HORIZON EUROPE
LE PROGRAMME EUROPÉEN POUR LA RECHERCHE ET L'INNOVATION

GUIDE DES APPELS À PROJET 2025

SOMMAIRE

1 AVANT-PROPOS

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Horizon Europe est le programme-cadre de l'Union européenne pour la recherche et l'innovation.
Il couvre la période 2021-2027 et est doté d'un **budget** de **95,5 milliards d'euros**.

Le présent guide a été réalisé par les membres du **Point de Contact National** (PCN) français Horizon Europe en charge du **Cluster 4** sur la thématique **Industrie**.

En **France**, le dispositif des PCN des clusters 4 et 5 est placé sous l'autorité de **Bpifrance**. Il est piloté par la Direction Europe et la Direction des Filières Industrielles. Les missions principales des PCN sont :

- **Informer, sensibiliser les communautés françaises de recherche et d'innovation sur les opportunités de financement d'Horizon Europe.**
- **Aider, conseiller et former les porteurs de projets aux modalités de fonctionnement du programme.**

Ce guide s'adresse à tous les acteurs français de la recherche et du développement des secteurs public et privé ainsi qu'aux autorités publiques, aux acteurs économiques, sociaux et culturels potentiellement ciblés par le Cluster 4 Industrie. Il offre un premier niveau d'accès au **programme de travail 2025 du Cluster 4 Industrie**, en proposant des éléments structurels qui permettent de comprendre les fondements et les priorités de ce Cluster, ainsi qu'une synthèse des éléments clés de chaque appel.
Les porteurs de projet intéressés doivent se référer au **programme de travail 2025 du Cluster 4**.

Les synthèses et traductions proposées dans ce guide n'engagent que la responsabilité de leurs auteurs et en aucune manière celle de la Commission européenne.

Qui sommes-nous ?

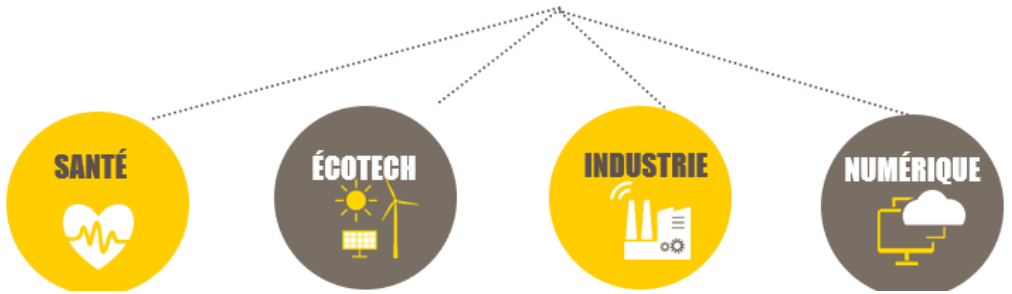
DIRECTION DES FILIÈRES INDUSTRIELLES

Une équipe d'ingénieurs, docteurs ès sciences, universitaires de 3e cycle, grandes écoles, entrepreneurs...avec de l'expérience en entreprise

+60 collaborateurs

- UNE **EXPERTISE** MULTIDISCIPLINAIRE
- UNE **CONNAISSANCE** SECTORIELLE

4 DOMAINES thématiques



PCN CLUSTERS 4 et 5

Numérique, Industrie et Espace
Climat & Energies, Mobilités

L'équipe Point de Contact National Industrie (PCN)

Coordination

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Matériaux Innovants Avancés; Textiles; Standardisation et valorisation des savoirs

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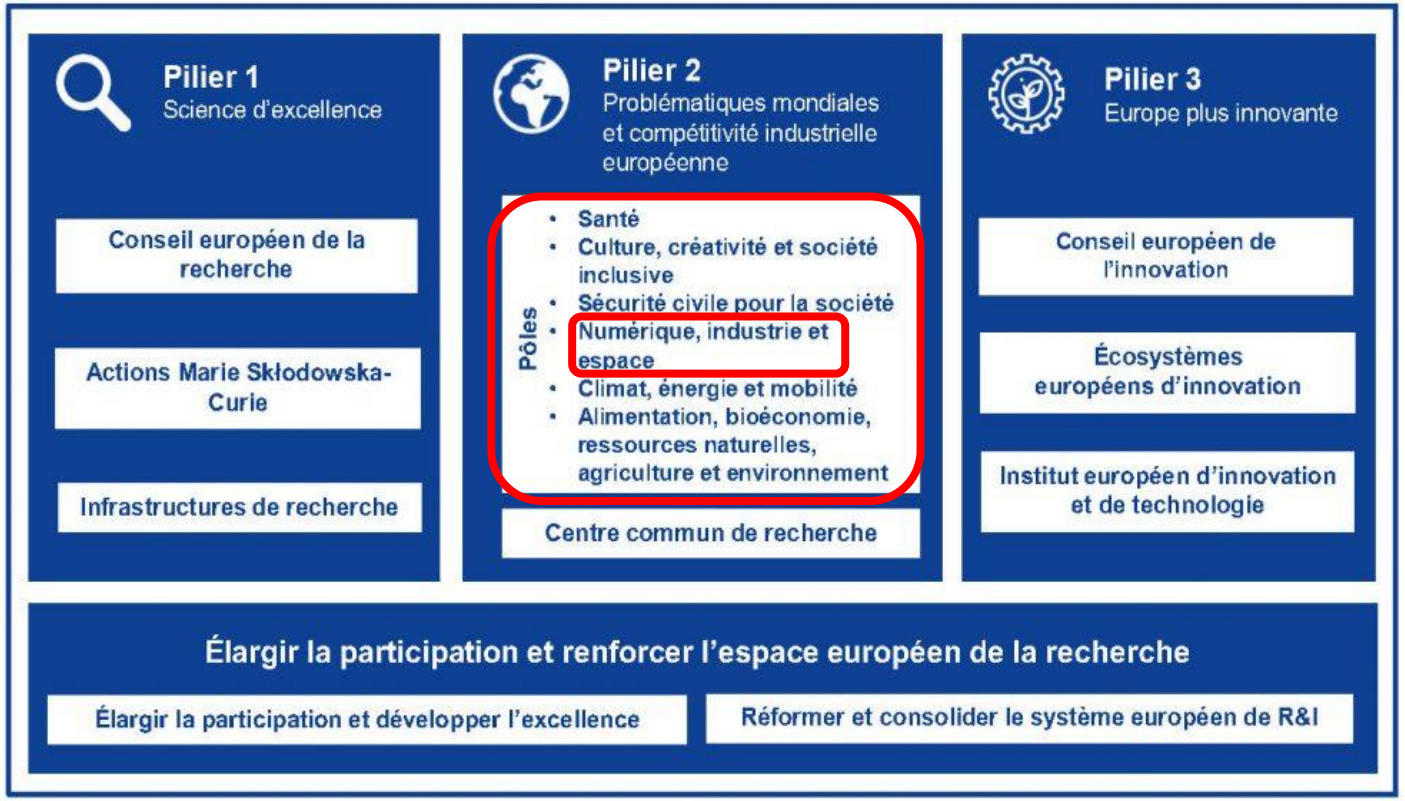
PRÉSENTATION GÉNÉRALE

HORIZON EUROPE ET LE CLUSTER 4

Le Programme-Cadre de l'Union européenne pour la Recherche et l'innovation

2021-2027

- **95,5 Mds€**
  - Renforcer les **bases scientifiques et technologiques** de l'Union ;
  - Stimuler sa capacité d'**innovation**, sa **compétitivité** et la création d'**emplois**
  - Concrétiser les **priorités politiques** stratégiques de l'Union ;
  - Contribuer à répondre aux **problématiques mondiales** dont les objectifs de **développement durable** des Nations Unies.



Appels thématiques "top-down"

Approche « top-down » pour soutenir les **priorités politiques stratégiques** de l'Union Européenne et les **objectifs de développement durable** des Nations Unies.

- Appels à projets **centrés sur des problématiques sociétales**, des **défis globaux** :
  - Répondre aux **impacts attendus**
  - Fournir des **options** et **solutions (non) technologiques**, **recommandations**....
- Projets **collaboratifs** transdisciplinaires, transsectoriels et transnationaux
- **3-4 ans** en moyenne
- Minimum **2-3 M€** et **4-6 M€** en moyenne, voire au-delà
- **3 types de projets** : RIA, IA, CSA

Appels thématiques “top-down”

Trois types de projets collaboratifs (instruments de financement)
Un financement à 100 %. Sauf : IA = financement à 70 % pour les acteurs privés (Entreprises de toutes tailles)

Research and Innovation Actions (RIA)

TRL 2 à 5
Activités visant à **établir de nouvelles connaissances** ou **à explorer la faisabilité** d’une technologie, d’un produit, d’un processus, d’un service ou d’une solution nouvelle ou améliorée : recherche fondamentale et appliquée, développement de technologie, essais d’un prototype à petite échelle…

Innovation Actions (IA)

TRL 5 à 8
Activités visant à **produire des plans ou des conceptions pour des produits, des processus ou des services** nouveaux, modifiés ou améliorés : prototypage, essais, démonstration ou pilotes, validation du produit à grande échelle, première commercialisation…

Coordination and Actions (CSA)

Activités contribuant aux objectifs d’Horizon Europe et consistant principalement en des **mesures d'accompagnement** : mise en réseau des acteurs, actions de communication et sensibilisation, dialogue politique, production d'études/rapports, planification stratégique…

Les partenariats du Cluster 4 Industrie

Partenariats institutionnels

- European Metrology

Appels hors Work Programme

Partenariats co-programmés

- Made in Europe
- Processes4Planet
- Clean Steel

Appels présentés dans le Work Programme

Partenariats co-financés

- Raw Materials for Green and Digital transition

Appels hors Work Programme
Consortium de financeur en cours de sélection (septembre 2025)

Focus : Lump Sum

Les modalités d'évaluation et la convention de subvention des projets *lump sum (Financements par sommes forfaitaires)* suivent autant que possible l'approche standard

- Mêmes critères d'évaluation, même calendrier des paiements, obligations de reporting technique similaires, avec l'accent mis sur l'achèvement des work packages

Une somme est fixée dans la convention de subvention pour chaque work package et chaque bénéficiaire

- L'achèvement du Work package entraîne le paiement de la somme forfaitaire
- Les paiements dépendent de la réalisation des activités, et non de l'obtention de résultats positifs
- Les work package peuvent être modifiés via des amendements

Deux options

Option 1 : L'appel à proposition définit le montant de la somme forfaitaire

- Le budget demandé dans votre proposition doit être égal à ce montant
- Votre proposition doit décrire les ressources que vous comptez mobiliser pour ce montant

Option 2 : Vous définissez le montant de la somme forfaitaire dans votre proposition

- Vous être libre de définir le montant nécessaire pour mener à bien votre projet
- Le montant de la somme forfaitaire doit être justifié par les ressources que vous comptez mobiliser

Pour plus d'informations : Webinaire Lump Sum

Focus : Lire le programme de travail

Programme de travail 2025 du **cluster 4** **Industrie – Numérique – Espace** du programme-cadre Horizon Europe

- « **Destination 1** » = thématique qui introduit les grandes orientations politiques et les impacts attendus
- « **Heading** » = Sous-destination de la destination
- « **Call** » = Appel thématique
- « HORIZON-CL4-2025-TWIN-TRANSITION-xx-xx » = Liste des sujets « topics » ouverts en 2025 aux candidatures pour des projets collaboratifs

Horizon Europe - Work Programme 2025
Digital, Industry and Space

Focus : Lire un appel à projet

1. Code et titre de l'appel à projet ou « topic » : programme, cluster, date du call (2025), id de la destination (03), Sous-destination (Data), id du topic (12)

2. Conditions : budget approximatif par projet, budget total pour l'appel, type d'action, conditions d'éligibilité

3. Résultats attendus des projets financés

4. Activités : enjeux traités, périmètre du sujet, liens avec les stratégies politiques, références à d'autres projets, etc.

1

HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-01: Integrated approaches for remanufacturing (Made in Europe Partnership) (IA)

2

Call: INDUSTRY	
Specific conditions	
Expected EU contribution per project	The Commission estimates that an EU contribution of between EUR 5.00 and 7.00 million would allow these outcomes to be addressed appropriately. Nonetheless, this does not preclude submission and selection of a proposal requesting different amounts.
Indicative budget	The total indicative budget for the topic is EUR 35.00 million.
Type of Action	Innovation Actions
Technology Readiness Level	Activities are expected to start at TRL 5 and achieve TRL 6-7 by the end of the project – see General Annex B.
Exceptional page limits to proposals/applications	In order to include a business case and exploitation strategy, as outlined in the introduction to this Destination, the page limit in part B of the General Annexes is exceptionally extended by 3 pages.

