



# Accelerating clean industrial deployment: insights, challenges, and opportunities

12 May 2026, Brussels



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# Opening remarks

**Martin Lange** – CINEA Head of Unit Horizon Europe, Energy

**Maria Velkova** – DG CLIMA Deputy HoU, Low carbon solutions: Research & low carbon technology deployment





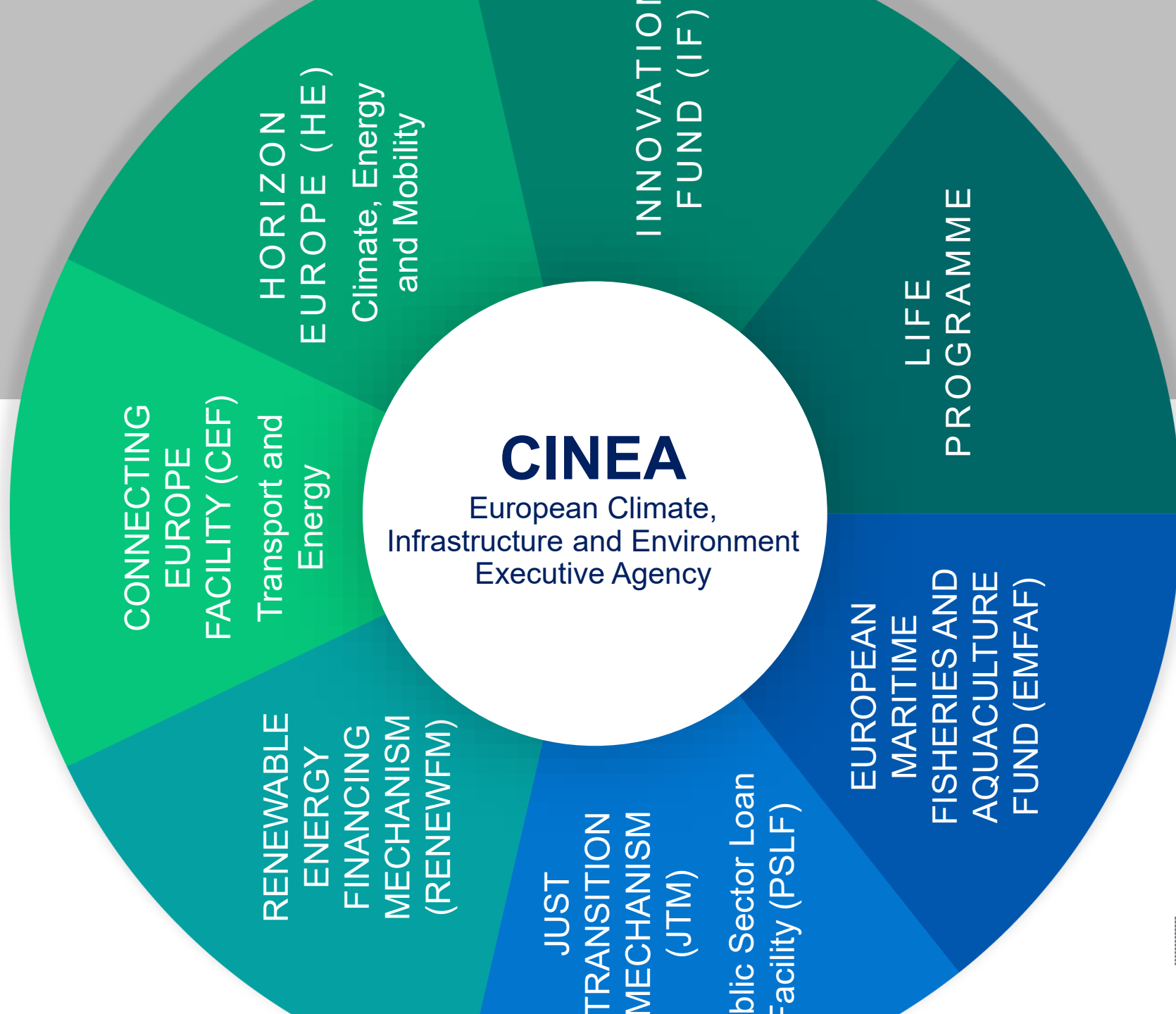
Boosting green growth and  
clean industry in Europe

# CINEA

Accelerating clean industrial  
deployment: insights,  
challenges, and opportunities

Martin Lange  
Head of Unit – Horizon Europe Energy  
12 May 2026

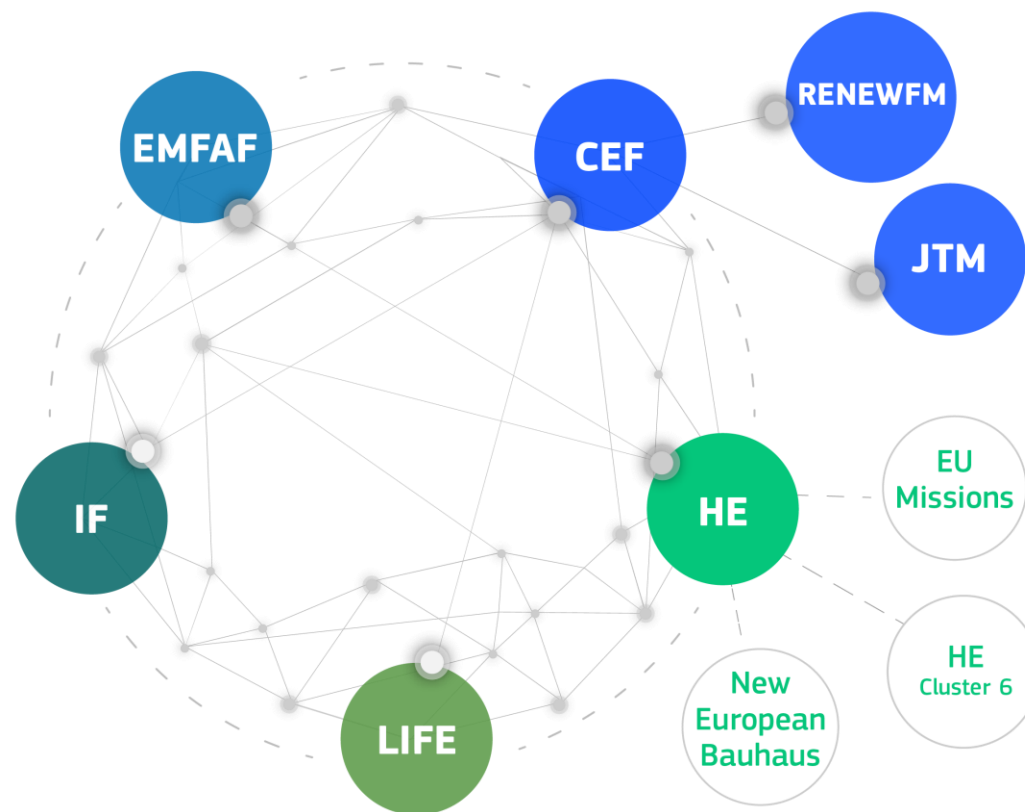
# The EU programmes managed by CINEA



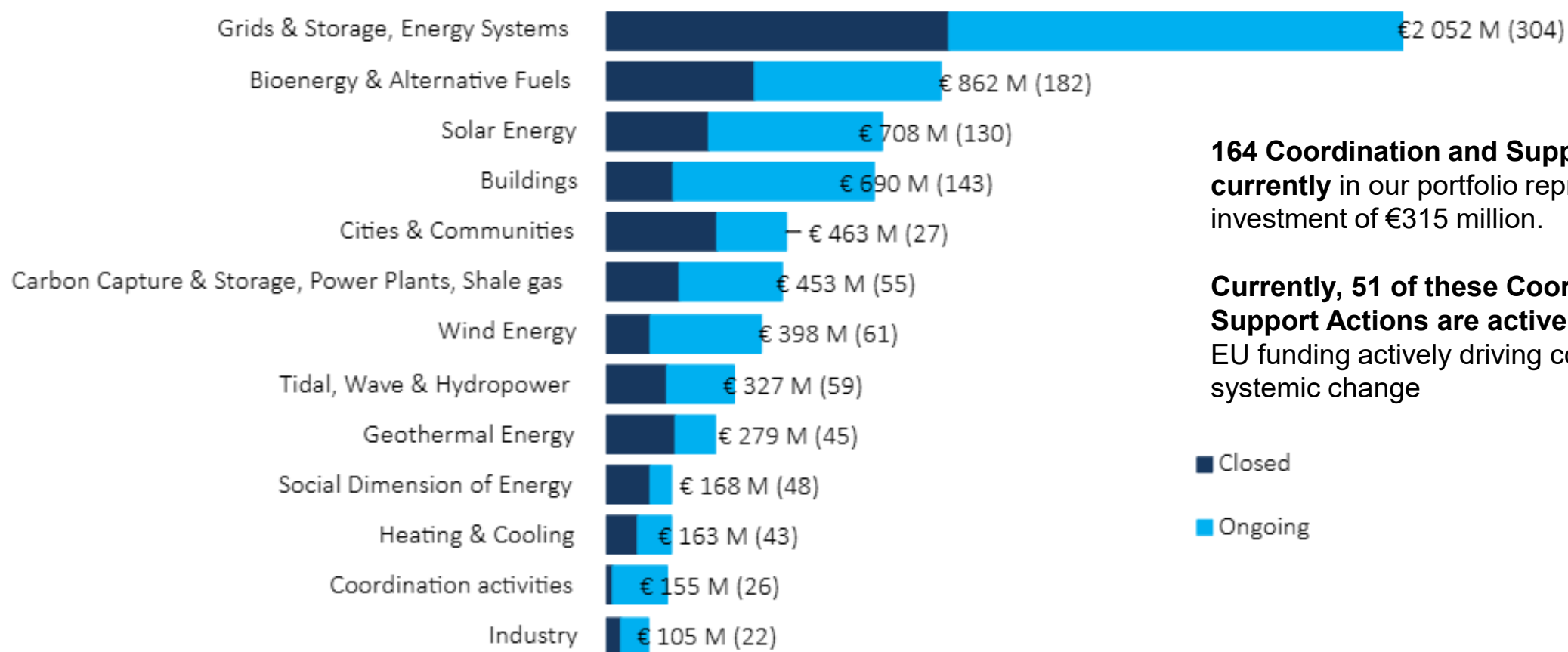


# What we do

- All CINEA managed EU programmes focus on **climate, energy and mobility**.
- Creating **synergies** between all programmes addressing climate change is vital.
- The Agency is ideally placed to ensure this – including synergies with other EU initiatives - to achieve the highest impact.



# HORIZON Energy Projects (1141 projects, € 6.8 billion EU contribution)



**164 Coordination and Support Actions** are currently in our portfolio representing a total EU investment of €315 million.

**Currently, 51 of these Coordination and Support Actions are active**, with €110 million in EU funding actively driving collaboration and systemic change

■ Closed

■ Ongoing



# Innovation Fund in a nutshell

## Ongoing projects + Projects from IF24 calls reserve\*



**268 projects**

247 ongoing +  
12 from IF24-NZT reserve\*\*  
9 from IF25-H2-Au



**~€16.00 billion**

€14.11 billion awarded  
€1.89 billion under GAP



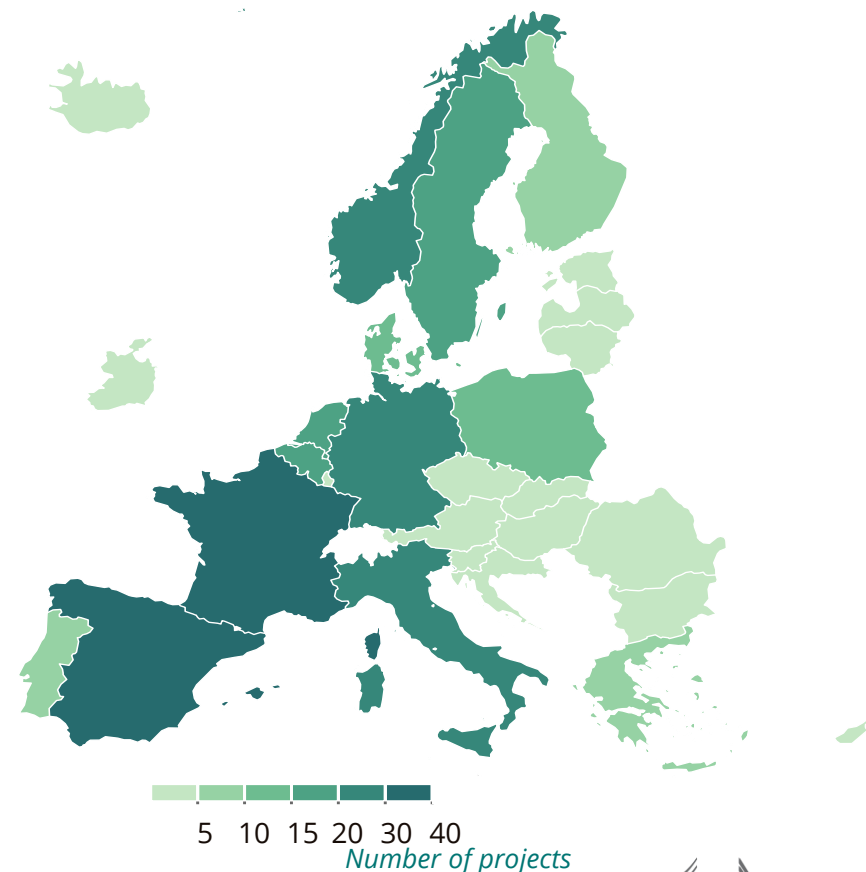
**28 countries**



**~ 1.19 billion tCO<sub>2</sub>e**  
to be avoided\*\*

**23 sectors**

73.6ktCO<sub>2</sub> avoided by end of 2025



\*Including **ongoing projects by end of Q1-2026** + 20 projects under Grant Agreement preparation

\*\* GHG emissions avoidance potential estimated, according to the relevant GHG methodology



# Examples of projects from Horizon Europe to Innovation Fund

17 IF projects in our portfolio of ongoing projects\* have been awarded in a previous phase with Horizon Europe.

## Examples

### TANGO

**COORDINATOR**  
Enel Green Power Italia SRL

**LOCATION**  
Catania, Italy

**SECTOR**  
RES – Solar energy

**GHG EMISSION AVOIDANCE**  
25 Mt CO<sub>2</sub>eq

**AMOUNT OF IF GRANT**  
EUR 117 675 577

**Status**  
In Operation



*Development of an industrial-scale pilot line to manufacture innovative PV modules.*

*Previous EU funding:  
Horizon 2020, AMPERE*



### SILVERSTONE

**COORDINATOR**  
Carbfix OHF

**LOCATION**  
Hellisheidi Geothermal Power Plant in South-West, Iceland

**SECTOR**  
CO<sub>2</sub> transport and storage

**AMOUNT OF IF GRANT**  
EUR 3 867 988

**Status**  
In Operation



*The Silverstone project uses Carbfix, a mineralisation technology which turns captured CO<sub>2</sub> into stone in less than 2 years underground. It follows the same process that nature has applied for millions of years to regulate long-term CO<sub>2</sub> levels in the atmosphere*  
*Previous EU funding:  
Horizon 2020 Carbfix2, GECO- and S4CE.*



\*of IF 247 projects ongoing.

# Thank you



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# Opening remarks

**Maria Velkova** – DG CLIMA Deputy HoU, Low carbon solutions: Research & low carbon technology deployment





# Keynote session

## The Clean Industrial Deal and the horizon ahead

**Maria Velkova** – DG CLIMA Deputy HoU, Low carbon solutions: Research & low carbon technology deployment

**Antonio Ferrandez** – DG RTD Policy Officer, Industrial transformation

# Innovation Fund

Deploying net zero technologies for climate neutrality

“Accelerating clean industrial deployment: insights, challenges, opportunities”  
conference

Maria Velkova, DHoU, DG CLIMA

*7 May 2026*



European  
Commission



# INNOVATION FUND

*Deploying innovative net-zero technologies for climate neutrality*

*Funded by the EU Emissions Trading System*



€40 billion\* available  
between 2020-2030

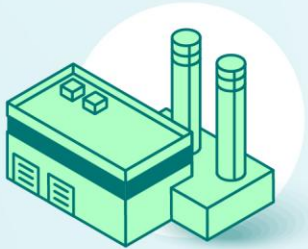


grants awarded through  
regular calls and auctions



avoid GHG emissions,  
boost competitiveness

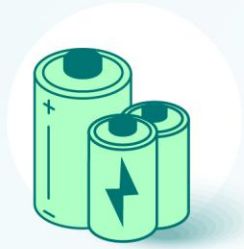
**supporting innovation in:**



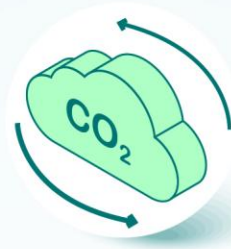
Energy-intensive  
industries



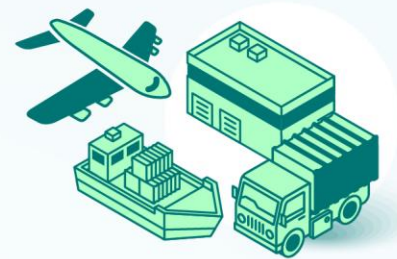
Renewable  
energy



Energy  
storage



Carbon capture,  
use and storage

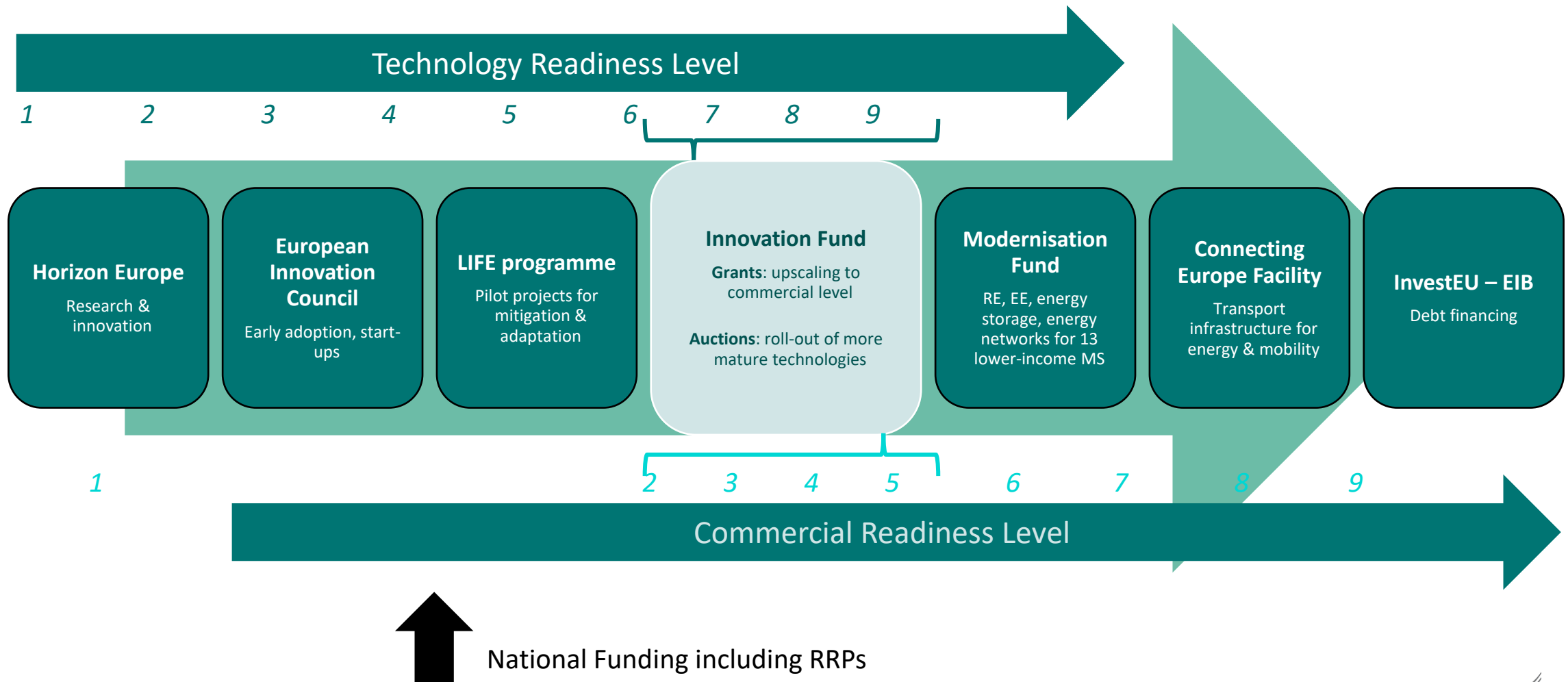


Net-zero mobility  
and buildings

*\*based on a carbon price of €75/tonne*



# A targeted project portfolio

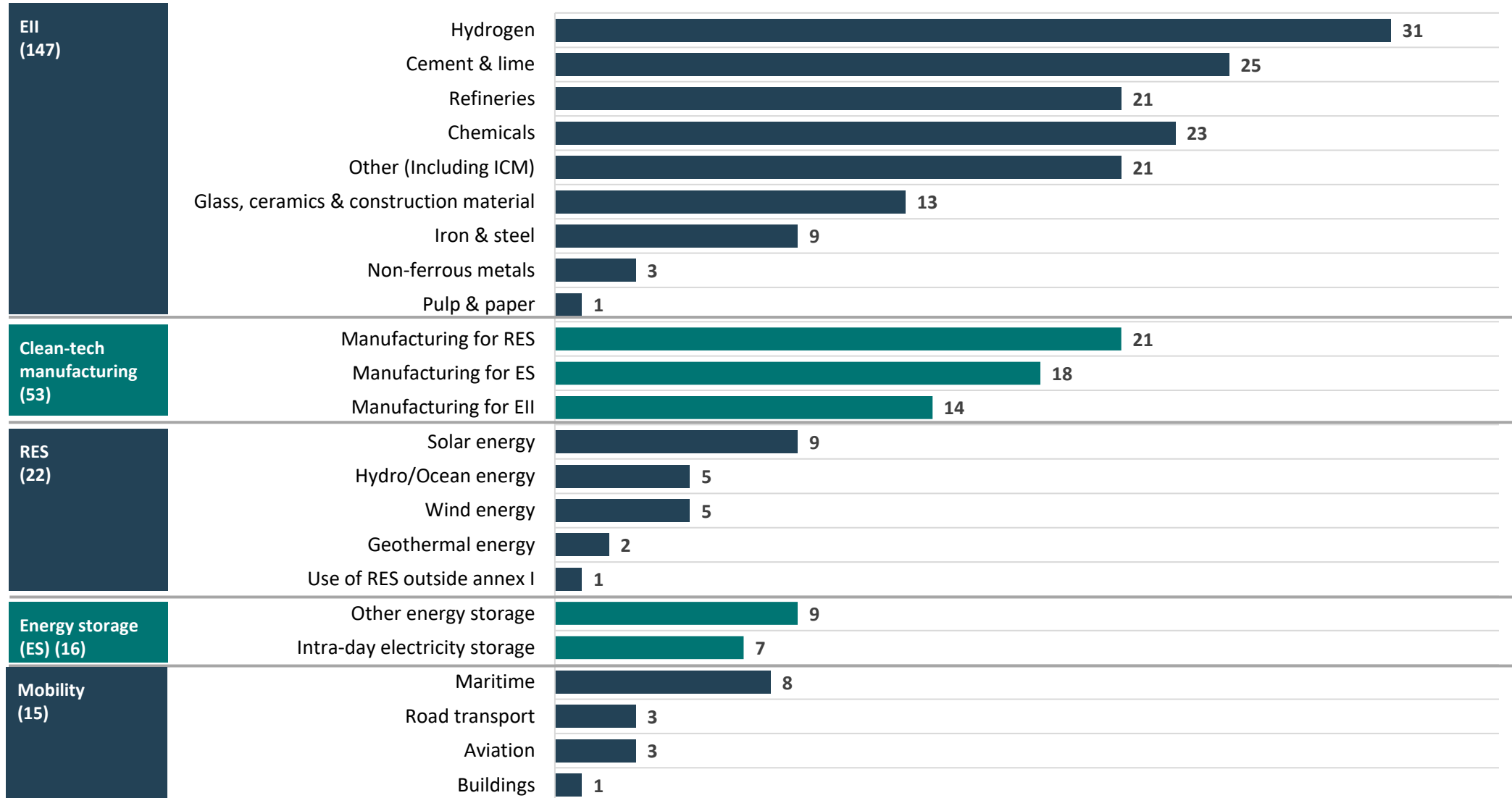


# The Innovation Fund supports urgent policy priorities



- **Net-Zero Industry Act:** clean-tech manufacturing topics + resilience criteria
- **European Hydrogen Bank:** domestic auctions for renewable/low-carbon hydrogen
- **Strategic Technologies for Europe Platform (STEP):** STEP Seal for funded projects
- **Industrial Carbon Management (ICM) Strategy:** support CCUS deployment since 2020
- **Trade and Cooperation Agreement with the UK:** IF24 Battery call
- **Clean Industrial Deal:** IF as a central tool to support investments in industrial decarbonisation
- **EU Automotive Package:** Battery Booster Facility
- **ResourceEU Action Plan:** supporting critical raw materials (CRM) value chain
- **SMR Strategy:** SMR eligible; can support first-of-a-kind SMR deployment
- **Industrial Maritime Strategy:** maritime sector provisions and resources in auctions and calls

