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Journey towards the decarbonization : ESTEP engagement for technical innovation

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The European Steel Technology Platform (ESTEP) continues its mission to drive innovation in sustainable steel production, with ongoing initiatives and collaborations shaping the industry's journey toward climate neutrality. The Clean Steel Partnership (CSP) has further expanded the collaborative research framework established by the Research Fund for Coal and Steel. CSP enables the development and demonstration of transformative technologies at medium to high technology readiness levels. As the private partner in the CSP, established through a Memorandum of Understanding with the European Commission, ESTEP coordinates the industry's research and innovation agenda to achieve the sector's ambitious decarbonization targets: 55% CO₂ reduction by 2030 and 80-95% by 2050 compared to 1990 levels. The specific research and innovation requirements are outlined in detail in the Strategic Research and Innovation Agenda (SRIA) of the CSP, which serves as the comprehensive roadmap for the steel industry's transformation. In this presentation, highlights of CSP-funded projects will be presented that are accelerating the industry's transformation, as well as ESTEP's efforts to shape standardization as a critical enabler for the adoption of breakthrough technologies in European steelmaking. These initiatives span the entire innovation spectrum, from novel hydrogen-based direct reduction technologies to advanced electric arc furnace configurations, demonstrating practical pathways toward green steel production. By demonstrating how coordinated research, targeted funding mechanisms, and cross-sector collaboration are converging to transform the European steel industry, the presentation delivers an integrated perspective on how ambitious climate objectives are being translated into tangible industrial progress. Examples cover CSP projects from carbon direct avoidance and circular economy.

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