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Les partenariats co-programmés et leur influence sur les appels

Clean Steel et Processes4Planet

Les Partenariats dans Horizon Europe

Initiatives où l'U.E. et les états membres s'engagent avec des acteurs privés et publics à soutenir conjointement le développement et la mise en œuvre d'un programme d'activités de recherche et d'innovation.

3 grands types de partenariats : co-financés, institutionnalisés, co-programmés

Les sujets décarbonation sont liés à deux Partenariats co-programmés :
Clean Steel / Processes4Planet

- Élaborent un document (agenda stratégique de R&I / roadmap) démontrant une vision stratégique commune des partenaires ;
- Mettent en œuvre cette vision stratégique à travers des appels Horizon Europe (Clean Steel utilise aussi RFCS)
- C'est-à-dire que les acteurs de chaque partenariat fournissent à la CE des informations sur les thèmes pertinents à inclure dans les programmes de travail.
- Les subventions résultant de ces appels sont financées par Horizon Europe.
- Les partenaires privés développent également des activités non financées par Horizon Europe, mais incluses dans les agendas stratégiques de R&I du partenariat (déploiement, aspects règlementaires, …).

Pour en savoir plus: https://www.horizon-europe.gouv.fr/les-partenariats-industrie-du-cluster-4-28474

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Partenariat Processes4Planet

PROCESSES4PLANET

Le Partenariat Processes4Planet : Informations principales

Lead DG RTD: E3 – Industrial Transformations
Successeur du partenariat Horizon 2020 SPIRE
MoU: Juin 2021
Lancement: 2021 (appels dans WP 2021/22)
https://www.aspire2050.eu/p4planet/about-p4planet

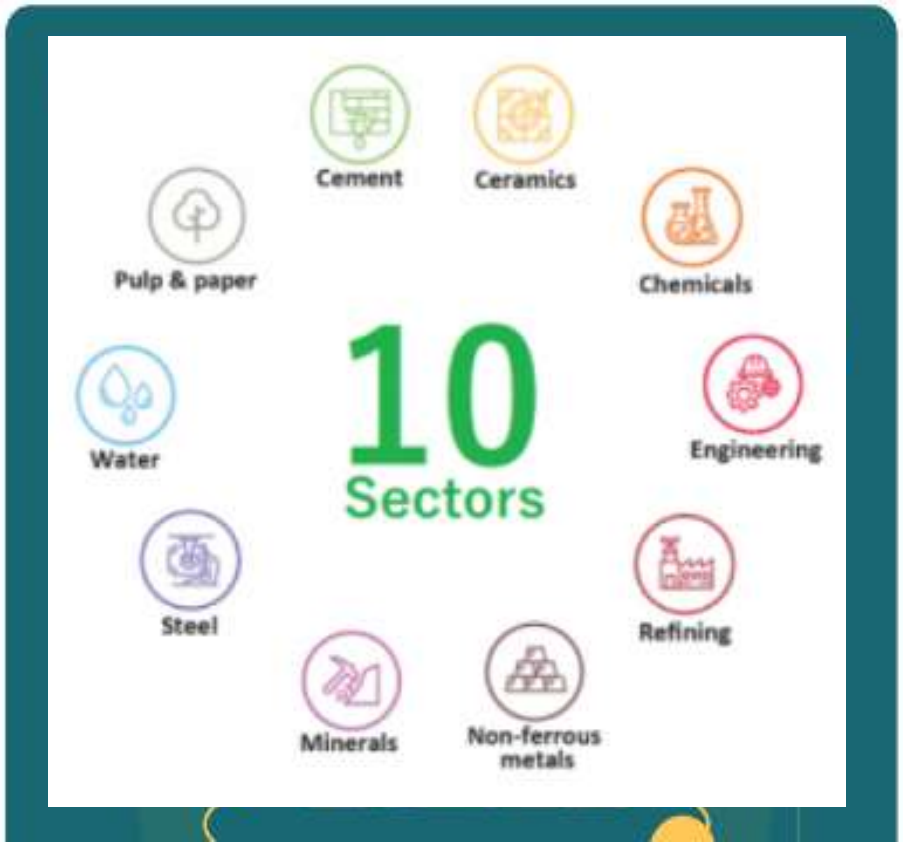
Partenariat co-programmé
Partenaires "privés" representés par les acteurs de l'association A.Spire
Challenge : transformer les industries de transformation européennes pour atteindre la circularité et la neutralité climatique au niveau de l'UE d'ici 2050 tout en améliorant leur compétitivité mondiale.

