The Research Fund for Coal and Steel (RFCS)

- The Research Programme of the Research Fund for Coal and Steel (RFCS) has funded research and innovation projects in the EU coal and steel sectors since 2002.

- It goes back a long way, to the very origins of the EU: Protocol (37) to the Treaties, it has its own three legal bases and sits outside the Multi-annual Financial Framework.

- It is funded by revenues from the assets of the European Coal and Steel Community (ECSC) in liquidation, exclusively devoted to research on coal and steel.

- RFCS is very modern at the same time. On 16 July 2020, the Commission proposed a revision of the legal bases to align RFCS with the objectives of the European Green Deal. On 19 July 2021, the RFCS modernisation package was adopted by the European Council.

- Today, and until 2027, the fund can use a portion of the assets to generate an annual RFCS budget of €111 million.

- This budget will be used to fund:
  - large clean steelmaking research and innovation breakthrough projects leading to near zero-carbon steel making by 2030;
  - R&I supporting the just transition of formerly operating coal mines or coal mines in the process of closure, and related infrastructure (Just Transition Mechanism).

- 24 June 2021 marked the launch of the Clean Steel co-programmed partnership (in synergy with Horizon Europe), to support research and innovation activities to scale up and speed up the digital and green transformation of the EU steel industry, in line with the European Green Deal.

- The RFCS will support the EU steel sector, contributing ~ € 700 million of EU funding to the Clean Steel Partnership for the period of 2021-2027, coming in equal parts from Horizon Europe and from RFCS.

- The RFCS will support the EU coal sector. In synergy with the Innovation Fund, the Just Transition Fund and LIFE among others, will contribute to the phase-out of coal so that no region is left behind. Improving health and safety and to minimise the environmental impacts of coalmines in transition are crucial.
The fund is managed by the European Commission (EC) and implemented by the European Research Executive Agency (REA), in cooperation with dedicated committees and advisory groups: the Coal and Steel Committee (COSCO), the Coal and Steel Advisory Groups (CAG/SAG) and Technical Groups (TG).

- General information -> RTD-STEEL-COAL@ec.europa.eu

**RFCS Summit 2022 – project success stories**

To mark this new era for the rejuvenated RFCS – as well as the programme’s 20th anniversary – the EC and REA, in co-operation with industry, organised the RFCS Summit on 21-22 March 2022. The following projects were showcased during the event.

**COAL**

**CoalTech2051 – 794369**
Title: An RFCS Accompanying Measure on European coal research in light of EU policy objectives to 2050 and future global trends in coal use  
EU Grant: € 365,660  
Start date: 01/07/2018  
End date: 30/06/2020

**CoalTech2051** developed a strategic agenda for RFCS aligned with the EU’s Energy Union vision and established a European Network to support the energy transition in the coal regions.

**GreenDEALCO2 – 101034035**
Title: Green Deployment of E-fuels and Liquids based on CO2 for closed and end-of-life coal-related assets  
EU Grant: € 1,535,886  
Start date: 01/08/2021  
End date: 31/07/2024

**GreenDEALCO2** identifies pathways for the retrofitting of end-of-life coal power plants to biomass, alternative solid fuels and hydrogen, while introducing new business plans for the coal industry.
i3upgrade – 800659  
Title: Integrated and intelligent upgrade of carbon sources through hydrogen addition for the steel industry  
EU Grant: € 1,991,844  
Start date: 01/06/2018   End date: 31/05/2022

**i3upgrade** investigated new reactor concepts for direct methanation and methanol synthesis of coal-based by-product gases in order to reduce the overall coal-based CO2 emissions of steel works.

METHENERGY PLUS – 754077  
Title: Methane recovery & harnessing for energy & chemical uses at coal mine sites  
EU Grant: € 1,678,137  
Start date: 01/07/2017   End date: 30/06/2020

**METHENERGY PLUS** proposed integrated approaches for upgrading methane emissions from working shafts and abandoned mines in a potential source of clean energy and chemicals.

