-art and how to go beyond this, how to maximize impact, do the measures achieve the desired results and outcomes in so that impact can be achieved

Recurring CL5 themes where Finns are active:

- Battery management/manufacturing
- Safety
- Sodium-ion batteries
- Solid-state batteries
- Stationary storage

TRL scale indicates the maturity level and determines the funding rate

TRL = Technology Readiness Level

RIA: 100 %

IA: 70 %

Incl. EIC Accelerator

1	2	3	4	5	6	7	8	9
Basic principles observed	Concept Formulized	Proof of Concept	Validation in lab	Technical validation in relevant environment	Demonstration in relevant environment	Demo in operational environment	System complete and operational	Commercial

Some advantages of EU funding over national funding:

- Higher funding rates
- Grant-based support also for activities close to the market
- Funding available for international consortia

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WORK PROGRAMMES & CALLS

WORK PROGRAMME (WP) IS THE MAIN DOCUMENT OF HORIZON EUROPE IMPLEMENTATION

Link to all latest Horizon Europe Work Programmes

As the preparation of Horizon projects takes time, it is advisable to start looking for suitable application topics and partners well in advance – so be bold and look ahead to the 2027 calls as well!

- **Cluster 5 (Climate, Energy and Transport) work programme** describes the actions, timelines and budgets to be funded in 2026-2027
- Some of the calls are arranged in two stages, in which case a shorter application is submitted first and only those who have made it to the second stage submit the full applications

In addition to the Work Programmes, all open call topics can be found on the **EU Funding & Tenders** portal

Cluster 5: Funding opportunities in 2027 (A)

Topic ID	Title	Opening date	Deadline	Type of action	Total budget (EUR 231.9 m)	EU contribution per project (EUR m)	TRL (start -> end of project)	Focus area fit	Description (from Work Programme)
HORIZON-CL5-2027-02-D2-05	Improvement of Adaptability, Flexibility and Efficiency of Existing Recycling Processes (BATT4EU Partnership)	03 Dec 2026	31 Mar 2027	IA	18.80	Around 9.40	-> 6-7	Battery condition, life cycle and reuse	Improves cost and recovery efficiency of existing **battery recycling for mixed feedstocks,** including production **scrap** and **mixed Li-ion chemistries**. Targets black **mass processing yielding battery-grade materials** and compliance with the **EU Batteries Regulation**.
HORIZON-CL5-2027-02-D2-06	Sustainable and Competitive Cell Production Techniques for Lithium-ion and Sodium-ion Batteries (BATT4EU Partnership)	03 Dec 2026	31 Mar 2027	IA	37.80	Around 18.90	-> 6-7	Battery materials and manufacturing process quality	Develops and demonstrates **flexible, modular cell manufacturing machinery and pilot lines** that cut cost and energy use. Covers **novel mixing and electrode manufacturing** with in-line quality control, dry-room assembly, fast formation and production-line digitalisation (defect identification).
HORIZON-CL5-2027-03-D5-03	Data-driven circular economy for e-mobility ecosystem (2ZERO Partnership)	15 Dec 2026	14 Apr 2027	IA	24.00	5.00 to 7.00	-> 6-7	Battery condition, life cycle and reuse	Circularity of **EV drivetrain components** and **charging infrastructure** using **health/Remaining Useful Life monitoring, digital-twin-based product passports** and **track and trace**. Battery cells are excluded from Area A; open to light- and heavy-duty EVs.
HORIZON-CL5-2027-03-D5-05	Higher Voltage, Megawatt Charging System compatible, modular powertrain for Heavy Duty Vehicles (HDV) (2ZERO Partnership)	15 Dec 2026	14 Apr 2027	IA	16.00	Around 8.00	-> 7	Working machinery and site electrification	Raises **HDV voltage** (beyond 800V) and develops **modular powertrains** for cost, efficiency and Megawatt Charging System compatibility. Aims to **cut in-vehicle charging losses by 10%**; considers **modular, removable battery systems** for second-life use.
HORIZON-CL5-2027-03-D5-06	Fire prevention and mitigation for EVs in confined areas (2ZERO Partnership)	15 Dec 2026	14 Apr 2027	IA	8.00	Around 8.00	-> 6	Battery condition, life cycle and reuse; BESS reliability	**EV fire risk**: European fire-accident database, thermal runaway mitigation, on-board diagnosis and **real-time monitoring**. Also **affordable detection and suppression for constrained spaces** and firefighting protocols.