# Sectoral distribution\*





# Types of calls and forms of support



## GRANTS

- Up to **60% of the relevant costs**
- **Payments based on milestones** (payments possible before project's entry into operation, as of grant award)
- **Non-Price award criteria**
- **Wide variety of innovations**
- Different **call topics** depending on the project's **size, type and focus**



## AUCTIONS

- Up to **100% of relevant cost**
- **No payments before entry into operation**
- **Price-based award criterion**, possibility for non-price criteria
- Focus on one **uniform auctioned good**
- Higher TRL/CRL

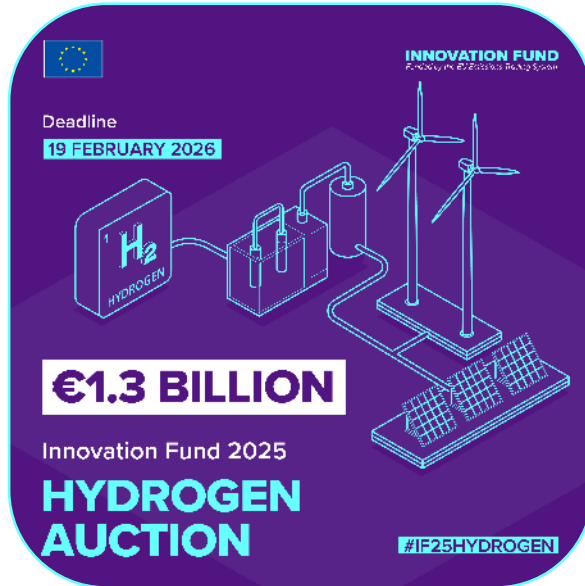
### Common features

- Both cover OPEX and CAPEX costs
- Both are result-based, rely on LUMP-SUM payments or UNIT COST contributions rather than cost declarations
- Both require advanced project maturity

# But also FINANCIAL INSTRUMENTS...



# 2025 Calls



## IF25 Hydrogen Auction

- RFNBO hydrogen production
- RFNBO and/or low-carbon **electrolytic** hydrogen production
- RFNBO and/or low-carbon **electrolytic** hydrogen production for **maritime** and **aviation** sectors



## IF25 Industrial Heat Auction

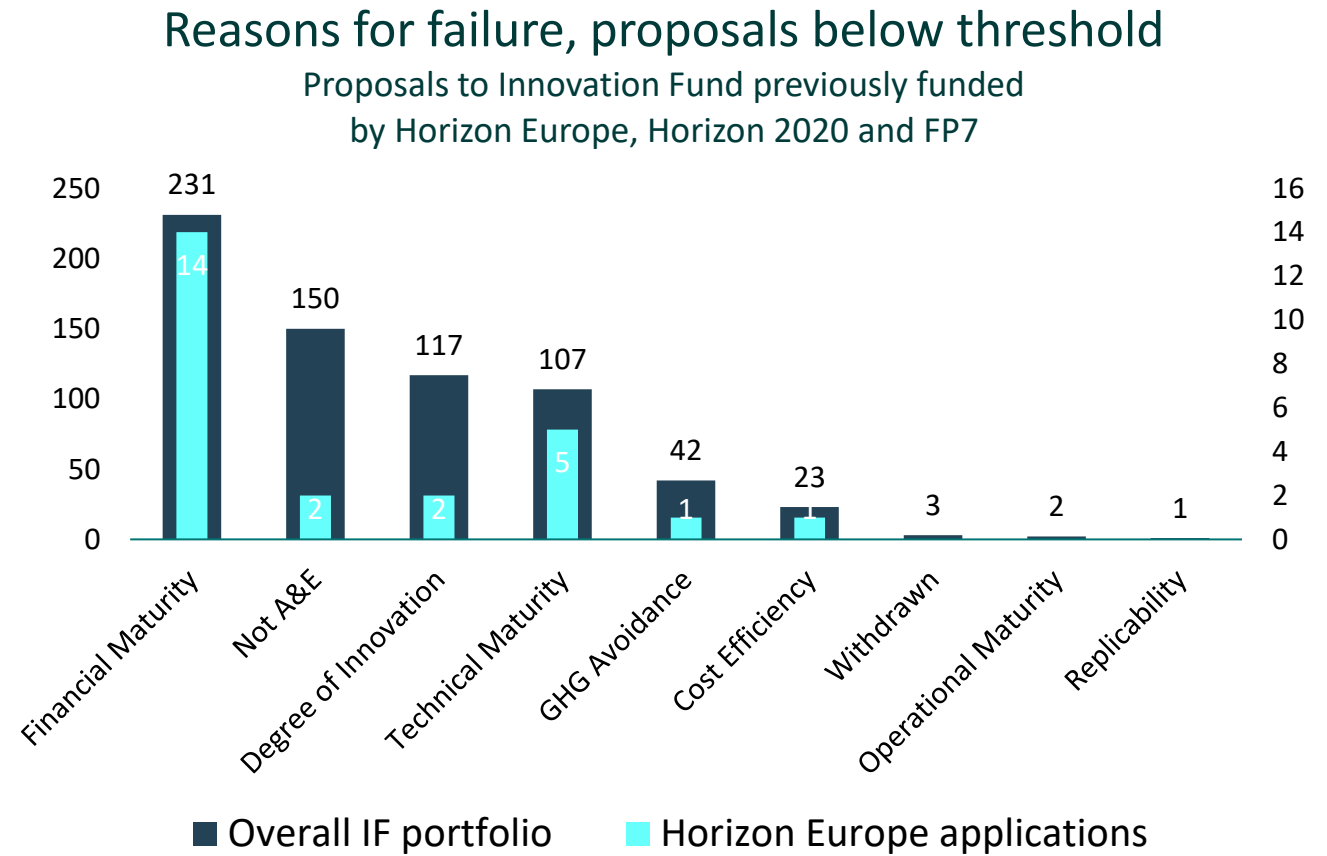
- 100-400°C - thermal capacity 3-5MW
- 100-400°C - thermal capacity > 5MW
- > 400°C - thermal capacity > 3 MW



# Horizon projects in IF applications

Projects from FP7, Horizon Europe and Horizon 2020 applying for the Innovation Fund

- The **success rate\*** of previously funded Horizon/FP7 projects is **32,5%** within the Innovation Fund, compared to the overall IF portfolio's success rate of 12%\*\*
- Biggest hurdle: **'Financial maturity'**, followed by 'Technical Maturity'
- 'Degree of Innovation' and 'GHG Avoidance' are criteria where former Horizon/FP7 project do better than the overall IF portfolio



\*Success rate defined as number of ongoing projects divided by all proposals submitted

\*\*Data from IF2021 – IF2023, regular Grant calls and auctions

# IF Project Development Assistance (PDA)



## PDA scope

### Due Diligence Assessment

Project maturity assessment

Technical Due Diligence

Financial Pre-Diligence

### Financial Services

Business plan and financial plans

Market analysis

Financial forecasts

Capital Structuring and/or Financial Modelling

Bankability Assessment and Financing Roadmap

### Technical Services

Support in the Preparation of Applications \*

Concept Development Support

Economic Analysis

Engineering, procurement and implementation support

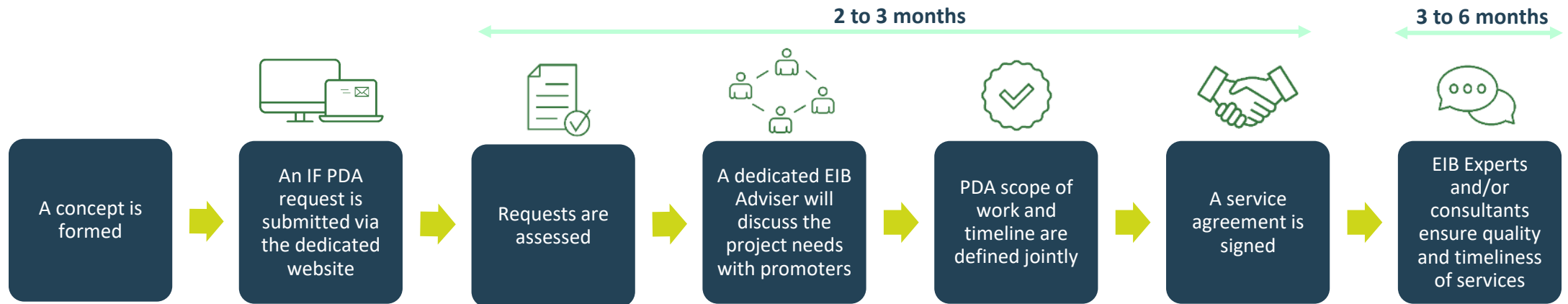
- ❑ **Available for all project sizes, subject to eligibility.**
- ❑ *Guides promoters through IF process.*
- ❑ **Enhances project bankability and accelerates FC.**

- ❑ *Connects promoters with suitable EIB products or EU financing options.*
- ❑ **Maximizes EIB financing and attracts third-party investors.**
- ❑ *Links promoters with relevant market participants.*



# Direct application to EIB (open PDA)

- Project promoters who are interested in obtaining PDA support may **approach the EIB directly:** [InnovationFund@eib.org](mailto:InnovationFund@eib.org) and fill in a [request form](#)
- **Eligibility for the Innovation Fund is a prerequisite** for consideration
- First-come, first-serve basis, all year round
- No need to have previously applied and subject to EIB's constraints



# IF National Contact Points

- **National Contact Points (NCPs)** can support you in:

## GETTING ACCESS TO RELEVANT INFORMATION AND MATERIAL

- NCPs can provide information on the application process and help you access relevant material and resources

## DECIDING TO APPLY OR NOT

- Help you identify whether your application is suitable for application

## APPLYING

- Support you in the application process by pointing out the resources available: tutorials, helpdesk, etc.

## GUIDING YOU TO OTHER SOURCES OF FUNDING

- If your proposal is not suitable, NCPs can direct you to other EU programs or national funding support schemes

## AFTER EVALUATION AND DURING PROJECT IMPLEMENTATION

- By assisting with reporting, co-financing rules or navigating permitting issues whenever possible

# Next Events



**2026 Cleantech Conference: Advancing Europe's leadership through transformative decarbonisation**

*19 May 2026*



**Stakeholder Consultation Event on the IF26 Calls for Proposals**

*19 June 2026*

# Thank you

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R&I in support of the

# Clean Industrial Deal

Horizontal Call - Work Programme 2026/27

Accelerating clean industrial deployment: insights, challenges, and opportunities

Antonio Ferrández García – Policy Officer – DG RTD.E3 – 12/05/2026

# Policy Context – Clean Industrial Deal

- CID Communication was published on 26 February 2025 - as a follow-up to the Competitiveness Compass, it aims to **direct investment towards infrastructure and industry in order to support the EU's industrial decarbonisation, growth, and competitiveness goals**.
- Confirms Europe's dedication to these goals by **offering clear business incentives** to support the decarbonisation and competitiveness of European industry, at the same time. It will help **creating lead markets to boost supply and demand in clean tech, accelerate the roll-out of clean energy & manufacturing, and reinforce a circular economy**.
- It focuses on **energy-intensive industries** and on **clean tech sectors**
- The Communication states that *"R&I is a key enabler for promoting the next generation of clean tech, clean energy and decarbonised manufacturing in the EU. The **flagship Horizon Europe call of ca. EUR 600 million under the 2026-2027 work programme supports fit-for-deployment projects**."*



# CID Horizontal Call – Overview

- Horizontal call (between **Clusters 4 and 5**), with 2 topics (in each year; 2026 & 2027):
  1. ***Clean Technologies for Climate Action***  
→ EUR 290 million across 2026 and 2027
  2. ***Decarbonisation of Energy-Intensive Industries***  
→ EUR 250 million across 2026 and 2027
- Both topics are **Innovation Actions** targeting **fit-for-deployment solutions**
- A complementary call of EUR 50 million in support of the Clean Industrial Deal is included in the **Research Fund for Coal and Steel**.

# Principles & Features of the Call

## Open Character

- **Applicants are free to decide** on the specific tech value chain they wish to strengthen through innovative competitive & decarbonization solutions

## Focus on Industrial Competitiveness

- Demonstrate **industrial leadership** in view of the deployment after the project (i.e. put together a consortium composition that allows for effective collaboration between relevant stakeholders and future deployment).
- Set out a sound **business plan** and **market-readiness strategy** on how to prepare and support the deployment of the proposed tech solution within/across relevant EU industrial sectors.
- Think ahead in view of **Leveraging investments** for deployment

## Value Chain & Cross-Sectorial Integration

- Ensure the development of technological solutions **across a specific tech value chain** (i.e. involving adequate combination of suppliers, users & relevant stakeholders).





# Expected Impacts

- **Accelerate the roll-out and deployment** of European industry decarbonisation and cleantech solutions across EU industrial sectors (EII + manufacturing, energy and transport).
- **Promote the competitiveness** of the cleantech and decarbonised industries in the EU.
- **Support the manufacturing capacity in Europe** for industry decarbonisation and cleantech solutions and strengthen sustainable and resilient value chains in Europe to reduce strategic dependencies.
- **Facilitate the mobilisation and alignment of public & private investments** for innovative decarbonisation and cleantech technologies and processes in the EU.
- **Reduce the energy price gap in Europe** via the deployment of competitive cleantech and industrial decarbonisation solutions.

# Topic: *Decarbonisation of Energy-Intensive Industries*

## Expected Outcomes

- **Accelerate the use of innovative technologies** to decarbonise industrial processes and bring to the market more **cost-effective clean products** to strengthen the competitiveness (including biodiversity), and resilience of EU industries (with quantifiable contribution);
- **Create new innovative first-of-a-kind operational demonstrators** and/or optimise newly installed industrial decarbonisation solutions in Europe; and
- **Demonstrate the market readiness** of the envisaged future clean products and their innovative processes via a credible business plan and an exploitation strategy for industrialisation, including market-tested use cases.

# Topic: *Decarbonisation of Energy-Intensive Industries*

## Scope

**Three tech areas in EII** with promising growth potential in Europe. Proposals are expected to address one or several of these areas:

- **Managing of carbon cycle (CCU/CCUS):** optimize and demonstrate technologies for capturing, utilizing, or storing CO<sub>2</sub> and CO from energy-intensive industries.
- **Clean energy usage in production:** support major improvements of clean energy usage in the energy intensive industries.
- **Circularity and resource efficiency:** improve resource efficiency (raw materials, energy, and water) across process industries, including the creation of circular value networks that utilize industrial side-streams and end-of-use waste.

This topic implements the co-programmed European partnerships Processes4Planet and Clean Steel: [p4planet\\_SRIA.pdf](#), [p4planet\\_SRIA\\_update2024.pdf](#), [2024-CSP-SRIA.pdf](#)



# Topic: *Clean Tech for Climate*

## Expected Outcomes

- Strengthen the **competitiveness, sustainability and resilience of an innovative clean tech solution** by clearly demonstrating the capability to, significantly:
  - (1) **increase its circular material use rate**, based on a sound and realistic baseline;
  - (2) **reduce the levelized cost of energy (LCOE) delivered to end-users** - including, where relevant, production, distribution, and storage costs, based on a sound and realistic baseline and considering different geographic scenarios; and
  - (3) **improve Europe's industrial leadership, resilience, and supply chain security**, in line with the objectives of Net-Zero Industry Act (NZIA) for the EU manufacturing capacity of net-zero technologies.
- Bring this innovative **cleantech solution to full technological maturity and close to market-readiness** with a view to accelerating its market deployment and/or integration in key industrial sectors in Europe (e.g. manufacturing, energy and transport).



# Topic: *Clean Tech for Climate*

## Scope

Three clean tech areas with promising growth potential in Europe (*based on the Transition Initiatives of the Clean Energy Transition (CET) Partnership*). Proposals are expected to address one or several of these areas:

- **Integrated net-zero emissions energy systems** (e.g. including energy grids, networks and systems)
- **Enhanced zero-emission power technologies** (e.g. including renewable electricity, heat and energy technologies)
- **Storage technologies, renewable fuels, and carbon capture and utilisation** (e.g. including batteries and other energy storage solutions, renewable hydrogen , advanced biofuels and synthetic renewable fuels) enabling climate neutrality

# Balanced Portfolios (For Each Topic)

Applicable separately to each of the two topics under the call:

Proposals should clearly select **one main area** but can also address in an **integrated way a combination** of the three areas under the respective scopes. Applicants are **free to decide on the specific value chain** they wish to strengthen in the above tech areas.

To contribute to a **balanced portfolio** covering the three tech areas described in the respective scopes, grants will be awarded to applications not only in order of ranking, but also at least to one (1) proposal that is the highest ranked for each main tech area, provided that the applications attain all thresholds.

## Synergies:

Projects funded under these topics will be encouraged to **develop synergies and coordinate with similar or complementary projects** funded under the respective other topic in the call, as well as with relevant projects funded under relevant European Partnerships.



# “Go/no go” moment

Critical milestone required by some topic texts in Horizon Europe, and included in the Clean Industrial Deal (CID) call.

Projects have to demonstrate that they comply with several requirements before entering the demonstration phase.

These conditions vary depending on the topic text. Always check the official work programme and adjust to the exact conditions of your topic.

Do not incur any costs related to the demonstration/deployment activities before obtaining a "go" decision from your granting authority.

In practice:

- Help proposals to think ahead introducing credible, achievable milestone with all due requirements
- It is important to take the “go/no go” milestone seriously from the proposal stage, avoiding to assume that any issues can be rectified during the grant preparation phase or the project itself.

# Call Dates

Opening: **18 Dec 2025**

Deadline: **15 Sep 2026**

- HORIZON-CID-2026-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries
- HORIZON-CID-2026-01-02: R&I in Support of the Clean Industrial Deal: Clean Technologies for Climate Action

Opening: **12 Jan 2027**

Deadline: **15 Sep 2027**

- HORIZON-CID-2027-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries
- HORIZON-CID-2027-01-02: R&I in Support of the Clean Industrial Deal: Clean Technologies for Climate Action





# Q&A



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# Introduction to the workshop

**Jose Jimenez**, DG CLIMA - Horizon Europe

Policy Officer Low carbon solutions: Research & low carbon technology deployment

# Accelerating Clean Industrial deployment

Horizon Europe Coordinated and support actions (CSA's)

## Introduction to the Workshop

*Jose Jimenez Mingo – DG CLIMA, 12<sup>th</sup> May 2026*

# Rationale & context

**Need to increase the deployment rate of technologies to reduce GHG emissions.**

**HORIZON-CL5-2023-D2-01-07: Support for the deployment of R&I results for climate mitigation. Synergies with the ETS Innovation Fund**

*Key expected outcomes:*

- **Further developing the innovation pipeline from system demonstration to deployment stage for innovation in the EU and Associated Countries.**
- **Developing scientifically sound mature proposals for the deployment of technological solutions to reduce Greenhouse Gas emissions.**
- **Synergies with other EU funding programmes, namely the ETS Innovation Fund**

# Growing strategic character in the EU

## Evolution of EU policies

- Innovation Fund new features
- Clean Industrial Deal: Horizon Europe call 2026-27
- EU competitiveness. (European Competitiveness Fund)
- Seamless pathway from R&D to deployment in the market

# Rationale & context

## **High specialisation : 1 CSA per technological area (2 for renewable energy)**

- Low-carbon technologies in energy-intensive industries
- Carbon capture, use and storage (CCUS)
- Renewable energy generation
- Energy storage & hydrogen

## **Key deliverable:**

Organise joint open events within their specific area with key industrial stakeholders to share lessons learnt and to promote synergies between Horizon Europe and the IF (e.g. organising open key information dissemination workshops with a larger group of Horizon 2020 projects)



# Expectations

- Understanding of the potential of EU for deployment of R&D results into the market in the 4 key areas selected.
- Specific focus on EU Framework Programme for RTD. H2020 and early HE (finished projects)
- Specific focus on the use of IF as a deployment programme for GHG emission reduction. Concrete IF proposals to be developed by each CSA.
- Understanding of limiting factors preventing the deployment of R&D results (in the different sectors).
- Facilitating the development of an innovation pipeline. Lessons learnt, tools developed

# Today's workshop

- Panel 1: Deployment mapping – Innovation pipeline: challenges, lessons learned and best practices
- Panel 2: Real-life stories of R&I to deployment
- Panel 3: Industrial voices – Sectoral perspectives on deployment and lesson learnt
- 4 Breakout Discussions per area
- Plenary presentation of the four breakout sessions



# Thank you for your attention





# Panel 1: Deployment mapping – Innovation pipeline: challenges, lessons learned and best practices

Accelerating clean industrial deployment: insights, challenges, and opportunities



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# Mapping of H2020 Potential for deployment

**Federico Spadaro** – H2IF Project coordinator, CLERENS



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DIAMONDS4IF

DIAMONDS4IF is a project of the European Union



2DPLOY

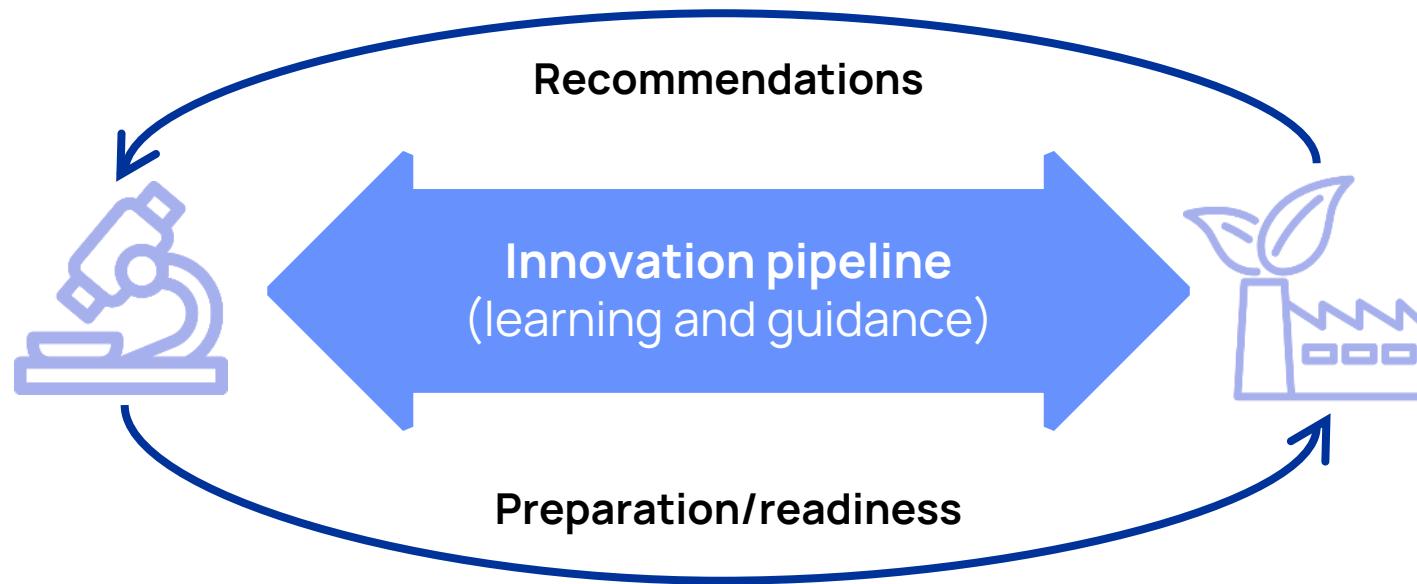
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# Bridging research and industrialisation

The projects funded under the **HORIZON-CL5-2023-D2-01-07** Call aim to define a **methodology to accompany R&I results to industrial readiness** and demonstrate how synergies between EU funding schemes (e.g., Horizon and the Innovation Fund) can be effective to **scale-up promising R&I results to innovative decarbonization solutions**.