Trois grands objectifs

- Développer et déployer des solutions climatiquement neutres
- Circularité de l'énergie et des matières premières
- Accélérer l'innovation et débloquer les investissements publics et privés pour un leadership mondial des solutions climatiquement neutres et circulaires

Processes4Planet
Secteurs et Agenda stratégique

ASPIRE
PROCESSES4PLANET RESEARCH ASSOCIATION



PROCESSES4PLANET
14 "Innovation areas"

- Renewable energy integration
- Heat reuse
- Electrification of thermal processes
- Electrically-driven processes
- Hydrogen integration
- CO_2 capture for utilisation
- CO_2 utilisation in minerals
- CO_2 & CO utilisation in chemicals and fuels
- Energy and resource efficiency
- Circularity of materials
- Industrial-Urban symbiosis
- Circular regions
- Digitalisation
- Non-technological aspects

Processes4Planet : Les appels

	Topic Identifier	Topic Title
2021	TT-01-14	Deploying industrial-urban symbiosis demonstrators for the utilisation of energy, water, industrial waste and by-products at regional scale (RIA)
	TT-01-16	Hub for Circularity Community of Practice (ECoP) platform (CSA)
	TT-01-17	Plastic waste as a circular carbon feedstock for industry (IA)
	TT-01-21	Design and optimisation of energy flexible industrial processes (IA)
	RES-01-01	Ensuring circularity of composite materials (RIA)
2022	TT-01-10	Circularity flows for solid waste in urban environment (IA)
	TT-01-11	Valorisation of CO/CO2 streams into added-value products of market interest (IA)
	TT-01-15	New electrochemical conversion routes for the production of chemicals and materials in process industries (RIA)
	TT-01-17	Integration of hydrogen for replacing fossil fuels in industrial applications (IA)
	RES-01-01	Circular and low emission value chains through digitalisation (RIA)
2023	TT-01-36	Modelling industry transition to climate neutrality, sustainability and circularity (RIA)
	TT-01-37	Hubs for circularity for near zero emissions regions applying industrial symbiosis and cooperative approach to heavy industrialized clusters and surrounding ecosystems (IA)
	TT-01-40	Sustainable and efficient industrial water consumption: through energy and solute recovery (RIA)
	TT-01-42	Circular economy in process industries: Upcycling large volumes of secondary resources (RIA)
	TT-01-31	Energy efficiency breakthroughs in the process industries (RIA)
	TT-01-33	Electrification of high temperature heating systems (IA)
2024	TT-01-32	Optimisation of thermal energy flows in the process industry (IA)
	TT-01-34	Renewable hydrogen used as feedstock in innovative production routes (RIA)
	TT-01-35	Turning CO2 emissions from the process industry to feedstock (IA)
	TT-01-38	Hubs for circularity for industrialised urban peripheral areas (IA)
	TT-01-41	Breakthroughs to improve process industry resource efficiency (RIA)

The Clean Steel Partnership

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DG Research & Innovation – Unit C3
– Low Emission Future Industries

4 April 2023

European Clean Steel Partnership: Key Elements

Lead DG: R&I.C3
Co-lead DG: GROW.I.1
Predecessor: none (but some coverage by SPIRE contractual Public-Private Partnership active between 2014 and 2020)
Roadmap: from Feb 2021
Launch: 2021 (calls in WP 2021/22)
Budget: 1700 M€ in total (350 M€ HE + 350 RFCS + 1 000 M€ Private side)