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Expected Outcome: The manufacturing industry should benefit from the following outcomes:

- Enable an industrial ecosystem[13] to double the volume of remanufactured components in the Union, compared to 2021, for the sectors and products considered;
- Stimulate new synergies for circularity in manufacturing industries;

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Scope: Remanufacturing (including de-manufacturing) is the rebuilding of products using combinations of reused, repaired and new components. Remanufacturing aims to retain the usefulness of both products and components and is an essential step in achieving full industrial circularity. Ultimately, remanufacturing is expected to reduce the level of resource consumption, as well as the carbon footprint of products and logistic chains. Such approaches will strengthen industrial resilience by building up a remanufacturing capacity in Europe, including possible applications in net-zero technologies and components.

Conditions d'éligibilité

Composition minimale du consortium (projets collaboratifs)

Au minimum **3 entités légales indépendantes, dans 3 Etats membres *ou associés* de l'U.E. dont au moins une établie dans un des 27 Etats membres.**

A savoir: dans chaque appel à projets, certaines conditions spécifiques peuvent apparaitre (plus de partenaires, autre pays obligatoire et/financés, etc ...).

Gender Equality Plan

Les entités participantes qui sont des organisations publiques, des organisations de recherche ou des établissements d'éducation supérieurs établies dans un Etat membre ou dans un pays associé doivent avoir **un gender equality plan**, couvrant des exigences minimales

- Une auto-déclaration est requise au moment de la soumission de la proposition.
- Le GEP sera inclus dans le processus de validation des entités (sur la base de l'auto-déclaration).

Critères d'évaluation des propositions

EXCELLENCE

- Clarté et pertinence des **objectifs du projet**, et dans quelle mesure le travail proposé est ambitieux.
- Solidité de la **méthodologie** proposée, prise en compte appropriée de **la dimension de genre** dans le contenu de la recherche et de l'innovation, et la qualité des pratiques de **science ouverte**

IMPACT

- Crédibilité des **trajectoires** pour atteindre **les résultats et impacts** spécifiés dans le programme de travail, ainsi que l'importance et la portée des contributions apportées par le projet.
- Pertinence et qualité des **mesures pour maximiser les résultats et impacts attendus**, comme indiqué dans le plan de diffusion et d'exploitation, y compris les activités de communication.

QUALITE ET EFFICACITE DE LA MISE EN OEUVRE

- Qualité et efficacité du **plan de travail**, évaluation des risques, et adéquation de l'effort assigné aux tâches de travail, ainsi que des ressources globales.
- Capacité et rôle de chaque **participant**, et dans quelle mesure le **consortium** dans son ensemble réunit l'expertise nécessaire.

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GUIDE DES APPELS 2025

Les destinations du Cluster 4 – Industrie : 1, 2, 4 et 6

Destination 1 : Atteindre une position de leadership mondial dans le domaine des chaînes de valeur industrielles et numériques neutres en carbone, circulaires et numérisées

Destination 2 : Atteindre le leadership technologique pour l'autonomie stratégique ouverte de l'Europe dans les matières premières, les produits chimiques et les matériaux innovants.

Destination 4 : Atteindre une autonomie stratégique ouverte dans les technologies numériques et les technologies émergentes habilitantes.

Destination 6 : Les technologies numériques et industrielles au service de l'innovation centrée sur l'humain.

Les priorités stratégiques

- **« Twin transition » : dans la continuité de l'exercice précédent, l'accent est mis sur la transition numérique et la transition verte, via les thèmes suivants**
  - Favoriser le reconditionnement, le recyclage, l'économie circulaire
  - Viser l'efficacité des opérations et de la logistique dans le domaine de la construction
  - Cibler les industries intensives en énergie : amélioration des process, électrification des moyens de production, intégration de technologies « net-zero », procédés plus surs et plus propres,...

- **Renforcement de l'autonomie stratégique de l'Europe dans les matières premières et les matériaux innovants avancés**
  - Sécuriser l'accès aux Matières premières critiques, rendre les procédés plus surs, réduire la dépendance aux matières premières importées
  - Développer des Matériaux Innovants pour protéger les constructions, développer leurs usages dans les achats publics et favoriser la connaissance dans le monde de la recherche,
  - Focus sur les PFAs, développer des alternatives sures et soutenables
  - Focus sur le textile, favoriser la production locale via l'adoption du digital

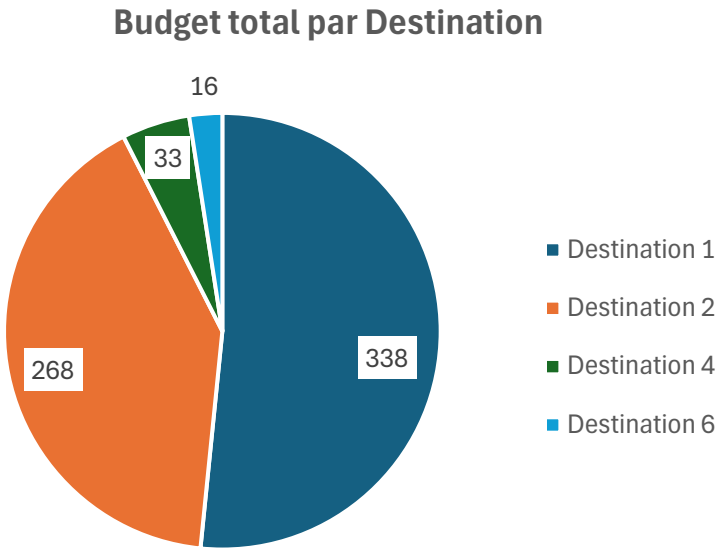
Les priorités stratégiques

- **Développer l'autonomie stratégique de l'Europe dans les technologies émergentes**
  Développer des modèles d'Intelligence Artificielle souverains et faciliter la coopération entre les chercheurs à l'échelle européenne

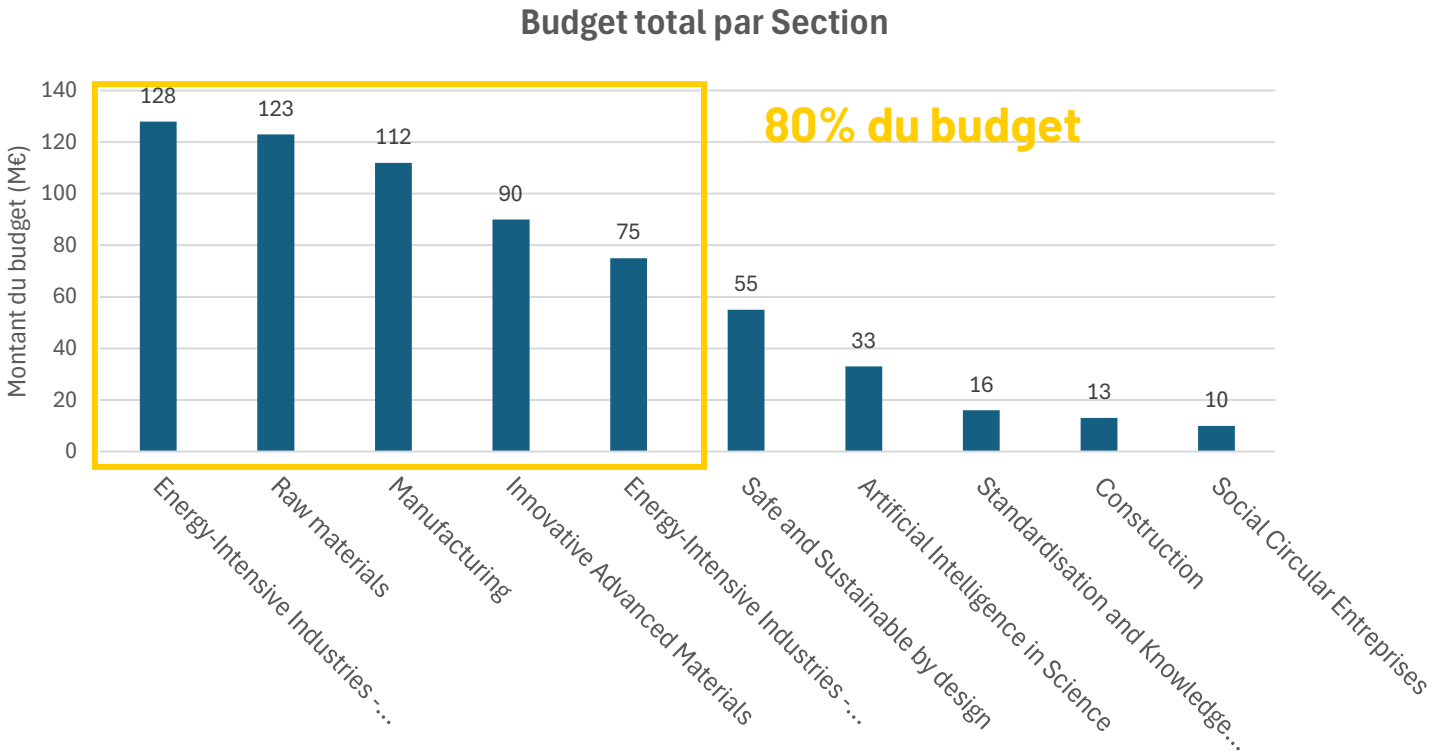
- **Remettre l'humain au cœur des développement technologiques et industriels**
  - Diffuser les résultats issus des précédents projets lauréats, via des plateformes digitales, en boostant la standardisation, en utilisant l'IA, en développant des pilotes de démonstrations interdisciplinaires,...
  - Focus sur le recensement des infrastructures en Ukraine

Dotations de la thématique Industrie

Un budget total de 655 M€ réparti sur 4 Destinations



Des sections nombreuses et plus ou moins dotées



A noter :
65% des appels à projet seront évalués en « lump sum »

Programme de Travail 2025 : Architecture et dates de dépôt

Destinations	Domaine	Date d'ouverture	Date de fermeture
Destination 1: Achieving global leadership in climate-neutral, circular and digitised industrial and digital value chains	**Industry**	**22-mai-25**	**First stage : 23-sept-25 Second stage : 14-avril-2025**
Destination 2: Achieving technological leadership for Europe's open strategic autonomy in raw materials, chemicals and innovative materials	**Industry**	**22-mai-25**	**First stage : 23-sept-25 Second stage : 14-avril-2025**
	Digital (CNECT)	10-juin-25	02-oct-25
Destination 3: Developing an agile and secure single market and infrastructure for data services and trustworthy artificial intelligence services	Digital (CNECT et HADEA)	10-juin-25	02-oct-25
Destination 4: Achieving open strategic autonomy in digital and emerging enabling technologies	**Industry**	**22-mai-25**	**23-sept-25**
	Digital (CNECT et HADEA)	10-juin-25	02-oct-25
Destination 5: Open Strategic Autonomy in Developing, Deploying and Using Global Space-Based Infrastructure, Services, Applications and Data	Space	22-mai-25	25-sept-25
Destination 6: Digital and industrial technologies driving human-centric innovation	Digital (CNECT et HADEA)	10-juin-25	02-oct-25
	Industry	**22-mai-25**	**23-sept-25**

Orientations Thématiques 2025

Destinations	Sous-destinations (Thématiques) – **Industrie**
Destination 1: Achieving global leadership in climate-neutral, circular and digitised industrial and digital value chains	• **Sous-destination 1 : Manufacturing (one stage)** • **Sous-destination 2 : Construction (two stage)** • **Sous-destination 3 : Energy-Intensive Industries : Decarbonisation and Energy Efficiency (one stage)** • **Sous-destination 4 : Energy-Intensive Industries : Circularity and Zero Pollution (one stage and two stage)** • **Sous-destination 5 : Social Circular Enterprises (one stage)**
Destination 2: Achieving technological leadership for Europe's open strategic autonomy in raw materials, chemicals and innovative materials	• **Sous-destination 1 : Raw Materials (one stage)** • **Sous-destination 2 : Innovative Advanced Materials (one and two stage)** • **Sous-destination 3 : Safe and Sustainable by Design (one and two stage)** • **Sous-destination 4 : Textiles (one stage)**
Destination 4: Achieving open strategic autonomy in digital and emerging enabling technologies	• Sous-destination 1 : Quantum and High Performance Computing • Sous-destination 2 : Photonics • Sous-destination 3 : Semiconductors • Sous-destination 4 : AI-GenAI/Data/Robotics • **Sous-destination 5 : Artifical Intelligence in Science (one stage)**
Destination 6: Digital and industrial technologies driving human-centric innovation	• Sous-destination 1 : Virtual Words • Sous-destination 2 : AI-GenAI/Data/Robotics • **Sous-destination 3 : Standardisation and Knowledge Valorisation (one stage)** • Sous-destination 4 : International Cooperation

