



Horizon Europe and RFCS Big Tickets Call topics and projects

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CSP calls 2021-2022 Cluster 4 Horizon Europe

- Topic 18:** Carbon Direct Avoidance in steel:
Electricity and hydrogen-based metallurgy
- Topic 19:** Improvement of the yield of the iron and steel making
- Topic 22:** Adjustment of Steel process production to prepare for the transition towards climate neutrality
- Topic 13:** Raw material preparation for clean steel production
- Topic 16:** Modular and hybrid heating technologies in steel production



CSP RFCS Big Ticket 2022 call objectives

- Obj. 1:** Preparation of steel CO/CO₂ gases for Carbon Capture Use and Storage (CCUS)
- Obj. 2:** Process Integration (PI) in steel plants to reduce the use of fossil carbon and associated CO₂ emissions
- Obj. 3:** CO₂ neutral iron ore reduction (Increasing the use of pre-reduced iron carriers)
- Obj. 4:** Developing technologies to reduce the specific energy required to produce steel



Prg.	Year	Topic	Project Acronym
HEU	2021	18	MaxH2DR
		19	HiYield
		19	ReMFra
		19	CAESAR
		22	RecHycle
	2022	13	PureScrap
		13	TransZeroWaste
		16	GreenHeatEAF
		16	ModHEATech
		16	HyTecHeat

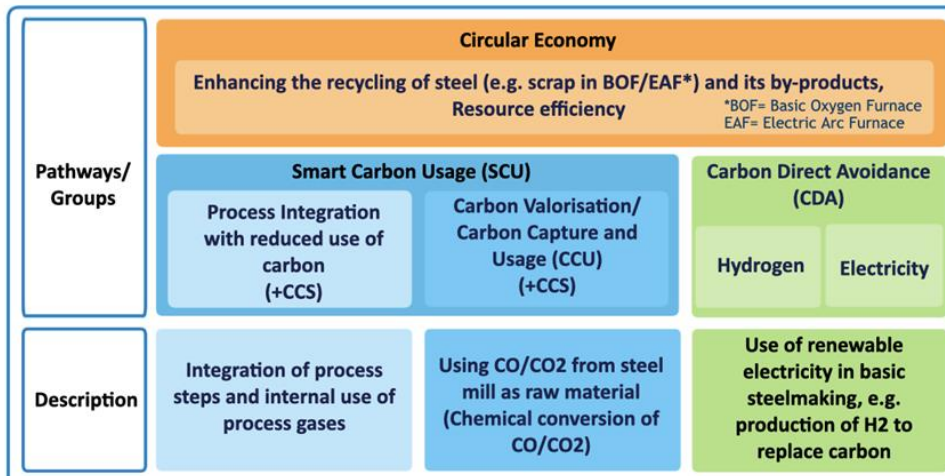
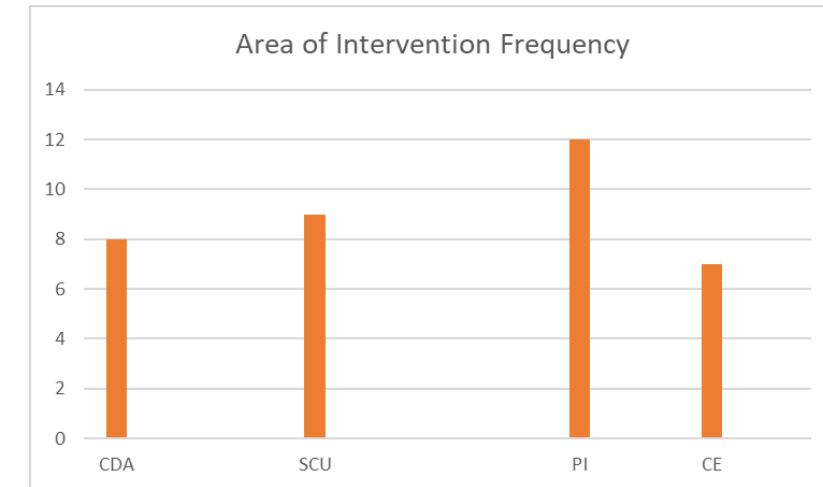
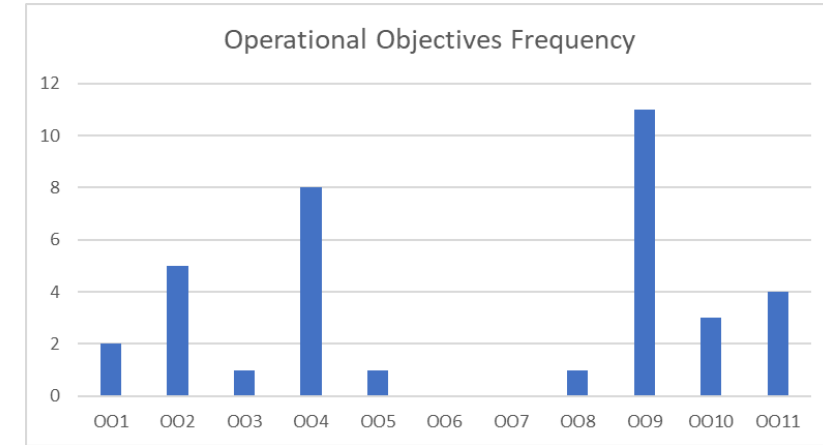
Prg.	Year	Obj.	Project Acronym
RFCS Big Ticket Steel	2022	2	MODIPLANT
		2	FullH2Reheat
		2	HYDREAMS
		2	TWINGHY