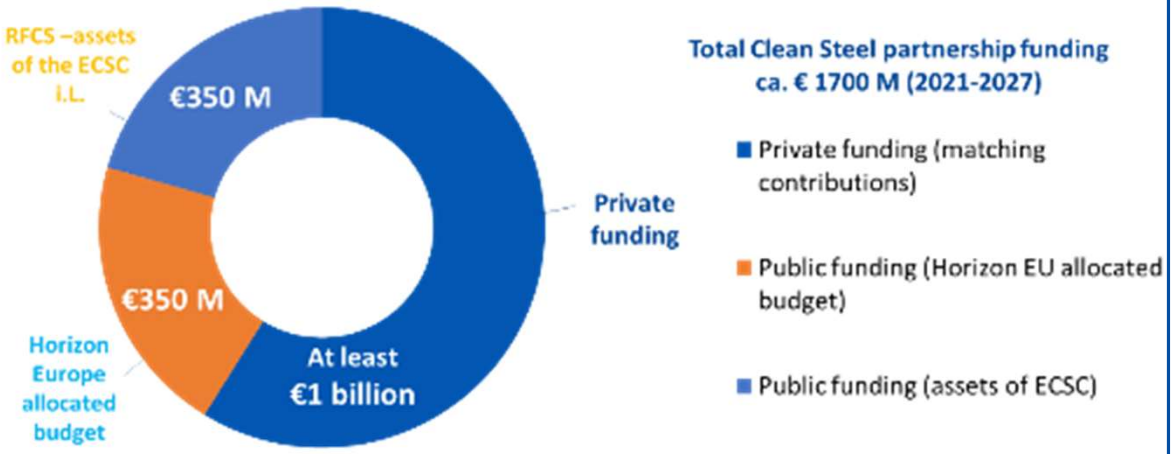
- Public-private co-programmed European partnership under Horizon Europe.
  - European Partnerships bring the European Commission and private and/or public partners together to address some of Europe's most pressing challenges through concerted research and innovation initiatives (https://research-and-innovation.ec.europa.eu/funding/funding-opportunities/funding-programmes-and-open-calls/horizon-europe/european-partnerships-horizon-europe_en).
- Partners: Private side represented by the European Steel Technology Platform (ESTEP).
- 2 complementary 'legs': RFCS and Horizon Europe
- Memorandum of Understanding signed on August 9, 2021.
- Challenge: EU steel industry is responsible for 20-25% of industrial CO2 emissions. It needs for major technological breakthroughs in order to cut emissions on a sufficient scale.

European Commission

Steel Research Programmes: Horizon Europe and RFCS

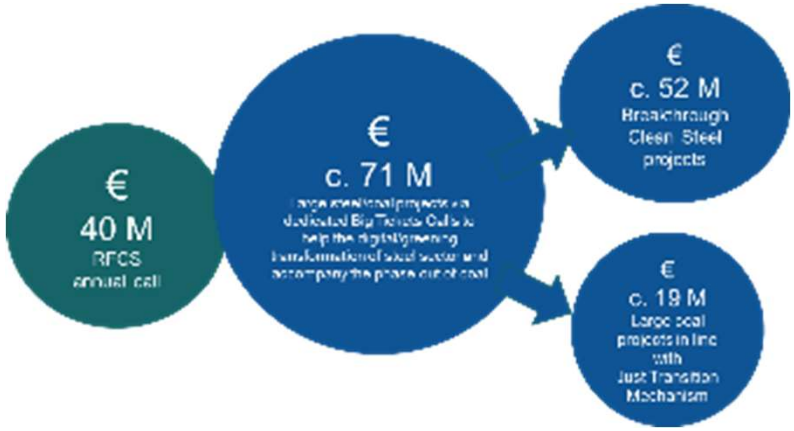
Horizon Europe 2021-2027

- Dedicated investment of € 350 million, with contribution of private funding.
- Clean Steel has 2 sources of funding, HE and RFCS, contributing to research & innovation with a total of € 700 million in the period 2021-2027.



RFCS

- By Council decision it relies on multiannual technical guidelines.
- With the new legal base in force since 2021 the annual funding is:



The distribution of funding is set at **27.2 %** for coal-related research and **72.8 %** for steel-related research, as provided for by Article 4(2) of the implementing measures, decided by the Council in 2003.

European Commission

Main Objectives and the Strategic Research Innovation Agenda

The **general objective** of the Partnership is to develop technologies at TRL8 to **reduce CO2 emissions** stemming from EU steel production by 80-95% compared to 1990 levels by 2050, ultimately leading to climate neutrality.

This objective is to be achieved while **preserving the competitiveness and viability** of the EU steel industry.

Specific objective 1: Enabling steel production through carbon direct avoidance (CDA) technologies at a demonstration scale.

Specific objective 2: Fostering smart carbon usage (SCU – Carbon capture) technologies in steelmaking routes at a demonstration scale, thus cutting CO2 emissions from burning fossil fuels (e.g. coal) in the existing steel production routes.

Specific objective 3: Developing deployable technologies to improve energy and resource efficiency (SCU - Process Integration).