Appels Industrie – Destination 1

Sous-destination 1 : *Manufacturing (Made in Europe Partnership)*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-01: Integrated approaches for remanufacturing (IA)	23 septembre 2025	IA	35.00	5.00 to 7.00	6
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-02: Physical and cognitive augmentation in advanced manufacturing (RIA)	23 septembre 2025	RIA	35.00	4.00 to 6.00	7
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-05: Advanced manufacturing technologies for leadership of EU manufacturers in products for the net-zero industry (IA)	23 septembre 2025	IA	42.00	5.00 to 7.00	6

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-01: Integrated approaches for remanufacturing

Expected Outcomes	• Increase significantly the **capability in Europe to implement remanufacturing technologies** for retaining, reusing, upgrading or adapting the function of products and components (**ambition to double the volume of remanufactured components in the Union, compared to 2021**, for the sectors and products considered) • Stimulate new **synergies for circularity in manufacturing i**ndustries • Support skills and **education capabilities for remanufacturing** • Support the development or revision of **standards for remanufacturing**
Activities	• **Demonstrate cutting-edge remanufacturing approaches**, covering de-manufacturing and appropriate manufacturing technologies • Integrate traditional manufacturing processes, such as **additive manufacturing, machining and welding, with automation, robotics and digitalisation**. • Integrate **model-based systems engineering**, • Develop quality control
Link to other topics	Links are encouraged with the projects funded under earlier relevant topics, for example the topic on remanufacturing, "HORIZON-CL4-2023-TWIN-TRANSITION-01-04: Factory-level and value chain approaches for remanufacturing"
Eligible stakeholders	This topic addresses the entire chain of stakeholders, industry (large/small), R&I actors/RTOs, academia. International cooperation is encouraged, especially with Japan or Taiwan.
Additional background documents (EU frameworks, publications,...)	Proposal for Ecodesign for Sustainable Products Regulation - European Commission Waste law - European Commission
Specific recommendations	Proposals should include a business case and exploitation strategy. **Recycling technologies for the generation of secondary raw materials are not within the scope of this topic.**

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-02: Physical and cognitive augmentation in advanced manufacturing

Expected Outcomes	• Empower workers at all levels in factories, through **breakthrough augmentation technologies** • Enhance, the **flexibility, inclusiveness, safety and well-being of workers in the industrial environment** • Foster the **human-centric aspect of the Industry 5.0 model**, through insights into how technology affects the working environment
Activities	• Develop **breakthrough solutions (based on e.g. mechatronics, sensing and photonics) for human-centric approaches;** these include innovative perception technologies to sense the shopfloor environment and to predict the intentions of humans, also leading to enhanced worker safety and reduction of discomfort, fatigue and physical and psychological stress • Develop **innovative methodologies, potentially using AI,** to provide reasoning capabilities and to **control the behaviour of the manufacturing systems**, to support humans and to interact and communicate with them • Take into account the **needs of managers and workers**, at the beginning of the design phase and throughout all stages up to the development of a prototype • Develop new methodologies to perform an **assessment of augmentation technologies and their suitability and value added** (beyond economics) for workers
Link to other topics	-
Eligible stakeholders	This topic addresses the entire chain of stakeholders, industry (large/small), R&I actors/RTOs, academia.
Additional background documents (EU frameworks, publications,...)	_
Specific recommendations	Proposals should include a business case and exploitation strategy. Proposals should take into account Social Sciences and Humanities (SSH) contributions regarding human-related barriers for the uptake of augmentation technologies in industrial environments Proposals should specifically address gender, age, disability and other anthropometric and ergonomic considerations, and impacts across diverse demographic groups.

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-05: Advanced manufacturing technologies for leadership of EU manufacturers in products for the net-zero industry

Expected Outcomes	• Enhanced capabilities in the areas of strategic and high-value-added products for the net zero industry • **Increased production capacity for clean technologies**, diversifying supply sources, and ensuring high environmental standards • Contributions to reaching the **targets set by the Net Zero Industry Act,** in ensuring the reduction of strategic dependencies
Activities	• Address manufacturing technologies applicable to products for **at least one of the strategic net-zero technologies** • Focus on the innovative development of one or more of the following manufacturing technologies : **Additive manufacturing or cladding for manufacturing and/or repair; Advanced joining technologies; Advanced forming and material shaping technologies; Surface processing technologies, functionalization, nano- or micromanufacturing; and High-precision machining and assembly.** • Integrate Innovative metrology and inspection methods, advanced and flexible automation approaches (for large components, complex assembling or handling of hazardous materials); Digital twins and data mining for fast ramp-up, scale-up and real-time optimization of production; Circular manufacturing approaches and reduced reliance on Critical Raw Materials, Relevant skills and standards. • **Minimize the environmental impact** of the manufacturing processes in terms of energy and resource consumption and CO2 emissions.
Link to other topics	See topic HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-34: Smart integration of net zero technologies into Energy Intensive industries. Technologies covered by that topic are not in the scope of this topic.
Eligible stakeholders	This topic addresses the entire chain of stakeholders, industry (large/small), R&I actors/RTOs, academia.
Additional background documents (EU frameworks, publications,...)	Q&A: The Net-Zero Industry Act and European Hydrogen Bank
Specific recommendations	Proposals should address manufacturing technologies applicable to products for at least one of the strategic net-zero technologies listed in Annex I of the Net-Zero Industry Act Proposals should include a business case and exploitation strategy. Technologies covered by the complementary topic HORIZON-CL4- INDUSTRY-2025-01-TWIN-TRANSITION-34: Smart integration of net zero technologies into Energy Intensive industries are not in the scope of this topic.

Appels Industrie – Destination 1 - Two-Stage

Sous-destination 2 : *Construction*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-2025-05-TWIN-TRANSITION-11-two-stage: Enhanced logistics and operations of construction sites (IA)	First Stage 23 septembre 2025 Second Stage 14 avril 2026	IA	13.00	Around 6.50	2

IA
Nb estimé de projets financés : 2
Budget/projet : 6,5 M€
Ouverture : 22 mai 2025
Deadline 1 : 23 septembre 2025
Deadline 2 : 14 avril 2026
Lump sum

HORIZON-CL4-2025-05-TWIN-TRANSITION-11-two-stage: Enhanced logistics and operations of construction sites (IA)

Expected Outcomes	• **Reduce the time** taken to carry out site operations of construction or demolition works ; • **Increase** the application of **on-site circular** approaches such as **re-use**, preparing for re-use and recycling, resulting in **reduced waste generation** and improved waste management ; • **Improve health and safety** of construction workers ; • Start at TRL 5 and achieve TRL 6/7
Activities / Actions	Mistakes and delays in construction works can lead to negative consequences such as risk of accidents, waste, pollution, inefficiency and financial consequences. Proposals should : • Develop technologies that **improve the efficiency** of operations on the construction site, leading to **more productive**, **faster and more efficient working practices**. The technologies should be interoperable with, or build upon existing industry-wide practices, such as Digital Twins and Building Information Modelling tools. • Address the **traceability of construction products** and other items delivered to the site, installed on site, and removed. • Integrate **circular economy approaches**, such as waste prevention and the **management and recovery** of construction and **demolition waste**; • Address new ways for site operations to reduce the chances of errors and accidents ; • Address human-centric and Social Science and Humanities (SSH) aspects of technologies or tools that are developed. (social innovation mechanisms)
Link to other topics	Proposals should seek to **build synergies with relevant other work**, for example, EU-funded projects under the New European Bauhaus Facility, or Horizon Europe partnerships including Built4People.
Eligible stakeholders	This topic addresses the entire chain of stakeholders, industry (large/small), R&I actors/RTOs, academia.
Additional background documents (EU frameworks, publications,...)	...
Specific recommendations	Proposals should include a business case and exploitation strategy.

Appels Industrie – Destination 1

Sous-destination 3 : *Energy Intensive Industries – Decarbonisation and Energy Efficiency*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-31: From heat-driven processes to the use of mechanical and electric forces (Processes4Planet partnership) (IA)	23 septembre 2025	IA	25.00	8.00 to 10.00	3
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-32: Green and resilient flexible production processes (Processes4Planet partnership) (IA)	23 septembre 2025	IA	25.00	8.00 to 10.00	3
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-33: Integrated use of renewable energy carriers in industrial sites (Processes4Planet partnership) (RIA)	23 septembre 2025	RIA	25.00	6.00 to 8.00	3
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-34: Smart integration of net zero technologies into Energy Intensive industries (Processes4Planet and Made in Europe partnerships) (IA)	23 septembre 2025	IA	25.00	5.00 to 9.00	3
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-37: Solving issues in carbon-neutral iron and steel making processes with diverse input materials of varying quality (Clean Steel Partnership) (RIA)	23 septembre 2025	RIA	28.00	Around 14.00	2

IA
Nb estimé de projets financés : 3
Budget/projet : 25 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-31: From heat-driven processes to the use of mechanical and electric forces

Expected Outcomes	Projects must aim at enabling **Energy Intensive industries** to: • Integrate renewable electricity in the process industrial plants: **from heat driven to direct electricity driven** (and thus reduce GHG emissions) • **Achieve 25% energy savings** compared to processes based on relevant Best Available Technologies • **Improve the economic viability of the entire plant** compared to the state-of-the-art heatdriven process (and be replicable in other plants) • Achieve **TRL 7 by the end of the project (IA)**
Activities	• Demonstrate and/or integrate hi**ghly efficient electrically driven technologies that can replace traditional heating processes** • Demonstrate and evaluate **energy efficiency gains and GHG emission avoidance (use of Innovation Fund Methodology for GHG)** • Take a holistic approach which may include aspects such as re**design of equipment, requirements for advanced materials and integrated electrified processes** • Ensure process safety, sufficient flexibility and ease of process control; • Showcase improved CO2 reduction potential, performance, scalability and cost efficiency of the proposed solution through, **at least, one realistic use case that can be replicable with demonstrable economic return**
Link to other topics	This topic implements the **co-programmed European partnership Processes4Planet**, and then is linked to all topics related to Processes4Planet : **HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-32/33/35/36**
Eligible stakeholders	--
Additional background documents (EU frameworks, publications,...)	Innovation Fund Methodology for GHG Emission Avoidance Calculation 2040 climate target
Specific recommendations	• Proposals should include a business case and exploitation strategy ==> must show that the project w**ill boost industrial decarbonisation technologies supply chain** in Europe and should include preliminary plans for scalability, commercialisation and deployment, possible private and public funding sources, societal and environmental impact, implications for the workplace (including skills and organisational change) • **The scope does not include conventional electric heating or the use of heat pumps.** • Proposals should include a business case and exploitation strategy

IA
Nb estimé de projets financés : 3
Budget/projet : 25 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-32: Green and resilient flexible production processes

Expected Outcomes	Projects must aim at enabling **Energy Intensive industries** to: • **Increase significantly the process flexibility**, offering a step change in the capacity of individual **production plants to promptly and frequently adapt fast to energy input variations over a significant range** • Participate to **GHG reduction (use of Innovation Fund Methodology for GHG to demonstrate)** • Lead to **economic and sustainability gains** despite of volatile energy supply variations • **Increase significantly raw material and energy efficiency while facing variations of the renewable energy input** when compared to state-of-the-art industrial processes • Achieve **TRL 6/7 by the end of the project (IA)**
Activities	• **Address the redesign and modification of existing processes**, improving the overall operation flexibility of the process and **resulting in continuous efficient operation** • **Increase flexibility response rate** (e.g., faster ramp up or ramp down) while maintaining a high energy and resource efficiency • Demonstrate and evaluate material and energy efficiency gains from a holistic view of the processing plants and the energy systems as well as economic benefits **by exploiting the price variations on the energy markets** • Showcase improved performance, scalability and cost efficiency of the proposed solution through **at least one realistic use case at pilot scale** • Define necessary skills of the proposed solution, to enable their industrial implementation
Link to other topics	This topic implements the co-programmed European partnership Processes4Planet, and then is linked to all topics related to Processes4Planet : **HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-31/33/35/36**
Eligible stakeholders	--
Additional background documents (EU frameworks, publications,...)	Innovation Fund Methodology for GHG Emission Avoidance Calculation 2040 climate target
Specific recommendations	• **Digital tools and advanced control** to support the operation and the flexibility of the processes **can be elements of a solution.** • **Storage options and use of several sources of renewable energy can be included,** the combination (**hybridation**) of various decarbonisation technologies can also be considered. • Proposals should include a business case and exploitation strategy

RIA
Nb estimé de projets financés : 3
Budget/projet : 25 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-33: Integrated use of renewable energy carriers in industrial sites

