

Project information

Start date: 01.01.2023

Call: HORIZON-CL4-2022-TWIN-TRANSITION-01

Duration: 42 months

Coordinator: Swerim AB

Type: Innovation Action

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The PURESCRAP project is taking an ambitious, major step toward reducing impurities in post-consumer scrap prior to melting by applying highly efficient sensor stations in conjunction with improved scrap processing. The project thereby provides a contribution to the Strategic Research and Innovation Agenda (SRIA) of the Clean Steel Partnership (CSP) and to the achievement of the European Green Steel goals regarding circular economy as well as to the reduction of CO₂ emissions.



PURESCRAP on tour

In April, the heavy scrap station travelled south from Luleå to its new home in Hallstahammar. After successful testing at Swerim, the system is now moving closer to full industrial operation at Stena's production site. This brings the innovative sorting technology one step closer to large-scale deployment. The heavy scrap system enables accurate material identification in heavy scrap streams. In the meantime, additional improvements have been made to the LIBS sensor to enhance performance, particularly in handling surface contamination. These refinements ensure robust and reliable sorting even under real-life conditions.



Fig.1: Truck with heavy scrap equipment

Paper published in January



Fig.2: First page of the published paper

In January, the PURESCRAP team has successfully published the paper “Combining multimodal sensor data for an enhanced use of scrap in steel production (Kombination multimodaler Sensordaten für eine verbesserte Nutzung von Schrott in der Stahlproduktion)” in the journal *Österreichische Wasser- und Abfallwirtschaft*. This research highlights how advanced sensor technologies can support the transition to low-carbon steel production. The paper focuses on improving how steel scrap is analysed and used more efficiently, turning what were once considered impurities into valuable resources.

PURESCRAP at various conferences



Fig.3: Valentina Colla at AISTech2026

AISTech 2026 – Association for Iron & Steel Technology in Pittsburgh (USA)

Valentina Colla from Scuola Superiore Sant'Anna (SSSA) participated in the AISTech 2026 Conference and Exposition, held in Pittsburgh (USA) from May 4th to May 6th, 2026. In her presentation, she highlighted the collaborative work developed by SSSA and Danieli in the field of Artificial Intelligence applied to steel scrap classification for sorting and cleaning purposes. In addition, Klaus Peters from ESTEP talked about EU steel at the 2025 crossroads and gave insights from the Clean Steel Partnership and ESTEP.

EEC2026 – European Electric Steelmaking conference in Milan (Italy)

The PURESCRAP project was presented at the 14th European Electric Steelmaking Conference (EEC2026), held in Milan, Italy, from May 11th-13th 2026. Alice Petrucciani from Scuola Superiore Sant'Anna (SSSA), showcased her work with Danieli on the use of Artificial Intelligence for identifying copper components in scrap. This approach supports more efficient sorting and contributes to improved material quality. In addition, Klaus Peters from ESTEP contributed to the conference programme with his talk on "Journey towards decarbonisation". He highlighted ESTEP's engagement for technical innovation.

The EEC2026 was accompanied by an exhibition, which provided an excellent platform for exchange and visibility. Our colleagues from SSSA took advantage of this opportunity by hosting a booth to actively promote the project and support the dissemination of PURESCRAP results.



Fig.4: top: Alice Petrucciani presenting the PURESCRAP project, bottom: and the SSSA booth below



Fig.5: First slide of Klaus Peters presentation

Future Steel Forum in Bologna (Italy)

The Future Steel Forum in Bologna took place from June 3rd-4th, 2026. Klaus Peters from ESTEP delivered a presentation titled "A decisive year for EU steel research." In his talk, he highlighted the role of various ongoing research and innovation projects. These projects advance the decarbonisation of the European steel industry and shape its sustainable future.

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