Cluster 5: Funding opportunities in 2027 (B)

Topic ID	Title	Opening date	Deadline	Type of action	Total budget (EUR 231.9 m)	EU contribution per project (EUR m)	TRL (start -> end of project)	Focus area fit	Description (from Work Programme)
HORIZON-CL5-2027-03-D5-18	Enhanced electric operation and battery durability (ZEWT Partnership)	15 Dec 2026	14 Apr 2027	IA	20.00	Around 10.00	-> 8	Working machinery electrification; Battery condition and life cycle	Full-scale demonstration of **battery-electric ferries, short-sea and inland vessels** with at least 150 nm range and over 5 MW peak propulsion power. Addresses **fast charging, battery degradation** and failure modes, battery management and safety.
HORIZON-CL5-2027-04-Two-Stage-D2-07	Novel approaches towards next-generation battery concepts, leveraging the enabling role of innovative advanced materials (BATT4EU and IAM4EU Partnerships)	15 Dec 2026	14 Apr 2027 (1st stage); 07 Oct 2027 (2nd stage)	RIA	48.00	Around 4.80	-> 4-5	Battery materials; BESS	Choose **one area**: 1) **low-cost chemistries** for **EVs/stationary storage** (component cost below EUR 35/kWh) 2) **high-performance batteries** for **aviation** (above 500 Wh/kg), or 3) **durable materials and cells** for **grid/industrial stationary storage**. Requires assessment of **scalability, recyclability, safety** and **predictive diagnostics**.
HORIZON-CL5-2027-05-D2-08	Demonstration for Long-duration Battery Energy Storage Systems (BATT4EU Partnership)	05 May 2027	15 Sep 2027	IA	18.80	Around 9.40	-> 6-7	BESS and operational reliability	**System-level** demonstration of **long-duration (above 8 h) battery storage** not yet on the market, such as redox flow or metal-air. Includes **use-case definition, digital SOC/SOH** and **lifetime prediction, techno-economic analysis** and **system-level safety assessment**.
HORIZON-CL5-2027-07-D3-17	PV based electrification of the economy: Designing & optimising PV systems supporting industrial electrification and promoting participation in electricity markets (EUPI-PV Partnership)	04 Aug 2027	01 Dec 2027	IA	18.00	Around 6.00	-> 6-8	Site electrification; BESS	**High-voltage DC PV systems**, including storage, for industrial sites. Alternatively, **PV participation in electricity markets** via **ancillary services and pooling**.
HORIZON-CL5-2027-07-D3-27	Integrated Approaches for Retrofitting Infrastructures with Innovative Energy Storage Technologies	04 Aug 2027	01 Dec 2027	IA	22.50	Around 7.50	-> 6-8	BESS and operational reliability	Demonstrates cost-efficient, **circular storage solutions** that **reuse obsolete infrastructure** (old hydropower dams, decommissioned plants, coal mines, industrial sites). Contributes to **grid flexibility; secure-by-design** approach r

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FOR A NEWBIE, THE EASIEST ACCESS TO EU FUNDING IS TO FIND A CONSORTIUM, BUT HOW TO GET ONBOARD? ALONG WITH THE ”USUAL SUSPECTS”

Contact the research players active in your sector and tell you’d like to join their EU project consortium

- University or VTT research group, other RTOs
- The non-Finnish RTOs and other organisations

Contact friends who have EU projects. To know who has,

- check Horizon Dashboard and CORDIS
- European partnership programmes and associations behind them
- Search for organisations you know
- If you find one, tell them that if they build/get onboard in a new consortium, you would be happy to join