no	project acronym	EU funding
1	MaxH2DR	4,2
2	CAESAR	5,6
3	HIYIELD	3,6
4	RemFRa	4,8
5	RecHycle	6,2
6	PURESCRAP	5,0
7	TransZeroWaste	5,0
8	GreenHeatEAF	3,6
9	HyTecHeat	3,4
10	ModHEATech	3,4
11	FULL2REHEAT	8,6
12	HYDREAMS	4,3
13	MODIPLANT	8,0
14	TWINGHY	4,5

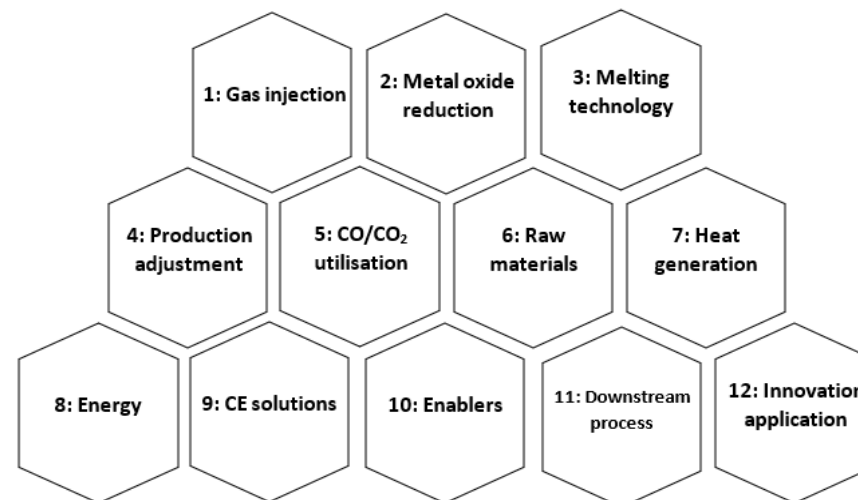
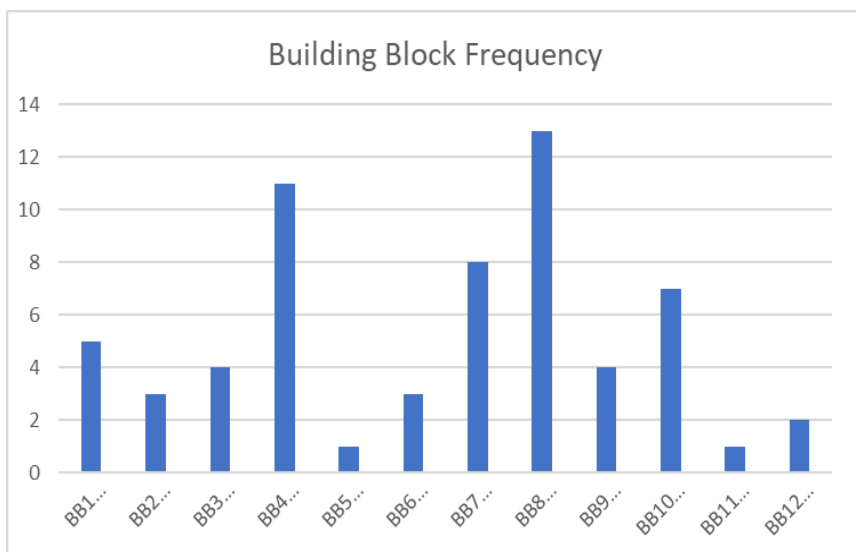
70,2 Million EUR



