**Start-end date:**
1 July 2023 – 31 December 2026

**Duration:**
42 months

**Funded under:**
RFCS Programme

The COOPHS project focuses on evaluating **how eco-friendly steel processing affects the performance of ultrahigh strength Press Hardened Steels** (PHS).

By delving into the influence of residual elements in press hardening steel, the project seeks to **enhance low $CO_2$ steel production for the automotive sector**, ultimately advancing the industry's environmental and technological standards by minimising $CO_2$ emissions.

COOPHS

Low $CO_2$ footprint on **Press Hardened Steels**


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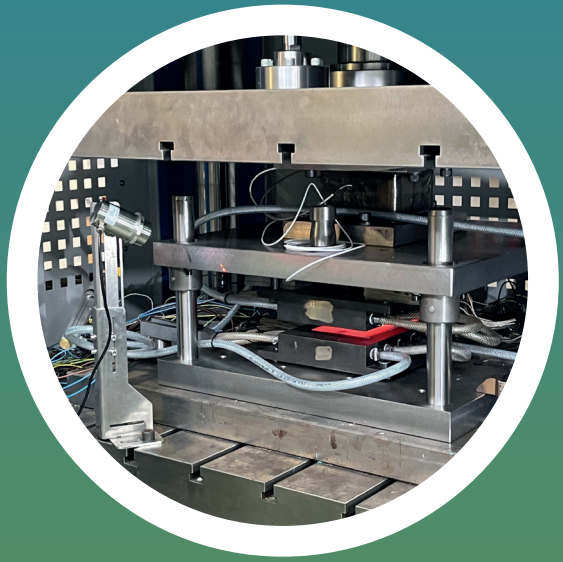


Funded by the European Union

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COOPHS

Low $CO_2$ footprint on **Press Hardened Steels**


# Enhancing low $CO_2$ steel production for the automotive sector through the development of more sustainable processing methodologies

**www.eurecat.org/coophs**

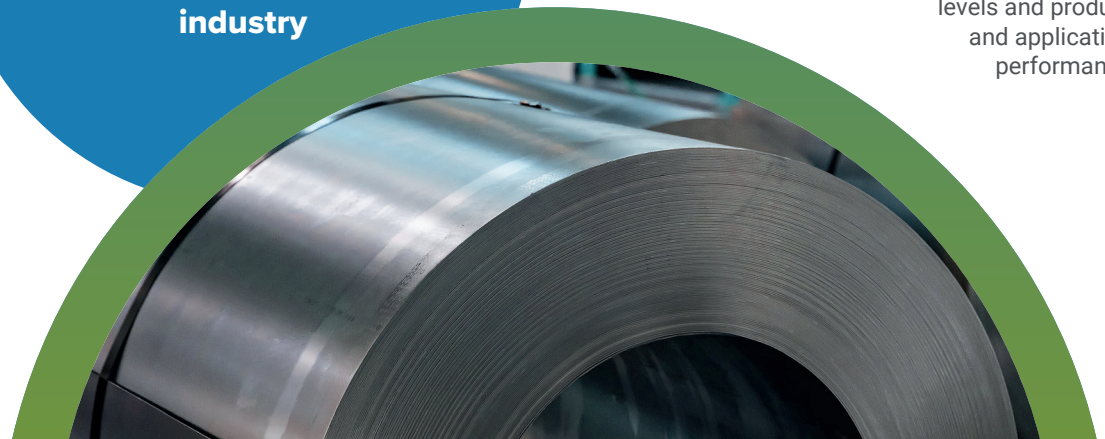
**COOPHS project boosts the production of low-carbon steel to contribute to the sustainability and decarbonization of the automotive industry.**

The goal of COOPHS is to deepen the complex effects introduced by residual elements common in Electric Arc Furnace (EAF) production routes on material microstructure and properties. In addition, one of the main objectives of the project is to determine the acceptable amounts of these residual elements in an industrial deployment of these solutions.

On the other hand, a tool will be designed to guarantee a emissions-product compromise to facilitate the progression of low $CO_2$ steels in the PHS automotive market. COOPHS research will also compare various existing solutions and propose optimized low-emission steel processing routes.

- **Deeper insight** into residual element impact on PHS microstructures.
- **Quantified** local **residual element concentrations** in microstructures
- Enhanced **understanding of PHS mechanical property** effects
- Development of a **tool for $CO_2$ emission-product compromise** in automotive sector
- Comparative **analysis of EAF vs. BOF steel** solutions
- Optimised **low emission processing routes** for high-performance steels

> **The production of high-performance steel through recycling will make it possible to minimize $CO_2$ emissions from the automotive industry**



## Project phases

**Residual Element Diversification**
Production of Ultrahigh Strength PHS introducing residual element contents

**Microstructural insights**
Advanced description of surface and grain boundary segregation behaviour of residual elements in Press Hardened Steel microstructures

**Mechanical characterisation**
Characterisation of the mechanical behaviour of PHS developed

**Correlation discovery**
Determination of key relationships between surface and grain boundary segregation of residual elements and its mechanical characterisation

**Environmental-Performance Equilibrium**
Identification of the optimum compromise of $CO_2$ emission levels and product and application performance