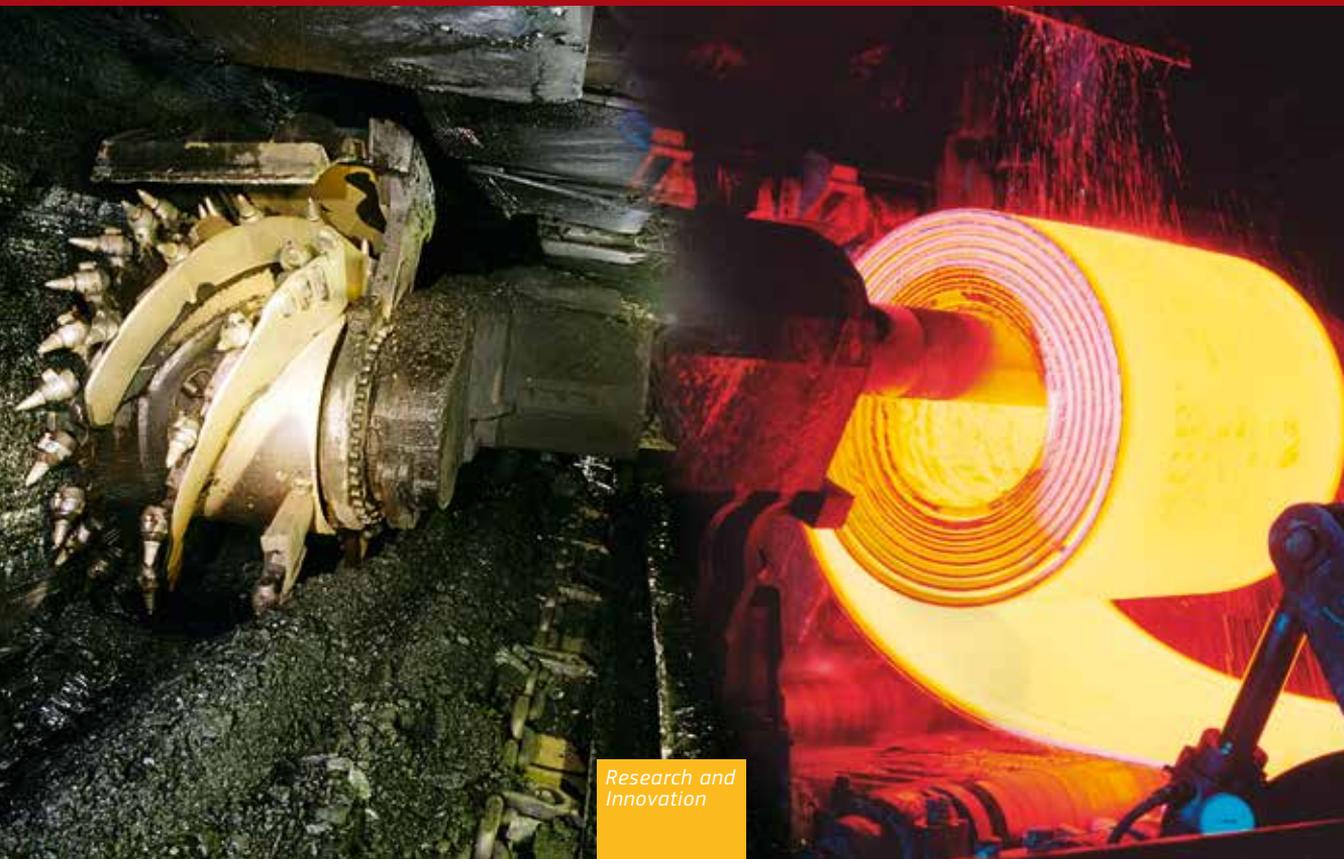




Research Fund for Coal & Steel

Monitoring Report



Research and
Innovation



EUROPEAN COMMISSION

Directorate-General for Research and Innovation
Directorate G – Industrial Technologies
Unit G.5 – Research Fund for Coal and Steel

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EUROPEAN COMMISSION

Monitoring Report of the
Research Programme for the

Research Fund for Coal & Steel

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This document constitutes the Monitoring Report of the RFCS Programme covering the period 2003-2010, as requested in the Article 38 of the actual legal basis of the RFCS (Council Decision n°2008/376/EC). As stipulated there and as proposed by the Coal and Steel Advisory Groups, the Commission has appointed an Expert Committee (ExCo) of professionally qualified experts of the Coal and Steel sectors to assist in the monitoring exercise. Members of the ExCo are:

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The ExCo was supported by European Commission staff of the RFCS Unit including Alan Haigh, Head of Unit for RFCS, and Monica Spinu and administrative support from Pablo Diaz Bellas, Magda Szaszkievicz, Ina Vandooren and Radostina Petrova Kirilova.

The analysis has been conducted from August 2011 to March 2012 by the ExCo members and reflects exclusively their opinion. Main rapporteurs for this monitoring report are Jean-Claude Charbonnier, Jürgen Czwalinna and Jürgen Stahl.

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Executive Summary

A **Monitoring exercise of the RFCS Programme** covering the period 2003 - 2010 was carried out by an Expert Committee comprising four coal and six steel experts appointed by the European Commission from nominations of the Advisory Groups. The Monitoring is based on Terms of Reference derived from the legal basis of the Research Programme (Council Decision n°2008/376/EC, Article 38) and endorsed by the Advisory Groups and COSCO. The information utilised comprises the Commission's statistical data, the responses of 103 beneficiaries and other stakeholders to a comprehensive questionnaire, exchange with all the members of the Technical Groups and the experts' own experience.