Expected Outcomes	Projects must aim at enabling **Energy Intensive industries** to: • Integrate the use of different types of renewable energy carriers in **industrial sites** with the aim to provide a constant robust low-carbon and economic energy input to process industries • Support stability and operational flexibility of the power grid, i**ncluding implementation of storage solutions to buffer energy demand peaks** • Schedule energy use and price compensation models **to achieve optimal grid load** • **Improve the technical and economic feasibility of the integrated use of renewable energy carriers in industrial sites** compared to other solutions with a similar CO2 reduction potential • Achieve **TRL 5/6 by the end of the project (RIA)**
Activities	• Develop highly efficient technologies for **integrated structures of industrial sites**, including storage elements and solutions for their integrated operation under **varying conditions** • Consider the interaction with the supply side, **in particular electric power grids, hydrogen pipelines or district heating** • **Demonstrate full integration and use of advanced digital technologies** from fields of distributed process control strategies, and **data driven AI based optimisation** and the application of model-based technologies for the improved, safe and efficient operation of industrial plants and sites, including the interaction with different grids • Demonstrate and evaluate energy efficiency and CO2 footprint reduction by optimal integration of energy from renewable sources as well as providing demand side flexibility **(use of Innovation Fund Methodology for GHG)**
Link to other topics	This topic implements the co-programmed European partnership Processes4Planet, and then is linked to all topics related to Processes4Planet : **HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-31/32/35/36**
Eligible stakeholders	Proposals should actively pursue **involvement of all actors in the value chain**, from industrial sites management to plant operators, and renewable energy providers. Interoperability as well as secure and trusted data sharing between stakeholders in the value chain should be considered.
Additional background documents (EU frameworks, publications,...)	Innovation Fund Methodology for GHG Emission Avoidance Calculation Hubs4Circularity Community of Practice FAIR principles
Specific recommendations	• Proposals should consider representative real industrial sites demonstrating the solutions at least in open-loop computations, and in parallel monitor the actual operation of the plants with validation of the benefits by simulations with accurate models. **Experiments involving real industrial sites are encouraged**. • Interoperability and trusted data sharing between stakeholders in the value chain should be considered, **in accordance with the FAIR data principles.** • Proposals should include energy efficiency, techno-economic and life-cycle assessment considerations **of the overall process.**

IA
Nb estimé de projets financés : 3
Budget/projet : 25 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-34: Smart integration of net zero technologies into Energy Intensive industries

Expected Outcomes	Projects must aim at enabling **Energy Intensive industries** to: • Bridge the gap between users and manufacturers of net-zero solutions for the energy intensive industries, foster win-win situations in which equipment **manufacturers co-create solutions with the energy-intensive industrial sectors** • Develop new **net-zero technologies industrially integrated processes** that support the decarbonization of industry and offer new market opportunities • Enhance competitiveness of the European Energy Intensive and manufacturing industries • Achieve **TRL 6/7 by the end of the project (IA)**
Activities	• Facilitate collaboration between **at least one energy intensive industrial sector, with manufacturers of net-zero technology solutions**, as well as where relevant engineering, and construction firms for the smart integration of one or several net-zero technologies in specific processes • **Optimize and adapt technologies**, products and solutions proposed by manufacturers of net zero technologies to meet the industrial sector needs, **on existing plants** • Demonstrate the effectiveness and **replicability of the proposed approaches**, develop solutions offering an **optimal balance between standardization and flexibility** as well as providing high-quality tailored solutions at competitive prices • **Support the development of skills for the integration** of net-zero technologies into energy intensive industries
Link to other topics	The attention of proposers is also drawn to the complementary topic HORIZON-CL4-INDUSTRY-2025-01-TWIN-TRANSITION-05 This topic implements the co-programmed European p**artnerships Processes4Planet** and Made in Europe.
Eligible stakeholders	**Proposals should involve all actors in the value chain** from the manufacturers of net zero technology solutions to energy intensive industries and engineering and construction firms. Interoperability and secure and trusted data sharing between the stakeholders of the value chain should be ensured.
Additional background documents (EU frameworks, publications,...)	liste des technologies "net zero" : Annexe 1 du NZIA
Specific recommendations	The inclusion of a **GHG avoidance methodology** is recommended and should provide detailed description of baselines and projected reductions. **Proposals should ensure dissemination and replication** of the proposed approaches for wide deployment, including advising and building capacity among the relevant actors. Proposals should **be based on a sound techno-economic analysis that confirms the economic viability** in view of evolving regulatory frameworks.

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-37: Solving issues in carbon-neutral iron and steel making processes with diverse input materials of varying quality (Clean Steel Partnership) (RIA)

Expected Outcomes	Fast and reliable transition to innovative technology pathways for carbon-neutral iron and steel making by tackling fundamental problems and boundary conditions with a system-level approach. This approach will target input materials, processes, and iron /steel output quality, considering the needs to reduce production costs, find alternative materials and solutions, improve process/energy efficiency and achieve at least the traditional product quality. • Validate innovative carbon-neutral iron and steel making solutions within a system-level approach and in consideration of diverse materials with varying quality (raw input materials and reductants mix) and energy needs. Address high-risk factors at macroscopic and microscopic level through detailed characterisation of the physical and chemical interactions that could compromise the optimal functioning of the processes; • Solve system-level issues within at least two low-CO2 production routes; • Define solutions and provide concepts to address possible modifications or material substitutions in innovative installations for low CO2 iron and steel production; • Improve low-CO2 steel production reliability to target high-quality products: i) clarify the effect of material and process variables, and overall system aspects; ii) clarify the influence of changing crude steel quality on the properties of the produced steel, with the purpose to achieve quality and extended lifespan of products; iii) clarify the impact of diverse input materials with varying quality on the residue characteristics and on its potential valorisation and use; • Provide an impact analysis covering the materials and energy balance of identified solutions, viability and byproducts.
Activities	Collaborative approach between academia, industry (including SMEs) and research organizations with the purpose to support: i) understanding, validating, and solving essential problems to allow maturity of innovative technologies in the industrial investment panorama for future carbon-neutral iron and steel making, ii) accelerating a reliable transition to climate neutrality in view of the end of the free ETS allowances by providing solutions optimized for different scenarios, and iii) fulfilling the Commission Recommendation on industry-academia co-creation for knowledge valorisation.
Link to other topics	Projects (if selected for funding and if relevant) could consider clustering activities with one project funded under topic HORIZON-CL4-INDUSTRY-2025-01-DIGITAL-61.
Eligible stakeholders	This topic implements the European co-programmed Clean Steel Partnership.
Additional background documents (EU frameworks, publications,...)	Commission Recommendation 2024/77430 on a Code of Practice on industry-academia co-creation for knowledge valorisation.
Specific recommendations	Proposals submitted under this topic should include a business case and exploitation strategy, for at least one process route. Additionally, a strategy for skills development to target innovative solutions should be presented, associating social partners when relevant.

Appels Industrie – Destination 1

Sous-destination 4 : *Energy Intensive Industries – Circularity and Zero Pollution (Process4Planet partnership)*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-2025-05-TWIN-TRANSITION-35-two-stage: Developing and embedding upcycling technologies into viable business (IA)	23 septembre 2025 14 avril 2026	IA	48.00	8.00 to 12.00	5
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-36: Safe and clean processing technologies and products (RIA)	23 septembre 2025	RIA	24.00	6.00 to 8.00	4
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-38: Synergies and mutual learning with national and regional initiatives in Europe on Industrial decarbonisation (CSA)	23 septembre 2025	CSA	1.00	Around 1.00	1
HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-39: Towards human-centric, sustainable and resilient energy-intensive industries (Processes4Planet and Clean Steel partnerships) (CSA)	23 septembre 2025	CSA	2.00	Around 2.00	1

HORIZON-CL4-2025-05-TWIN-TRANSITION-35-two-stage: Developing and embedding upcycling technologies into viable business

Expected Outcomes	**Energy Intensive Industries** must benefit : • **Feasibility of the upcycling of end-of life waste materials by process industries** in integrated circular schemes – including for supplying the **value chains of net zero technologies** and components; • Enable **doubling the ratio of secondary raw materials upcycled** leading to a significant increase in resource, including energy efficiency and improved carbon lifecycle across the value chain compared to present levels; • **New business opportunities and revenue flows for recycling companies benefiting particularly SMEs** – including for supplying the value chains of net zero technologies and components; • Foster the **use of digital tools** as well as the data sharing, and FAIR (Findability, Accessibility, Interoperability and Reusability) digital assets principles. • As appropriate in one or more projects, contribute to the reconstruction, recovery, circularity and upgrading of industries of Ukraine.
Activities	• **Develop processes for the upcycling of end-of-life materials in an integrated way**, including the development of better novel separation, sorting and processing technologies as well as digitalisation and automation of the processes as necessary • Integration of technologies and logistics systems into business models of circular schemes • Focus on processes and secondary raw materials which offer the **highest additional upcycling potential** • Evaluate **socio-economic and environmental impacts** of the upcycling solutions • **Minimize presence of substances of concern** to mitigate the impacts of multiple recycling loops as well as the accumulation of additives and trace materials in secondary resource streams • Consider **advanced monitoring and sensing** along the value chains and improved data completeness, accuracy and interoperability between the process and recycling companies (Digital Product Passport)
Link to other topics	-
Eligible stakeholders	Projects are encouraged to integrate existing Hubs4Circularity as nodes in the value chains Proposals should actively pursue the involvement of all actors in the value chain
Additional background documents (EU frameworks, publications,...)	Hubs4Circularity
Specific recommendations	Proposals should include techno-economic and life-cycle assessment of the overall process (including of the carbon footprint) and demonstrate the economic viability of the approach. Proposals should include a business case and exploitation strategy.

HORIZON-CL4-INDUSTRY-2025- 01-TWIN-TRANSITION-36: Safe and clean processing technologies and products

Expected Outcomes	**Energy Intensive industries** must benefit from projects: • **Reduce the use of hazardous substances** in production processes and materials and ensure the avoidance of their proliferation into products • Enable **novel processing technologies** and materials with reduced health, safety, and environmental impacts • Increased **knowledge on the industrial emission releases** when it comes to emerging and less known groups of hazardous pollutants not regulated at EU level • Reduce the occupational exposure risk and negative health impacts at work by **empowering employees** • Contribute to the **clean air** and potentially **biodiversity objectives**
Activities	• **Demonstrate the reduction of the use of hazardous substances** • Develop novel processing technologies leading to reduced health, safety and environmental impacts beyond CO2 emissions • Minimize adverse effects from the novel processes' technologies on the function and durability of the materials, recyclability, the production cost as well as the associated risk • Where relevant, develop **sampling and monitoring methods for emerging pollutants** and less known groups of pollutants in stack emissions before entering the environment
Link to other topics	-
Eligible stakeholders	International cooperation is encouraged Take advantage of European research infrastructures and services in the areas of analytical research Inform the European Commission's Joint Research Centre (JRC) of
Additional background documents (EU frameworks, publications,...)	Analytical Research Infrastructures in Europe: https://arie-eu.org/ Portfolio ESFRI: https://ri-portfolio.esfri.eu/
Specific recommendations	• Include **techno-economic and life-cycle assessment** considerations of the overall process • Involve all the relevant actors in a participatory approach for the reduction of risk and health issues at work • Include a business case and exploitation strategy • **GHG emissions from industry are not included in the scope of this topic.**

Appels Industrie – Destination 1

Sous-destination 5 : *Social Circular Enterprises*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-2025-05-TWIN-TRANSITION-21-two-stage: Demonstrators for clusters of social circular enterprises (IA)	14 avril 2026	IA	10.00	Around 5.00	2

HORIZON-CL4-2025-05-TWIN-TRANSITION-21-two-stage: Demonstrators for clusters of social circular enterprises

Expected Outcomes	•**Accelerate technology adoption** in individual Social Circular Enterprises (SCEs) and foster **shared development** through collaborative cluster**s.** •**Boost competitiveness** of SCEs by improving productivity and unlocking new market opportunities, especially **in textiles, WEEE, and construction materials** •**Demonstrate technical, economic, and environmental excellence of SCEs** in local circular value chains, encouraging collaboration with mainstream industry •**Reduce non-recyclable waste** in the region by transforming waste, by-products, and side streams into **secondary raw materials** •**Increase employment and productivity** of people distant from the labour market, using **assistive technologies** and **AI-based tools**
Activities	**Set up transnational demonstrators** as **Social Circular Tech Clusters**, involving SCEs, tech providers, research centers, and circular businesses. •**Adapt, design, test, and implement** technology solutions tailored to the needs of SCEs •Focus on **waste stream management** (e.g. textiles, construction, WEEE), improving **efficiency, traceability, and automation** •**Compare pilots across at least two countries** to assess replicability and scalability of solutions •**Support SCEs directly** in enhancing their productivity, innovation, and market access •Facilitate the **creation of tech-based spin-offs** and promote **knowledge sharing** with mainstream industry •Involve **public authorities and SCE federations** to support systemic change
Link to other topics	-
Eligible stakeholders	Each demonstrator consortium exists out of two or more clusters, each grouping individual SCEs (ideally with different degrees of maturity), for-profit circular companies (e.g. sectoral peers in secondary raw materials industries), research, and tech centres able to support SCE with relevant technology and research capacity. SCEs should form the core of the consortia. Each consortium must be **transnational**, involving at least **two EU Member States or Associated Countries**, and should aim to **compare pilots across different markets**
Additional background documents (EU frameworks, publications,...)	ls-decision_he_en.pdf About social economy - European Commission swd-annual-single-market-report-2021_en.pdf social_circular_economy_2017.pdf
Specific recommendations	Proposals are encouraged to build on, or seek collaboration with, existing projects and develop synergies with other relevant European, national or regional initiatives and funding programmes. In particular, the project could build further on relevant knowledge, tools, methods and technology developed and applied within existing H4C (Clusters for Circularity) and its knowledge platform.

