The Case for a Dedicated Steel and Metals Partnership (SAMP) under FP10 (2028–2034)

The Steel and Metals Partnership (SAMP) is proposed as a dedicated European Partnership under FP10, covering the full metals ecosystem (all ferrous and non-ferrous metals) within a single, coherent research and innovation framework. It builds on the proven governance model of the Clean Steel Partnership (CSP) and extends it to the whole metals value chain. Around 70 experts from industry, research and technology organisations, universities, technology providers and associations, from both the ferrous and non-ferrous sectors, confirmed this case at the SAMP Joint Technical Forum in Brussels on 16 September 2026.

Delivering the Steel and Metals Action Plan

The **Steel and Metals Action Plan** (March 2025) is SAMP's policy foundation. It commits around €600 million in Horizon Europe flagship funding and €150 million from the Research Fund for Coal and Steel to fit-for-deployment metals projects in 2026–2027, which shows the Commission already recognises the R&I investment metals need. Without a dedicated partnership in FP10, that investment has no continuation just as the technologies it supports move towards deployment and as low-carbon public procurement for steel and aluminium is proposed from 2029. The Transition Pathway for Metals Sectors, published alongside the Action Plan, takes that case to the next programme and calls for sustained and increased R&I funding for metals, including under FP10. SAMP is the structured response to that call. The Action Plan also establishes a permanent dialogue on the Transition Pathway for Metals Sectors, which SAMP directly supports.

SAMP also supports two other EU commitments. **The Critical Raw Materials Act** and the **RESourceEU Action Plan** rely on cross-metal recycling and by-product recovery to secure critical metals. **The Net-Zero Industry Act**'s manufacturing targets for wind, solar, heat pumps, electrolysers and batteries depend on advanced metals produced in Europe.

Why One Metals Ecosystem, Not Separate Sectors

Metals do not occur in isolation. Many are recovered as by-products of a shared carrier metal; across 62 metals studied systematically, 61% are obtained primarily as by-products of a host carrier metal. They converge again in industrial products (an electric vehicle or wind turbine is a multi-metal assembly) and at end of life, in the integrated recycling networks that recover them together. This creates shared research and innovation challenges across the metals value chain, particularly in areas such as recycling, material recovery, energy use and the treatment of increasingly complex multi-material products. A framework organised around individual metals alone risks fragmenting research efforts where greater cross-metal coordination could accelerate innovation and deployment.

The pressures are shared, too: high energy costs, the scale of decarbonisation investment, regulatory burden and the fragility of integrated recycling networks affect steel, aluminium and other non-ferrous metals alike. While their production processes and technological pathways differ, they face many of the same enabling challenges, including access to affordable low-carbon energy, industrial electrification, digitalisation, advanced recycling technologies and the scale-up of innovative solutions.

A dedicated metals partnership would allow these common challenges to be addressed jointly while preserving the metal-specific R&I pathways needed for each sector.

When one node weakens, for example when a smelter is idled by high energy costs, the consequences can extend across interconnected value chains, including the recovery and supply of other, often critical, metals.

The Structural Gap in the Current Framework

No existing Horizon Europe instrument covers the full ferrous and non-ferrous metals ecosystem as a dedicated priority. The Clean Steel Partnership is explicitly limited to steel decarbonisation; aluminium, copper, zinc, nickel and other non-ferrous metals fall outside its mandate. Processes4Planet spans ten process-industry sectors but is cross-sectoral by design; it cannot provide the metallurgical depth a metals-specific instrument requires. The metals ecosystem has never had a single dedicated R&I home

in the EU framework programme architecture. SAMP is designed to fill that gap under FP10.

Research and Innovation: Where Metals Gain by Working Together

SAMP's research agenda is being built bottom-up with the metals R&I community. At the Joint Technical Forum, experts from steel, aluminium, zinc and other non-ferrous metals looked for the places where joint work moves faster, costs less or has more impact than parallel, sector-specific programmes. They found them across energy, carbon, circularity, products, digitalisation and skills:

Where synergies exist	What the metals community identified
Shared demonstration and testing infrastructure	Joint and mobile demonstration plants and test facilities for hydrogen, plasma torches, electrified and hybrid heating and hydrogen storage safety, so that safety margins, operating conditions and regulatory requirements are proven once rather than company by company. Non-ferrous metals, operating at smaller scale, can act as a first test bed before scale-up. Shared pilot lines, reference materials and testing also speed up the qualification of new alloys.
From energy user to energy player	Heat recovery and high-temperature storage, flexibility demonstrators and hybrid, multi-fuel furnaces, so that plants can sell recovered energy, offer grid services and support local microgrids, contributing to Europe's energy security.
Common plant building blocks	Refractories, waste-gas systems, maintenance, emissions such as NOx, and off-gas characterisation, cleaning and conditioning for CO_2 capture, together with harmonised carbon accounting along the value chain.
Linked material flows	As steel decarbonises, the zinc content and tramp elements in electric arc furnace dust change, directly affecting zinc recyclers. Waste from one industry can be a metal source for another, by-products from several industries can be combined into products such as building materials, and slags can bind CO_2. New combinations of hydro- and pyrometallurgy can unlock streams no single sector can make viable.

From scrap to product	Faster, cheaper sorting and characterisation of scrap, common quality metrics and digital material passports, linked to impurity-tolerant alloys and to in-process monitoring of how residual elements affect microstructure and properties. Together they allow higher recycled content without loss of performance.
Data and digital tools	Sensors for harsh conditions, digital twins and AI models that transfer across plants and processes, and sovereign, interoperable data spaces. Innovations already travel between sectors: aluminium dross recycling applied in steel production is one example.
People and skills	Shared curricula, competence frameworks and training platforms building on ESSA, Skills4EII and SPIRE-SAIS; common safety approaches for hydrogen, electrification and cybersecurity; and a joint effort to make the metals industries attractive to young people, rather than competition between sectors for the same talent.

Product quality, process chemistry and final industrial validation remain largely specific to each metal and process, and SAMP will keep room for these sector pathways. The synergy areas above will be detailed in SAMP's Strategic Research and Innovation Agenda.

A Model That Already Works

The Clean Steel Partnership (2021–2025) shows the governance model functions: 25 Horizon Europe projects plus 14 RFCS 'Big Ticket' projects, all six Areas of Intervention actively addressed, 11 of 12 building blocks projected to reach TRL 8, and participation spanning 14 Member States, with visiting-researcher targets already exceeded. SAMP extends this validated governance architecture, not a new or untested one, to the full metals ecosystem.

Our Ask

We ask the European Commission to include the Steel and Metals Partnership as a dedicated partnership in FP10 for 2028–2034, implemented as a work programme-based (co-programmed) partnership, the model that has worked for the Clean Steel Partnership, and to reflect it explicitly in the thematic areas of the FP10 partnership portfolio.

Metals travel together, from ore to product to recycling. Europe's research and innovation framework should too.