



# Circularity in the EU with a focus on the steel industry

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*June 2024*

# Clean Industrial Deal

## Focus:

- Clean Tech
- Decarbonisation of energy-intensive industries

## Main elements:

- Circularity and access to materials – Circular Economy Act and Trans-Regional Circularity Hubs
- Financing the transition - Industrial Decarbonisation Bank
- Lead markets – Industrial Decarbonisation Accelerator Act

## Flagship under Horizon Europe:

- € 600 Million in 2 non-prescriptive topics: Clean Tech and Energy Intensive industries
- Accelerate deployment of solutions in clean tech and energy-intensive industries: ready for market deployment and scale-up
- Synergies by design with Innovation Fund, to create a project pipeline

# Steel and Metals Action Plan

## Main elements:

- Tackle energy costs
- Shield the industry from unfair international competition
- Enable investments

## Enable and support circularity and decarbonisation investments:

- Under the Industrial Decarbonisation Accelerator Act: i) resilience and sustainability criteria to foster demand of EU steel, ii) a voluntary label on carbon intensity of steel products
- €150 million from the Research Fund for Coal and Steel – big tickets call
- €1 billion pilot auction supporting industrial decarbonisation and electrification

## Reform of the Research Fund for Coal and Steel:

- Simplify and further accelerate investments in steel research, including research on defence applications

# Horizon Europe Clean Steel – Circular Economy

- Specific RIA topic 45 in 2023 under Horizon Europe Cluster 4: “*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*” was exclusively dedicated to circular economy.
- The topic received 8 proposals at submission stage, out of which 3 proposals were funded.

Acronym	Title	Coordinator	EU Funding	Countries
Dust2Value	<i>Pioneering Sustainable Recovery in Steelmaking: Hydrogen-Based Technology for Byproduct Management</i>	MONTANUNIVERSITAET LEOBEN	€ 4.602.250	AT (coord.), BE, DE, ES
ZHYRON	<i>Valorisation of iron-rich &amp; Zinc-containing steelmaking by-products via HYdrogen-based ReductiON</i>	FUNDACION CIRCE	€ 4.531.761	ES (coord.), BE, DE, FR, IT, SE
MEDALS	<i>Metallic Elements Dissipation Avoided by Life cycle design for Steel”.</i>	KUNGLIGA TEKNISKA HOEGSKOLAN	€ 5.654.935	SE (coord.), DE, ES, IE, IT

# RFCS – Circular Economy

- Announced in the Steel and Metals Action Plan (SMAP), a dedicated part of the RFCS Big Tickets call for steel in 2026 will focus on recycling technologies focus and will dedicate € 50 M.
- An important project has been funded under the RFCS Big Tickets call for steel in 2024.

Acronym	Title	Coordinator	EU Funding	Countries
<b>SLAG2BUILD</b>	<i>Forced air granulation of Ladle Furnace SLAG to enhance its hydraulic properties and allow its re-use as a replacement of Portland Cement in the BUILDing sector”</i>	DALMINE S.P.A.	€ 4.550.210	IT (coord.), BE, DE, ES, FR

# Circularity - Funding summary on Energy Intensive Industries (SPIRE and P4Planet)

The first Industrial Symbiosis projects kicked off in 2015.

28 projects have been granted a total of € 168M under Horizon 2020. Success stories: [CORALIS](#), [EPOS](#), [SYMBIOPTIMA](#), [SHAREBOX](#), [intelWATT](#)

Under Horizon Europe Cluster 4 WP 2021-22: 3 projects on Industrial Symbiosis ([AshCycle](#), [SYMSITES](#), [WaterProof](#)) 3 projects on Urban-Industrial Symbiosis ([tExtended](#), [REDOL](#), [MOBICCON-PRO](#)) and 2 Community of Practice of Hubs4Circularity ([H4C EUROPE](#), [H4C ECoP](#)) have been granted € 72M.