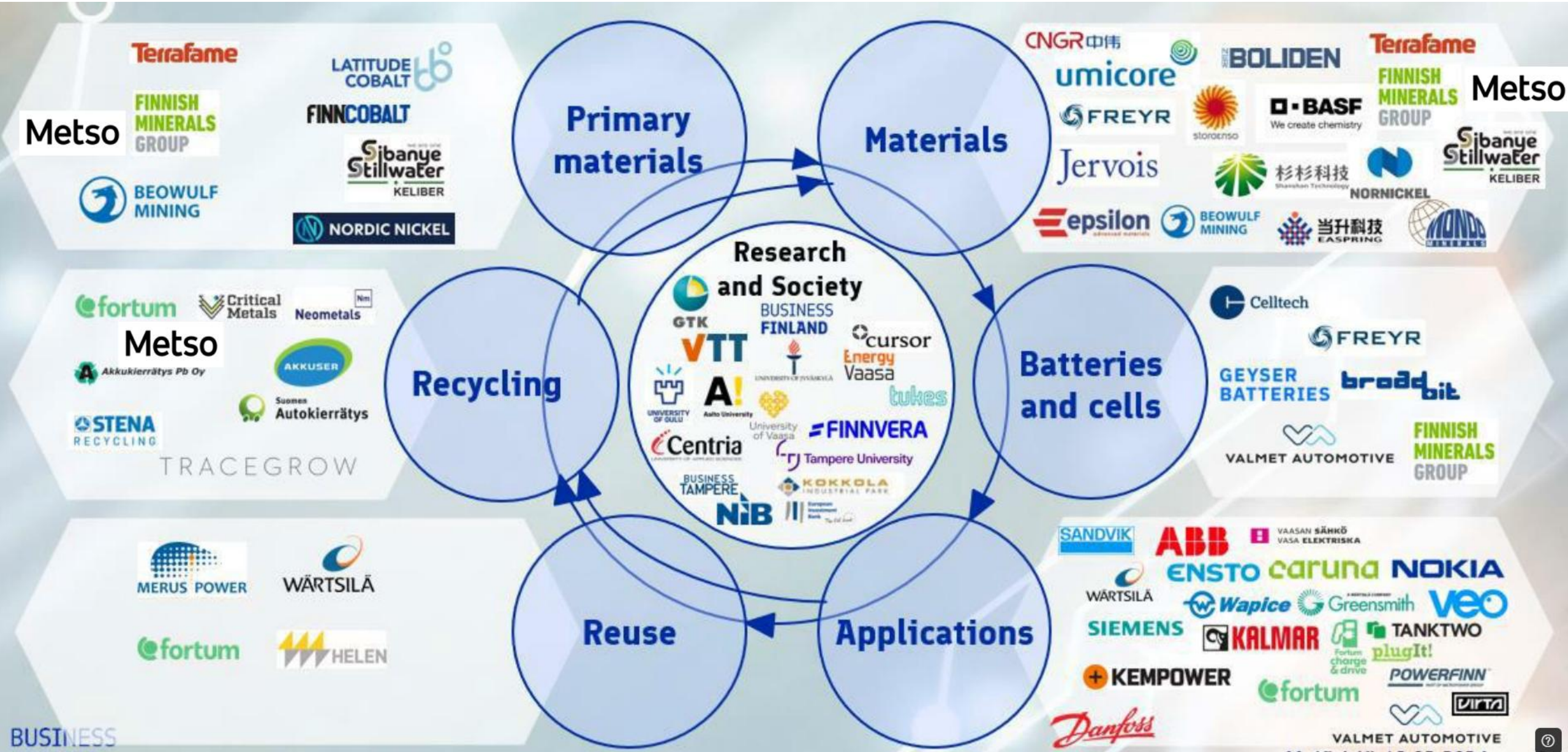
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