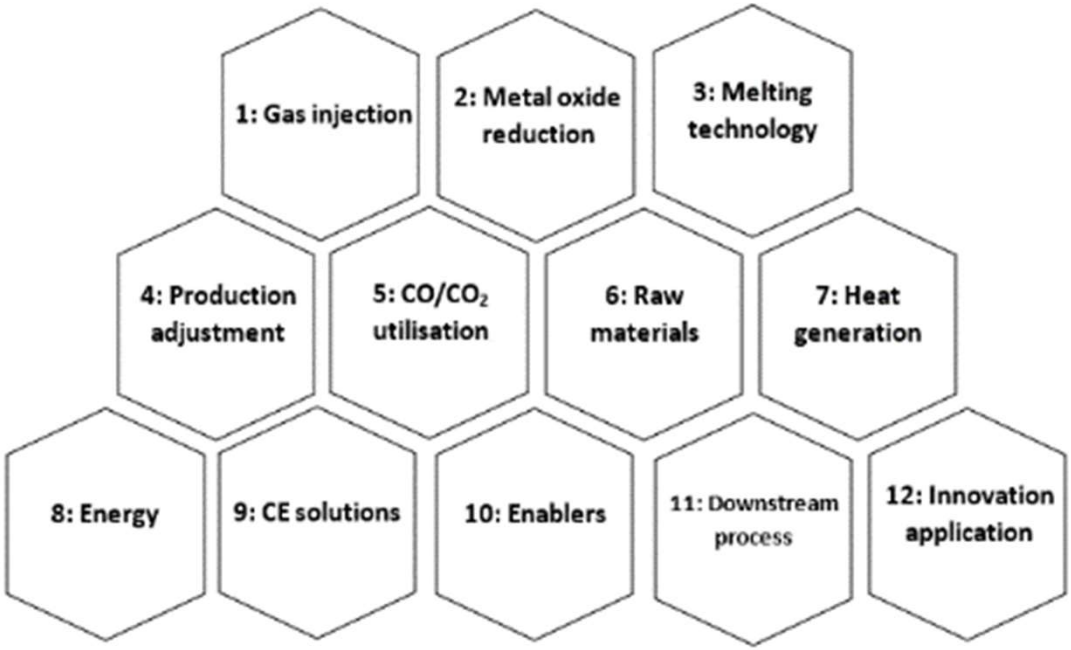
Specific objective 4: Increasing the recycling of steel scrap and residues, thus improving smart resources usage and further supporting a circular economy model in the EU.

Specific objective 5: Demonstrating clean steel breakthrough technologies contributing to climate-neutral steelmaking.

Specific objective 6: Strengthening the global competitiveness of the EU steel industry in line with the EU industrial strategy for steel.

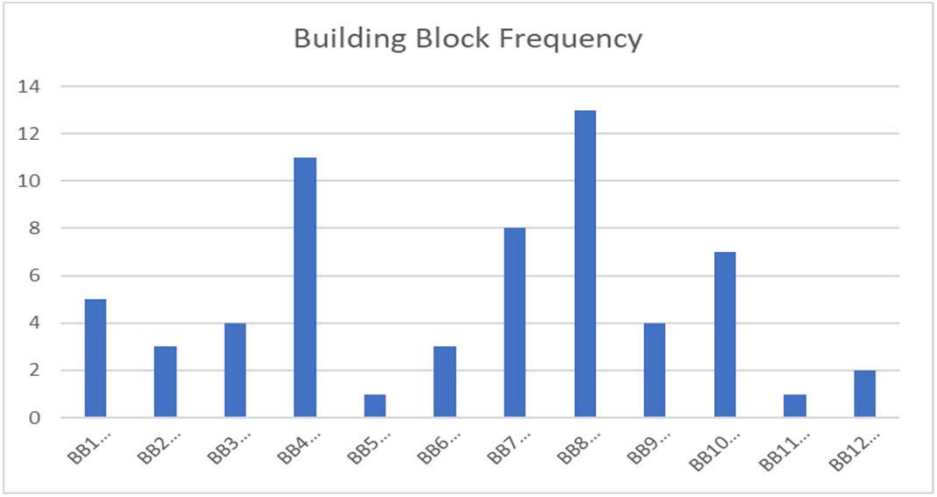
https://www.estep.eu/assets/CleanSteelMembersection/CSP-SRIA-Oct2021-clean.pdf