QUESTIONS RÉPONSES

DESTINATION 1

Appels Industrie – Destination 2

Sous-destination 1 : *Raw Materials*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-61: Technologies for critical raw materials and strategic raw materials from end-of-life products (IA)	23 septembre 2025	IA	24.00	Around 8.00	3
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-62: Strategic Partnerships for Raw Materials: Innovative Approaches for sustainable production of Critical Raw Materials (IA)	23 septembre 2025	IA	30.00	Around 7.50	4
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-63: Innovative solutions for the sustainable production for Semiconductor raw materials (IA)	23 septembre 2025	IA	24.00	Around 8.00	3
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-64: EU Co-funded Partnership on raw materials for the green and digital transition (Co-funded partnership Raw Materials for the Green and Digital Transition)	23 septembre 2025	COFUND	45.00	Around 90.00	1

HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-61: Technologies for critical raw materials and strategic raw materials from end-of-life products (IA)

Expected Outcomes	Increasing supply security and access to secondary raw materials, in particular critical and strategic raw materials for EU50 industrial value chains and strategic sectors which will alleviate critical raw materials dependency Increase recovery rate of critical and strategic raw materials as set out in the Critical Raw Materials Act through developing raw materials recycling and re-use of components and/or products from end-of-life (EoL) products, including recovery of raw material by-products. • Improve competitiveness of secondary raw materials production by enhancing cost effectiveness. • Improve efficiency of technologies for separation and recycling and the sustainable embedment of the process in terms of energy, resource and water use, waste and emissions (including Green House Gases and air pollutants) footprint. • Improve responsible supply of raw materials to Europe from EoL streams in line with the EU principles for sustainable raw materials, 52 which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance. • Actions are expected to contribute to the implementation of the EU Critical Raw Materials Act
Activities	• develop material efficient high-quality re-use and recycling of one or more of the following end-of-life product categories/key waste streams: waste electrical and electronic equipment (WEEE), waste batteries, end-of-life vehicles, waste wind turbines, waste solar photovoltaics, waste heat pumps, waste electrolysers and machine tools made from high-performance alloys. • focus on the whole chain of re-using and recycling processes and procedures – from collection, logistics, characterisation, sorting, cleaning, refining and purification of secondary raw materials and quality of produced outputs. • focus on functional re-use and recycling. Recycling where the recycled material is of lower functionality than the original material (downcycling) is to be avoided.
Eligible stakeholders	participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR,CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials
Additional background documents (EU frameworks, publications,...)	Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020 (OJ L, 2024/1252, 3.5.2024, ELI: http://data.europa.eu/eli/reg/2024/1252/oj). European Commission. Directorate General for Internal Market, Industry, Entrepreneurship and SMEs. (2021). EU principles for sustainable raw materials. Publications Office. https://doi.org/10.2873/12856
Specific recommendations	If projects use satellite-based earth observation, positioning, navigation and/or related timing data and services, beneficiaries must make use of Copernicus and/or Galileo/EGNOS (other data and services may additionally be used).

HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-62: Strategic Partnerships for Raw Materials: Innovative Approaches for sustainable production of Critical Raw Materials (IA)

Expected Outcomes	• Strengthen EU cooperation with countries the EU established strategic partnerships on Raw Materials; • Improved industrial viability, safety and environmental impacts of the operation in a way that leads to measurable improvements; • Improved diversification of EU sourcing of critical raw materials from third countries; • Improved responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental and economic performance. • Dissemination and exploitation of projects outputs is tailored for organisations and industry dealing with raw materials in the EU and project partner from Strategic partnership countries. • Promote the utilisation of UNFC (United Nations Framework Classification for Resources) and UNRMS (United Nations Resource Management System) in the raw materials sector
Activities	• Develop and demonstrate extraction, processing or refining technologies in order to facilitate and increase recovery in exploitation of primary critical raw materials (minerals and metals only). The proposals have to demonstrate (measure and assess) reduced environmental and social impact. Proposals can include additional exploration aspects if duly justified. • Justify the relevance of all targeted minerals and metals. Priority are the EU critical raw materials. **Sea mining is not within the scope of this topic.** • Collaborate with countries with which the EU has signed Strategic Partnerships on Raw Materials. • Collaborate with one selected Strategic Partnership country . The consortia should include raw materials industry from the targeted country in the focussed group, as well as downstream users from the EU. • Demonstrate technology on mineral resources of the targeted partner country. The environmental (including GHG and other air pollutant emissions, water, soils, biodiversity) and social impacts of technology should be duly measured and assessed.
Eligible stakeholders	participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR,CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials
Additional background documents (EU frameworks, publications,...)	Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020 (OJ L, 2024/1252, 3.5.2024, ELI: http://data.europa.eu/eli/reg/2024/1252/oj). European Commission. Directorate General for Internal Market, Industry, Entrepreneurship and SMEs. (2021). EU principles for sustainable raw materials. Publications Office. https://doi.org/10.2873/12856
Specific recommendations	Proposals submitted under this topic should include a business case and exploitation strategy

HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-63: Innovative solutions for the sustainable production for Semiconductor raw materials (IA)

Expected Outcomes	• Decreased dependency of the EU on imported raw materials for semiconductor production and decreased risk in European semiconductor supply chains. The actions targeting strategic raw materials67 should contribute to the benchmarks as set out in theCritical Raw Materials Act • Raw materials for semiconductors competitively produced and refined in the EU in a sustainable and socially acceptable way improving the competitiveness of European industry. • Increase recovery rates of particularly raw materials from low grade or complex ores and/or from residues and/or by-products and/or extractive waste and/or manufacturing waste. • Increase the competitiveness and sustainability of mineral processing and refining processes in terms of cost-effectiveness, higher material-, water-, energy-efficiency,emission reduction and flexibility. This may also include the development of more sustainable solvents, reagents, and low-carbon manufacturing processes. • Foster collaboration among industry stakeholders along the value chain, research institutions, and technology providers to accelerate the development and adoption of sustainable production solutions. • Improve responsible supply of raw materials to Europe in line with the EU principles for sustainable raw materials69, which are a non-regulatory set of principles based on the EU acquis. They set out requirements for sustainable raw materials and extraction and processing in Europe in terms of social, environmental, and economic performance
Activities	• focus on raw materials for semiconductors necessary for the green and digital transition and strategic sectors, such as for example aero-space; including one or more of the following raw materials: antimony, arsenic, bismuth, boron, gallium, germanium, indium, selenium, silicon, tellurium. • Actions should facilitate the market uptake of solutions developed through industrially- and user-driven multidisciplinary consortia covering the relevant value chain from extraction to the production of semiconductor grade raw materials and alloys, as well as relevant downstream industry. Standardisation aspects should be considered when relevant.
Eligible stakeholders	participation in this topic is limited to legal entities established in Member States, associated countries, OECD countries, African Union Member States, MERCOSUR,CARIFORUM, Andean Community and countries with which the EU has concluded strategic partnerships on raw materials
Additional background documents (EU frameworks, publications,...)	Regulation (EU) 2024/1252 of the European Parliament and of the Council of 11 April 2024 establishing a framework for ensuring a secure and sustainable supply of critical raw materials and amending Regulations (EU) No 168/2013, (EU) 2018/858, (EU) 2018/1724 and (EU) 2019/1020 (OJ L, 2024/1252, 3.5.2024, ELI: http://data.europa.eu/eli/reg/2024/1252/oj). European Commission. Directorate General for Internal Market, Industry, Entrepreneurship and SMEs. (2021). EU principles for sustainable raw materials. Publications Office. https://doi.org/10.2873/12856
Specific recommendations	For TRLs 6-7, a credible strategy to achieve future full-scale deployment in the EU and encourage long-term industrial collaboration is expected, indicating the intentions of the industrial partners after the end of the project.

Raw Materials for the Green and Digital Transition

🌍 Qu’est-ce que le partenariat Raw Materials for the Green and Digital Transition ?

Le partenariat Raw Materials for the Green and Digital Transition est un programme européen de recherche et d'innovation soutenu par Horizon Europe. Il vise à **sécuriser l'approvisionnement en matières premières critiques nécessaires pour la transition verte et numérique de l'Europe**.

🎯 Objectifs principaux :

- Renforcer la coordination des programmes de recherche nationaux et régionaux dans le domaine des **matières premières non énergétiques et non agricoles**
- Atteindre les objectifs du **Critical Raw Materials Act**.
- Assurer un approvisionnement durable en matières premières critiques
- Soutenir l'innovation dans le recyclage et la substitution des matières premières
- Réduire la dépendance de l'Europe vis-à-vis des importations de matières premières
- 3 axes principaux : exploration, extraction, recyclage
- Appels à projets annuels avec financement R&I

💡 Pourquoi c’est important pour vous ?

- Financement de projets innovants dans les domaines des matières premières, du recyclage, et de la substitution
- Accès à un réseau européen de chercheurs, industriels, et décideurs politiques
- Opportunités pour les entreprises, startups, laboratoires, et ONG

Raw Materials for the Green and Digital Transition

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Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-64: EU Co-funded Partnership on raw materials for the green and digital transition (Co-funded partnership Raw Materials for the Green and Digital Transition)	23 septembre 2025	COFUND	45.00	Around 90.00	1

Achieving technological leadership for Europe's open strategic autonomy in raw materials, chemicals and innovative materials (2025)

Activités

- Le partenariat coordonnera les programmes nationaux et régionaux de R&I sur les matières premières non énergétiques et non agricoles.
- Il s'appuie sur l'expérience d'ERA-MIN et couvre toute la chaîne de valeur (hors exploitation minière en mer).
- Les propositions doivent mutualiser les financements pour des appels conjoints avec cofinancement européen et soutien aux tiers.
- Le partenariat est ouvert aux pays de l'UE, associés et partenaires stratéfiques ; les bénéficiaires doivent être des organismes publics de R&I.
- Les activités incluent appels conjoints, formation, démonstration, alignement politique et forte implication des parties prenantes.
- Le budget total est de 300 M€, avec une contribution européenne maximale de 90 M€ (30 %), et des appels annuels prévus de 2026 à 2032.

