Research Fund for Coal and Steel
11. EU – Euracoal
Coal Dialogue
8 July 2015

Wolfgang Schneider
European Commission
DG Research and Innovation
Research Fund for Coal and Steel
History of the RFCS
The RFCS Programme (1)

*From the past ... European Coal and Steel Community (ECSC)*

1952: ECSC Treaty of Paris (validity 50 years)
Expired in July 2002
Levy from coal and steel production
Assets left: ~ 1.6 billion €
The RFCS Programme (2)

... to the present: Research Fund for Coal and Steel (RFCS):

- 2001: Treaty of Nice
- To transfer the ECSC assets (originally paid by industry) to the European Community and utilise the interests generated by these assets (now ~ 2,0 billion € to co-finance research in coal and steel
- To create the RFCS: 1 February 2003
RFCS Background Information
Legal Basis

COUNCIL DECISION of 1 February 2003 establishing measures on the financial consequences of the expiry of the ESCS Treaty and on the Research Fund for Coal and Steel (2003/76/EC)

COUNCIL DECISION of 29 April 2008 on the adoption of the Research Programme of the Research Fund for Coal and Steel and on the multiannual technical guidelines for this programme (2008/376/EC)
WHAT is the RFCS Programme?

A research fund with a budget of \( \sim 50 \text{ M€ / year} \)
Not taxpayer money
Promoting **industrial** research in the field of

- **Coal and Steel**

Open call for proposals for

- **Research projects (60% funding)**
- **Pilot & Demonstration projects (50% funding)**
- **Accompanying measures (60 - 100% funding)**
- **Deadline: mid September each year**

Outside the FP/H2020 ... yet closely co-ordinated & complementary
Who can participate?

Simple rules
- Any legal entity established in the EU28 Member States
- Partners outside EU28 are entitled to participate but without receiving financial contribution

Typical projects
- Focused on industrial participation
- Dedicated and manageable consortium (5/8 partners)
- Average funding 1 – 2 M€ per project
- Duration typically 3 – 4 years
RFCS Overview: Facts & Figures

- Approx. 300 Grant Agreements running at any one time
- >700 M€ funding in Coal and Steel research since 2003 ≈ 1 B€ total spending
- Mixture of industry, academia and research centres
- Technical, innovative projects, well defined objectives
- Can be complimentary to other funding (e.g. national funds)
COAL: Programme Research Objectives

- Management of external dependence on energy supply
- Health and Safety in Mines
- Improving the competitive position of Community Coal
- Efficient protection of the environment & improvement of the use of coal as a clean energy source

Coal means: Hardcoal - Lignite - Coke - Briquettes - Oil Shales
Coal Technical Groups

**TGC 1**  
Coal mining operation, mine infrastructure and management, unconventional use of coal deposits

**TGC 2**  
Coal preparation, conversion and upgrading

**TGC 3**  
Coal combustion, clean and efficient coal technologies, CO2 capture
Submitting a Proposal

Deadline 15 September 2015
2015 Annual Priorities Coal

1. Management of environmental risks during OR after mine operation
2. Increasing the efficiency of mine production by utilising Information and Communication Technologies (ICT) for improved process optimisation
3. Improved monitoring of coke oven conditions
4. Upgrading of coal-derived liquids
5. Technological improvements targeting load flexibility AND environmental performance of coal fired power plants
6. Pilot projects validation of emerging AND innovating technologies leading to efficiency improvements AND CO2 emission reduction
Results of the 2014 Evaluation
Proposals received

![Bar chart showing proposals received for steel and coal from 2003 to 2014.](chart_image)
# Evolution of Available RFCS Budget