# Bridging research and industrialisation

**4 main sectors** have been identified and are targeted by sister projects.



# The innovation pipeline

The **innovation pipeline** is the methodology adopted to **select promising R&I projects** potentially ready to upscale to market and to **identify common challenges and best practices on how to bridge this gap between research and industry.**



R&I projects **screening and assessment**



Collection of **lessons learnt**



**Support** towards deployment



**Standardized guidelines**, by sector

# The selection methodology



# 1. High-level identification



- **Public and private databases** (CORDIS, Kaila, Wheesbee, Advisory Boards)
- **Horizon-funded** R&I projects (e.g., RIA, IA)
- **Sector- and technology-specific** (ES & H2, EII, CCUS, RE)
- Performed **at the beginning of or before** the project

 **Wide pool of eligible projects**



## 2. Preliminary shortlist



- **Most consistent selection** (based on public information)
- **Thematic area and relevance** for the IF instrument
- **Technical maturity** (based on final achieved TRL)
- **Scalability / marketability**, based on public exploitation summaries

▶ **Short list of high-potential projects**

### 3. Final selection



- Identification of **most promising innovations**
- **Viability check** (self-assessments, surveys, interviews, pre-scoring)
- Further analysis on **alignment to IF criteria and gap analysis**
- **Companies deep-dive** (technological ownership, financial viability)

► **Few companies selected to apply to the InnovFund**

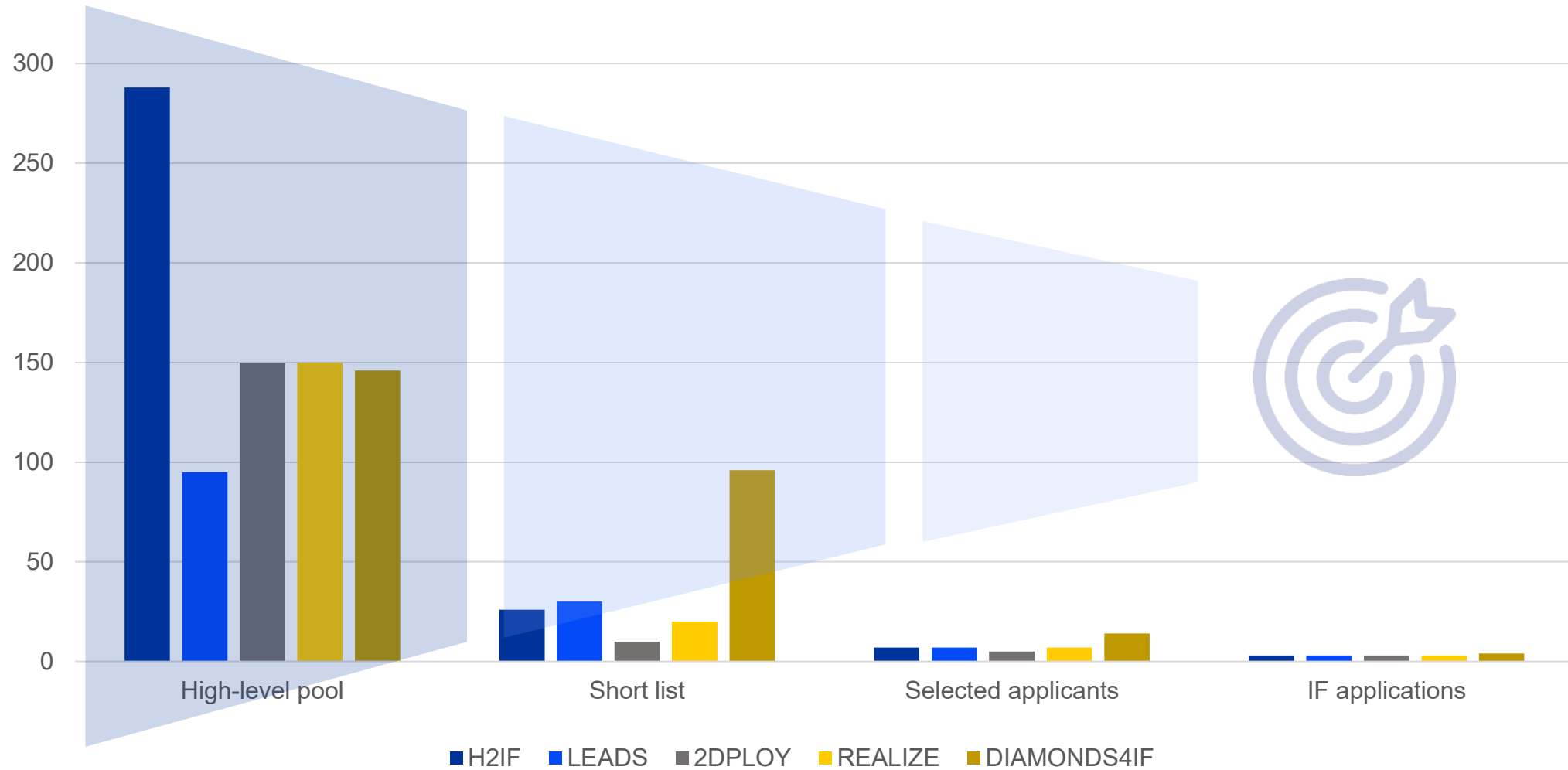
## 4. Preparation to IF application



- **Guided collection of relevant information** (technical, financial, GHG)
- **IF-specific coaching and guidance** (e.g., IF workshops)
- **Tailored support** (e.g., individual roadmaps, proposal reviews and co-draft)
- **Identification and closing of gaps** (mostly financial/business case)

► **14 IF applications submitted in 2024-26, 2 more expected in 2027**

# Results





# Q&A



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# Thank you for your attention







# Support for R&I deployment: available tools to help you upscale your innovation

**Silvia Colella & Patrizia Bolognesi** - DIAMONDS4IF (PNO Innovation)



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DIAMONDS4IF



2DPLOP

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# Available tools to help you upscale your innovations

1. Self-assessment tools for potential applicants
2. Tools for assessing innovation and readiness
3. Tools to guide the application process, assist with document preparation and build capacity
4. Information resources, lessons learnt and policy feedback
5. Tools for identifying and selecting projects



# 1. Self-Assessment Tools for Potential Applicants

For potential applicants checking whether their project idea is suitable before investing in full proposal preparation:

- DIAMONDS4IF: Innovation Fund Self-Assessment
- LEADS: [IF SELF CHECK QUESTIONNAIRE](#)
- 2DPLOY: Pre-Qualification Matrix
- H2IF: D3.1 (Annex II) – self assessment questionnaire for potential applicants



## 2. Innovation & Readiness Assessment Tools

For evaluating the **innovation potential**, maturity deployment readiness of project ideas and *Go/No-Go* potential:

- Project-specific **Viability Checks**:
  - ✓ To assess project's **eligibility and chances of success**
  - ✓ To identify **weaknesses and gaps** to achieve the best fit possible
  - ✓ To assess the **capacity of project partners to manage an IF application** and coordinate the IF projectAll projects
- **Innovation Assessment Tool** (PNO Digital): assess the innovation potential of any project idea, including IF concepts and R&I results. It supports evidence-based evaluation of project readiness, innovation degree and future deployment potential

# 3. Application Guidance, Document Support & Capacity-Building Tools

For helping applicants understand IF requirements, evaluation criteria, timelines and mandatory documents:

## IF GUIDELINES

- LEADS →

Designed in a 2-page leaflet format, offering clear and concise “pills” of information on key aspects of the Innovation Fund. A total of six guidelines were produced and distributed both in printed form at physical events and digitally



- Innovation Fund **Practical Guide** ([leaflet format](#) [DIAMONDS4IF](#))

# 3. Application Guidance, Document Support & Capacity-Building Tools

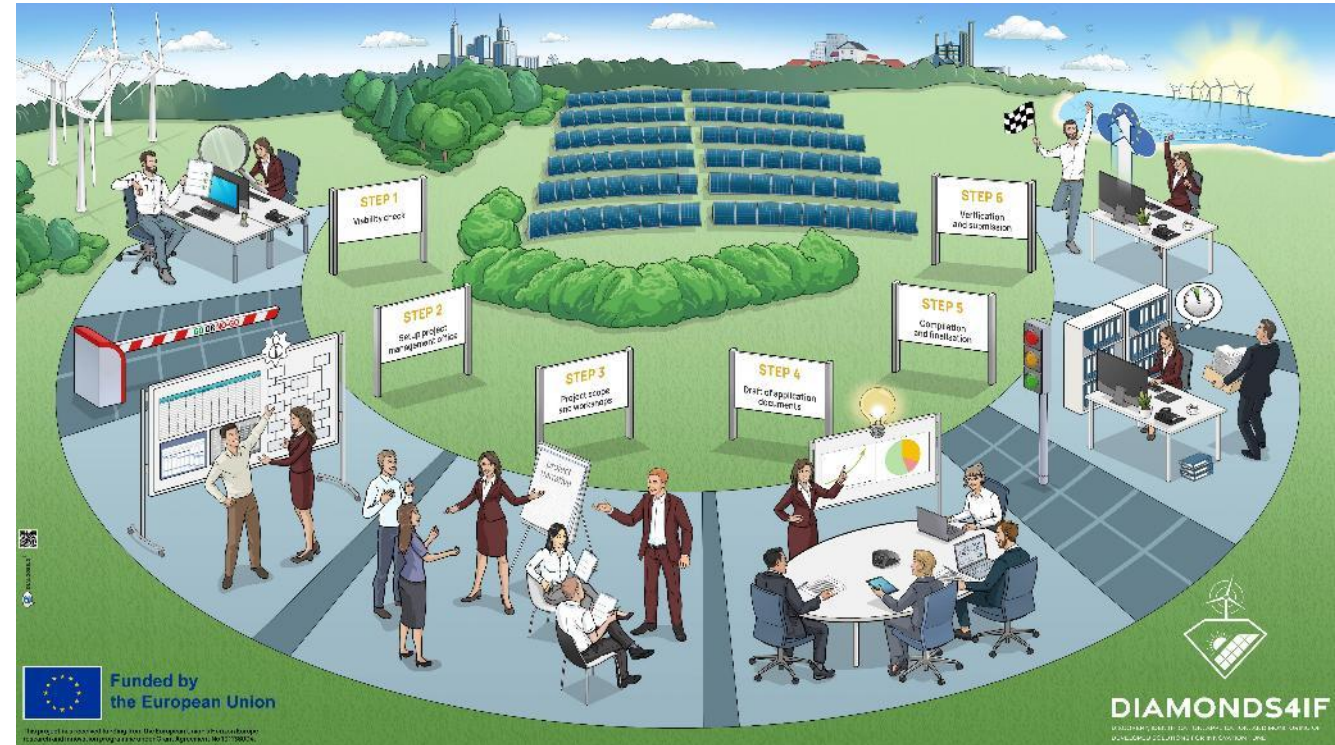
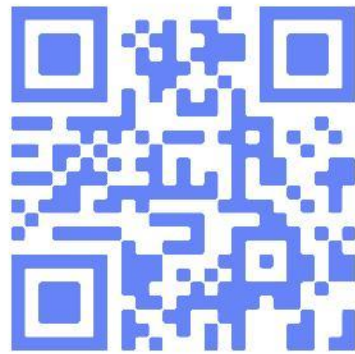
- [H2IF D4.1: Guidance-for-supporting-the-community-of-applicants-to-the-Innovation-Fund-instrument-1.pdf](#) and [H2IF D5.1: Reviewed-guidance-for-supporting-the-community-of-applicants-to-the.pdf](#):
  - **checklist** of documents and activities when approaching an IF proposal,
  - overview of the IF **evaluation criteria**,
  - hints and tips based on experience
  - a detailed **timeline** (steps) to approach the IF application
- [H2IF D4.1](#) and [H2IF D5.1](#) (Annexes I and II):
  - annotated templates (Business Plan; Feasibility Study) with tips and specific considerations



# 3. Application Guidance, Document Support & Capacity-Building Tools

DIAMONDS4IF:

- **Interactive map** explaining the IF process
- YouTube **Video tutorials**
- **Workshop materials**



# 2DPLOY Masterclasses - specifically address common weaknesses observed by IF evaluators and offer practical guidance for applicants

## 1. Degree of Innovation & TRL (68 minutes)

- Clearly position innovation vs. state of the art.
- Avoid vague or unsupported innovation claims

## 2. Social Impact & Replicability (52 minutes)

- Demonstrate societal value and EU-level relevance
- Strengthen replicability beyond technical aspects

## 3. Financial Maturity & Cost Efficiency (64 minutes)

- Build a credible business case and financing logic
- Improve bankability and investment readiness

## 4. Technical Maturity (103 minutes)

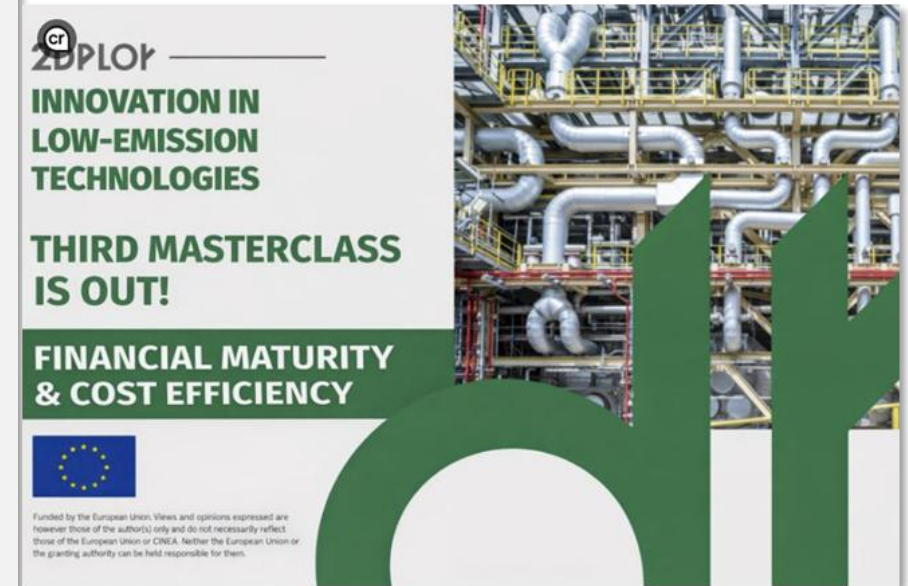
- Show feasibility, scalability, and system integration
- Address technical risks and deployment readiness

## 5. GHG Calculations – Data Requirements (50 minutes)

- Use correct system boundaries and robust data
- Increase credibility and traceability of GHG results

## 6. GHG Calculations – End-of-Life (22 minutes)

- Apply consistent, transparent GHG methodologies
- Correctly account for life-cycle and end-of-life effects



For more information see also :

[2DPLOY website](#)

[2DPLOY on LinkedIn](#)

[2DPLOY on YouTube](#)

...r(s) only and do not necessarily  
...sible for them.



# LEADS

BRIDGING THE  
INNOVATION GAP

## LEADS INNOVATION FUND WEBINAR

Feasibility Study under the Microscope:  
Key Sections, Common Gaps & How to Fix Them

Thursday 19<sup>th</sup> February 2026, 10h00 - 12h00 CET



10:00 AM

Edoardo Paganelli - A.SPIRE (Comms & Diss. WP)  
Introductory Remarks  
15 minutes

10:15 AM

Roberto Conti - PNO Innovation Italy (LEADS Project Manager)  
Avoiding Pitfalls: How to Build a Winning Innovation Fund (IF)  
Feasibility Study Annex  
20 minutes + 10 minutes Q&A

10:45 AM

Paola Zitella - PNO Innovation Italy (Senior Consultant)  
Feasibility studies that win: the essential criteria for ensuring  
the credibility and efficacy for evaluators  
20 minutes + 10 minutes Q&A

11:15 AM

Virtual Coffee Break  
10 minutes

11:25 AM

Patryk Suchodolowski - Heidelberg Materials (Head of CCUS  
Development and Implementation Department)  
HuCCSar - a CCS success story  
20 minutes

11:45 AM

Open Discussion  
15 minutes

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# LEADS

BRIDGING THE  
INNOVATION GAP

## LEADS INNOVATION FUND WEBINAR

Key points on GHG emissions avoidance calculation &  
experience from industrial perspective

Wednesday, 1 April, 10h00 - 11h30 CET

10:00 AM

Edoardo Paganelli - A.SPIRE (Comms & Diss. WP)  
Introductory Remarks  
15 minutes

10:15 AM

Athina Preveniou - AdMiRIS (Environmental Sustainability  
Manager)  
Key points for CCUS projects in the IF methodology for  
GHG emission avoidance calculation  
20 minutes + 10 minutes Q&A

10:45 AM

Giorgos Daskalakis - Motor Oil Hellas (Head of  
Technology Management)  
Industrial perspective: Tips on the GHG emission  
avoidance calculations for a successful IF application  
20 minutes + 10 minutes Q&A

11:15 AM

Open Discussion  
15 minutes

REGISTER NOW



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## 4. Knowledge Resources, Lessons Learnt & Policy Feedback

To identify recurring challenges, lessons learnt and recommendations, with a goal of supporting future applicants and providing feedback to CINEA and the EU's Directorates-General

- Public Deliverables
- Innovation pipeline report (detailing selection methodology and main lessons learnt in terms of challenges and best practices to upscale R&I projects to market)

# 4. Knowledge Resources, Lessons Learnt & Policy Feedback

Websites, LinkedIn accounts, News, Event sections newsletters, joint press releases, interviews, articles, webinars, event participation

- [www.realize-project.eu/](http://www.realize-project.eu/)
- [www.aspire2050.eu/2dploy](http://www.aspire2050.eu/2dploy)
- [www.aspire2050.eu/leads](http://www.aspire2050.eu/leads)
- [www.h2if.eu](http://www.h2if.eu)
- [Homepage - Diamonds4if](#)
- [Joint Recommendations from the 5 projects to CINEA and the EU DGS](#) on how to improve access to IF and facilitate this upscale
- ["Jumping Hurdles" questionnaire](#)



# 5. Project Scouting & Selection Tools

For internal users identifying promising R&I results and potential IF candidates:

- [Kaila by Zabala Innovation](#), **database** used to find and shortlist projects and shortlist them based on available information (e.g: deliverables)
- [H2IF: D3.1-Horizon2IF-Innovation-Strategy-and-Roadmap.pdf](#) :
  - the **selection methodology to identify promising proposals** from Energy Storage and Hydrogen sectors, ii) the **ideal roadmap to apply to the IF instrument**, iii) the **main challenges met in the process** and preliminary recommendations
- **Wheesbee** (PNO Digital)



# Wheesbee: Unlocking Insights Across the EU Projects Ecosystem

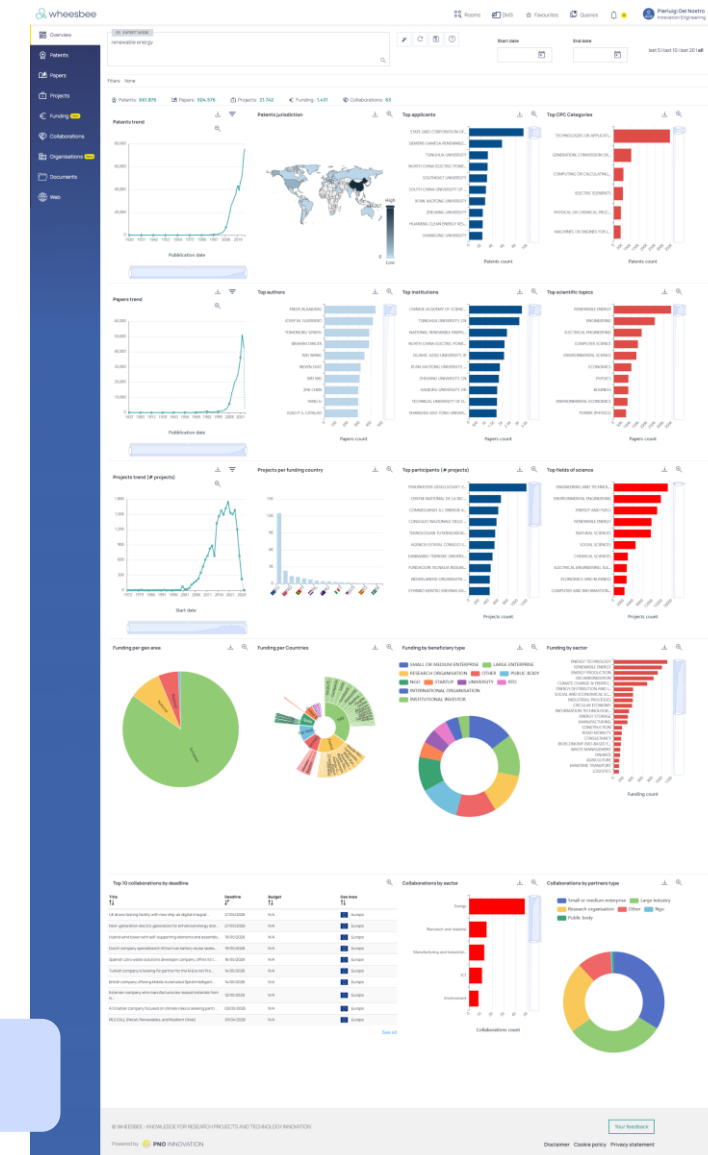


# Wheesbee

## Enhancing Innovation Processes

- Wheesbee provides access to the information that matters most for anyone involved in research and innovation — supporting every stage of the process, from discovery to strategic decision-making.
- Access millions of curated resources in one place:
  - Patents (worldwide coverage)
  - Scientific publications (across every domain)
  - R&D projects (European and national)
  - Funding opportunities (European, national, regional)
  - Collaboration ecosystems (Open Innovation platforms)
- Organize knowledge, collaborate effectively, and stay ahead of emerging trends.

[www.wheesbee.eu](http://www.wheesbee.eu)



**NATURAL LANGUAGE SEARCH**

decarbonisation

Filters: None

Total Matches: 104 Page 1 on 6

ALL ANALYSE EXPORT ADD RELEVANCE

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☐ Energy-efficient membrane-based separation solution for carbon capture, hydrocarbon separation and olefin/paraffin separation offered for flue gas emitters and petrochemical plant owners

Geographical area: Europe Deadline: 07/10/2026 Type: Technology Offer Status: PUBLISHED  
Sectors: Energy, Manufacturing and industrial processes  
Type of Partners Sought: Large Industry, Small or Medium Enterprise, Research Organisation, Other  
Saved in 1 rooms

Saving up to 90%: This gas separation technology achieves superior **energy efficiency** by changing the physical separation principle from "thermal" to "sieving"

---

☐ Advanced High-Durability Containment System for Aluminium-Based Thermal Energy Storage

Geographical area: Europe Deadline: 09/07/2026 Type: Technology Request  
Status: PUBLISHED  
Sectors: Energy, Nanotech and Material  
Type of Partners Sought: Large Industry, Small or Medium Enterprise, Research Organisation, Other  
Saved in 1 rooms

A Spanish SME (Small and Medium-sized Enterprise) specialized in **renewable energy and decarbonisation** solutions seeks advanced containment technology

---

☐ A Turkish company has developed carbon-free thermal energy storage systems with renewable integration for industrial and residential applications and is looking for commercial agreement with the technical assistance.

Geographical area: Europe Deadline: 01/10/2026 Type: Technology Offer Status: PUBLISHED  
Sectors: Energy  
Type of Partners Sought: Large Industry, Small or Medium Enterprise, Research Organisation

The technology converts low-cost electricity into heat, stores it, and releases it when needed, enabling renewable integration, supporting **decarbonisation** and ensuring reliable clean heat

---

☐ A Spanish company offers modular system for instant thermal energy generation from photovoltaic sources

Geographical area: Europe Deadline: 09/07/2026 Type: Technology Offer Status: PUBLISHED  
Sectors: Energy, Nanotech and Material, Manufacturing and industrial processes  
Type of Partners Sought: Large Industry, Small or Medium Enterprise, Research Organisation

A Spanish company specialized in **renewable energy** (hardware developer) offers a modular technology that converts photovoltaic electricity into thermal energy

---

☐ The geothermal panel that can turn any underground structure into a renewable energy source

Geographical area: Europe Deadline: 12/11/2026 Type: Technology Offer Status: PUBLISHED  
Sectors: Energy  
Type of Partners Sought: Large Industry, Small or Medium Enterprise, Research Organisation

Importantly, even in an increasingly **electrified** world, the bulk of building energy consumption is not electrical but thermal—used for space heating, cooling, and hot water. Depending on the country

and tunnels), interested in enhancing their energy systems and **decarbonizing** their energy operation. Beside the desired collaboration above, they are also open for (funded) research & development

Filters: None

Total Matches: 104 Page 1 on 6

ALL ANALYSE EXPORT ADD RELEVANCE

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**Energy-efficient membrane-based separation solution for carbon capture, hydrocarbon separation and olefin/paraffin separation offered for flue gas emitters and petrochemical plant owners**

☆ z&l o o q
✉
🔗

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**Deadline:** 07/10/2026 **Status:** Published

**Summary** | Description | Partners Sought

✎

---

Sectors: Energy, Manufacturing and industrial processes

Tags

CAPTURE AND STORAGE OF CO<sub>2</sub>

CHEMICAL AND SOLID MATERIAL RECYCLING

FILTRATION AND MEMBRANE PROCESSES

GAS TRANSMISSION AND DISTRIBUTION

MANUFACTURE OF CONSTRUCTION MATERIALS, COMPONENTS AND SYSTEMS

OTHER UTILITIES AND RELATED FIRMS

PLANT DESIGN AND MAINTENANCE

PLASTICS, POLYMERS

WASTE TO ENERGY - OTHER

WATER, SEWERAGE, CHEMICAL AND SOLID WASTE TREATMENT PLANTS

---

**Abstract**

Saving up to 90% this gas separation technology achieves superior energy efficiency by changing the physical separation principle from "thermal" to "sieving" separation. Swiss company's patented technology entails molecular sieving membrane container solutions, for carbon capture and hydrocarbon separation. The company is looking for commercial agreement with technical assistance or R&D cooperation agreement with flue gas emitters, polymer plant owners and chemical process licensors.