Building Blocks of the CSP



https://www.estep.eu/assets/CleanSteelMembersection/CSP-SRIA-Oct2021-clean.pdf

According to a recent analysis performed by ESTEP in the context of ongoing monitoring activities, the frequency of coverage of the Building Blocks by the funded projects is the following:



European Commission

Horizon Europe Clean Steel Topics 2021 to 2023

Year	Topic	Title of Topic	Funded Projects
2021	# 18	Carbon Direct Avoidance in steel: electricity and hydrogen-based metallurgy	**MaxH2DR**: "Maximise H2 Enrichment in Direct Reduction Shaft Furnaces"
	# 19	Improvement of the yield of the iron and steel making	**HIYIELD**: "Highly efficient technologies for increased yields in steelmaking processes and reduced environmental impact" **ReMFra**: "REcovering Metals and Mineral FRAction from steelmaking residues" **CAESAR**: "CirculArity Enhancements by Low quality Scrap Analysis and Refinement"
	# 22	Adjustment of steel process production to prepare for the transition towards climate neutrality	**RecHycle**: "Recycling renewable hydrogen for climate neutrality"
2022	# 13	Raw material preparation for clean steel production	**PURESCRAP**: "Purity improvement of scrap metal" **TransZeroWaste**: "Upgrading of low-quality iron ores and mill scale with low carbon technologies"
	# 16	Modular and hybrid heating technologies in steel production	**GreenHeatEAF**: "Gradual Integration of REnewable non-fossil ENergy sources and modular HEATing technologies in EAF for progressive CO2 decrease" **ModHEATech**: "Modular HEATing Technology through renewable resources for steel production" **HyTecHeat**: "HYbrid TEChnologies for sustainable steel reHEATing"
2023	# 43	**PORTFOLIO TOPIC:** Low carbon-dioxide emission technologies for melting iron-bearing feed materials **OR** Smart carbon usage and improved energy & resource efficiency via process integration	Ongoing
	# 45	Circular economy solutions for the valorisation of low-quality scrap streams, materials recirculation with high recycling rate, and residue valorisation for long term goal towards zero waste	Ongoing

European Commission

Clean Steel Topics Overview

		Topics in 2021			Topics in 2022		Topics in 2023		Topics in 2024	
		# 18	# 19	# 22	# 13	# 16	# 43	# 45	# 44	# 46
TRL Level	8									
	7									
	6									
	5									
	4									
	3									
	2									
	1									
Type of Action		IA	IA	IA	IA	IA	IA	RIA	IA Lump Sum	RIA
€ per Project		€ 6-8 M	€ 4-5 M	€ 4-5 M	€ 4-5 M	€ 3 M	€ 4-6 M	€ 3-6 M	€ 3-5 M	€ 3-5 M
€ per Topic		€ 28 M	€ 14 M	€ 14 M	€ 14 M	€ 10 M	€ 23 M	€ 12 M	€ 10 M	€ 20 M

Covered by RFCS Big Tickets

Covered by RFCS Annual Call

European Commission

Think About the Next Steps!

It is important to accelerate technology deployment to market!

On 8 February 2023, the European Climate, Infrastructure and Environment Executive Agency (CINEA), the European Commission's DG Climate Action (CLIMA) and Research and Innovation (RTD) organised the Innovation Fund Synergies Workshop.

- The focus of the workshop was to gather participants from mature R&I projects funded under EU R&I funding programmes (notably Horizon 2020) to explore funding opportunities under the EU Innovation Fund to deploy their technologies.

- **Recordings remain available at**: https://cinea.ec.europa.eu/news-events/events/european-framework-programme-ri-innovation-fund-synergies-workshop-2023-02-08_en

European Commission

REPowerEU Event

On **23 May from 9:30 to 12:00,** DG Research & Innovation organises an in-person information event in Brussels on financial and business opportunities beyond Horizon Europe, which can support the market uptake of new technologies and systems.

The programme targets the areas of energy, mobility, transport and Euratom, and it includes presentations by representatives from the Innovation Fund, the European Investment Bank, the Connecting Europe Facility and the European Innovation Council, with an opportunity for questions & answers.

This event will be the ideal opportunity to learn more about how to bring innovative solutions to the next level, and to network with companies in your area.

Info & registration: https://research-innovation-community.ec.europa.eu/events/5C8vdR0EOrBg3zEFSDMdqT/overview

European Commission

Thank you

European Commission