Résultats attendus

- Renforcer l'accès sécurisé et durable aux matières premières critiques et stratégiques pour les industries européennes.
- Aligner les priorités nationales de R&I avec la politique européenne et renforcer les partenariats stratégiques.
- Améliorer la sécurité industrielle, l'impact environnemental et la diversification des sources d'approvisionnement.
- Contribuer à la mise en œuvre du Critical Raw Materials Act et promouvoir un approvisionnement responsable.
- L'utilisation des cadres UNFC (United Nations Framework Classification for Resources) et UNRMS (United Nations Resource Management System) est encouragé, avec une diffusion ciblée vers les parties prenantes concernées

Appels Industrie – Destination 2

Sous-destination 2 : Innovative Advanced Materials (IAMs)

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-2025-05-MATERIALS-42- two-stage: Innovative Advanced Materials (IAMs) for product monitoring, smart maintenance and repair strategies in the construction sector (RIA) (Innovative Advanced Materials for Europe partnership)	14 avril 2026	RIA	30.00	Around 6.00	5
HORIZON-CL4-2025-05-MATERIALS-43- two-stage: Innovative Advanced Materials (IAMs) for robust, fast curing sealants and coatings for manufacturing and final assembly (IA) (Innovative Advanced Materials for Europe partnership)	14 avril 2026	IA	30.00	Around 6.00	5
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-44: Innovative Advanced Materials Innovation Procurement (CSA)	23 septembre 2025	CSA	2.00	Around 2.00	1
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-45: Materials Commons for Europe (IA)	23 septembre 2025	IA	28.00	Around 28.00	1

Nb estimé de projets financés : 5
Budget/projet : 30 M€
Ouverture : 22/05/2025
Deadline étape 1 : 23/09/2025
Deadline étape 2 : 14/04/2026
Lump sum

HORIZON-CL4-2025-05-MATERIALS-42-two-stage: Innovative Advanced Materials (IAMs) for product monitoring, smart maintenance and repair strategies in the construction sector (RIA) (Innovative Advanced Materials for Europe partnership)

Expected Outcomes (TRL 3 → TRL 5-6 by the end)	• Break frontiers between functional and structural materials by applying monitoring applications enabling **infrastructure management** such as tracking, **self-powering and self-sensing** to **reduce maintenance costs by at least 30%** compared to the state-of-the-art. • Reduce the resources (materials and energy) needed for constructions and lower environmental impacts by applying IAMs with improved performance of structural or functional components, combining longevity and efficiency, repairability and circularity (improving overall materials circularity by at least 30%); • Proof of concept of the 'safe and sustainable by design' (SSbD) to avoid use of hazardous substances and lower environmental impact; • **Promote industrial uptake** of IAMs by facilitating scalability and/or integration into leaner industrial production processes; • Support acceptance of innovative construction materials for housing to **achieve maximized user experience and comfort**.
Activities	• **Extend the lifetime of materials** used in the construction sector (e.g. cement, concrete, composites, technical textiles, plaster board, pipes). Actions : sustainable and circular strategy, easily dismantlable into reusable or recyclable components (circular economy), smart maintenance and repair functions implemented, autonomous repair systems, smart (AI) exploitation of collected data enables real-time monitoring, safety. At least **2 of the following activities** should be performed : • Develop strategies to accelerate the performance evaluation step to reduce time to market • Enhance sensor capabilities for tailored solutions through IAMs with extended physical sensor functionalities for mechanical-technological traits • Develop self-repairing materials with autonomous repair mechanisms to enhance reliability, lifespan, and recyclability in complex structures. • Develop AI-based models like digital twins to optimize maintenance and repair plans using sensor data, extending product lifetime efficiently • Produce and share knowledge on multi-scale and multi-physics phenomena to better understand materials behavior during their lifetime • Develop IAMs fit for modular off-site processing or 3D printing onsite + Use of **new digital technologies** to improve designing and producing of IAMs with new functionalities + Explore possibilities to **transfer and use developed IAMs** or technologies in **other sectors**;
Link to other topics	--
Eligible stakeholders	International cooperation is encouraged, especially with Japan This topic implements the co-programmed **European Partnership Innovative Advanced Materials for the EU (IAM4EU).** Proposals funded under this topic are part of the partnership portfolio (→ **develop synergies** with the related stakeholder community, **contribute to the objectives** of the partnership).
Additional background documents (EU frameworks, publications,...)	FAIR data principles
Specific recommendations	The project should include a business case and exploitation strategy. Proposals could consider the involvement of the European Commission's Joint Research Centre (JRC),

IA (TRL à la fin du projet : 6-7)
Nb estimé de projets financés : 5
Budget/projet : 30 M€
Ouverture : 22/05/2025
Deadline étape 1 : 23/09/2025
Deadline étape 2 : 14/04/2026
Lump sum

HORIZON-CL4-2025-05-MATERIALS-43- two-stage: Innovative Advanced Materials (IAMs) for robust, fast curing sealants and coatings for manufacturing and final assembly

Expected Outcomes	• **Prolong lifespan and performance** of components and products across sectors using **IAMs-based coatings, functionalized surfaces and/or sealings** to withstand specific or challenging requirements and/or harsh environments; • **Lower maintenance needs** and overall reduced Cost of Ownership for essential, structural or functional components and products; • **Lower environmental impact** through improved resource efficiency, reduced energy consumption, increased recyclability at end of life an/or substitution of hazardous substances • Proof of concept of the "**safe and sustainable by design**" framework • **Promote industrial uptake of IAMs by facilitating scalability** and/or integration into leaner industrial production processes
Activities	• Develop new and/or improved IAMs-based coatings, functionalized surfaces and/or sealings that improve **recyclability, circularity and safety** of developed materials and products, reduce materials consumption, costs of production, manufacturing and disassembly by **combining multiple functionalities** and **satisfying multiple requirements across different applications**. At least **2 of the following activities** should be performed : • Develop strategies to accelerate the performance evaluation step to reduce time to market • Develop functionalised surfaces which can improve performance of products • Design and develop new sealants and coatings that can be applied by automated processes • Master batch synthesis of IAMs • Produce and share knowledge on multi-scale and multi-physics phenomena to better understand materials behavior during their lifetime + Use of **new digital technologies** to improve designing and producing of IAMs with new functionalities
Link to other topics	--
Eligible stakeholders	International cooperation is encouraged, especially with Japan
Additional background documents (EU frameworks, publications,...)	FAIR data principles
Specific recommendations	The project should include a business case and exploitation strategy

IA (TRL à la fin du projet : 5-6)
Nb estimé de projets financés : 1
Budget/projet : 28 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025

HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-45: Materials Commons for Europe

Expected Outcomes	• Create a **federal digital infrastructure for advanced materials research and development**, demonstrating use cases, **facilitating industrial uptake** and offering a **feedback loop to academic research** • Give researchers form industry and academia access to interoperable, heterogeneous and FAIR data sources and computational tools that support **design and development of advanced materials** • Enabling the use of **state-of-the-art AI technologies and predictive modelling techniques** in the digital infrastructure for industry and academia
Activities	• **Interconnect existing and new infrastructures devoted to advanced materials design and development across the EU**, supported by AI tool and facilitate access to HPC facilities • Help researchers from across Europe to **accelerate the design, development, characterization and testing of new or improved advanced materials** in a controlled environment • Foster **trust in data sharing among stakeholders** based on FAIR data principles • Foster contributions from academia and industry, across different sectors, using **a user-centric approach** (take into account IP and ownership) • Support **virtual design** of advanced materials and related processing. Foster the progress towards **self-driving labs.**
Link to other topics	All other topics related to innovative advanced materials
Eligible stakeholders	**Publicly funded organisations** with the necessary expertise, mandated by their competent ministry. They must be able to function as **major hubs and contact points for stakeholders in national ecosystems**.
Additional background documents (EU frameworks, publications,...)	FAIR principles Existing national initiatives such as Material Digital, DIADEM and CaPeX EU initiatives such as "Innovative Materials for EU" partnership, EOSC, EuroHPC, Open Innovation Testbeds
Specific recommendations	The project shall be facilitated by the creation of **an advisory board** supporting short- and long-term solutions. The project duration should be **around 4 years.** The project should include **3 phases** (Planning and Framework Establishment, Initial Buid-up and Demonstration). **5 use cases across different sectors should be demonstrated**.

Appels Industrie – Destination 2

Sous-destination 3 : *Safe and Sustainable by Design*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-2025-05-MATERIALS-51- two-stage: Development of safe and sustainable by design alternatives to Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS) (IA)	14 avril 2026	IA	30.00	Around 7.00	4
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-52: Accelerate the uptake of life-cycle assessment (LCA) for Safe and Sustainable by Design (SSbD) chemicals and materials and resulting products (RIA)	23 septembre 2025	RIA	15.00	4.00 to 5.00	3

Sous-destination 4 : *Textiles*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-31: Digitally enabled local-for-local textile and apparel production (Textiles for the Future Partnership) (IA)	23 septembre 2025	IA	10.00	Around 5.00	2

IA (TRL à la fin du projet : 6-7)
Nb estimé de projets financés : 4
Budget/projet : 7M€
Ouverture : 22/05/2025
Deadline étape 1 : 23/09/2025
Deadline étape 2 : 14/04/2026
Lump sum

HORIZON-CL4-2025-05-MATERIALS-51- two-stage: Development of safe and sustainable by design alternatives to Perfluoroalkyl and Polyfluoroalkyl Substances (PFAS)

Expected Outcomes	• Make safer and more sustainable alternatives to per- and poly-fluoroalkyl substances (PFAS) available to industries offering products with targeted performances supporting their competitiveness; • Give the Commission, regulatory agencies, Member States and associated countries access to new and publicly available knowledge about PFAS alternatives; • Support EU strategies, policies and legislation, such as future PFAS restrictions under the REACH Regulation, as well as requirements for the EU Ecolabel, EU Taxonomy and Eco-design for Sustainable Products Regulation (ESPR), by making safe and sustainable alternatives to PFAS available; • Demonstrate the applicability of the 'Safe and Sustainable by Design' (SSbD) framework to avoid regrettable substitution when developing innovative safe alternatives to PFAS.
Activities	The Commission initiative for SSbD sets a framework which should be a reference in the proposal. The new alternatives to be developed should meet the technical functions required in the specific applications and align with such framework. **Proposals should address at least one industrial application** and should develop one or more new chemical substances or technologies to replace existing PFAS used, according to abovementioned applications and functions, in one of the following areas: Electronics, Construction technologies, Technical textiles and/or automotive parts.
Link to other topics	The challenge of developing PFAS alternatives should also cooperate with relevant topics under other clusters and calls of Horizon Europe (e.g. HORIZON-CL4-2021-RESILIENCE-01-08, HORIZON-CL4-2022-RESILIENCE-01-23, HORIZON-CL6-2023-ZEROPOLLUTION-02-2-two-stage, Horizon 2020 LC-GD-8-1-2020), including topics under the Chips Joint Undertaking and the Clean Hydrogen Joint Undertaking (e.g. HORIZON-JTI-CLEANH2-2024-05-02: Development of non-fluorinated components for fuel cells and electrolysers). Proposals should specifically allocate the necessary resources for collaboration with the other relevant projects
Eligible stakeholders	-
Specific recommendations	Proposals should involve appropriate expertise in Social Sciences and Humanities (SSH), e.g. with communities of citizens to engage in product reliability and consumer rights. At least, an analysis of how the introduction of such alternatives is positively or negatively considered by users and the general population, disruptive (or not) for the established social norms or behavioural patterns, should be conducted; In accordance with the SSbD framework, this topic requires the effective demonstration of the added value of the outcomes to protect human health and the environment, e.g. in the fields of biodiversity protection, indoor and /or outdoor air quality. Collaboration with existing Open Innovation Test Beds (OITBs) should be explored - where relevant. International collaboration is encouraged.

RIA (TRL à la fin du projet : 5-6)
Nb estimé de projets financés : 3
Budget/projet : 15M€
Ouverture : 22/05/2025
Deadline : 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025-01-MATERIALS-52: Accelerate the uptake of life-cycle assessment (LCA) for Safe and Sustainable by Design (SSbD) chemicals and materials and resulting products (RIA)

Expected Outcomes	• Support the implementation of EU strategies such as the proposed Eco-design for Sustainable Products Regulation (ESPR), the EU Ecolabel, the Green Claims Directive proposal, the One-Substance-One-Assessment package, the Batteries Regulation, the Critical Raw Materials Act and the Net Zero Industry Act with scientific evidence on sustainability throughout the entire life cycle of chemicals and materials,; • Reduce significantly the cost to apply LCA at company level, including for SMEs, compared to current costs; • Allow an efficient and simplified LCA application at early stage of design and facilitate decision making for companies and policy makers by providing user-friendly and cost-effective tools, methods and data; • Provide advanced, reliable and predictive life cycle models and impact assessment methods, allowing for a satisfactory measurement of planetary boundaries;
Activities	Proposals should identify and fill the gaps in LCA tools, methods and data used for improving the environmental sustainability and efficiency of chemicals, materials and resulting products, taking also into account the criticality of raw materials. The Environmental Footprint (EF) methods should in particular be built on. All stages from raw material extraction to end-of-life disposal of products should be included. Data-driven decisions and actions for a greener and more sustainable future should be enabled, while respecting planetary boundaries. The tools should be in compliance with the Safe and Sustainable by Design framework, hence to be considered as a reference in the proposal.
Link to other topics	--
Eligible stakeholders	Proposals should indicate to which chapters of the **Strategic Research and Innovation Plan for chemicals and materials** they will contribute. International collaboration is encouraged. Synergies with Horizon Europe missions as relevant are encouraged.
Specific recommendations	Projects should build on, or seek collaboration with, existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms. Specifically, **projects should collaborate with the Partnership on Assessment of Risks from Chemicals (PARC)** and ensure complementarity with the **SSbD toolbox** and also **engage with the IRISS project** on the different value chains. Additionally, projects are encouraged to build on the results obtained by the ORIENTING project funded under the CE-NMBP-42-2020 topic which has aimed to operationalise methodologies for LCA and to propose options to further advance the Product Environmental Footprint (PEF). Proposals should allocate the necessary resources for the above activities. Where relevant, proposers are encouraged to take advantage of and connecting to European research infrastructures and services.