🔍 Rooms
📁 DMS
★ Favourites
📄 Queries
🔔
👤 Pierluigi Del Nostro  
Innovation Engineering

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**Energy-efficient membrane-based separation solution for carbon capture, hydrocarbon separation and olefin/paraffin separation offered for flue gas emitters and petrochemical plant owners**

☆ z&l o o q
✉
🔗

---

**Deadline:** 07/10/2026 **Status:** Published

**Summary** | Description | **Partners Sought**

✎

---

**Geographical area:** 🇪🇺 Europe

**Type:** Large Industry, Small or Medium Enterprise, Research Organisation, Other

**Sectors:** Other, Manufacturing and industrial processes

**Role**

- Provide demonstration facilities / flue gas streams for carbon capture
- Provide CO<sub>2</sub> transport and storage
- Provide propylene recycle streams

**Profile**

- Polymer producer (Polypropylene)
- Flue gas emitter (waste to energy, cement, steel, other)
- Refrigerant manufacturers or providers

🔍 Rooms
📁 DMS
★ Favourites
📄 Queries
🔔
👤 Pierluigi Del Nostro  
Innovation Engineering

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**Type:** Technology Offer

**Source**

<https://een.ec.europa.eu/partnering-opportunities/energy-efficient-membrane-based-separation-solution-carbon-capture>

🔍 Rooms

📁 DMS

★ Favourites

📄 Queries

🔔

👤 Pierluigi Del Nostro  
Innovation Engineering

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NATURAL LANGUAGE SEARCH

decarbonisation

Filters: Statuses = ( Open OR Forthcoming OR Always Open OR EU Draft Public )

Total Matches: 274 Page 1 on 14

HORIZON-CL4-2027-02-MAT-PROD-32-two-stage: Efficient energy input from renewable sources and energy management in the process industries (IA) (Processes4Planet and Innovative Advanced Materials for the EU partnerships)

Geographical area: European Opening Date: 22/09/2026 Deadline: 02/02/2027 04:00 UTC Funding status: FORTHCOMING Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 9.000.000 Overall budget: € 52.500.000 Beneficiaries: Large Enterprise, Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, International Organisation, Other

LIFE-2026-CET-INDUSTRY: Supporting the clean energy transition of European industry and businesses

Geographical area: European Opening Date: 21/04/2026 Deadline: 16/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: N/A Overall budget: € 7.000.000 Beneficiaries: Large Enterprise, Startup, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, International Organisation, Other

LIFE-2026-CET-PDA: Project Development Assistance for sustainable energy investments

Geographical area: European Opening Date: 21/04/2026 Deadline: 16/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: N/A Overall budget: € 8.000.000 Beneficiaries: Public Body, Small or Medium Enterprise, Large Enterprise, Research Organisation, University, NGO, International Organisation, Other

HORIZON-CID-2027-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries (IA) (Processes4Planet and Clean Steel partnerships)

Geographical area: European Opening Date: 12/01/2027 Deadline: 15/09/2027 04:00 UTC Funding status: FORTHCOMING Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 25.000.000 Overall budget: € 125.000.000 Beneficiaries: Large Enterprise, Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, International Organisation

HORIZON-CID-2026-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries (IA) (Processes4Planet and Clean Steel partnerships)

Geographical area: European Opening Date: 18/12/2025 Deadline: 15/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 25.000.000 Overall budget: € 125.000.000 Beneficiaries: Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, Other

HORIZON-CL5-2027-02-D3-07: Concentrated solar thermal systems for decarbonising industrial processes

Geographical area: European Opening Date: 03/12/2026 Deadline: 31/03/2027 04:00 UTC Funding status: FORTHCOMING Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 6.000.000 Overall budget: € 12.000.000 Beneficiaries: Large Enterprise, Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, Other

Funding by sector

Decarbonization, Energy Technology, Climate Change & Environ..., Renewable Energy, Energy Production, Circular Economy, Industrial Processes, Information Technology, Social and Economical Sc..., Manufacturing, Consultancy, Energy Distribution and I..., Road Mobility, Construction, Finance, Waste Management, Logistics, Advanced Materials, Bioeconomy (Bio-based E..., Maritime Transport

Funding by beneficiary type

Small or Medium Enterprise, Large Enterprise, Startup, Research Organisation, University, Public Body, Other, RTO, NGO, International Organisation, Institutional Investor

Funding status

Open, Forthcoming, Always Open

Overview

Patents

Papers

Projects

Funding

Collaborations

Organisations

Documents

Web

NATURAL LANGUAGE SEARCH

decarbonisation

Filters: Statuses = ( Open OR Forthcoming OR Always Open OR EU Draft Public )

Total Matches: 274 Page 1 on 14

HORIZON-CL4-2027-02-MAT-PROD-32-two-stage: Efficient energy input from renewable sources and energy management in the process industries (IA) (Processes4Planet and Innovative Advanced Materials for the EU partnerships)

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Geographical area: European Opening Date: 21/04/2026 Deadline: 16/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: N/A Overall budget: € 7.000.000 Beneficiaries: Large Enterprise, Startup, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, International Organisation, Other

LIFE-2026-CET-PDA: Project Development Assistance for sustainable energy investments

Geographical area: European Opening Date: 21/04/2026 Deadline: 16/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: N/A Overall budget: € 8.000.000 Beneficiaries: Public Body, Small or Medium Enterprise, Large Enterprise, Research Organisation, University, NGO, International Organisation, Other

HORIZON-CID-2027-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries (IA) (Processes4Planet and Clean Steel partnerships)

Geographical area: European Opening Date: 12/01/2027 Deadline: 15/09/2027 04:00 UTC Funding status: FORTHCOMING Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 25.000.000 Overall budget: € 125.000.000 Beneficiaries: Large Enterprise, Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, International Organisation

HORIZON-CID-2026-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries (IA) (Processes4Planet and Clean Steel partnerships)

Geographical area: European Opening Date: 18/12/2025 Deadline: 15/09/2026 04:00 UTC Funding status: OPEN Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 25.000.000 Overall budget: € 125.000.000 Beneficiaries: Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, NGO, Other

HORIZON-CL5-2027-02-D3-07: Concentrated solar thermal systems for decarbonising industrial processes

Geographical area: European Opening Date: 03/12/2026 Deadline: 31/03/2027 04:00 UTC Funding status: FORTHCOMING Type: Grant Investment Type: RDI Grantor: European Commission Max funding amount: € 6.000.000 Overall budget: € 12.000.000 Beneficiaries: Large Enterprise, Startup, RTQ, Small or Medium Enterprise, Public Body, Research Organisation, University, Other

Funding by sector

Decarbonization, Energy Technology, Climate Change & Environ..., Renewable Energy, Energy Production, Circular Economy, Industrial Processes, Information Technology, Social and Economical Sc..., Manufacturing, Consultancy, Energy Distribution and I..., Road Mobility, Construction, Finance, Waste Management, Logistics, Advanced Materials, Bioeconomy (Bio-based E..., Maritime Transport

Funding by beneficiary type

Small or Medium Enterprise, Large Enterprise, Startup, Research Organisation, University, Public Body, Other, RTO, NGO, International Organisation, Institutional Investor

Funding status

Open, Forthcoming, Always Open

HORIZON-CID-2027-01-01: R&I in Support of the Clean Industrial Deal: Decarbonisation of energy intensive industries (IA) (Processes4Planet and Clean Steel partnerships)

Opening Date: 12/01/2027 Deadline: 15/09/2027 Published on Source: 12/12/2025 Published on Wheesbee: 04/12/2025

Summary Change History

Programme: HORIZON - Horizon Europe (HORIZON), HORIZON 2 - Global Challenges and European Industrial Competitiveness, HORIZON 2.4 - Digital, Industry and Space

Call: HORIZON-CID-2027-01 - R&I in Support of the Clean Industrial Deal

Action Type: HORIZON-IA HORIZON Innovation Actions

Beneficiaries: Large Enterprise, Startup, Rto, Small Or Medium Enterprise, Public Body, Research Organisation, University, Ngo, International Organisation

Sectors: Decarbonization, Industrial Processes, Energy Technology, Circular Economy, Climate Change & Environment, Manufacturing

Technologies: Energy Technology, Renewable Energy, Hydrogen, Manufacturing Technology, Advanced Material, Automation And Robotics, Energy Storage, Environmental Technology, Pollution Control, Sustainable Practices, Waste Management

Keywords: DECARBONIZATION INNOVATIVE DEMONSTRATORS MARKET READINESS CLEAN TECHNOLOGIES

Description

Expected Outcome:

Proposals are expected to contribute to all the following expected outcomes:

- Accelerate the use of innovative technologies to decarbonise industrial processes and bring to the market more cost-effective clean products to strengthen the competitiveness, sustainability (including biodiversity), and resilience of EU industries;
- Create new innovative first-of-a-kind operational demonstrators and/or optimise newly installed industrial decarbonisation solutions in Europe; and
- Demonstrate the market readiness of the envisaged future clean products and their innovative processes via a credible business plan and an exploitation strategy for industrialisation, including market-tested use cases.

Scope:

The Clean Industrial Deal aims to secure the EU as an attractive location for manufacturing, including for energy-intensive industries, and to promote clean tech and new circular business models in order to meet Europe's ambitious decarbonisation and climate neutrality targets. It focuses primarily on the competitive decarbonisation of EU industry and on the production of clean technologies in the EU.

Funding country: Europe

Geo Area: European

Status: FORTHCOMING

Types: Grant

Investment Type: RDI

Overall Budget: 125.000.000,00 €

Max Funding Amount: 25.000.000,00 €

Deadline Model: Single Stage

Deadline 1: 15/09/2027 15:00 UTC

Grantor

European Commission - [http://ec.europa.eu/index\\_en.htm](http://ec.europa.eu/index_en.htm)

+ More information

Source Link

<https://ec.europa.eu/info/funding-tenders/opportunitie...>

Links

<https://ec.europa.eu/info/funding-tenders/opportunitie...>



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Wheelsbee interface showing search results for "decarbonisation". The left sidebar lists navigation options: Overview, Patents, Papers, Projects, Funding, Collaborations, Organisations, Documents, and Web. The main content area displays search results for "decarbonisation" with filters for start date and funding country. The results are categorized by funding country (European Union, Horizon 2020, etc.) and include details such as project title, start/end dates, status, and funding amounts. A line graph shows the "Projects trend (# projects)" over time, and a bar chart displays "Top fields of science".

Wheelsbee interface showing search results for "decarbonisation". The left sidebar lists navigation options: Overview, Patents, Papers, Projects, Funding, Collaborations, Organisations, Documents, and Web. The main content area displays search results for "decarbonisation" with filters for start date and funding country. The results are categorized by funding country (European Union, Horizon 2020, etc.) and include details such as project title, start/end dates, status, and funding amounts. A line graph shows the "Projects trend (# projects)" over time, and a bar chart displays "Top fields of science".

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# A unique tool for analysing the funded projects ecosystem

Wheesbee provides access to more than 1.4 million of R&I&D funded projects by integrating and harmonising data from 22 different official sources (European and national)

## Europe:

- CORDIS
- Framework Programme 1-7
- Horizon 2020
- Horizon Europe
- European Funding & Tenders Portal
- Interreg
- LIFE

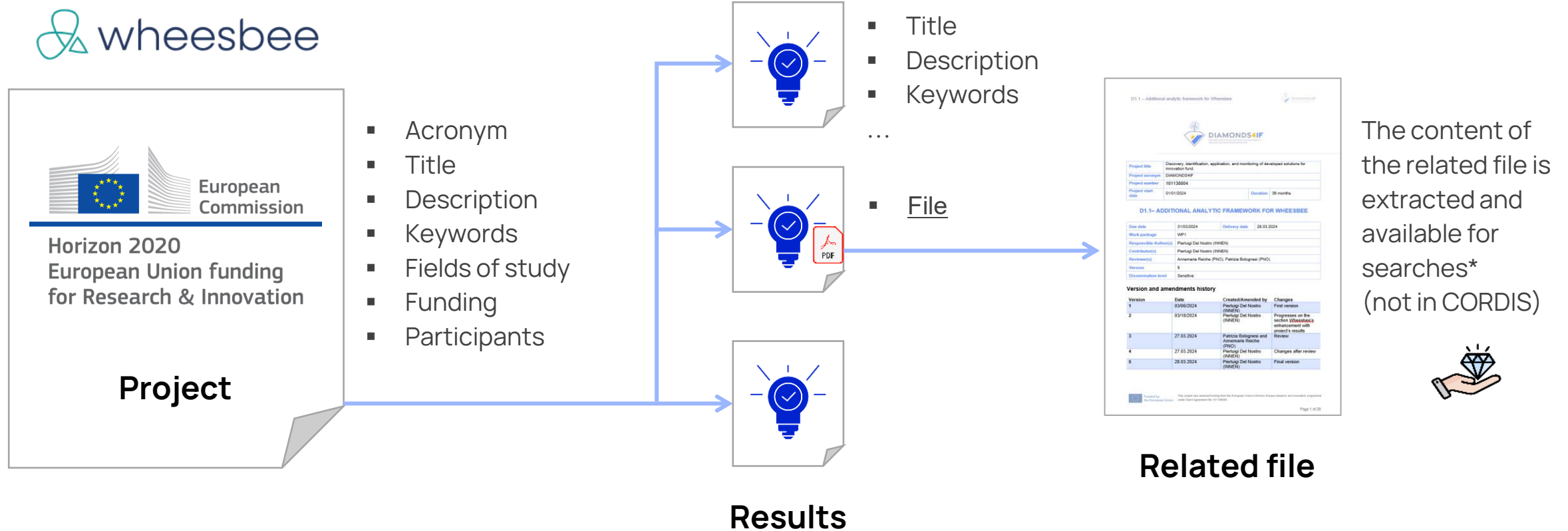
## European countries:

- Austria
- Belgium
- Finland
- France
- Germany
- Italy
- The Netherlands
- Norway
- Portugal
- Spain
- Switzerland

## Outside EU:

- Australia
- Canada
- United Kingdom
- United States of America

# Wheesbee's additional analytical framework for Diamonds4IF



# Wheesbee > Projects + Results search form

Search in projects +  
results with 1 click

Search in  
projects only

Search in  
projects' results only

The screenshot shows the Wheesbee web application interface. On the left is a dark blue sidebar with navigation links: Overview, Patents, Papers, Projects (highlighted with a yellow bar), Funding, Collaborations, Organisations, Documents, and Web. The top navigation bar includes icons for Rooms, DMS, Favourites, Queries, a notification bell, and a user profile for Pierluigi Del Nostro. The main content area features a 'NATURAL LANGUAGE SEARCH' bar with a placeholder text: 'Type a clear topic description in natural language (avoid questions, additional filters, keyword lists)...'. Below the search bar are filter sections for 'ACRONYM, TITLE, DESCRIPTION', 'STATUS', 'CLASSIFICATIONS', 'ORGANISATIONS', 'FUNDING COUNTRIES, PROGRAMMES, TOPICS, CALLS, FUNDING SCHEMES', and 'DATES'. At the bottom of the main area is the 'RESULTS' section, which contains four input fields: 'Result title', 'Result text', 'Result type', and 'Subtype'. A green 'Search' button is located at the bottom center. A blue bracket on the right side of the search bar and filters section indicates that clicking here performs a search across both projects and results. Another blue bracket on the right side of the results section indicates that clicking here performs a search only within project results.

Easy search in projects and  
results with one click.  
Or choose to focus your  
search specifically on  
projects, only on their  
results, or combine search  
filters.

# Wheesbee > Search results


The screenshot displays the Wheesbee search results page for the query "pet glycolysis". The interface includes a sidebar with navigation options (Overview, Patents, Papers, Projects, Funding, Collaborations, Organisations, Documents, Web) and a top navigation bar with user information (Pierluigi Del Nostro, Innovation Engineering). The search results are filtered by "NATURAL LANGUAGE SEARCH" and show "Total Matches: 19". The results are organized into two main sections: "MIX-UP - Mixed plastics biodegradation and UPcycling using microbial communities" and "CHEMPET - Industrial scale PET chemical recycling via an innovative glycolysis process". Each section displays project details (Funding country, Start date, End date, Status, Total cost, Project funding, Organisations) and a list of matching results. The "MIX-UP" project has 190 results, and the "CHEMPET" project has 5 results. The interface also includes a "Projects trend (# projects)" chart showing the number of projects over time (2012-2026) and a "Top fields of science" chart showing the distribution of results across various scientific fields.

The search algorithm considers the results as part of a project, so you can see projects as highly relevant because they have significant results matching the query (even if the keywords are not in the description of the project).

For each project, the total of results and the list of those matching the search are shown.

The matching results are presented by relevance with respect to the search and are tagged with the type.

# Wheesbee > Enhanced project's detail page



Overview

Patents

Papers

Projects

Funding New

Collaborations

Organisations Beta

Documents


Web


Rooms

DMS

Favourites






Queries

 3

 Pierluigi Del Nostro  
Innovation Engineering


EXPERT MODE


(decarbonisation OR decarbonization OR (carbon reduction) OR (carbon abatement))





INDUSTRIALISED DURABLE BUILDING ENVELOPE RETROFITTING BY ALL-IN-ONE INTERCONNECTED TECHNOLOGY SOLUTIONS


☆












Funding country:  European Union

Status: ACTIVE

Acronym: INFINITE

Authority: European Commission

Total Cost: 10,148,199.00 €

Project Funding: 7,999,286.00 €

Project Funding



























Total Cost

Source: <https://cordis.europa.eu/project/rcn/2>

Summary

Organisations (29)

Project Results (22)

NAME ↑↓	ROLE ↑↓	CONTRIBUTION ↑↓	COUNTRY ↑↓
 ACCADEMIA EUROPEA DI BOLZANO	Coordinator	919.025,00 €	 Italy
 ARAMIS	Participant	13.588,00 €	 France
 BOUYGUES CONSTRUCTION	Participant	652.170,00 €	 France
 CASA	Participant	252.008,00 €	 Italy
 EDERA SRL IMPRESA SOCIALE	Participant	271.328,00 €	 Italy
 FANTI LEGNAMI	Participant	403.462,00 €	 Italy
 GREENDELTA	Participant	350.087,00 €	 Germany
 GRUNSTATTORAU FORSCHUNGS UND INNOVATIONS	Participant	224.500,00 €	 Austria
 HUYGEN INGENIEURS & ADVISEURS	Participant	215.857,00 €	 Netherlands
 INOVACUSKO RAZVOJNI INSTITUT UNIVERZE V LJUBLJANI	Participant	287.687,00 €	 Slovenia
 INSTITUTO VALENCIANO DE LA EDIFICACION FUNDACION	Participant	276.000,00 €	 Spain
 LEITAT	Participant	388.107,00 €	 Spain
 LOGIREP	Third party	N/A	 France

Easy check the organisations of the Consortium



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wheesbee

Rooms CMS Favourites Queries

Pierluigi Del Nostro  
Innovation Engineering

Overview Patents Papers Projects Funding Collaborations Organisations Documents Web

New section Organisations available as beta version!

The goal of this section is to provide relevant information about organisations, including those from patents, papers, projects and external sources. To do this, we are automatically harmonising all the variants of names the organisations can appear with. This beta version shows the harmonised organisations from the Projects section, including all the funding countries. Stay tuned for news and updates!

EXPLORE MODE

Build your query exploiting the available operators.

ACCADEMIA EUROPEA DI BOLZANO

Italy Research Organization 1993 https://www.eurac.edu

VIALE DRUSO 1, BOLZANO 39100 291-500 info@eurac.edu

+39 0471 055 055

Organisations

Eurac Research is a private research centre based in Bolzano-Bolzano. Read more

Projects (136)

Total Matches: 136 Page 1 on 1

VASCAGE-C - Centre for Promoting Vascular Health in the Ageing Community

Funding country: Austria Start date: 01/04/2019 End date: 31/03/2023 Status: CLOSED

Programme: Austria FFG Programmes Organisations: 54

ZIRBE - Goal-oriented innovation laboratory East Tyrol

Funding country: Austria Start date: 01/07/2016 End date: 31/05/2017 Status: CLOSED

Programme: Austria FFG Programmes Organisations: 5

VITALITY - Energy-optimized design rules and planning interfaces for BIPV in urban areas

Funding country: Austria Start date: 01/02/2017 End date: 31/01/2019 Status: CLOSED

Programme: Austria FFG Programmes Organisations: 6

DENSYS 2.0 - DECENTRALISED SMART ENERGY SYSTEMS 2.0

Funding country: European Union Start date: 01/09/2024 End date: 31/10/2030 Status: UNKNOWN

Programme: Erasmus+ (ERASMUS+) Total cost: € 4,968,000 Project funding: € 4,968,000 Organisations: 16

ULYSSEUS - Consolidating Ulysseus: an open to the world, persons-centred and entrepreneurial European University for the citizenship of the future

Funding country: European Union Start date: 01/11/2023 End date: 31/10/2027 Status: UNKNOWN

Programme: Erasmus+ (ERASMUS+) Total cost: € 12,800,000 Project funding: € 12,800,000 Organisations: 51

IP - IMAGINE PEACE

Funding country: European Union Start date: 01/11/2024 End date: 30/04/2027 Status: UNKNOWN

Programme: Creative Europe Programme (CREA) Total cost: € 899,510 Project funding: € 899,510 Organisations: 7

SILVIALP - Silver Via Alpina

Funding country: European Union Start date: 01/06/2015 End date: 30/11/2016 Status: UNKNOWN

Programme: Programme for the Competitiveness of Enterprises and small and medium-sized enterprises Total cost: € 330,155 Project funding: € 247,616 Organisations: 9

EMBRACE - Building Resilience Amongst Communities in Europe

Funding country: European Union Start date: 01/10/2011 End date: 30/09/2015 Status: CLOSED

Programme: Framework Programme 7 Total cost: € 4,264,772 Project funding: € 3,263,423 Organisations: 11 Results: 2

HELM - Harmonised European Land Monitoring

Funding country: European Union Start date: 01/01/2011 End date: 31/12/2013 Status: CLOSED

Programme: Framework Programme 7 Total cost: € 1,204,875 Project funding: € 1,000,000 Organisations: 27 Results: 2

Projects trend (# projects)

Start date

Top fields of science

Projects per funding country

Top participants (# projects)

# Wheesbee > Organisation's detail page

- Description, details and contact information
- All the R&D activity of an organisation at a glance
  - All the R&D projects
  - Projects trend
  - Fields of study
  - Funding countries
  - Collaborations



Overview

Patents

Papers

Projects

Funding

Collaborations

Organisations

Documents

Web

Rooms

DMS

Favourites

Queries

Pierluigi Del Nostro  
Innovation Engineering

EXPERT MODE

Build your query exploiting the available operators...

INDUSTRIALISED DURABLE BUILDING ENVELOPE RETROFITTING BY ALL-IN-ONE INTERCONNECTED TECHNOLOGY SOLUTIONS

Start date: 01/11/2020

End date: 30/04/2026

Summary

Organisations (29)

Project Results (22)

RESULTS FILTERS

Result title

Result text

Result type

Subtype

Total Matches: 22

Search

Periodic Reporting for period 3 - INFINITE (INDUSTRIALISED DURABLE BUILDING ENVELOPE RETROFITTING BY ALL-IN-ONE INTERCONNECTED TECHNOLOGY SOLUTIONS)

REPORT SUMMARY

TO BE OR NOT TO BE THERE Remote ethnography during the crisis and beyond

PEER REVIEWED ARTICLES

PUBLICATION

Renewal of Ethnography in the Time of the COVID-19 Crisis

PEER REVIEWED ARTICLES

PUBLICATION

Experimental evaluation of the temperature related behaviour of pigment based coloured BiPV modules integrated in a ventilated façade

PEER REVIEWED ARTICLES

PUBLICATION

Social sustainability assessment for a stakeholder-centered building retrofit

CONFERENCE PROCEEDINGS

PUBLICATION

Hidden colored Building Integrated Photovoltaics: technology overview and design challenges

CONFERENCE PROCEEDINGS

PUBLICATION

Experimental Assessment and Data Analysis of Colored Photovoltaic in the Field of BiPV Technology Application

CONFERENCE PROCEEDINGS

PUBLICATION

Energy Performance Evaluation and Economical Analysis by Means of Simulation Activities for a Renovated Building Reaching Different Nzeb Definitions Targets

CONFERENCE PROCEEDINGS

PUBLICATION

Decision-Making Aid Tool to Support Renovation of Buildings with Industrialised All-in-One Technology Solutions

CONFERENCE PROCEEDINGS

PUBLICATION

Boosting the Renovation Wave with Modular Industrialized Renovation Kits: mapping challenges, barriers and solution strategies

CONFERENCE PROCEEDINGS

PUBLICATION

A Simple Guide for Designing a Photovoltaic and Battery System Coupled with a Heat Pump Across Europe

CONFERENCE PROCEEDINGS

PUBLICATION

Project Website

WEBSITES/PATENT/FILLINGS/VIDEOS ETC

DELIVERABLE

Printed materials: bookmark, rollup and digital flier

WEBSITES/PATENT/FILLINGS/VIDEOS ETC

DELIVERABLE

INFINITE Visual Identity

WEBSITES/PATENT/FILLINGS/VIDEOS ETC

DELIVERABLE

Interactive market potential map

OTHER

DELIVERABLE

Structuring the EU Observatory

DOCUMENTS/REPORTS

DELIVERABLE

Funding country: European Union

Status: ACTIVE

Acronym: INFINITE

Authority: European Commission

Total Cost: 10,148,199.00 €

Project Funding: 7,999,286.00 €

Project Funding

Total Cost

Source: <https://cordis.europa.eu/project/rcn/22>

# Wheesbee > Enhanced project's detail page

It is possible to easily go through the set of results of a specific projects, in the dedicated tab.

A search form is also available, in case of a high number of project's results.