<table>
<thead>
<tr>
<th>Year</th>
<th>Coal (€)</th>
<th>Steel (€)</th>
<th>Total (€)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2003</td>
<td>16,320,000</td>
<td>43,680,000</td>
<td>60,000,000</td>
</tr>
<tr>
<td>2004</td>
<td>16,320,000</td>
<td>43,680,000</td>
<td>60,000,000</td>
</tr>
<tr>
<td>2005</td>
<td>15,368,000</td>
<td>41,132,000</td>
<td>56,500,000</td>
</tr>
<tr>
<td>2006</td>
<td>14,892,000</td>
<td>39,858,000</td>
<td>54,750,000</td>
</tr>
<tr>
<td>2007</td>
<td>14,654,000</td>
<td>39,221,000</td>
<td>53,875,000</td>
</tr>
<tr>
<td>2008</td>
<td>14,535,136</td>
<td>38,902,864</td>
<td>53,438,000</td>
</tr>
<tr>
<td>2009</td>
<td>14,067,568</td>
<td>37,651,432</td>
<td>51,719,000</td>
</tr>
<tr>
<td>2010</td>
<td>14,649,784</td>
<td>39,209,716</td>
<td>53,859,500</td>
</tr>
<tr>
<td>2011</td>
<td>16,572,892</td>
<td>44,356,858</td>
<td>60,929,750</td>
</tr>
<tr>
<td>2012</td>
<td>15,902,446</td>
<td>42,562,429</td>
<td>58,464,875</td>
</tr>
<tr>
<td>2013</td>
<td>14,071,240</td>
<td>37,661,260</td>
<td>51,732,500</td>
</tr>
<tr>
<td>2014</td>
<td>13,155,620</td>
<td>35,210,630</td>
<td>48,366,250</td>
</tr>
<tr>
<td>2015</td>
<td>12,974,400</td>
<td>34,725,600</td>
<td>47,700,000</td>
</tr>
<tr>
<td>Totals</td>
<td>193,483,086</td>
<td>517,851,789</td>
<td>711,334,875</td>
</tr>
</tbody>
</table>
Results of the 2014 Coal Evaluations

37 proposals submitted
7 proposals successful
3 proposals on reserve list
14 proposals above threshold, no funding available
10 proposals under threshold
3 proposals not eligible
Coal proposals received in 2014
Country distribution of all applicants

- 300 participations from 20 countries
- Top 3 participants: Poland, Germany, Spain
Coal proposals recommended for funding in 2015: Country distribution

- 53 beneficiaries* from 12 countries
- Top 3 beneficiaries: Poland, Spain, UK
Possible Changes to RFCS

- Amendment of the Legal Basis
- New Model Grant Agreement
- New Info Pack 2015
The RFCS Monitoring and Assessment report is published and available from:

EU Bookshop, or

RFCS web site
Quantitative Benefits

The 23 projects analysed have provided an **annual benefit** of about **100 M€/year** for the beneficiaries. This annual benefit was compared to the corresponding budget of the projects and to the RFCS funding → **1 Euro of RFCS funding** resulted in a **benefit of 3.3 Euros/year for the beneficiaries**.

Estimation of the potential accumulated **benefits for the beneficiaries** → **400 M€**.

Correspondingly: **1 Euro** spent of **RFCS funding** corresponds to an average of potential **accumulated benefit of ~ 14 Euros** at the level of the beneficiaries.
**Success Stories**

**Industrial research - Coal & steel**

Results: 1-10 of 24

Tick (check) box to add article to PDF “basket”

- **Engineering longer lives for bridges**
  Bridges are an integral part of today’s road and rail transport network, but maintaining them puts significant strain on public finances. The EU-funded project Long Life Bridges has found a way to keep them safe at lower cost. It has also built a prototype of a device designed to extend the lifetime of bridge cables.
  Published: 25 February 2015

- **Mapping greenhouse emissions to prevent climate change**
  EU-funded researchers have used advanced modelling and geospatial information to compile more accurate greenhouse gas inventories for Poland and Ukraine. The approach could substantially improve the accuracy of national inventories of greenhouse gases and boost Europe’s efforts to reduce emissions.
  Published: 30 June 2014

- **OXYMOD – Cleaner power thanks to mathematics**
  Mathematical modelling has in recent years proven to be a useful and cost-cutting tool for designing and modernising coal-fired power plants. The OXYMOD project – supported by the European Union (EU) Research Fund for Coal and Steel (RFCS) – has striven to extend existing combustion modelling capabilities to oxy-fuel combustion conditions. This should lead to preparation and pre-engineering of large demonstration power plants in Europe using modern and clean oxy-fuel CO2 capture technology in the
Summaries of RFCS projects
2003-2012

Full list of co-financed projects
2015 RFCS Evaluations

Location for session in Brussels: Covent Garden Building

Indicative Planning

► Remote evaluation: September/October 2015

► Central session: October/November 2015
Web Links / RFCS Info


  The website now contains:

  - the latest news about activities in Coal and Steel
  - information for stakeholders on how to participate
  - a link to successful RFCS projects

When accessing the CORDIS website a reference to the new website is given,


Thank you for your attention!
Examples of successful projects:

- NEMAEQ
- IMPECABL
- LIGPOWER
- CFB 800
**NEMAEQ** - New mechanisation and automation of longwall and drivage equipment

Project aimed at increasing the productivity and reducing production costs. Research results:

- Coal/rock distinction; collision avoidance, less maintenance and downtime
- Used a wide variety of sensors: Infrared; RADAR; impact sound sensors
- Wireless communication and when necessary fibre-optic links
- Networked sensors and dedicated software
- Cost reduction through: productivity increase; decrease of labour cost, increase of running time
NEMAEQ: Financial Benefits

Productivity increase with a fully automated shearer loader system

1.5 M€/y/longwall; potential 45 M€/y within EU

Cost reduction: decrease of labour cost, increase of running time

0.1 M€/y/longwall; potential 3 M€/y within EU
IMPECABL - Improving environmental control and coke battery life through integrated monitoring systems

Project aimed at reducing emissions from coking plants and extend life time and productivity rate. Prolonging lifetime of coking plant to 40 – 50 years. Techniques developed provide plant management with investigative and monitoring tools for early detection of problems in older coking plants.

Results can lead to a reduction of capital cost of 10%. Based on the European coke production and assuming only 5% reduction for the sector → potential cost reduction of 0.75€/t or 32 M€/y
**LIGPOWER** – More efficient cleaning concept for stepping up availability of lignite-fired power plants

Strong interest from the power generation community to apply **suitable cleaning technologies** for **enhancing availability** of coal-fired power plants. The use of efficient cleaning facilities results in an **increase of 1% plant availability**, leading to a **benefit of 1M€/y** for a **600 MW** unit. In Europe 3 units are covered within the assessment period → **3M€/y benefit**.

In addition, benefit from the avoidance of **unnecessary investment** is estimated at **10 M€**.
**CFB 800 – Circulating Fluidized Bed combustion for coal-fired power plants**

The CFB is considered to be one of the very important technologies leading to the increase of efficiency in power generation and decrease of emissions. The CFB project aimed at scaling up design for CFB technology to 800MW size with a net efficiency of 45%. 0.2 Mt/y of CO2 can be avoided by using 5% biomass (corresponding to a benefit of 1.6 M€/y). Further savings can be achieved by using a coal/petcoke ratio of 80/20 ➔ potential benefit of 7.4 M€/y savings in operational costs.
Further Groups:

**COSCO:** Composed of representatives of Member States. Its role is to assist the Commission in the overall programme management.

**CAG/SAG:** Composed of technical advisers, active in the field concerned and aware of the industrial priorities. Members are appointed by the Commission. The CAG and the SAG shall assist the Commission in the programme management.
Possible Changes to RFCS

Amendment of the Legal Basis:

- Composition of the Advisory Groups (represent stakeholder community, appointment duration)
- Tasks of the Advisory Groups (ranking list)
- Tasks of the Coal and Steel Technical Groups (definition of priorities)
- Deadline for call for proposals
- Update references, harmonise with H2020
Possible Changes to RFCS

New Model Grant Agreement:

- No amendment for budget transfers
- Reporting periods
- Financial statements (audit certificate, €)
- Payments to the coordinator
Possible Changes to RFCS

New Info Pack 2015:

- Revision of the evaluation criteria
- Thresholds
- Cascade mechanism
- Eligibility criteria
- Operational capacity check
Evaluation

**Phase 1: Remote evaluation**
Each proposal is evaluated individually by 3 evaluators on the dedicated SEP system (Submission & Evaluation of Proposals)

**Phase 2: Preparation of draft Consensus Report**
For each proposal a draft CR is prepared on the SEP system by a rapporteur (one of the evaluators) on the basis of the individual evaluations

**Phase 3: Central evaluation (Brussels)**
For each proposal a consensus meeting takes place with the participation of the 3 evaluators and a Commission's Project Officer
Evaluation and Selection Process

- Proposals received
- Eligibility check
- Threshold ok
- First Main list
- Final List
- Budget cut-off
- Evaluations

Commission Decision

PROJECT START