RAFF – 847299  
Title: Risk Assessment of Final Pits During Flooding  
EU Grant: € 2,050,532  
Start date: 01/06/2019 End date: 31/05/2022

**RAFF** develops model-based methodologies and guidelines for a safer exploitation of pit lakes dedicated to recreational purposes, the common reclamation method of open-pit mines.

RECOVERY – 847205  
Title: RECOVERY of degraded and transformed ecosystems in coal mining-affected areas  
EU Grant: € 1,188,196  
Start date: 01/07/2019   End date: 30/06/2023

**RECOVERY** applies quantitative assessments of ecosystem services for sound decision-making of land rehabilitation and ecological restoration of underground and opencast coal mining-affected areas.
SUMAD – 847227
Title: Sustainable Use of Mining Waste Dumps
EU Grant: € 2,022,399
Start date: 01/07/2019       End date: 30/06/2022

SUMAD develops an operational computer-based risk management tool for the reuse of mining waste tips for better, safer, economical solutions for post-mining spoil waste dumps.

STEEL

CrashTough – 800693
Title: Towards high crashworthiness parts through the investigation of microstructural effects on fracture toughness of 3rd generation AHSS
EU Grant: € 1,138,162
Start date: 01/07/2018       End date: 31/12/2021

CrashTough sought to understand and optimise the micro-structures of third generation advanced high-strength steels for use as lightweight automotive parts for increased vehicle efficiency.

DROMOSPLAN – 710066
Title: Drones for autonomous monitoring of steel plants
EU Grant: € 962,338
Start date: 01/07/2016       End date: 31/12/2020

DROMOSPLAN aimed at improved health and safety by replacing workers with unmanned aerial vehicles for steel mill monitoring and maintenance, included testing in two steel plants.
FAILNOMORE – 899371
Title: Mitigation of the risk of progressive collapse in steel and composite building frames under exceptional events
EU Grant: € 958,413
Start date: 01/07/2020    End date: 30/06/2022

FAILNOMORE will produce design guidelines for mitigating the risk of progressive collapse of steel and composite structures subjected to exceptional events such as impact and explosions.

REENEAF2 – 00003
Title: Biochar for a sustainable EAF steel production
EU Grant: €1,001,182
Start Date: 1/07/2014    End Date: 30/06/2016

GREENEAF2 undertook further R&D of using biomass char instead of coal in electric arc steel furnaces, especially the field validation of char injection & the effects on productivity.

GreenSteel – 882151
Title: Green Steel for Europe
EU Grant: € 1,247,612
Start date: 01/01/2020    End date: 31/10/2021

GreenSteel aimed at: developing a steel industry decarbonisation technology roadmap, including pathways; identifying funding opportunities; broad impact assessment of EU-level policy options; as well as dissemination & stakeholder engagement.
MACO Pilot – 709694
Title: Optimisation of the mixed acid online monitoring and control in stainless steel pickling plants
EU Grant: € 960,181
Start date: 01/07/2016   End date: 31/12/2019
MACO Pilot sought to increase the EU’s steel industry production flexibility whilst maintaining highest quality. This pilot project aims to optimise the innovative online concentration measuring technique concerning set-up, long-term reliability and operative range.

ROBOHARSH – 709553
Title: Robotic workstation in harsh environmental conditions to improve safety in the steel industry
EU Grant: € 962,339
Start date: 01/07/2016   End date: 30/06/2019
ROBOHARSH wished to increase steel workers’ health and safety by using robots for potentially dangerous ladle sliding gate maintenance.

SteelWind – 14018
EU Grant: € 1,135,317
Start Date: 1/07/2014 End Date: 31/12/2017
SteelWind explored the design and development of a new high nitrogen bearing steel for offshore wind turbines with improved surface fatigue, wear and corrosion properties for increased lifespan.