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# Wheesbee › Project's result detail page

The screenshot shows the Wheesbee interface. On the left is a dark blue sidebar with navigation links: Overview, Patents, Papers, Projects, Funding (marked 'New'), Collaborations, Organisations (marked 'Beta'), Documents, and Web. The main content area has a top navigation bar with 'Rooms', 'DMS', 'Favourites', 'Queries', a notification bell, and a user profile for 'Pierluigi Del Nostro'. Below this is a 'NATURAL LANGUAGE SEARCH' box with a placeholder text and a search icon. The project title 'Methods for an improved industrialised envelope design' is prominently displayed. Below the title, the 'Creation date' is '11/08/2025'. There are three tabs: 'PROJECT RESULTS' (active), 'DELIVERABLE', and 'DOCUMENTS REPORTS'. The main text describes the report on methods for an improved industrialised envelope design through ScanToBIM and design for assembling-disassembling (drafts M18, M36). A large teal 'Download' button is circled in blue. To the right of the main text, there is a sidebar with project details: 'Result of project' (INDUSTRIALISED DURABLE BUILDING ENVELOPE RETROFITTING BY ALL-IN-ONE INTERCONNECTED TECHNOLOGY SOLUTIONS), 'Funding country' (European Union), 'Programme' (Horizon 2020), 'Start date' (01/11/2020), 'End date' (30/04/2026), and 'Source' (https://cordis.europa.eu/project/rcn/230724).

The cover image features the 'INFINITE BUILDING RENOVATION' logo at the top left, with the tagline 'Industrialised envelope solutions'. A reference number 'Ref. Ares(2025)2088269 - 15/04/2025' is in the top right. The title 'D3.5' is in large bold letters. Below it, the full title 'Methods for an improved industrialized envelope design' is shown. Further down, it says 'Public Report' and 'Date - 15.04.25'. At the bottom, there is a European Union flag logo and a text block stating: 'INFINITE/Industrialised durable building envelope retrofitting by all-in-one interconnected technology solutions project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No 956397'. The background of the cover has a geometric pattern of yellow and grey cubes.



**DIAMONDS4IF**

DISCOVERY, IDENTIFICATION, APPLICATION, AND MONITORING OF  
DEVELOPED SOLUTIONS FOR INNOVATION FUND

# Contact us



**PNO INNOVATION**



**Funded by  
the European Union**

This project has received funding from the European Union's Horizon Europe research and innovation programme under Grant Agreement No 101138004.



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 [LinkedIn](#)



# Q&A



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# Thank you for your attention





# Main bottlenecks and barriers from Horizon R&I projects for upscale funding and lessons learnt

**Roberto Conti** – LEADS (PNO Innovation)



# Accelerating Clean Industrial Deployment

## Horizon Europe implementation figures (2021-2025)

- 95.5 B€ - Horizon Europe Budget (2021-2027)
- > 20.000 projects funded ( $\approx 5.000/\text{year}$ )
- $\approx 20.000$  Innovation action proposals ( $\approx 1.000$  granted)
- > 30.000 beneficiaries



<https://dashboard.tech.ec.europa.eu/>

## Europe is not lacking innovation capacity

### The gap

There is still a significant gap between Horizon Europe success and Innovation Fund readiness. This is not only about TRL, project size or funding volume.

### The promoter role

IF requires clear ownership, industrial leadership and the capacity to turn a technology into a bankable, buildable and operable project.

### The lesson

Proposal preparation is not just proposal writing. It requires structuring, maturation and market-readiness work before submission.



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# From technology development to industrial deployment

## Horizon Europe



- Technology oriented
- Proof of concept & Demonstration
- Pre-industrial environment
- Focus on Innovation Performance
- TRL 5-7

## Innovation Fund

- Business oriented
- Full scale industrial deployment
- Real market conditions
- Focus on maturity and bankability
- TRL 6-8

It's a shift in perspective!

And these two perspectives do not always follow the same logic.

That's where many of the bottlenecks we will discuss today originate



# From technology development to industrial deployment

Horizon  
Europe



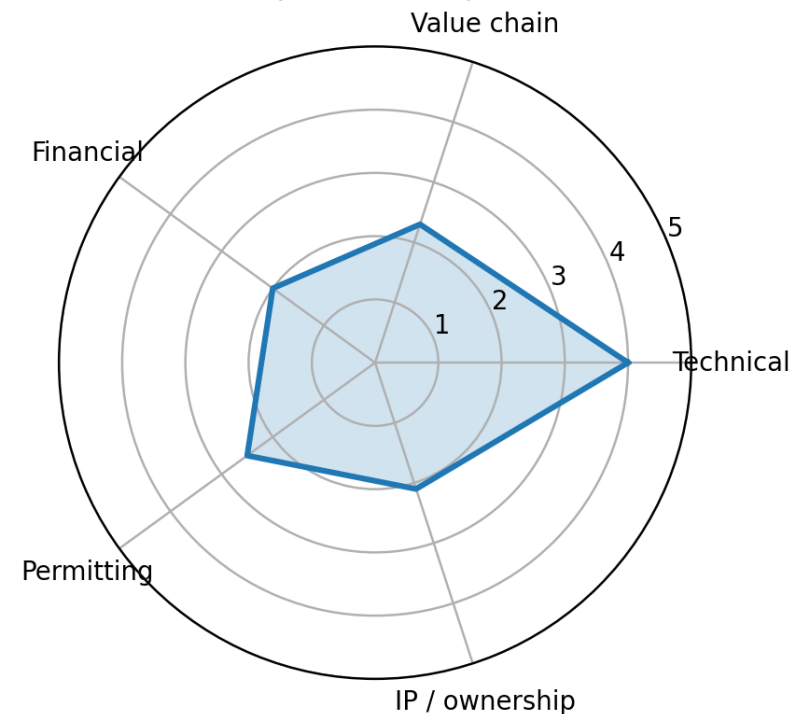
Innovation Actions (IA) are not sufficiently mature for industrial and financial deployment

Frequent blocker: unclear ownership / exploitation rights of results (IP, licensing, FTO) slowing scale-up



Implication: proposal-building must include early 'bankability gates' beyond TRL.

Typical IA readiness profile (illustrative)



*Illustrative pattern from REALIZE screening/validation*

# Non-technical risks dominate the gap between R&I and full deployment

Horizon  
Europe



1

## Value chain gaps

Manufacturing scale, suppliers, warranties, O&M, EPC capacity

2

## Financial model maturity

Auditable model, assumptions, sensitivities, bankability evidence

3

## Revenue/offtake uncertainty

Route-to-market, PPA strategy, hedging, customer commitments

4

## Permitting, grid & schedule realism

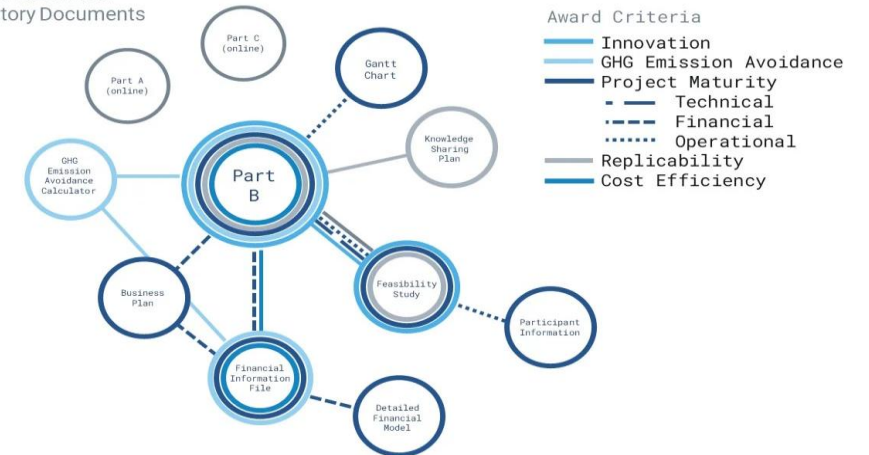
Critical path, permitting roadmap, execution plan

5

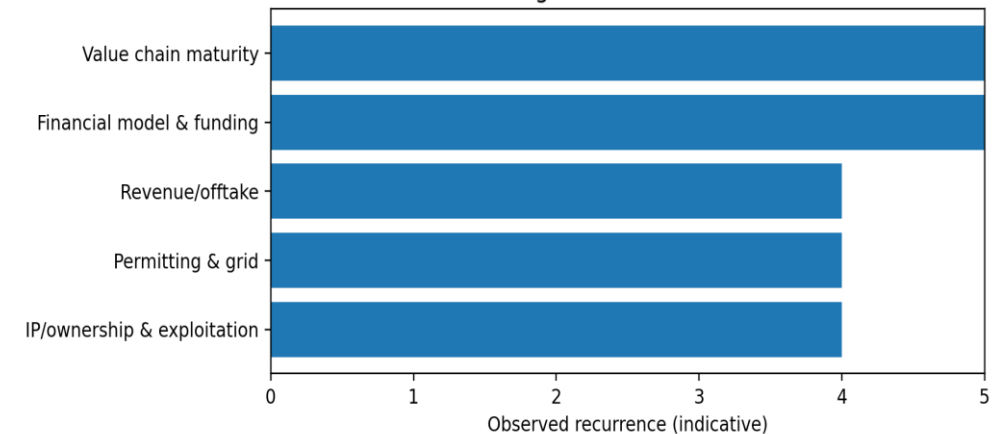
## Ownership / IP constraints

Rights to exploit, licensing terms, FTO, multi-partner governance

IF: Dependencies of  
Mandatory Documents



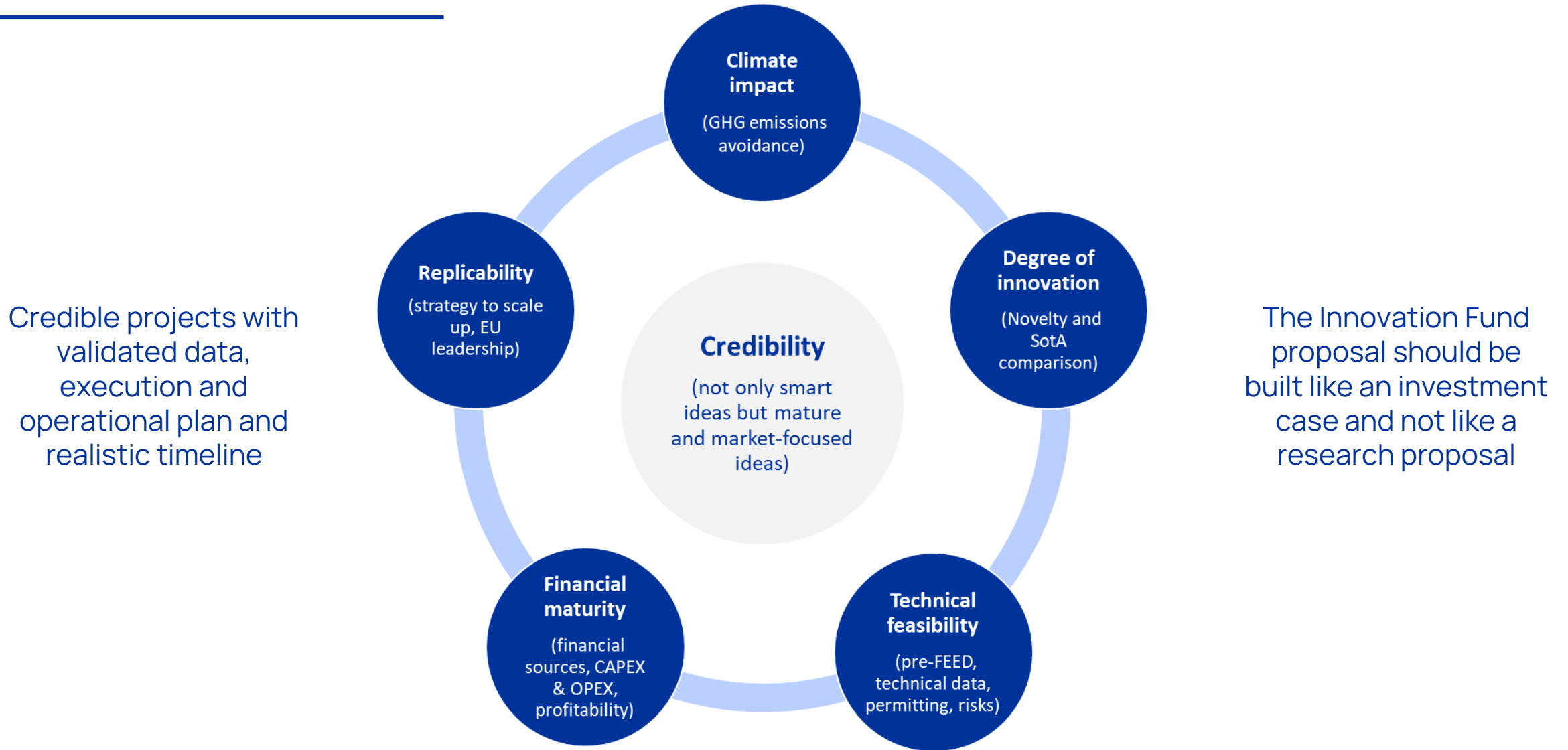
Recurring barriers to IF-readiness



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# What Innovation Fund is looking for...





# Main Bottlenecks and barriers identified by CSAs cluster projects



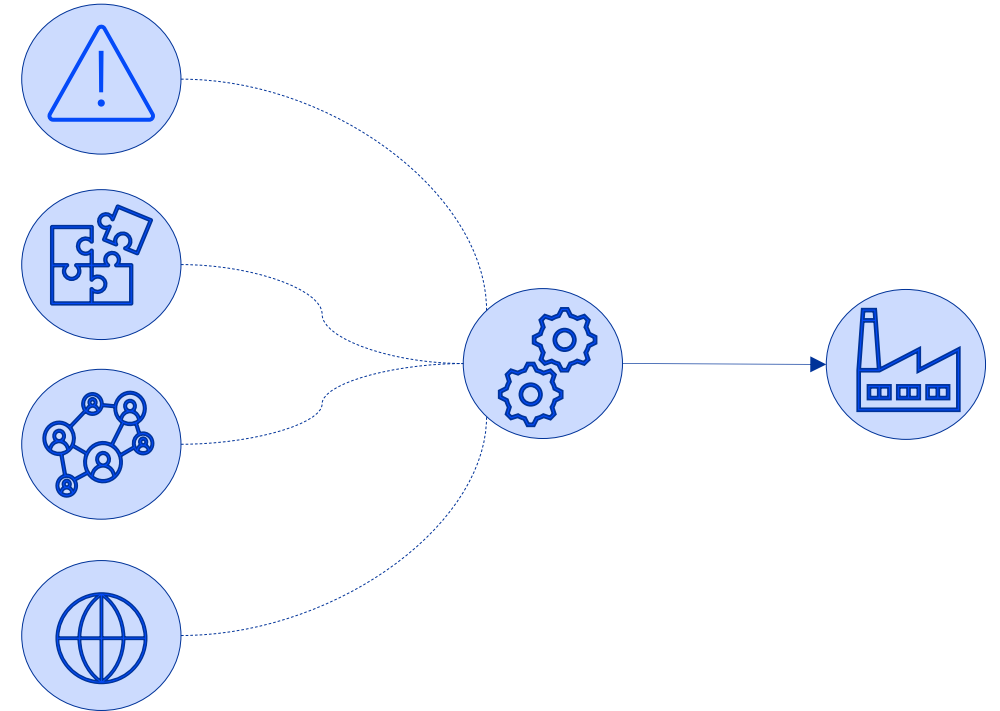
**Funded by  
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# Financial and business barriers

## Financial maturity and clear long-term business strategy

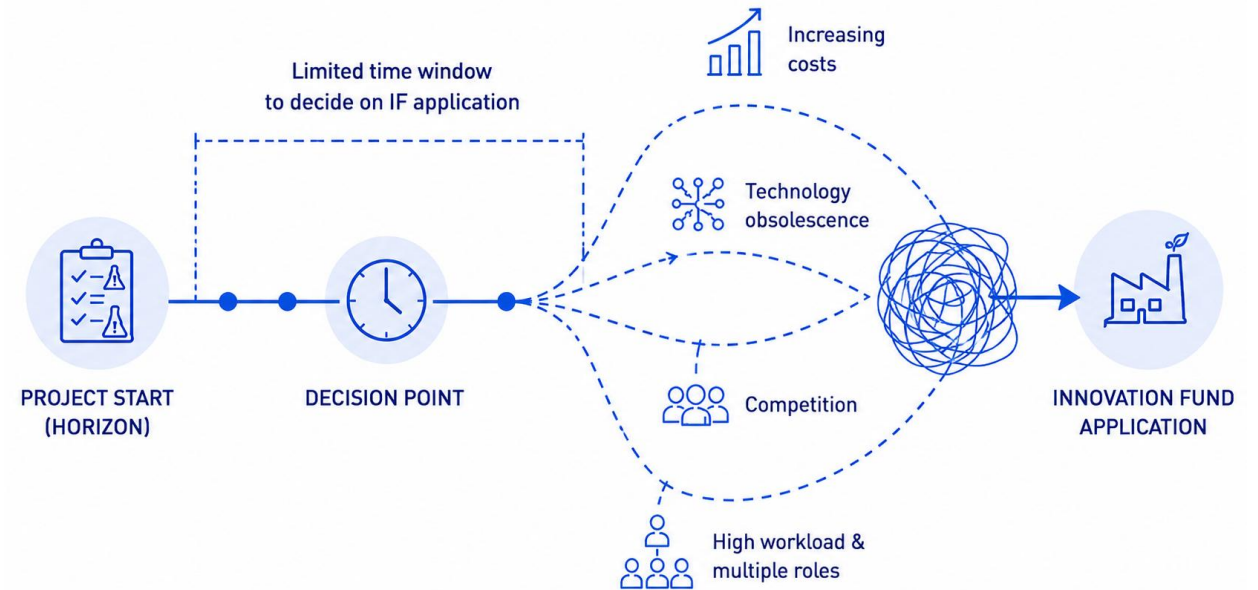
- First-of-a-kind (FOAK) projects show high risk profile → low attractiveness for investors/ financiers
- Scope, activities and business model of IF project could be very different from the R&I project
- Business models are not robust or mature enough.
- SMEs sometimes lack knowledge and understanding of their own full value chain.
- External factors: market dynamics, geopolitical tensions and changes in policies/regulations



# Operational and managerial barriers

## Timing, decision making and strong Team needed

- Limited time window for a Horizon-funded project to decide whether to apply to the IF (e.g., technology obsolescence)
- Long development time due to project complexity and/or scale
- Project owners, especially SMEs, are often not structured to handle the workload required for an IF application



# Innovation Fund programme complexity

## Very resource-intensive and rigid IF application process

- Feasibility Study, Part B, Business Plan, GHG model and other annexes are highly detailed
- Knowledge required for successful research projects is entirely different from industrial scale-up (e.g.: importance of site development & local stakeholders fostering)
- Certain evaluation metrics (e.g. GHG-cost-efficiency thresholds, scalability/replicability guidelines, expectations on financial maturity) are difficult to meet, particularly for innovative pilot projects

Material	Pages
Application Form Part A	
Application Form Part B	70
Application Form Part C + extended Part C Form	
Mandatory annexes	
Detailed budget table/relevant cost calculator	
Participant information	
Timetable/Gantt chart	
GHG emissions calculator	
Feasibility study (template provided)	60
Business plan (template provided)	60
Detailed financial model	
Audit statement on relevant costs	
Shareholders' financial resources	
Support to project	
Terms of supply	
Supporting documents	
Due diligence reports	
Permits, licences, authorisations	

Overall proposal info

Full detailed technical info and supply/value chain description

Business plan and detailed financial model (CAPEX, OPEX, Revenues, P&L, Cashflow, etc....)

Letter of Support or pre-agreements  
Suppliers: volume and prices identification  
Customers: willingness to pay

# Challenges by industrial sector

## Strong global competition and Industry Challenges

- EU **RES** operators struggle to compete with projects backed by foreign capital (e.g. China, USA), despite the EU's ambitions for energy strategic autonomy.
- Some key technologies for **RES** (e.g.: offshore wind farms, noise mitigation technologies, offshore solar infrastructure) often do not meet or are not included in the Innovation Fund criteria.
- Key regulatory/remuneration issues for **Long Duration Energy Storage** (LDES) and **Hydrogen storage** projects. Important energy market reforms are needed for innovation premiums to be adequately recognised and rewarded prior to large CAPEX investments.
- **Carbon Capture and Storage**: Upcoming CO<sub>2</sub> Transport legislation; Regulations are still moving at a slow pace. Need to decarbonize much faster if we want to reach 2050 climate goals





# Conclusions

---

## ➤ The Gap is not technological

Europe has a strong Innovation Pipeline. The main barriers are non-technical

## ➤ The real challenge is maturity and ownership

Moving from Horizon Europe to Innovation Fund requires:

- Business maturity
- Financial robustness
- Governance, IP, project ownership

## ➤ Projects must be built as investments

Successful projects are not just innovative  
They are bankable, scalable and market-driven

## What needs to change

- ❖ Earlier industrial involvement
- ❖ Stronger project ownership
- ❖ Integration of financial and technical development
- ❖ Better alignment with market and policy frameworks





# Q&A



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# Thank you for your attention



# Panel discussion



**Maria Laura Trifiletti** – CINEA  
(Moderator)



**Andrea Rausa** – LEADS, PNO  
Innovation



**Kristian Aas** - 2DPLOY, SINTEF



**Marie Latour** – REALIZE, Eurofunding



**Martin Bracken** - H2IF, CLERENS



**Patrizia Bolognesi** - DIAMONDS4IF,  
PNO Innovation





# Coffee break



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the European Union



DIAMONDS4IF

Advanced technologies for sustainable development and innovation in the diamond industry



2DPLOY

LEADS







## Panel 2: Real-life stories of R&I to deployment

Accelerating clean industrial deployment: insights, challenges, and opportunities



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LEADS





# DREAM: Decarbonisation of the REzzato And Mazzano cement plant

**Claudia Capone** – Heidelberg Materials



Funded by  
the European Union



LEADS







# DREAM: Decarbonisation of the REzzato And Mazzano cement plant

*Making a material difference in the Italy's CCS value chain*

| Public Conference 2<sup>nd</sup> edition: Accelerating clean industrial deployment: Insights, Challenges, and Opportunities – Panel 2 - Real-life stories of R&I to deployment | Brussels | Dr. Claudia Capone |

2026, May 12

**DREAM**

Decarbonisation of the  
Rezzato And Mazzano cement plant



**Funded by the European Union**  
Emissions Trading System  
Innovation Fund

Heidelberg Materials





# Heidelberg Materials

<b>Material Impact</b> 	<b>Unique Positioning</b> 	<b>Radical Focus</b> 
<b>Global Advantage</b> 	<b>Collective Strength</b> 	<b>Value Creation</b> 

## Making a Material Difference



~49,000

employees on 5 continents  
in 2025



~ 50

countries



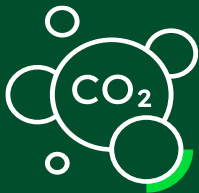
€ 21.5 bn

Revenue in 2025



1<sup>st</sup>

Large-scale CCS cement plant in the  
world



↓ 512 kg/t

specific net CO<sub>2</sub> emissions per  
tonne of cementitious material  
(Scope 1) in 2025



# Heidelberg Materials Italia

Since 2016, HMI is ultimately controlled by HM AG.