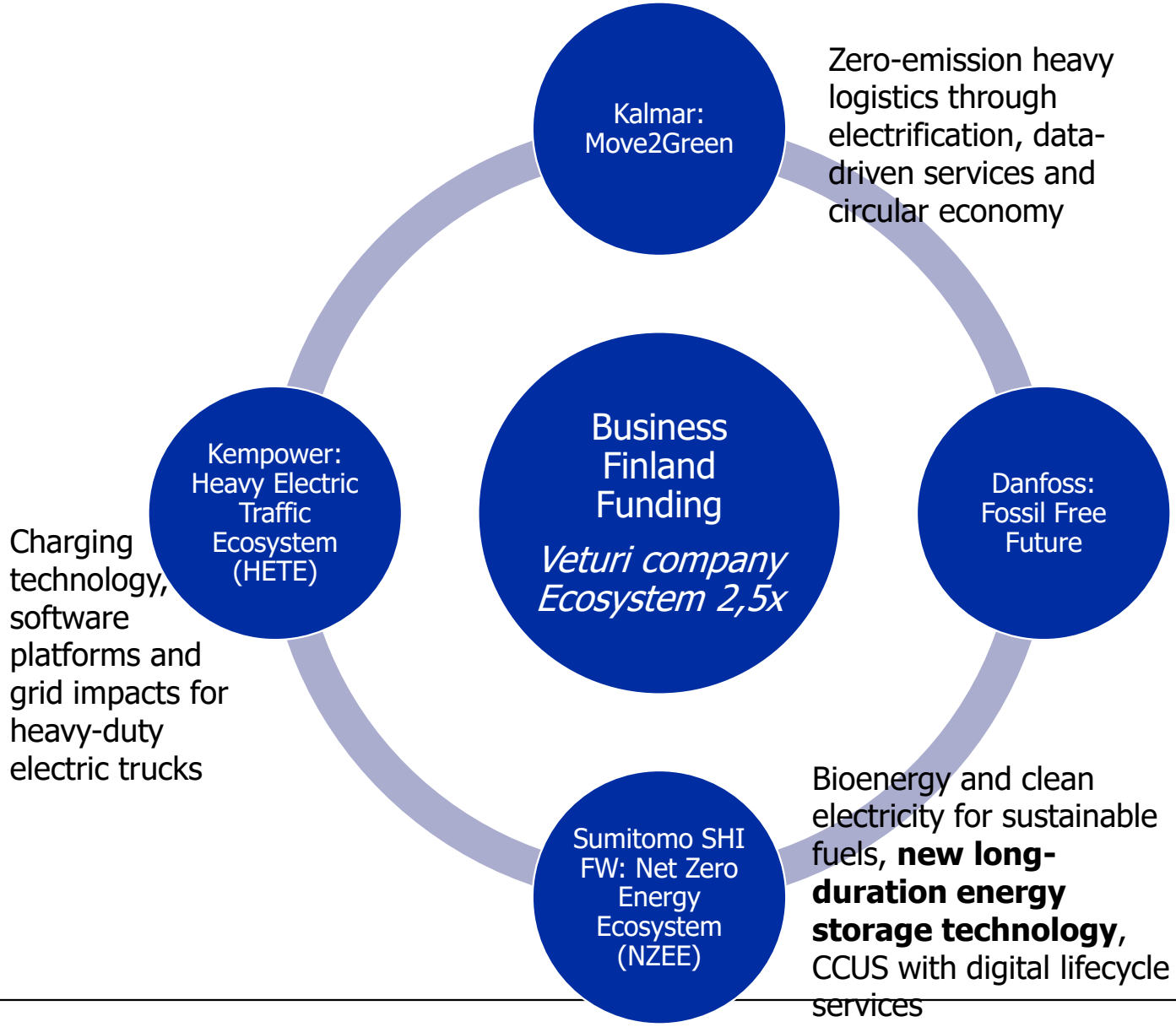