	OO1.-Replacing carbon by renewable energy
SO1. - Enabling steel production through carbon direct avoidance (CDA) Technologies	OO2.-Development of H2-based reduction and/or melting processes
	OO3.-Electrolytic reduction
	OO4.-Improving process integration with reduced use of carbon
SO2.- Fostering SCU technologies in steelmaking routes	OO5.-Increasing the use of non-fossil carbon
	OO6.-Capturing CO2 for CCU and/or CCS
	OO7.-Conditioning of metallurgical gases (containing CO2, CO, CH4, etc.)
	OO8.-Increasing the use of pre-reduced iron carriers
SO3.- Developing deployable technologies to improve energy and resource efficiency (SCU Process Integration)	OO9.-Developing technologies to reduce the energy required to produce steel
	OO10.-Enhancing the recycling and re-use of industrial residues of the steel production process
SO4.-Increasing the recycling of steel scrap and residues to increase smart resources and further support a circular economy model	OO11.-Enhancing the recycling of steel scrap



Call	Call Topic	Project Name	BB1 Gas Injection	BB2 Metal Oxide Reduction	BB3 Melting Technology	BB4 Product Adjustment	BB5 CO/CO2 Utilisation	BB6 Raw Materials	BB7 Heat Generation	BB8 Energy	BB9 CE Solutions	BB10 Enablers	BB11 Downstream Process	BB12 Innovation Application
HEU 2021	#18	MaxH2DR	x	x		x				x		x		x
	#18	RecHycle	x	x		x	x			x		x		x
	#19	HiYield				x				x	x			
	#22	ReMFra		x							x			
	#22	CAESAR				x		x		x	x	x		
HEU 2022	#13	PURESCRAP			x			x		x	x	x		
	#13	TransZeroWaste			x			x	x	x				
	#16	GreenHeatEAF			x	x			x	x				
	#16	ModHEATech			x	x			x	x				
	#16	HyTecHeat				x			x	x		x		
RFCS BT 2022		MODIPLANT	x			x			x	x				
		FULL2REHEAT	x			x			x	x		x	x	
		HYDREAMS	x			x			x	x				
		TWINGHY				x			x	x		x		





CSP calls 2023 Cluster 4 Horizon Europe

Topic 43: Low carbon-dioxide emission technologies for melting iron-bearing feed materials **OR** smart carbon usage and improved energy & resource efficiency via process integration

Topic 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

CSP RFCS BIG Ticket call objectives

1. CO₂ neutral iron ore reduction (Increasing the use of pre-reduced iron carriers)
2. Developing technologies to reduce the specific energy required to produce steel
3. Circular economy and sector coupling solutions to meet the zero-waste goal for steelmaking
4. Preparation of steel CO/CO₂ gases for Carbon Capture Use and Storage (CCUS)
5. Process Integration (PI) in steel plants to reduce the use of fossil carbon and associated CO₂ emissions

Prg.	Year	Topics	Funding budget	# proposals	Requested funding	Total project costs
HEU	2023	43	23	2		
		45	12	8		
RFCS		1-5	130	9	90	263



90 / 263 = 34.2% << 50%
High commitment of private side in RFCS



CSP calls 2024 Cluster 4 Horizon Europe

Topic 44: Digital transformation and ensuring a better use of industrial data, which can optimise steel supply chains

Topic 46: CO₂-neutral steel production with hydrogen, secondary carbon carriers and electricity OR Innovative steel applications for low CO₂ emissions



CSP RFCS Big Ticket 2024 call objectives *

1. Cross cutting issues: digitalisation, skills and social innovation
2. CO₂ neutral iron ore reduction (Increasing the use of pre-reduced iron carriers)
3. Technologies to improve energy efficiency, increase heat recovery and enhance Process Integration (PI) approaches in steel production.
4. Advanced steel alloys for special applications
5. Circular economy and sector coupling solutions to meet the zero-waste goal for steelmaking
6. Preparation of steel CO/CO₂ gases for Carbon Capture Use and Storage (CCUS)

* Subject to changes