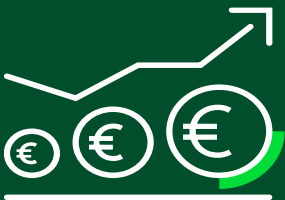


## REZZATO-MAZZANO CEMENT PLANT



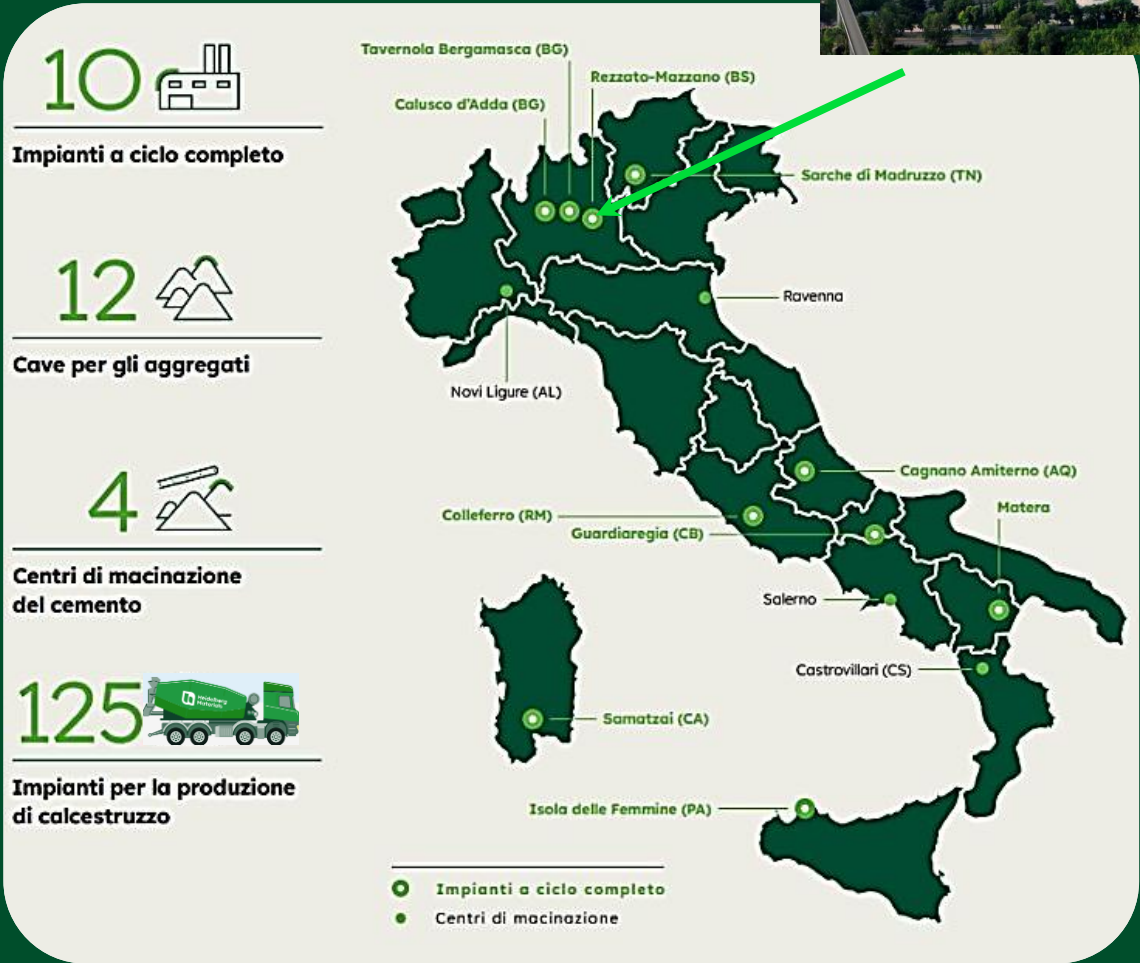
EMPLOYEES 2025

1,710 people



REVENUE 2025

> € 1 bn





## DREAM project - the objective

The **1<sup>st</sup> full-scale innovative decarbonised plant** in the **cement sector** in **Italy**

enabling a complete and robust CCS value chain in Italy

accelerating risk-reduced CCS uptake across the European Union.

# DREAM



**Funded by the European Union**

Emissions Trading System  
Innovation Fund



**March 2026**

Grant Agreement signature with CINEA

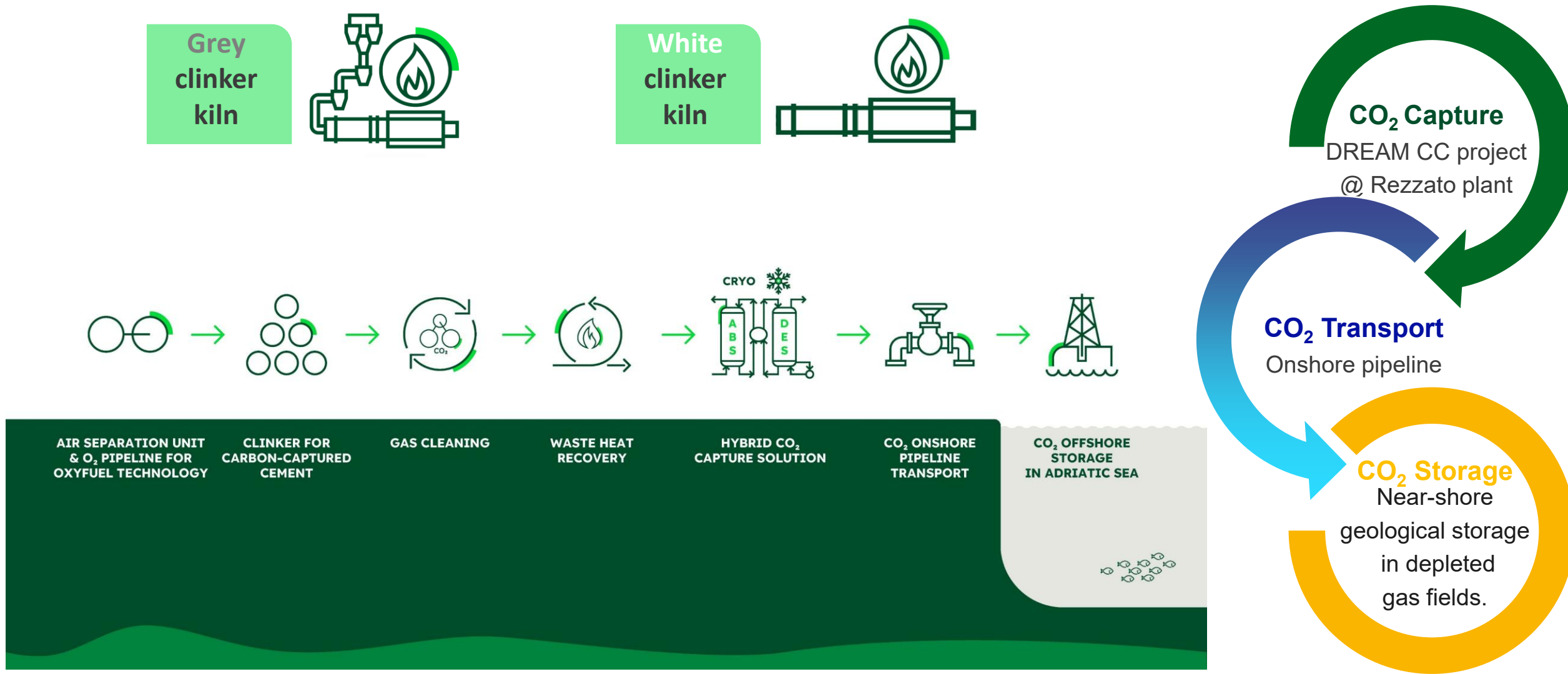


**1<sup>st</sup> April 2026**

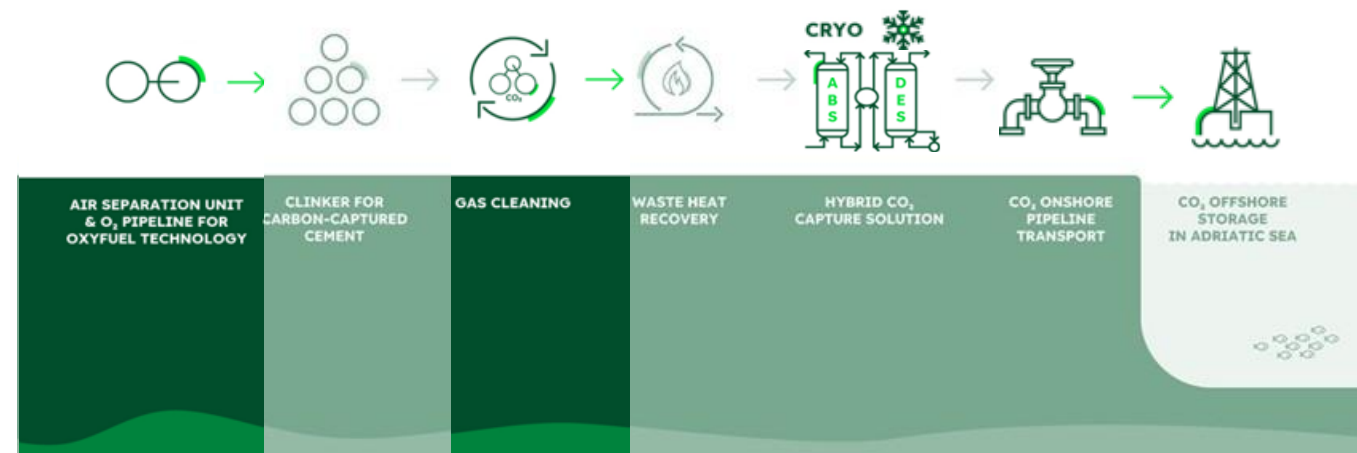
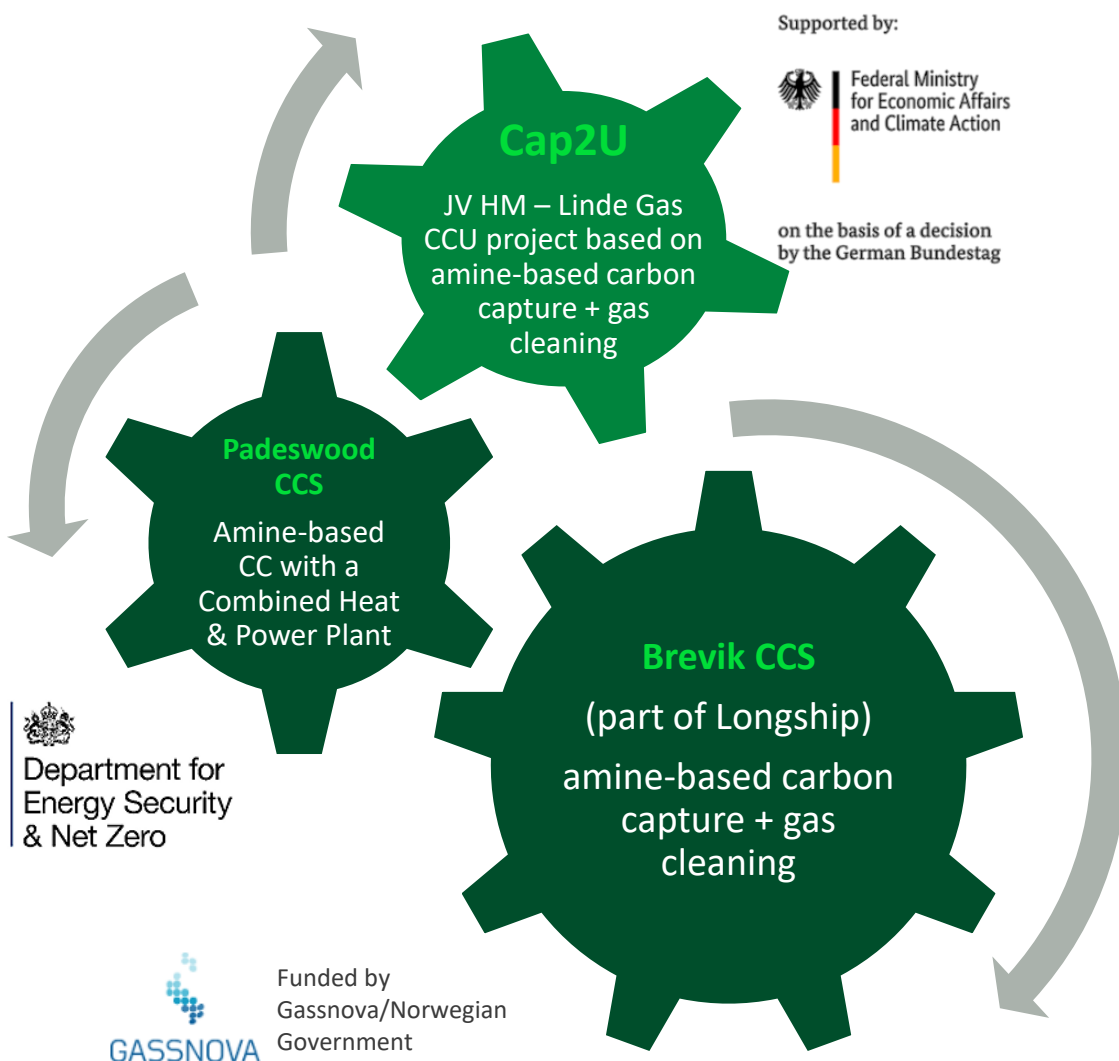
Start of the EU-IF funded project



## DREAM - The technological carbon capture hybrid design + T&S solution



# DREAM - The valuable lesson learnt from R&I/CCS nationally-funded projects



## LL from Brevik CCS

- Post-combustion solvent-based capture
- Gas distribution
- Impurity control

## LL from Cap2U

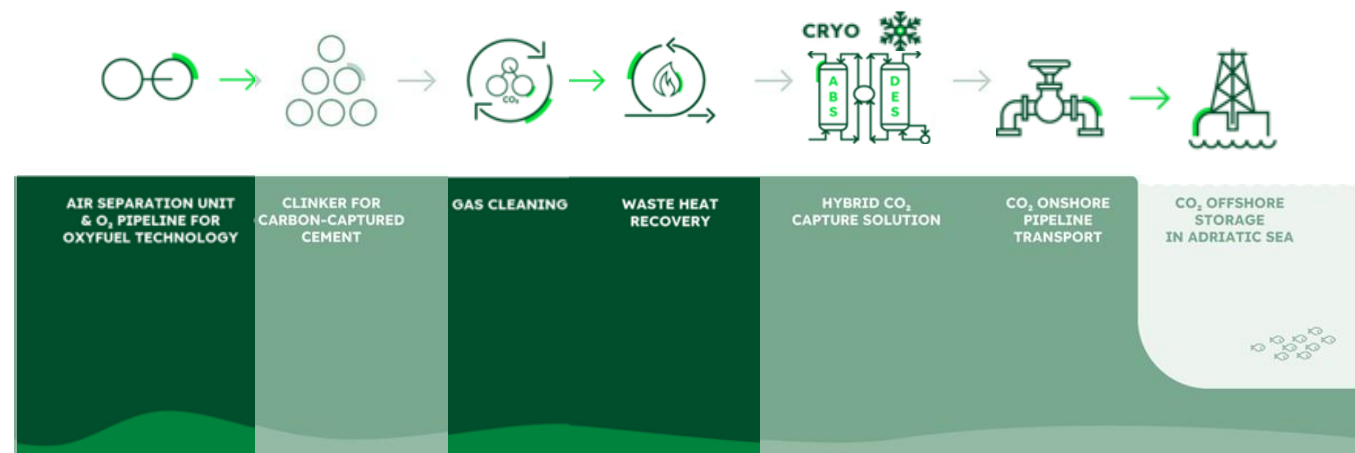
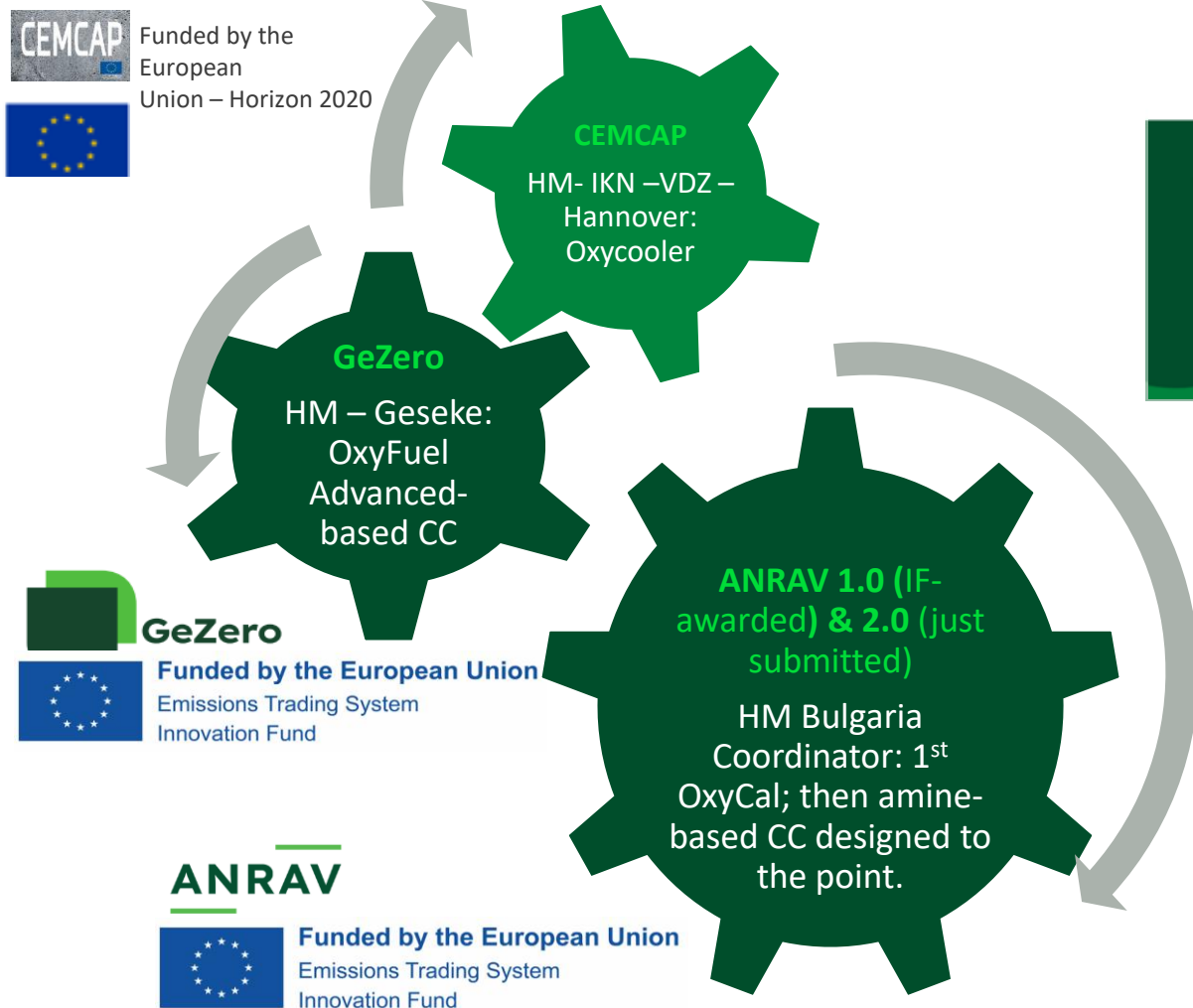
- Improved gas cleaning to the point ready for food grade CO<sub>2</sub> for human use

## LL from Padeswood CCS

- Solvent-based capture
- Diversified supply chain strategy



# DREAM - The valuable lesson learnt from R&I/CCS EU-funded projects



## LL from CEMCAP

- Techno-economic comparison of CC technologies to retrofit exiting cement plants
- Role of CCS value chain integration
- Lead clinker Oxy-cooler design and on-site (DE) testing

## LL from ANRAV

- Experience to limit overdesign
- Crucial importance of T&S integration

## LL from GeZero

- Improved oxyfuel combustion
- Value chain strategy

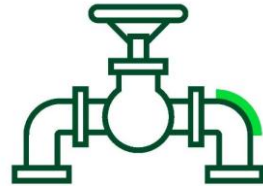


## DREAM project: Decarbonisation of the REzzato And Mazzano cement plant



**CO<sub>2</sub> CAPTURE**  
~ 10 Mt  
over first 10 years

**CO<sub>2</sub> TRANSPORT**  
via onshore pipeline  
225 km



**CO<sub>2</sub> STORAGE**  
Offshore storage  
in depleted gas fields



**CC-INTEGRATED PLANT  
OPERATION**  
from 2032

1<sup>st</sup> grey carbon-captured  
cement in Italy.



1<sup>st</sup> white carbon-captured  
cement in HM Group.





**Funded by the European Union**  
Emissions Trading System  
Innovation Fund

# Thank You for your attention.





# Heidelberg Materials



# Storengy

**Florent Lejette** – Storengy France



Funded by  
the European Union



LEADS



# Storengy, a word leader in natural gas storage committed to the zero-carbon transition

**1<sup>st</sup>**

Gas  
storage operator  
in Europe



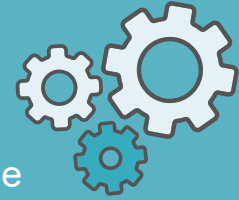
**21**

storage sites  
in Europe



**70**

years of expertise  
in the development  
of energy solutions



more  
than

employees



**95%**

Professional Equality Index  
in 2024



Funded by  
the European Union

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# Our Storage facilities

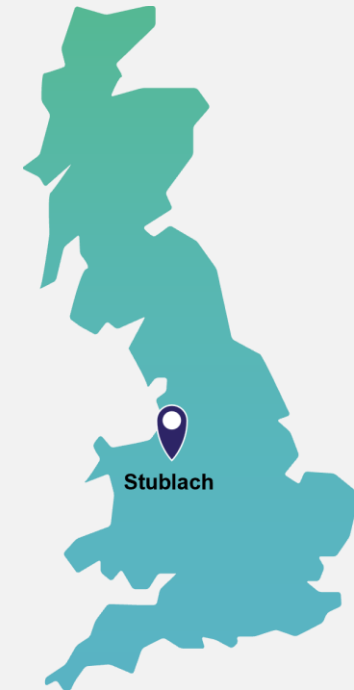
## France



## Germany



## United Kingdom



\* 50% stake in Géométhane and operation of the site



**Aquifers**



**Salt caverns**



**Depleted fields**



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the European Union**

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# Storengy's Underground Hydrogen Storage projects pipeline

**Ideally located on the future European hydrogen corridor, STORENGY's salt caverns enable large-scale storage solutions**



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the European Union

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# Reaching operational readiness for fast-cycling in Underground Hydrogen Storage thanks to CHP



**Hydrogen Pilot STorage for large Ecosystem Replication**

## 1st European-supported large scale

### Funded test pilot

- Large scale renewable H2 storage in salt caverns
- Total budget: 15,5 M€ (5 M€ funding from the CHP (°))

## By the numbers

H2 production	1 MW (PEM electrolyzer)
H2 stored	3 tons
Cycling rate	100 cycles in 3 months

(°) CHP (Clean Hydrogen Partnership) (previously called FCHJU)  
EU's Horizon 2020 Research and Innovation programme Hydrogen Europe and Hydrogen Europe Research

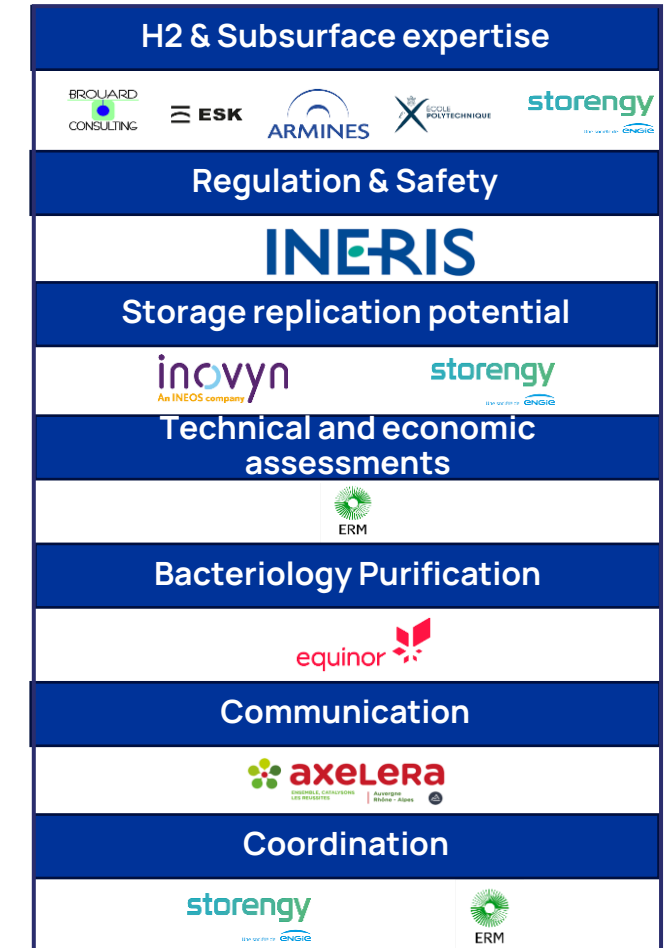
## Partners

### By the numbers

**9** partners

**4** countries

(France, Germany, UK, Norway)