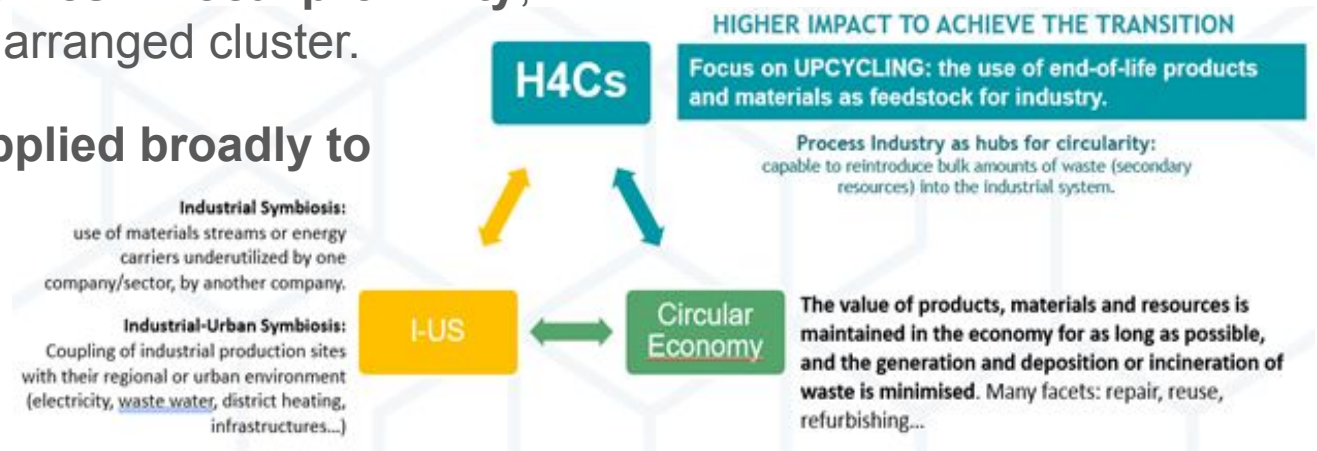
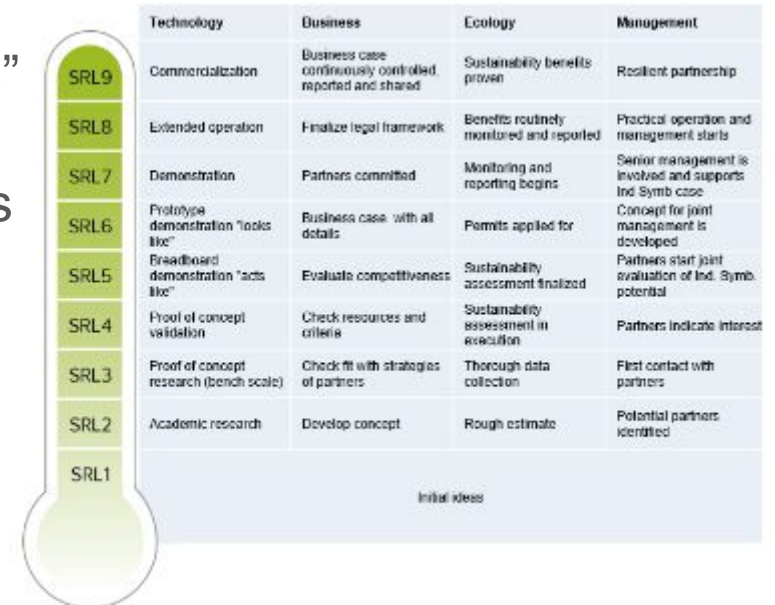
Under Horizon Europe Cluster 4 WP 2023-24: 4 projects on Hubs4Circularity ([IS2H4C](#), [HURRICANE](#), [Theseus](#), [United Circles](#)) with € 79 M

Other topics in circularity in HE have been granted € 207 M:

- WP21 - Plastic waste as a circular carbon feedstock for industry,
- WP21 - Ensuring circularity of composite materials,
- WP22 - Circular and low emission value chains through digitalisation,
- WP23 - Circular economy in process industries: Upcycling large volumes of secondary resources,
- WP25 - Developing and embedding upcycling technologies into viable business

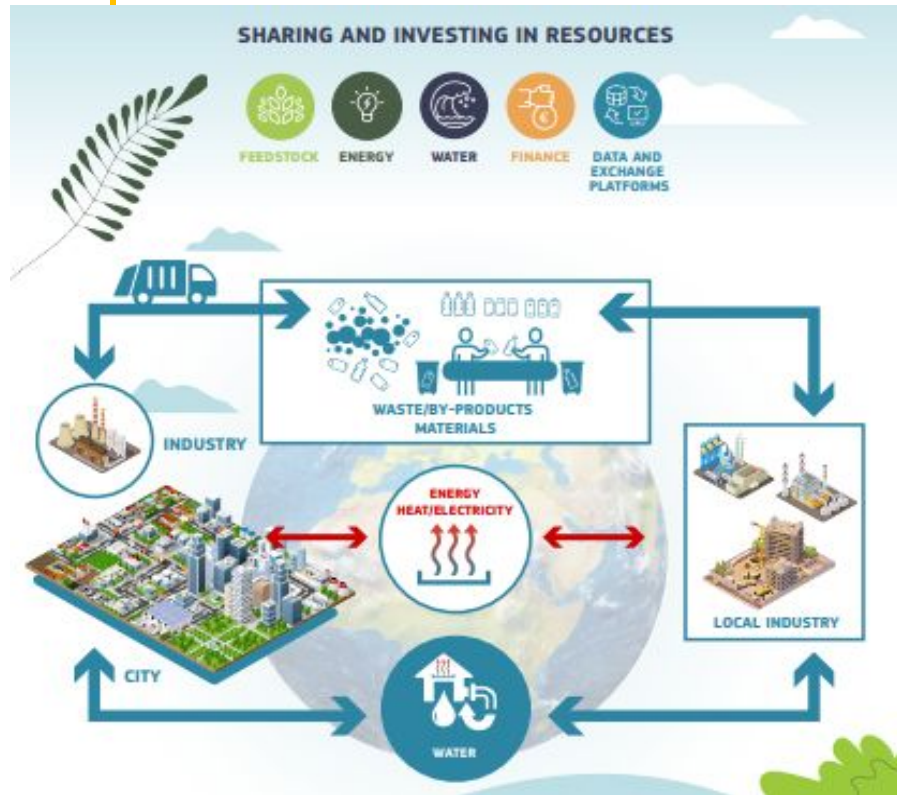
# From I-US and Circular economy to H4C

- **Industrial symbiosis** engage “traditionally separate industries” in a **collective approach** to competitive advantage involving physical exchange of materials, energy, water, and by-products
- Transition towards the Hubs for Circularity:
  - From supply-driven business model towards demand-based by-design approach.
  - Start within an **existing group of companies in local proximity**, be it an industrial park or a more loosely arranged cluster.
  - Industrial Symbiosis approach **can be applied broadly to many different industrial sectors.**





# Hubs for Circularity – The concept



- Self-sustaining economic industrial ecosystems for:
  - full scale industrial symbiosis and/or urban industrial symbiosis
  - achieving a step change in circular utilization of resources, including CO<sub>2</sub>, within a given representative geographical area
  - strong technological focus and process industry dimension
- Specific implementation:
  - funding strategies
  - participation of all stakeholders (Industry, SMEs, local authorities, educational institutions and civil society)
- Common target :
  - collectively achieve and demonstrate at scale a leap towards circularity and carbon neutrality in the use of resources (feedstock, energy and water) in a profitable way.





# Thank you



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