IA (TRL à la fin du projet : 6-7)
Nb estimé de projets financés : 2
Budget/projet : 10 M€
Ouverture : 22/05/2025
Deadline: 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-MATERIALS-31: Digitally enabled local-for-local textile and apparel production

Expected Outcomes	• Demonstrate economic viability of **local on-demand production** of fashion and other complex textile products, for professional or public end markets, through **integration of advanced digital technologies** across the **full product life cycle from creation, production, distribution use and en-of-life**; • Accelerate adoption **of advanced digital product creation and manufacturing technologies** by **European textile and fashion SMEs;** • Increase share of re- or near-shored production of time-critical textile products, made in **socially and environmentally responsible** ways, including recycled materials

Activities	• **Small scale demonstration**, experimentation or piloting of approaches, processes or technologies for :
	  • **Complex manufacturing operations** including yarn or fabric production and final product assembly
	  • **Seamless interoperable data flows and transparency** towards the end user that pursue waste minimization, short time to market and trust building
	  • Valorisation of **locally available renewable raw materials** and **regional production capacities**
	  • **Micro-factories** that combine small-scale local production, repair and de-manufacturing operations
	• Uptake of **innovative service-driven business models** that maximise **consumer value creation** and **lower total cost of ownership** from high-quality long-lasting products

Link to other topics	
Eligible stakeholders	At least **1 advanced technology provider, 1 manufacturing SME, 1 end-market facing company** (retailer, consumer service provider,...). The proposal should include Financial Support to Third Party (FSTP), which can be provided only to **SME participants**. The involvement of **start-ups** is also specifically encouraged. The partners should be from **at least 2 different countries.**
Additional background documents (EU frameworks, publications,...)	The topic implements the co-programmed European Partnership "Textiles for the Future"
Specific recommendations	Include a business case and exploitation strategy Indicative duration of **18 months**

QUESTIONS RÉPONSES

DESTINATION 2

Appels Industrie – Destination 4

Sous-destination 5 : *Artificial Intelligence in Science*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR million)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-DIGITAL-61: AI foundation models in science (GenAI4EU)(RIA)	23 septembre 2025	RIA	30.00	Around 6.00	5
HORIZON-CL4-INDUSTRY-2025- 01-DIGITAL-62: Facilitated cooperation for AI in Science (CSA)	23 septembre 2025	CSA	3.00	Around 3.00	1

RIA (TRL à la fin du projet : 4)
Nb estimé de projets financés : 5
Budget/projet : 6M€
Deadline : 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-DIGITAL-61: AI Foundation models in science (GenAI4EU) (RIA)

Expected Outcomes	• **Accelerate research and development in science**, with focus on targeted domains (see below) • **Advance AI technology** (not limited to Generative AI) **tailored for scientific needs** and potentially adaptable to other tasks in the area of application; • Contribute to the development of foundation models in targeted areas, and pave the way for **future funding of foundation models in a broader range of scientific disciplines;** • Advance solutions to **societal or scientific challenges**; • Bridge existing knowledge gaps and induce **interdisciplinarity by design** across different fields necessary to advance the area of application • Support **open-source and open science**, especially for research communities with limited access to modern AI tools.
Activities	• address one of the following scientific domains: **Materials science / Climate change science / Environmental pollution sciences / Agricultural sciences** • focus on 1) **developing foundation models** (not limited to Generative AI) for science in the chosen domain; 2) **showing a foundation model's usefulness** by adapting it to subtasks/scientific problems in the chosen domain; and 3) illustrating **other possible areas of application**. • Prove access to **high quality (multimodal) data** needed for the development of the model. • Contribute to efforts to **reach common standards** for data formats, metadata, taxonomies and ontologies. • Demonstrate a strategy to access the **computational resources** needed for model training, evaluation/testing and inference. • Propose a **model architecture** that is designed with transparency in mind • Ideally, employ methodologies for **integrating domain/interdisciplinary knowledge** into the model and seek synergies with solutions that facilitate the managing and making sense of vast amounts of data (for example knowledge graphs).
Link to other topics	Synergies with the selected projects from HORIZON-INFRA-2025-01-EOSC-06: Using Generative AI (GenAI4EU) for Scientific Research via EOSC are encouraged, where relevant. Proposals are encouraged to collaborate with established infrastructures such as the WeatherGenerator project.
Eligible stakeholders	International cooperation is encouraged, where the EU has reciprocal benefit, like the Trillion Parameter Consortium
Additional background documents (EU frameworks, publications,...)	FAIR data principles
Specific recommendations	• Identify at least **four possible use cases and scientific challenges** that can be addressed with the model and its adaptations. • Identify and assess the **potential risks of misuse** of the foundation model. • Propose a plan to **make the model public, maintain and evolve it and promote it to the scientific community** on a regular basis

CSA
Nb estimé de projets financés : 1
Budget/projet : 3M€
Deadline : 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-DIGITAL-62: Facilitated cooperation for AI in Science (CSA)

Expected Outcomes	• **Identify the long-term research challenges** where AI can make a meaningful breakthrough contributing to EU's competitive edge in selected scientific disciplines/areas, through a Strategic Research and Innovation Agenda. • Provide evidence to **structure the resources for AI in Science at European level**, as a feasibility test towards potential R&I initiatives beyond the CSA that could **optimise access to relevant data, infrastructure and talent across different scientific domains** for more and better AI-enabled research. • **Coordinate, strengthen the network and raise awareness and a community of scientists**, including citizen scientists, research organisations and stakeholders towards new paradigms of research with AI.
Activities	• Develop a **Strategic Research and Innovation Agenda for AI in Science** by mobilising **large groups of domain and AI researchers in different fields** to identify key long-term research challenges in a diverse range of scientific areas **where AI can make a meaningful difference for scientific breakthroughs**, which are compelling to the EU competitive, environmental and social policy agenda. The project should come up with **pilot areas from across Horizon Europe Pillar II Clusters**, building on Europe's competitive advantages in science and AI technologies. The research challenges should be related to prediction and design problems in the different scientific fields identified that could be solved with AI. • The project should build evidence and assess the needs and potential for R&I initiatives for AI in Science beyond the CSA, in an effort **to identify ways to improve the EU landscape for support for AI in Science**, to be discussed and agreed upon with the Commission and the Member States. The assessment should identify the ways for **improving data access, infrastructure and support services, as well as skills and talent-related needs to boost the integration of AI in different fields** of science at larger scale in Europe in research processes and lab automation, while promoting reproducibility, transparency and open science. It should also identify options for EU to better enable cooperative development and sharing of AI models for scientific discovery across different scientific fields. It should also **take into account existing EU efforts to support access to data, research infrastructures, networks, HPC**. • Different scenarios of R&I initiatives and infrastructure improvements should be prototyped together with a **diverse range of users and stakeholders from the research community, industry, start-ups, civil society and policy-maker communitie**s. Based on the feasibility test results, the project should develop a roadmap on the needed steps for a more effective coordination between the domain and AI scientific communities in Europe and the needed upgrades in service and infrastructure provision at EU level for the integration of AI in different scientific fields, including research processes engaging citizens and civil society, e.g. Citizen Science.
Link to other topics	--
Eligible stakeholders	Projects should build on or seek collaboration with existing projects and develop synergies with other relevant European, national or regional initiatives, funding programmes and platforms, in particular with EU-level initiatives such as EOSC ,EuroHPC Joint Untedtaking , ESFRI, AI Factories, the EU AI, Data and Robotics Partnership, AI4EOSC the AI on Demand Platform and the GenAI4EU Central Hub.
Additional background documents	-
Specific recommendations	The proposals should also provide coordination and dissemination for interdisciplinary AI-enabled science to facilitate stakeholder engagement, coordination and promotion of AI in Science initiatives across Europe. The CSA should develop a website, organise awareness raising events for the benefits of AI in Science and create opportunities for exchanging on good practices.

Appels Industrie – Destination 6

Sous-destination 3 : *Standardisation and Knowledge Valorisation*

Topics	Deadline	Type of actions	Budgets (EUR millions)	Expected EU contribution per project (EUR millions)	Indicative number of projects expected to be funded
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-60: Horizon Standardisation Booster (CSA)	23 septembre 2025	CSA	1.50	Around 1.50	1
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-61: Standardisation landscape analyses tool (CSA)	23 septembre 2025	CSA	1.00	Around 1.00	1
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-62: Artificial Intelligence for knowledge valorisation (CSA)	23 septembre 2025	CSA	2.00	Around 2.00	1
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-63: Value creation pilots for scaling up innovative solutions (CSA)	23 septembre 2025	CSA	2.00	Around 2.00	1
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-64: Pilot initiatives on Technology Infrastructures (CSA)	23 septembre 2025	CSA	5.00	0.50 to 1.00	5
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-65: System innovation experimentation for Industry 5.0 (IA)	23 septembre 2025	IA	3.00	Around 3.00	1
HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-66: Assessment of Technology Infrastructure needs in Ukraine (CSA)	23 septembre 2025	CSA	1.50	1.00 to 1.50	1

CSA
Nb estimé de projets financés : 5
Budget/projet : 1 M€
Deadline : 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-64: Pilot initiatives on Technology Infrastructures

Expected Outcomes	• **Provide evidence and understanding of the European landscape of Technology Infrastructures** (TI), including facilities and their services • Develop and understanding of **the specifical needs of industrial users** for TI • **Improve availability of TI facilities** and strengthen the provision of services for enterprises across the EU, **in particular SMEs and start-ups,** with increased opportunities for testing, up-scaling and deployment of new technologies • Make TI in Europe **stronger and more resilient** with improved strategic service offer, better adapted to user needs, • **Contribute to the validation of a European approach to TI**, test different strategies and instruments and their feasibility, to address availability and service gaps at EU level, and learn from their implementation experience
Activities	• **Build a detailed mapping of the available TI in Europe and the main types of services offered and used**. This should lead to an understanding of user needs for TI and identify the **potential gaps or mismatch between supply and demand**, • Develop **a strategy, roadmap or agenda with identified measures** to help overcome the existing gaps and barriers. • Develop proposals for **implementation modalities** of the proposed strategy, roadmap or agenda, as well as identification of relevant actors to implement them.
Link to other topics	Build on or seek collaboration with relevant existing projects and develop synergies with other relevant EU, national or regional initiatives, funding programs or platforms
Eligible stakeholders	Industrial partners, including SMEs and large enterprises, organisations hosting TI and other infrastructures offering relevant services for industry, technology, market and legal experts as needed
Additional background documents (EU frameworks, publications,...)	Towards a European Policy for Technology Infrastructures
Specific recommendations	Identify a **specific technology area or industrial ecosystem** in which to implement the activities, based on the priorities defined in the report above (twin transition, health, mobility, security and resilience,...)

IA
Nb estimé de projets financés : 3
Budget/projet : 3 M€
Deadline : 23/09/2025
Lump sum

HORIZON-CL4-INDUSTRY-2025- 01-HUMAN-65: System innovation experimentation for Industry 5.0

Expected Outcomes	• Demonstrated **successful incentives for systemic transformation towards Industry 5.0** and for **skills upgrading and boosting the competitiveness of EU industries.** • Development and application of **Industry 5.0 enabling conditions, processes and methods for systemic transformation**, organisational learning capacities and revitalisation of industries at regional/local level. • Demonstrate / provide evidence on the implementation of Industry 5.0 innovations for better adaptation of industries to new challenges linked **to twin transition** (enhanced resilience), organisational agility, and contribute to tackling the skills gap / attraction of best talent in regional industrial ecosystems.
Activities	• Elaborate on an **Industry 5.0-driven methodology framework** via system innovation experimentation in different industrial ecosystems in European Regional, Innovation Valleys and other regions, • Ivolve appropriate **expertise in Social Sciences and Humanities** (SSH), in particular in **systems thinking or complexity science** and their practical implementation as part of system innovation or transformation initiatives For each of the identified transformation challenge, the project should engage **stakeholders in transdisciplinary research and innovation activities**, including in: a) Identifying and testing **new Industry 5.0 driven methods and measures** for organisational transformation, learning organisation implementation and system innovation, to support the scaling up of Industry 5.0 b) Developing and testing the **new methodologies through sandboxes, open innovation approaches or participatory processes** for systemic transformation by prototyping new incentives schemes or enabling measures. c) Develop **tools/measures to build evidence on and promote the impact of Industry 5.0 methods** for industrial transformation at regional/local level
Link to other topics	Build on the results of the "Community of Practice on Industry 5.0" and other Horizon Europe Industry 5.0 (or related) funded projects.
Eligible stakeholders	
Additional background documents (EU frameworks, publications,...)	Industrie 5.0 : Comment en faire une réalité ?
Specific recommendations	The sandboxes should involve **quadruple or quintuple helix stakeholders at regional/local level.** Project duration recommended ~36 months

QUESTIONS RÉPONSES

DESTINATION 4 & 6

4

PARTENARIATS

EUROPEAN METROLOGY

Les partenariats du Cluster 4 Industrie

Partenariats institutionnels

- European Metrology

Partenariats co-programmés

- Made in Europe
- Processes4Planet
- Clean Steel

Partenariats co-financés

- Raw Materials for Green and Digital transition

European Metrology

🌍 Qu’est-ce que European Metrology ?