# Assessing technical and economic feasibility of replicating the process at other European sites

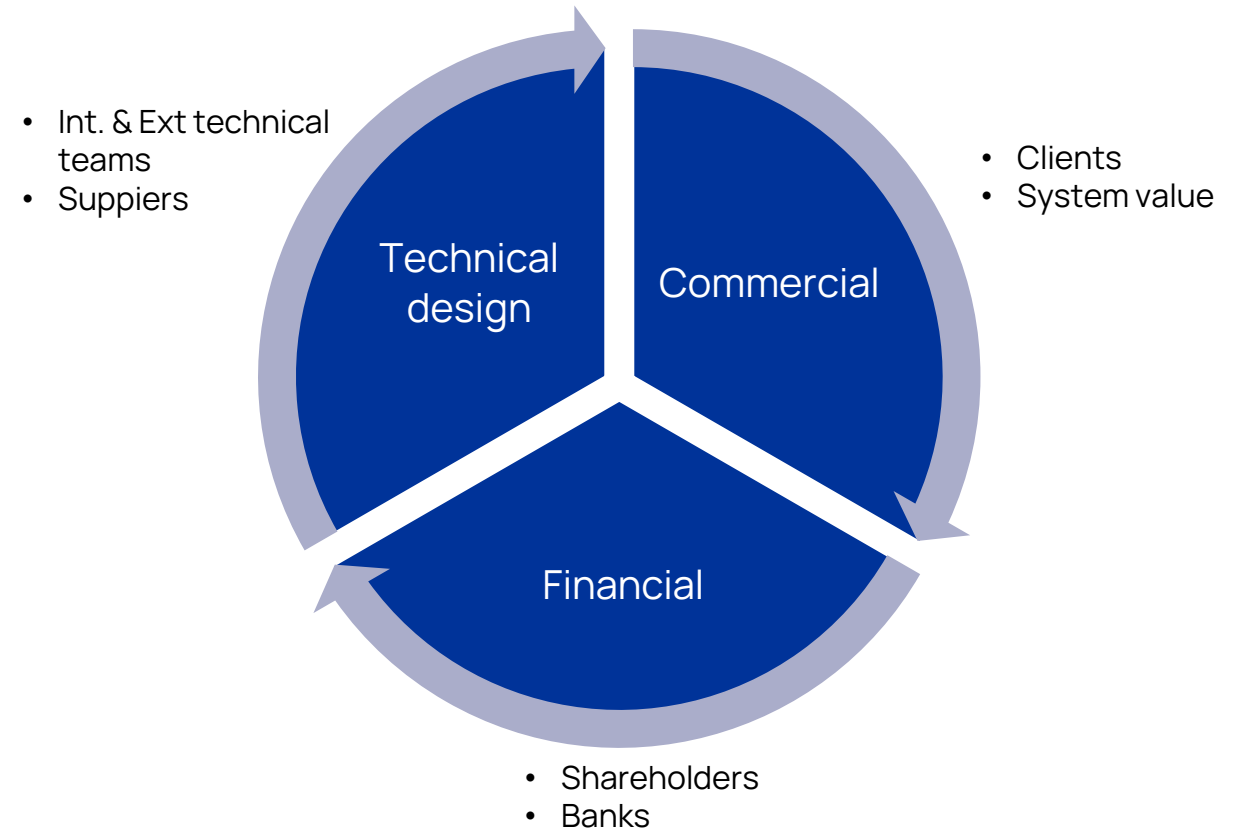


**>100 cycles completed, o/w 10 with strong pressure variations**

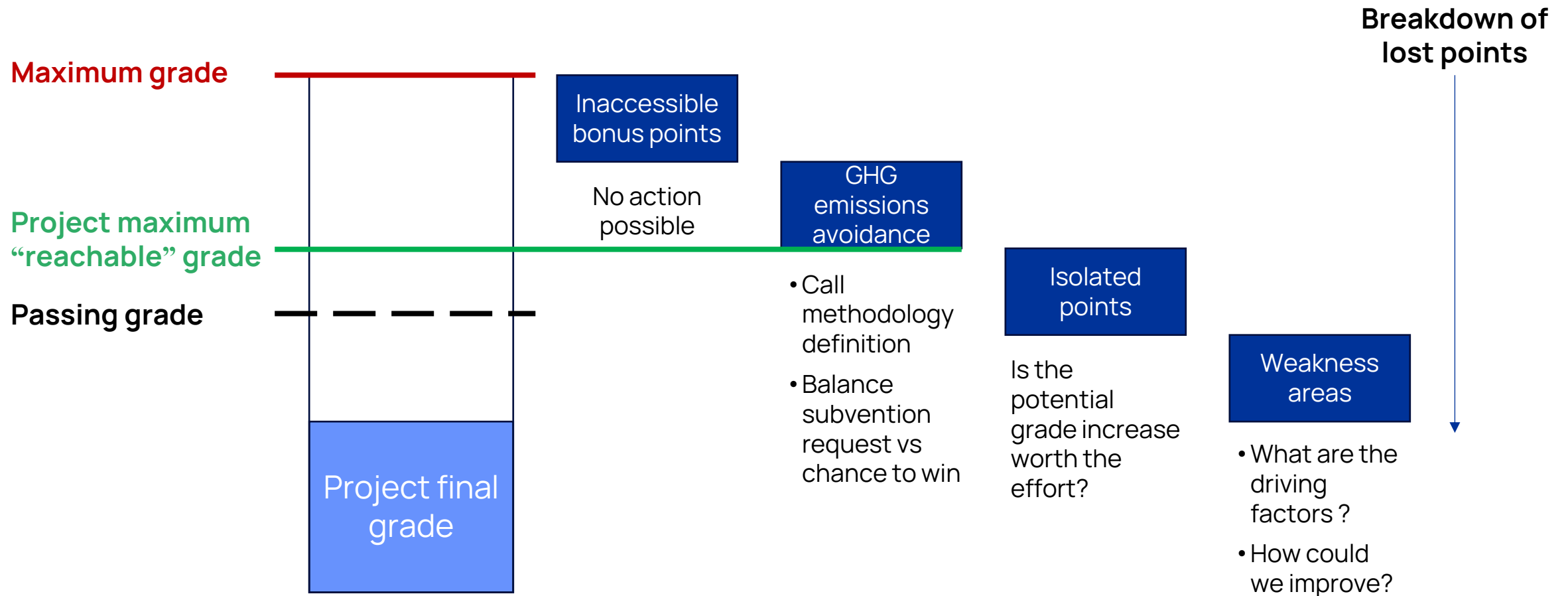
- **Tightness** of a full salt cavern storage
- **No impact of fast cycling on geo-mechanical resistance** of the cavity
- **Business model refining** (ability for UHS to support fast cycling)
- **Pursuing testing operation conditions**

# Leveraging Innovation Fund to fast charge project maturity of a scale up project

Short period of time allows for a mobilization and a process thinking focused on essentials



# Lessons learned from our application outcome







# Thank you for your attention



# HERAMBIENTE

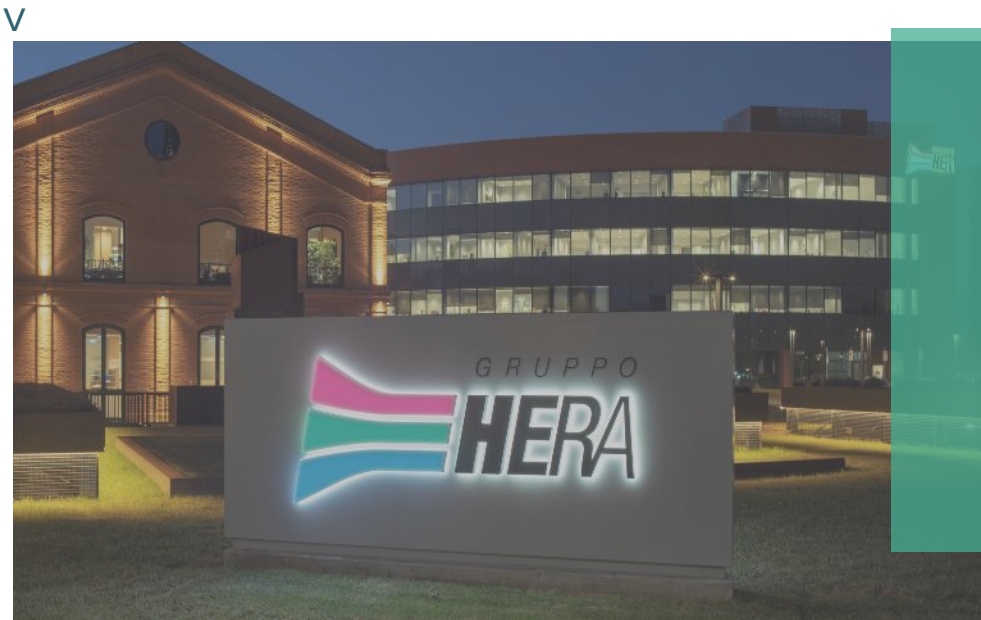
Bruxelles,  
12<sup>th</sup> may 2026





# THE HERA GROUP

Founded in 2002, by the merger of 11 municipal companies in Emilia-Romagna. Through a path of constant and balanced growth, it has become one of the nation's largest multiutilities. It works in the environment, water and energy sectors, by providing a variety of services mainly in the Emilia-Romagna, Veneto, Friuli-Venezia Giulia, Marche and Toscana regions.



15 billion €  
revenue



> 9,500  
employees

Since 2003, it is listed in the Italian Stock Exchange (Borsa Italiana). In 2019, it entered the FTSE Mib.

FTSE

Included in the Dow Jones Sustainability Europe Index and in the Dow Jones Sustainability World Index.



Since 2021 in the MIB ESG Index, the first Italian blue-chip index, dedicated to ESG best practices.

MIB ESG

1

## ENVIRONMENT



7.7 million tonnes  
of waste treated

2

## WATER



283.4 million cubic metres  
of water sold

3

## GAS



10.7 billion cubic metres  
of gas sold

## ENERGY



14.5 TWh  
of electricity sold

# HERA'S STRATEGY FOR NET ZERO

**2016**

Introducing Hera's approach to the **shared value creation**: reduction of greenhouse gas emissions among the **drivers** for its creation

**2017**

First **complete reporting** on Group's scope 1, 2 and 3 emissions

**2020**

**Beginning of path towards alignment with TCFD<sup>1</sup> Recommendations** with the involvement of all Business Units. **Definition of decarbonization initiatives** exceeding the period covered by the Industrial plan

**2023**

**CDP<sup>2</sup> rating**: Hera obtains score **A-**  
**Third CO<sub>2</sub> emissions reporting**:  
-13.8% compared to 2019

**2021**

**Articles of Association**

Contribute to reaching carbon neutrality in the Hera Group's "purpose"

**Validation of 2030 target as per Science Based Targets initiative**

CO<sub>2</sub> emissions:-37% by 2030 compared to 2019

**2024**

**Definition of a Net Zero long-term commitment**

**2030**

-37%  
of emissions

**Net zero  
by 2050**

<sup>1</sup> TCFD: Task force on climate-related financial disclosure

<sup>2</sup> CDP: ex Carbon Disclosure Project

# Project development – Scouting activities

**2022:** Early participation in the AdriatiCO2 consortium for an Innovation Fund application with a CCS project on multiple emitters in the Ravenna industrial district (HERA for Ravenna WTE facility), providing broad exposure to capture technologies.



Baker Hughes



HERA developed the project up to the application stage but decided not to join the consortium submission for the third Innovation Fund call in 2023.

**Late 2022:** Assessment of potential synergies between HPC technologies and the WTE facility connected to the Bologna district heating network.

Feasibility study with Giammarco Vetrocoke regarding the implementation of HPC technology at the WTE facility of Bologna.

**Early 2023:** identified SAIPEM HPC+enzyme low-temperature technology for integration with WTE facility in Ferrara, highlights:

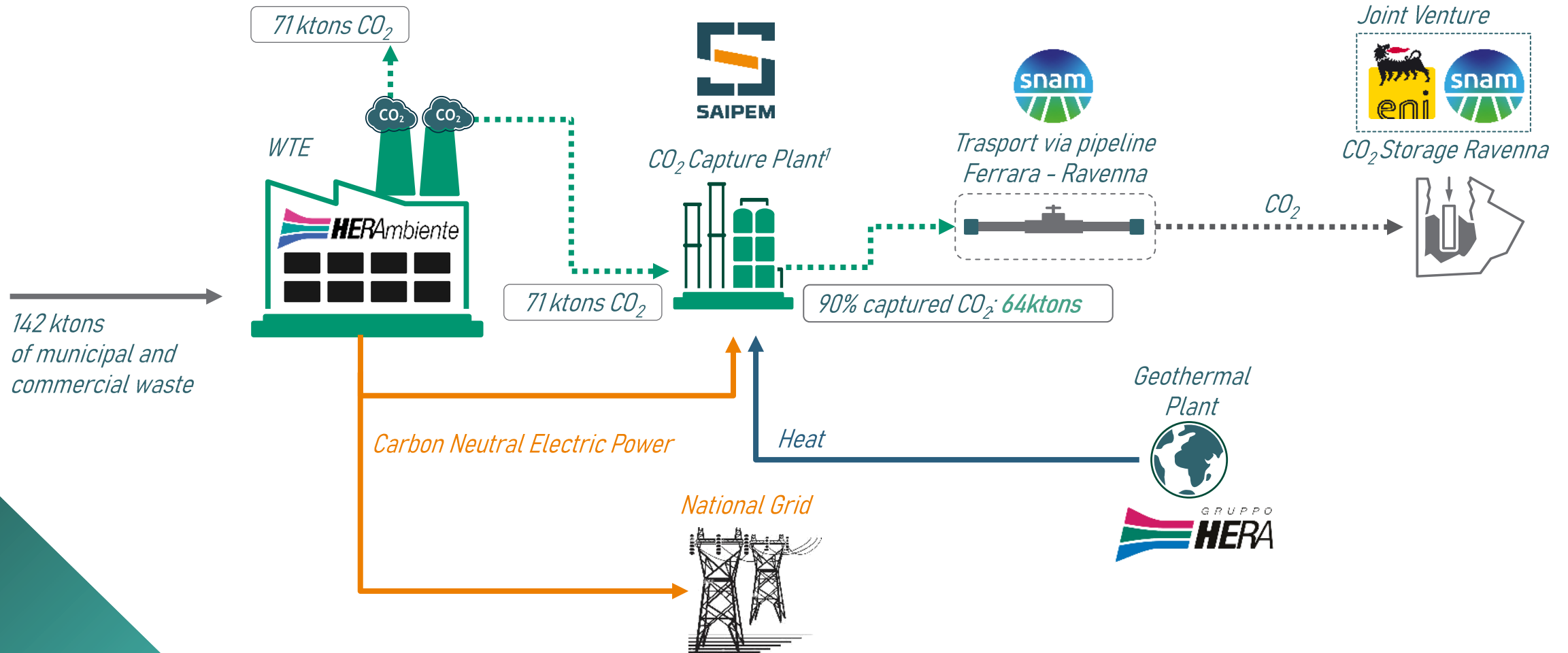
- Ferrara is 70 km from the Ravenna CCS storage project.
- Geothermal plant for local district heating connected to the WTE facility could power the CCS plant.





# Project development – Feasibility

Ferrara waste-to-energy plant emits a total of 142 ktons/year from two specular lines of which **64 ktons/year of CO<sub>2</sub>** will be captured and sent to geological storage.



# Project development – IF Application

46



APPLICATION  
3 months

## Documents

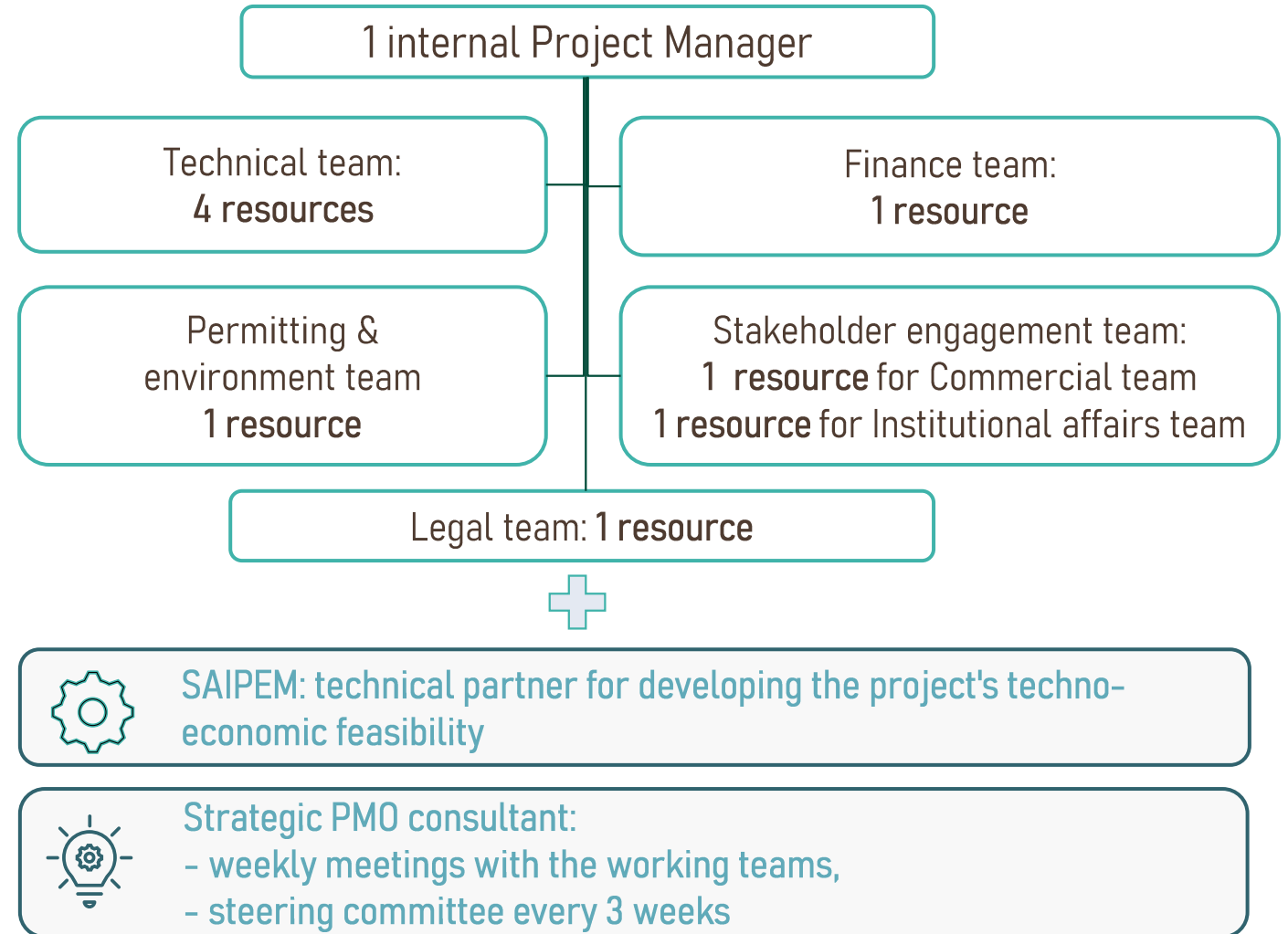
11 mandatory call documents



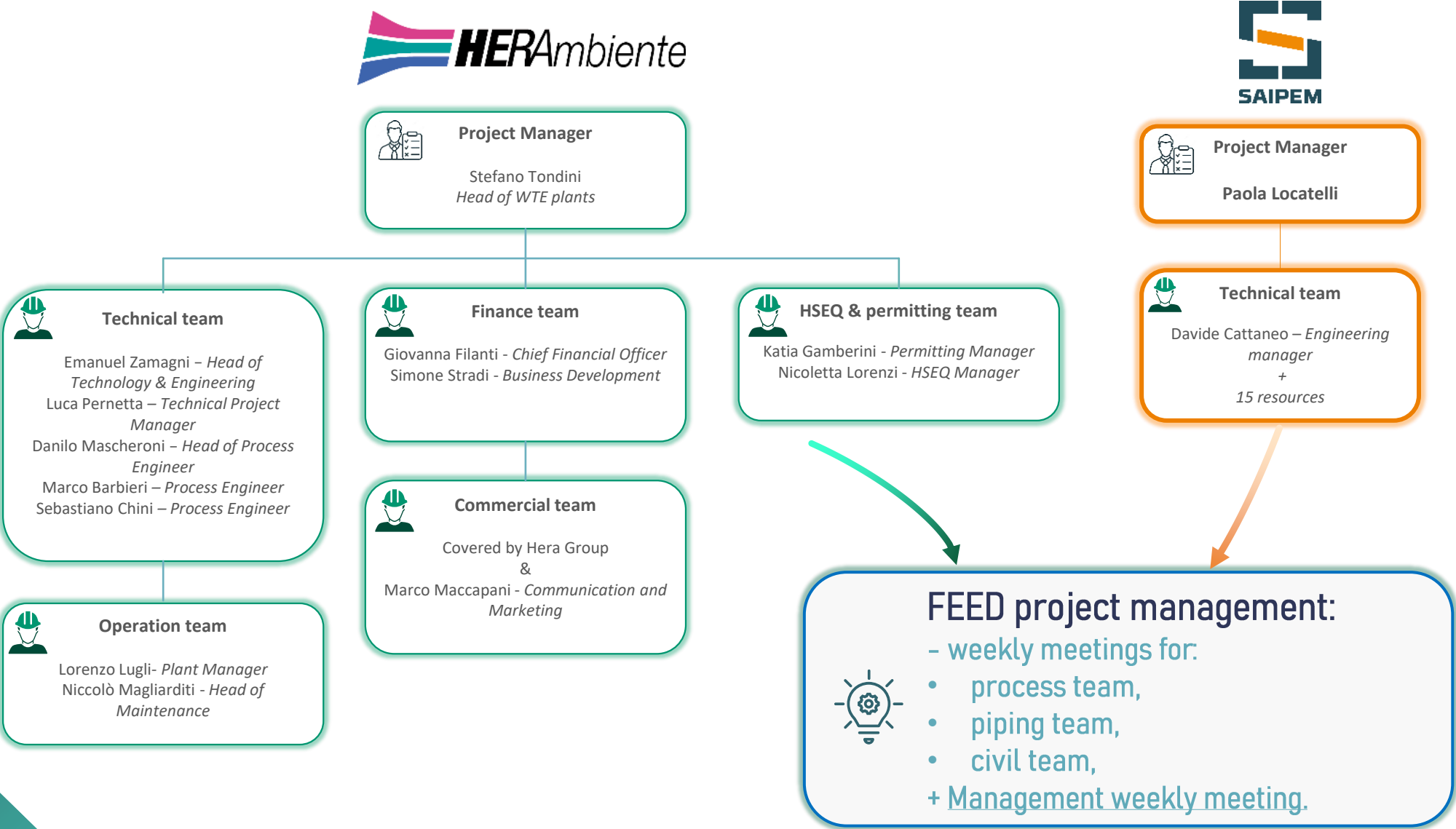
35 supporting documents, including:

- 17 Letters of Support/Interest (national/regional authorities, universities, public & social organizations)
- 6 MoUs / preliminary supplier contracts
- 3 Due diligence reports validating the economic-financial & technical models (GHG balance)
- 9 technical documents on feasibility and basic engineering

## Organization chart for the application phase



# Project development – FEED



# Project development – Bluenzyme development path

## Key Milestone:

**2017:** Enzymatic technology has undergone testing, with over 5,500 hours of operation in technical demonstration unit (capture capacity: 10 tpd) installed at Vallefild.

**2019:** Saint Felicien plant commissioning (30tpd).

**2020:** Saipem participation at the ACCSESS project funded by HORYZON 2020 with enzymatic HPC technology.

**2021:** Technology certified TLR 8.

**2024:** Saint Felicien plant with more than 9000 operating hours.



<2014  
0.5 tpd



2014-2015  
1 tpd



2015  
10 tpd



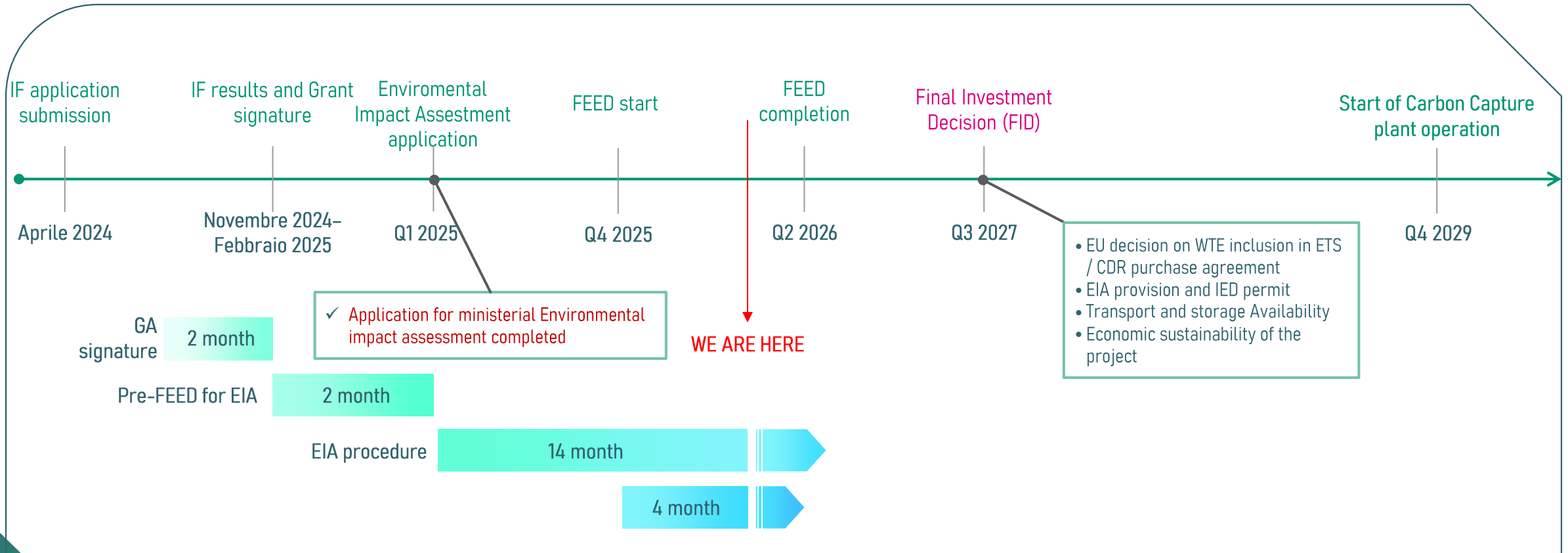
2017  
10 tpd



2019 - today  
30 tpd



# CAPTURESTE – PROJECT TIMELINE







***CapturEste***





# Thank you for your attention





# **SIZABLE ENERGY**

Gigawatt-Scale Ocean Energy Storage

THE DEFINITIVE LONG DURATION ENERGY STORAGE (LDES)

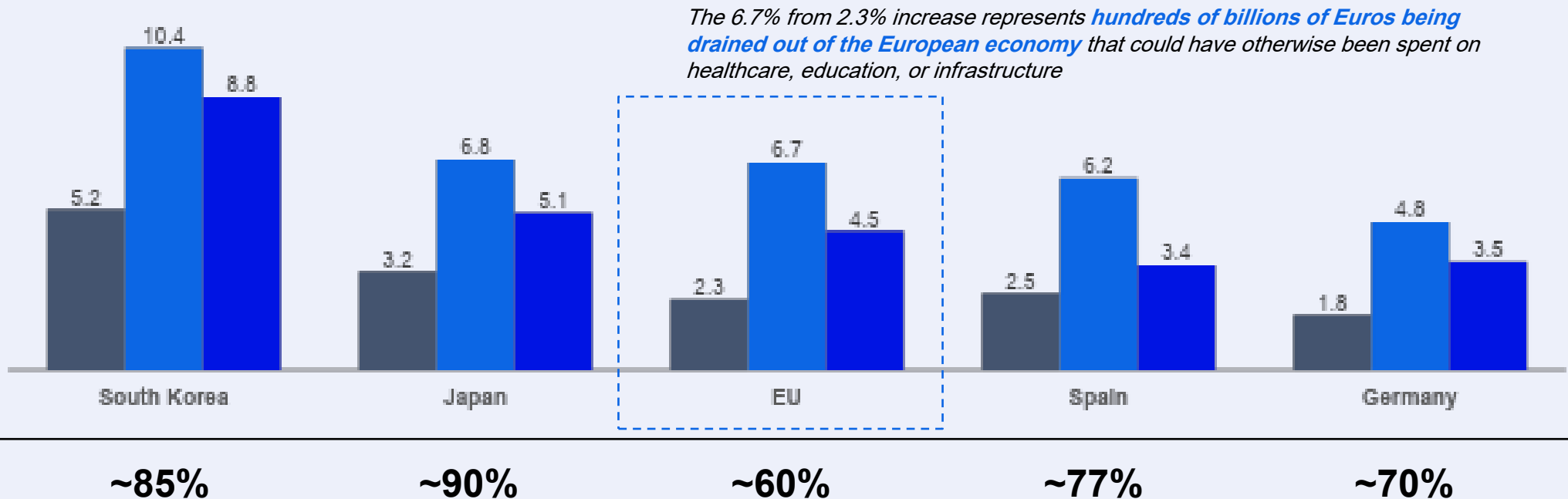


## THE PROBLEM

# Without Local Energy Supply, Economies are Susceptible to Global Energy Price Shocks

## Net Energy Import Bill as a percentage of GDP

In almost every region shown, the percentage of GDP spent on importing energy **more than doubled**



Source: IMF World Economic Outlook and ECB Macroeconomic Projections. <sup>1</sup> This measures the percentage of a country's total energy needs that are met by imports from other countries.