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Sustainable Circular Battery Business



Veturi initiatives within electrification and batteries innovation



WHO TO CONTACT?

EU Collaboration



Heini Günther
Bio & circular, Industry, Deep Tech/EIC



Markus Ranne
Defence, Space



Sampo Sammalisto
Health



Markku Pekonen
Energy, Mobility



Emmi Nahi
Green Transition



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EUTI, the National Liaison Office for Horizon Europe Programme



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You can reach out to us at firstname.lastname@businessfinland.fi - feel free to drop us a note ☺

WHAT HAPPENS AFTER 2027?

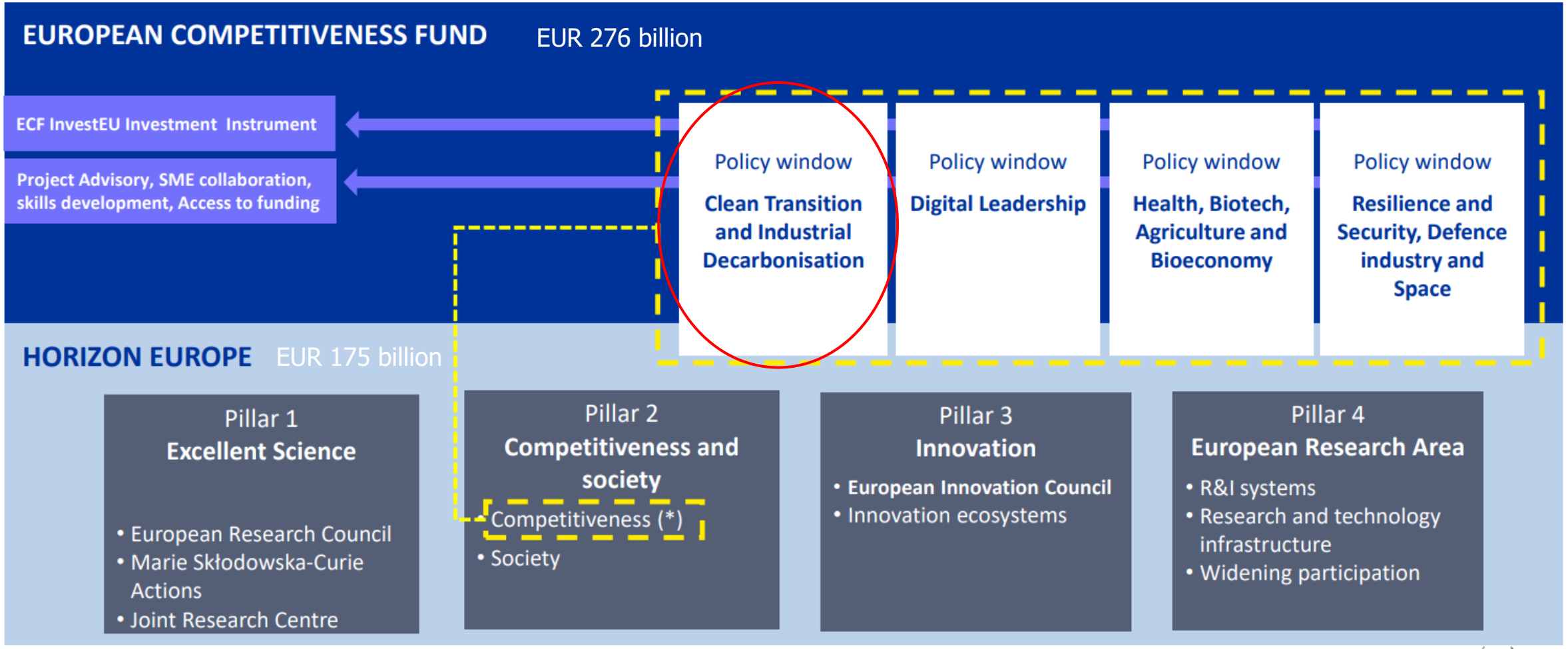
Next Multiannual Financial Framework 2028-34, currently in preparation

- Broad lines (expected): competitiveness and industrial capacity, defence and security, green transition, digitalisation, skills, enlargement/neighbourhood (e.g. Ukraine)
- Horizon Europe – continues! The pillars will continue, as will e.g. partnerships (how?). More simplification is expected (e.g. lump sum) and e.g. dual use will be possible.
  - The relationship between HE and the ECF?
- Innovation Fund – continued! Financing from emissions trading revenues.

ECF - European Competitiveness Fund

- The aim is to cover the entire innovation chain - from basic research to industrial deployment
- covers grants, loans, guarantees, equity investments, etc. extensively
- the aim is to catalyse significant private sector investment
- emphasis on industrial competitiveness, e.g. strategic projects (e.g. "EU veturi")
- links to IPCEI projects and state aid frameworks
- a large number (12) of other EU funding programmes are merged into ECF

COMBINED ARCHITECTURE OF EUROPEAN COMPETITIVENESS FUND & HORIZON EUROPE



* Consistent with activities of the European Competitiveness Fund

Horizon Europe 2028-2034

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HOW TO PREPARE FOR THE NEXT FRAMEWORK?

- For companies, opportunities may emerge in RDI projects, scale-up funding, financial instruments, procurement and the provision of trusted services.

- Research-intensive organisations can play a bridging scientific exploration with academic partners to formulation of new technologies with leverage available throughout the innovation cycle.

Success requires strategic positioning across the full EU value chain.

-> Find relevant partners, build networks keeping **deployment, commercialization** and **value chain** development in mind.

-> Stay tuned to news on more detailed thematic plans – and influence them yourself when the time is right.



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KIITOS!

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