European Metrology Partnership est un programme européen de recherche et d'innovation soutenu par Horizon Europe. Il vise à établir un **système de métrologie autosuffisant et efficace à l'échelle européenne**, garantissant que l'Europe dispose d'un système de métrologie de classe mondiale.

🎯 Objectifs principaux :

- Fournir des solutions de métrologie et des données et méthodes de référence métrologiques fondamentales.
- Offrir des solutions de mesure adaptées, soutenant et stimulant l'innovation européenne.
- Répondre aux défis industriels et sociétaux.
- Soutenir et permettre la conception et la mise en œuvre efficaces de réglementations et de normes, qui sous-tendent les politiques publiques répondant à ces défis.

📊 Chiffres clés :

- Budget total : environ **690 millions d'euros** (cofinancé par les États membres et l'Union européenne).
- Partenaires : communauté scientifique de la métrologie et parties prenantes.

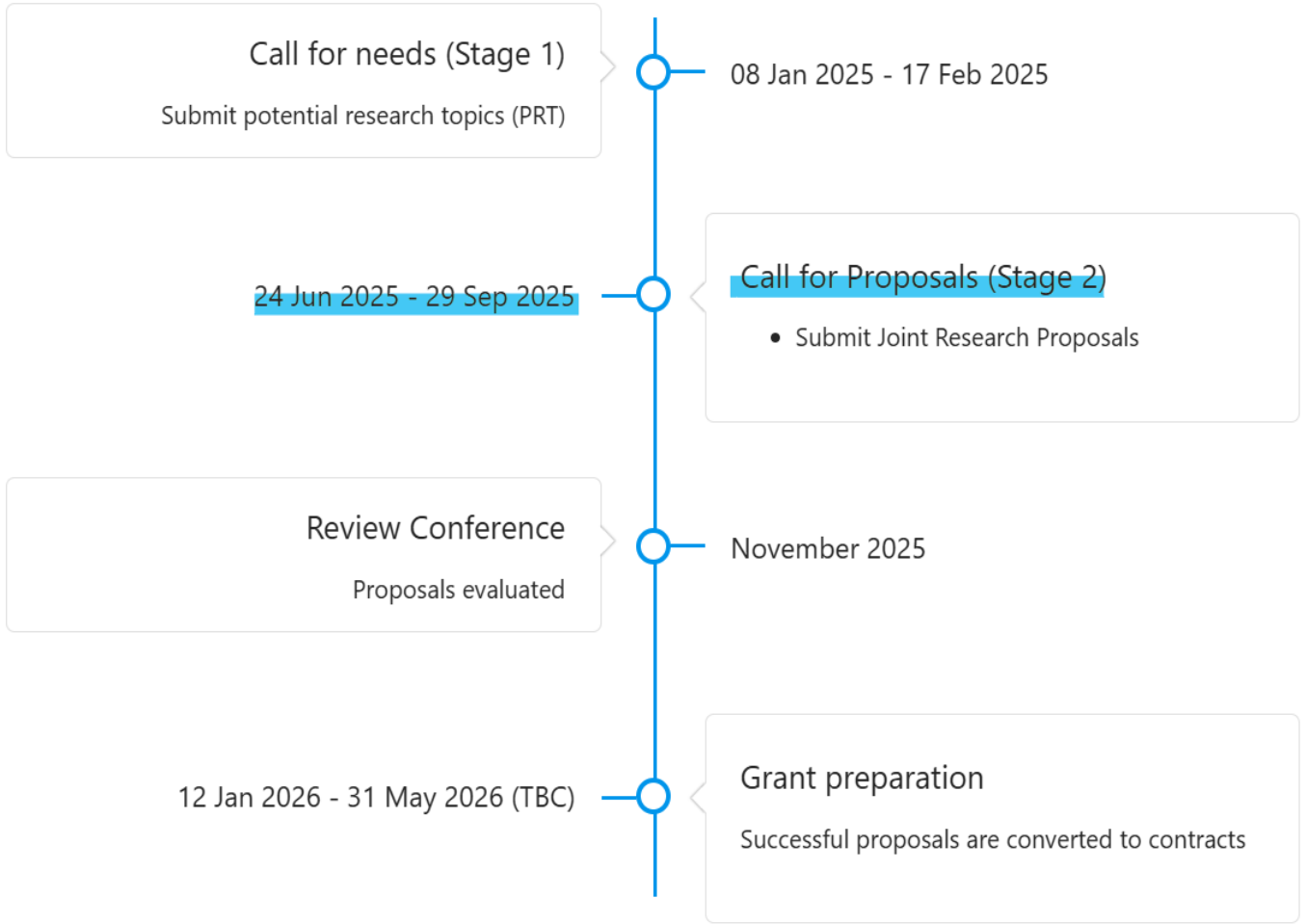
💡 Pourquoi c’est important pour vous ?

- Soutien à l'innovation industrielle, à la recherche, au commerce et à la réglementation.
- Accélération de la transition vers une Europe verte, neutre en carbone et numérique.
- Renforcement de la compétitivité et de la croissance économique de l'industrie européenne.

Metrology Partnership Call in 2025

- **Health Call :** Soutient la recherche en métrologie pour améliorer les diagnostics et traitements médicaux, en intégrant des technologies comme l'IA et la médecine personnalisée, tout en impliquant les acteurs clés du secteur de la santé.
- **Integrated Metrology Call :** Renforcer une métrologie européenne intégrée et de pointe, en mutualisant les compétences des instituts partenaires pour développer des services de mesure traçables.
- **Research Potential Call :** Renforcer les capacités de recherche en métrologie dans les pays émergents, en soutenant des projets ciblés pour développer des compétences scientifiques et techniques, en vue d'une participation future aux appels principaux du Partenariat européen sur la métrologie.
- **Regulation Call :** soutient le développement de solutions métrologiques pour appuyer la conception et la mise en œuvre de réglementations européennes, en lien avec les grands enjeux sociétaux, économiques et environnementaux, comme le Green Deal ou l'AI Act, tout en renforçant la compétitivité industrielle.

Calls 2025 - Timeline



Metrology Partnership Call 2025

5

INFORMATIONS PRATIQUES ET ACCOMPAGNEMENT

LES SITES DE RÉFÉRENCE

- **Contact PCN Industrie: pcn-industrie@bpifrance.fr**
- **Site Horizon Europe (Commission Européenne)** : Horizon Europe - European Commission
- **Portail des financements et des appels d'offres de l'UE** : EU Funding & Tenders Portal
- **Site PCN Industrie** : https://www.horizon-europe.gouv.fr/pcn-industrie

IDENTIFIER DES PARTENAIRES POUR LES APPELS INDUSTRIE – 1/2

- **Réseau et contacts d'affaires en France et en Europe et pays associés**
- **Participants aux projets déjà financés sur des thématiques proches**

https://cordis.europa.eu/projects/fr

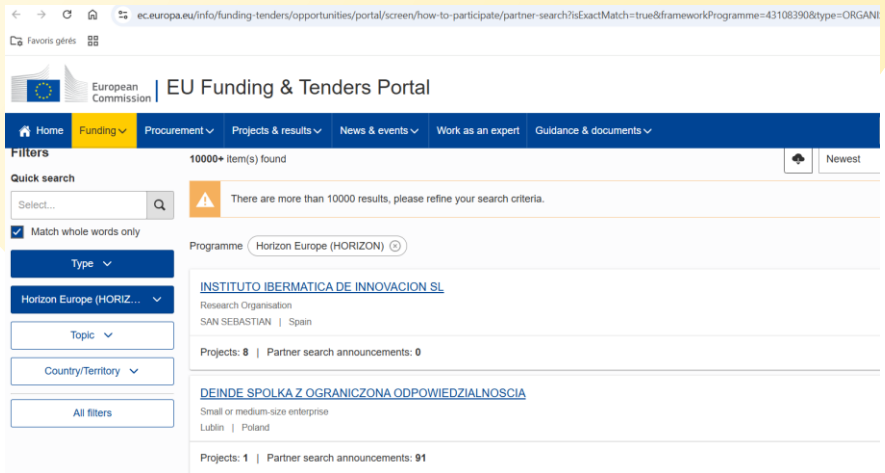
- **Les membres des partenariats du domaine industrie**

Les partenariats sont structurés sous forme d'associations dont les membres sont régulièrement impliqués dans les projets soumis

Destination	Partenariat	Thématiques	Site du partenariat
1	Clean Steel - Low Carbon Steel making	Acier : production bas carbone	https://www.estep.eu/clean-steel-partnership
2	Made in Europe	Technologies de Fabrication	https://www.effra.eu/made-in-europe-state-play/
2	Processes4Planet	Procédés	https://www.aspire2050.eu/p4planet/about-p4planet
2	Innovative Materials for EU	Matériaux	A venir
4	European Metrology	Mesure	https://www.metpart.eu/

- **Le portail du participant**

Fonction recherche de partenaires sur chaque appel: https://ec.europa.eu/info/funding-tenders/opportunities/portal/screen/how-to-participate/partner-search ?



IDENTIFIER DES PARTENAIRES POUR LES APPELS INDUSTRIE – 2/2

- **PME : Enterprise Europe Network**

https://een.ec.europa.eu/partnering-opportunities?f%5B0%5D=p%3A4320&f%5B1%5D=p%3A4355
https://www.een-france.fr/

- **Cabinets Conseil**

Association française: https://www.asso-conseils-innovation.org/
liste qualifiée par domaine dans le cadre du Diag PTI disponible auprès du PCN.

- **PCN Industrie**

Mises en relation ciblées en liaison avec nos homologues européens

PME: DIAG PARTENARIAT TECHNOLOGIQUE INTERNATIONAL

Candidater à un AAP européen/ international collaboratif

Le dispositif Diag PTI propose un **accompagnement personnalisé** dans la participation aux appels à projets R&D collaboratifs intergouvernementaux, européens ou transnationaux.

POURQUOI ?

Le Diag PTI s'adresse aux dirigeants souhaitant être accompagné dans:

- la **préparation du partenariat technologique** (recherche de partenaires européens/internationaux)
- **Rédaction et dépôt** du dossier de candidature
- **Négociation de l'accord de consortium et/ ou assistance juridique.**

COMMENT ?

Bpifrance met à disposition des entreprises une liste de **consultants spécialisés dans le montage de projets collaboratifs.**

POUR QUI ?

- **Start-ups, PME** de moins de 250 salariés au consolidé
- Entreprises **innovantes**
- **Sur le territoire français et/ou dans les DROM-COM**
- Exclusion : entreprises en « difficulté » selon la définition européenne.

QUEL PRIX ?

- **Prise en charge à 50%** du montant total de la prestation par Bpifrance
- Jusqu'à **25 000€ HT** si l'entreprise bénéficiaire est **cheffe de file du consortium**, et jusqu'à **5 000 € HT** si membre d'un consortium

Contact : diagpti@bpifrance.fr

ACTEURS ACADEMIQUES : MRSEI – OPÉRÉ PAR L'ANR

20 ans de soutien à la recherche

Montage de Réseaux Scientifiques Européens ou Internationaux à un AAP européen/ international collaboratif

POURQUOI ?

Le programme MRSEI a été créé pour donner les moyens aux scientifiques travaillant dans des laboratoires français de déposer en tant que coordinatrice/coordinateur un projet de recherche à des appels collaboratifs européens (Horizon Europe) ou internationaux et de leur donner ainsi la possibilité de développer des projets interdisciplinaires ambitieux et de renforcer leur visibilité au niveau international.

COMMENT ?

L'ANR propose une soumission en continu avec deux sessions de sélection.

POUR QUI ?

- **Laboratoires de recherche publique français**

MONTANT ET FRAIS ELIGIBLES

- **Aide maximum de 36k€ pour une durée de deux ans**
- **Frais de personnel, prestations de services, frais généraux non forfaitisés**

https://anr.fr/fr/detail/call/mrsei-2025-montage-de-reseaux-scientifiques-europeens-ou-internationaux/

6 QUESTIONS

SERVIR L'AVENIR

bpifrance