Stable Year

Price Shock Year (2022)

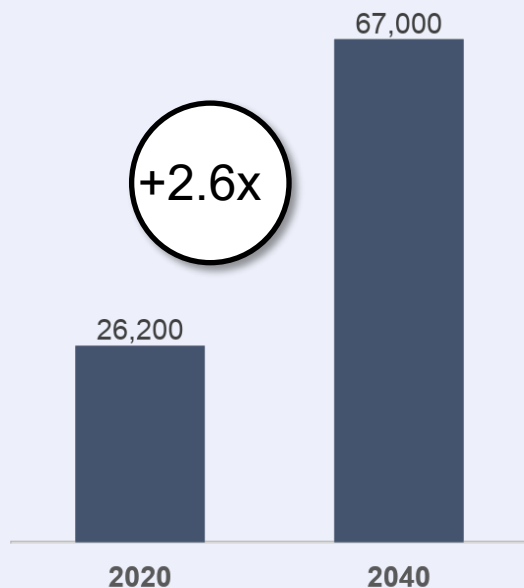
Price Shock Year (2026)

## THE PROBLEM

# Variable Renewable Energy will Dominate the Grid by 2040

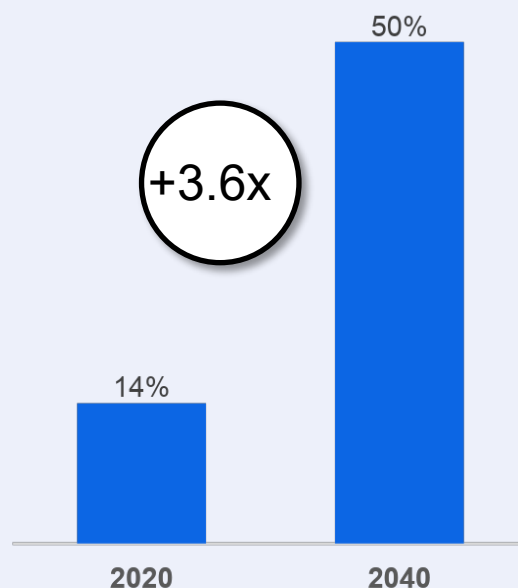
### Global Electricity Demand (TWh)

In terms of "work to be done" and infrastructure built, this is the fastest expansion in human history



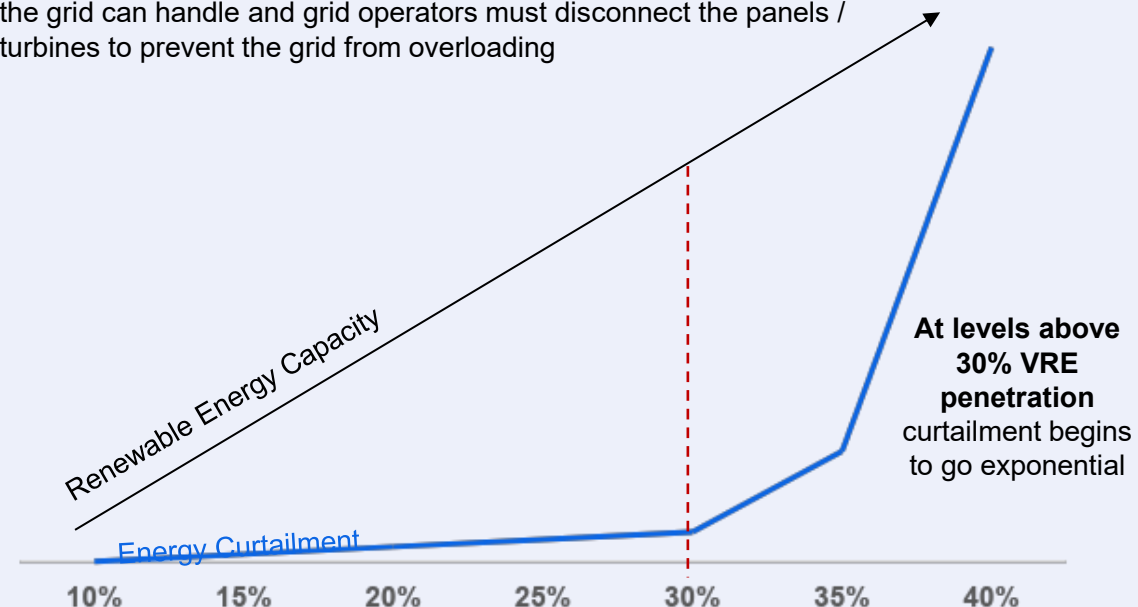
### Global Electricity Supply of Wind/Solar

As a % of Total Output (TWh)



### The Intermittency Barrier

Curtailement happens when wind and solar produce more electricity than the grid can handle and grid operators must disconnect the panels / turbines to prevent the grid from overloading

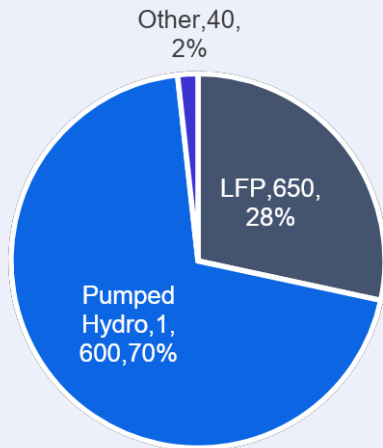




## THE PROBLEM

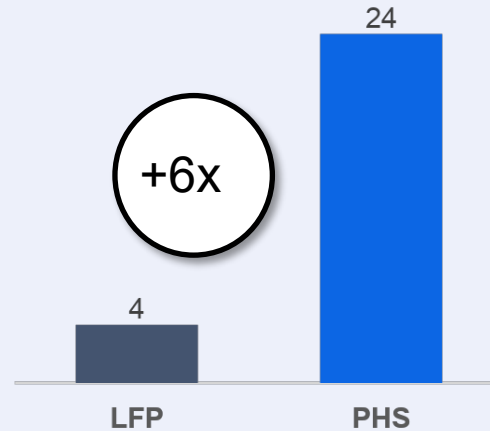
# Batteries Can't Provide the Long-Duration that is Needed and Their Supply is Controlled by China

Global Energy Storage Capacity (GWh)



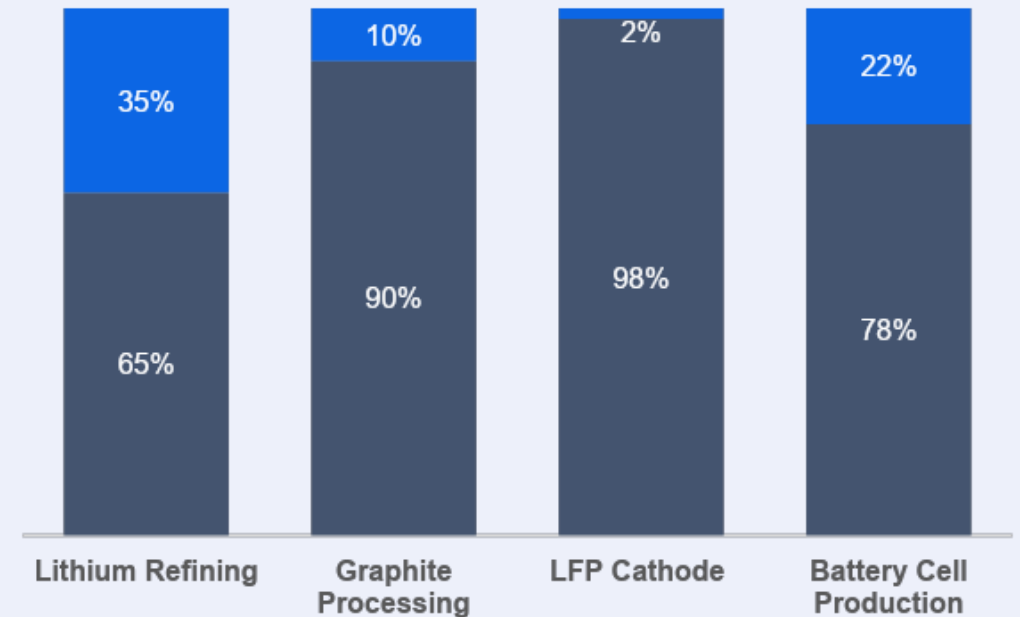
Over 98% of new stationary battery projects now use Lithium Iron Phosphate (LFP)

Energy Storage Duration Comparison (Hours)



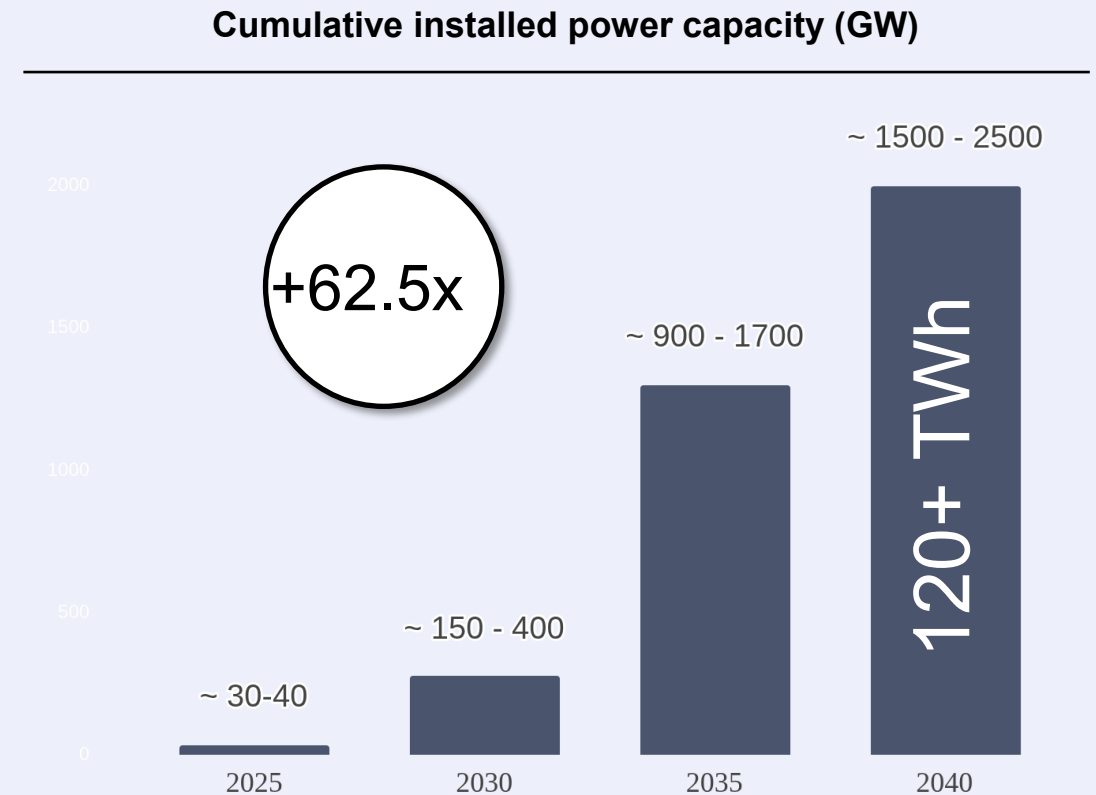
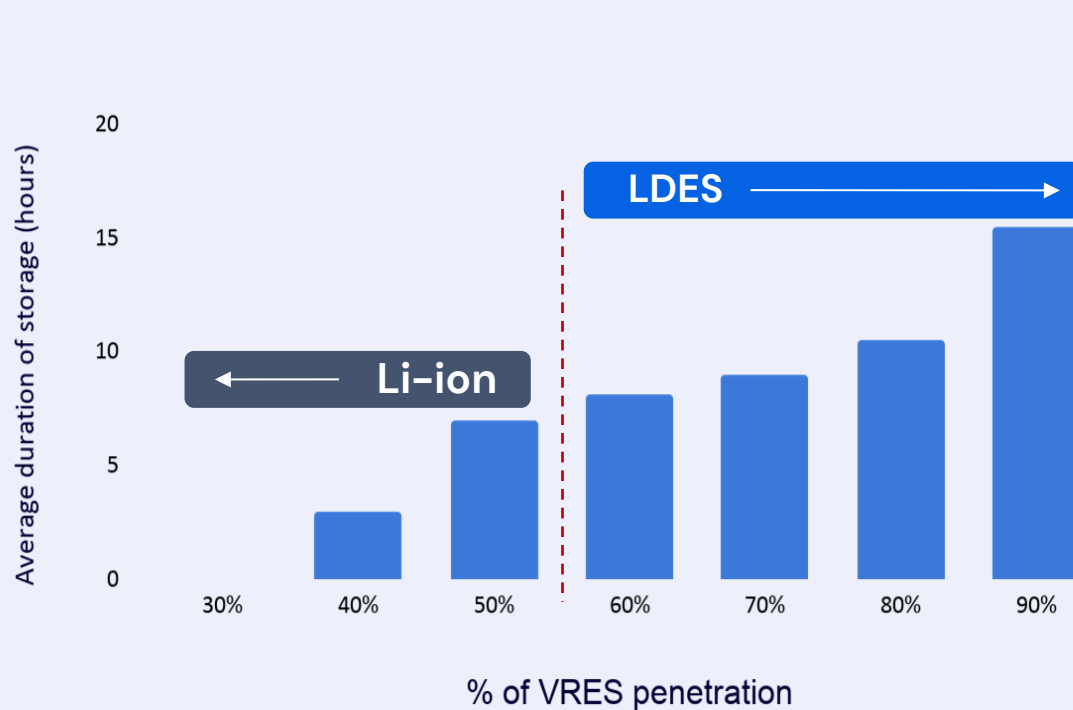
Unlike a 2-4 hour battery, a PSH plant can often discharge for 10 to 24 hours straight

LFP Battery Supply Chain is Dominated by China



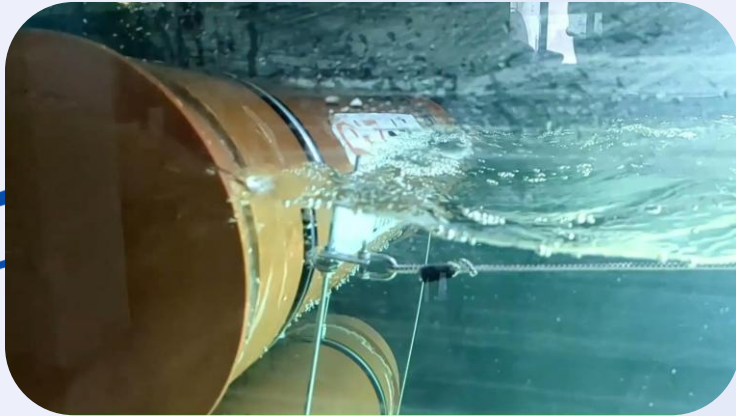
## THE PROBLEM

# Storage Duration Requirements Increase as the Share of Variable Renewable Energy grows





# Sub-System Technology at MW Scale Has Been De-Risked via Seed Funding



Nov 2024  
Seed Funding

1H 2025

✓ Validated external barrier and floating reservoir against waves

2H 2025

✓ Tested both reservoir assemblies in reference environmental conditions

1H 2026

**Deployed and tested all sub systems at sea**

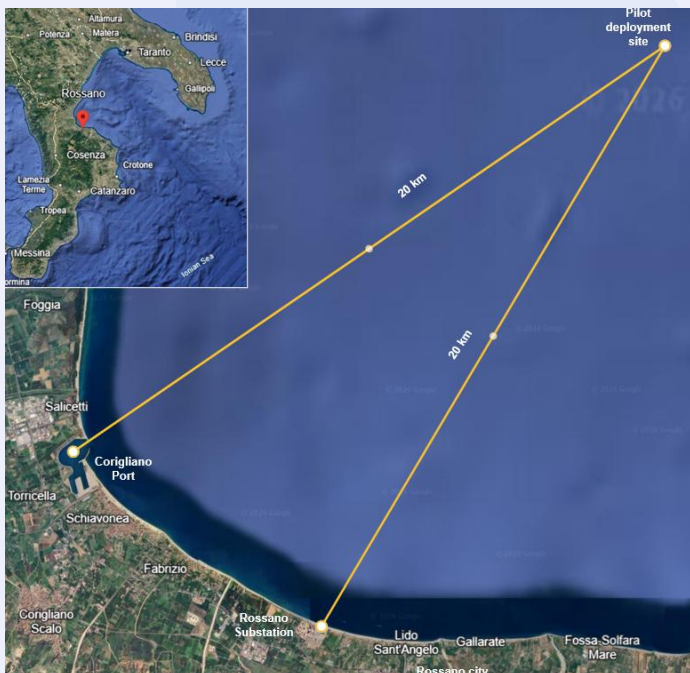
- Technology qualification
- Environmental Impact Assessment



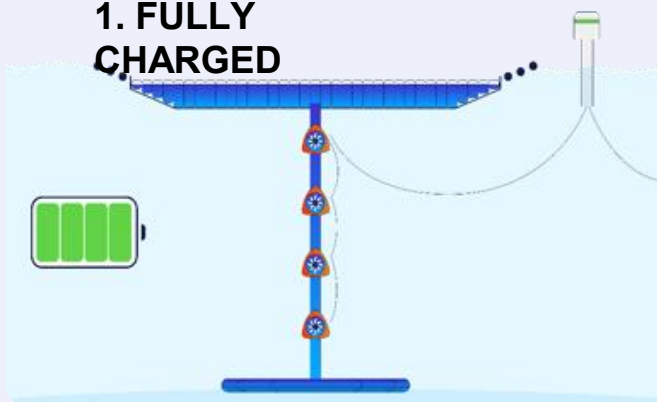
# Project ABYSS | IF 2025 Pilot candidate: the Catalyst for Global Scale

**ABYSS = [Advanced Brine-based  
hYdro Storage System]**

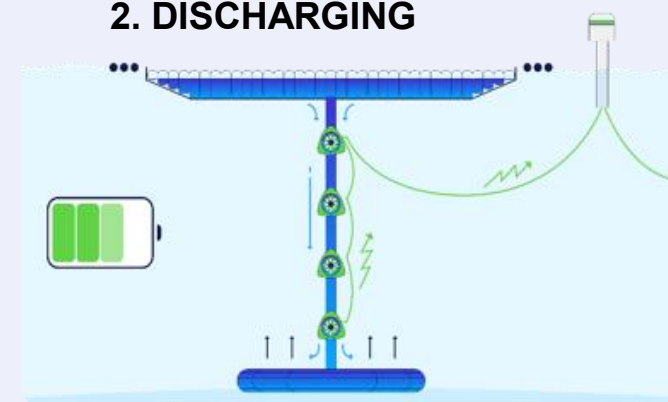
- Pilot (FOAK) 10 MW | 120 MWh
- 470m depth



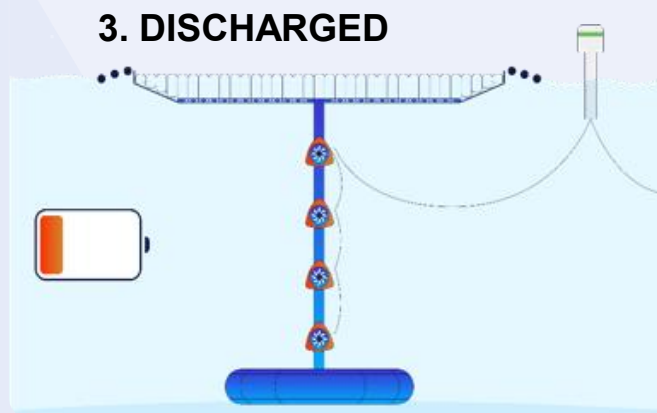
**1. FULLY  
CHARGED**



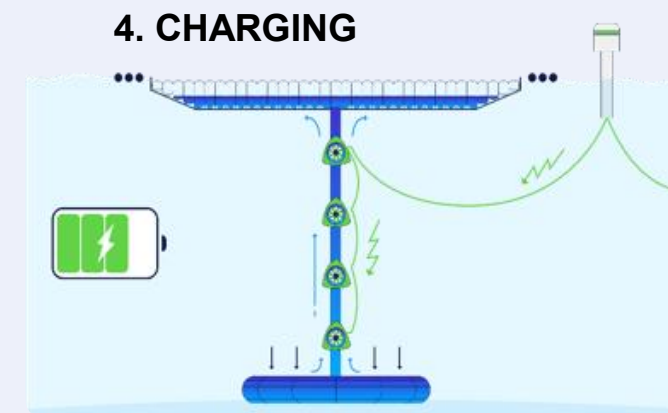
**2. DISCHARGING**



**3. DISCHARGED**



**4. CHARGING**



ABYSS Pilot is the industrial key to unlocking a 120 TWh global market





# Thank you for your attention



# Panel discussion



**Andrea Rausa** – LEADS  
(Moderator)



**Claudia Capone** – Heidelberg  
Materials



**Florent Lejette** – Storengy



**Marco Barbieri** – Hera Ambiente



**Simone Biondi** – Sizable



# Networking lunch



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DIAMONDS4IF

DIAMONDS4IF is a project of the European Union Horizon 2020 research and innovation programme under the Marie Skłodé Curie grant agreement.



2DPLOP

LEADS







## Panel 3: Industrial voices – Sectoral perspectives on deployment and lesson learnt

Accelerating clean industrial deployment: insights, challenges, and opportunities



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DIAMONDS4IF



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# Breakout rooms distribution



**Energy Storage and Hydrogen**  
(Buckeye room)



**Energy Intensive Industries**  
(Ballroom – no change)



**Carbon Capture, Utilisation and Storage**  
(Mulberry room)



**Renewable Energy**  
(Chestnut room)





# Coffee break



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DIAMONDS4IF

Advanced technologies for sustainable development



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# Panel 3: Industrial voices – Sectoral perspectives on deployment and lesson learnt

Plenary session



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# Panel discussion



**Federico Spadaro** – H2IF, CLERENS  
(Moderator)



**Andrea Rausa** – LEADS, PNO  
Innovation



**Kristian Aas** - 2DPLOY, SINTEF



**Martin Bracken** - H2IF, CLERENS



**Patrizia Bolognesi** - DIAMONDS4IF,  
PNO Innovation





# Closing remarks

**Jose Jimenez**, DG CLIMA - Horizon Europe

Policy Officer Low carbon solutions: Research & low carbon technology deployment



# Thank you for your attention