The **main results** of the monitoring exercise are that the objectives of the RFCS Programme are of high relevance for both sectors and suitable for the future and that the allocation of the annual budget to the sectors, the share of allowable actions and the participation rules - particularly for Third Countries - are adequate. The system of advising bodies is effective. Their composition and distribution reflect the sectors' structure and needs with potential for adjustments in the steel sector. The implementation of the Research Programme is, in general, rated "good" for all stages from the invitation to make proposals to the execution and review of projects. Only a few administrative hurdles are noted. The degree of dissemination is high among the beneficiaries, the scientific and technical community and in the sectors concerned. The major success factors seen in many RFCS projects are the competence of the project partners and a commitment to really cooperate, strong industrial partnerships and coherent project plans.

Suggestions for improvements comprise the separation of perennial rules in the Information Package, an

earlier provision of information on annual priorities, detailed suggestions to improve the user friendliness of the new and basically welcomed electronic submission system and an improved lay-out of the application forms.

The priority setting should be optimised by fewer and longer-lasting priorities to achieve a real focus. A more efficient organisation of the proposal evaluation process, including remote evaluation and reducing the on-site time of the experts, is recommended and a better assignment of the evaluation criteria, particularly the "Innovative Content", as well as means to "calibrate" the experts' judgements. The level of detail on staff costs estimates in the proposal and negotiation phases should be re-considered.

The assignment of technical fields and projects to the Technical Groups Steel should be re-considered without increasing their number. The efficiency of the project monitoring by the Technical Groups could be improved by an additional meeting per year. The flexibility to handle project extensions and the framework conditions for final reporting should be improved by considering an extended project duration. Several means to improve the dissemination of results, also beyond the Final Report, are suggested, including a lump sum for publications. It is suggested that pilot and demonstration projects should be encouraged, e.g. by setting a priority on P&D and making these projects financially more attractive. The funding of a higher share of indirect costs - thus also promoting the participation of SMEs - should be taken into consideration, e.g. by increasing the flat rate for indirect costs.

Thanks to its industrial, application-oriented character the **impact of the RFCS Programme** is rated high. The overall approach of the Research Programme should therefore be maintained.

1. INTRODUCTION

1.1. Historical Background

Signed in Paris in 1951, the European Coal and Steel Community (ECSC) Treaty initiated 50 years of successful collaborative research and technical development in the coal and steel industry, thus sustaining the competitiveness of the sectors and improving health and safety at the workplace. Since then, researchers became more and more accustomed to cooperating in a growing European spirit. It may be said that the ECSC was the crystallisation point for the European Union, and the related Research Programme as the first ever European research network has led to some major achievements:

- Development of a European coal and steel community working towards common objectives

- Implementation of collaborative projects at European level
- Effective synergy for the modernisation of the coal and steel industry and the global challenge
- Strengthening the European position in a competitive global environment

Major technical innovations were developed within the frame of the unique and as highly effective rated ECSC Research Programme since 1951.

Coal plays a major role in energy supply in Europe, despite a decline in some Member States (see fig. 1.1). According to the EU Commission 2008 baseline scenario, the share of the coal in energy supply may even rise (see fig. 1.2). Within the EU27, the coal industry employs more than 255.000 people.

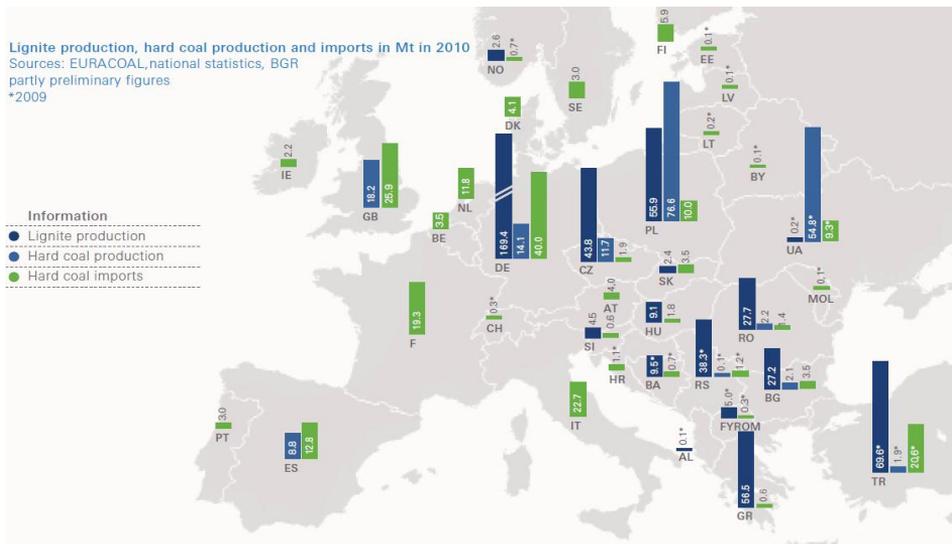


Figure 1.1 Coal production and import in EU 27

Steel is the basic material for many industrial value chains within the EU27. Except in a few countries, there are steel production sites across the Member States (see fig. 1.3). Major producers are Germany, Italy, France and Spain. In total, roughly 200 million t of crude steel are produced in Europe yearly except during times of crises. A share of about 60 % is produced in the blast furnace from iron ore and about 40 % via the electric arc furnace route from scrap (see fig. 1.4). In 2010, steel consumption exceeded 147 million tonnes for all qualities. The main utilisation is in the construction, automotive and mechanical engineering sectors (see fig. 1.5). The total number of employees is about 355.400 with a turnover of 190 billion € (EUROFER data).

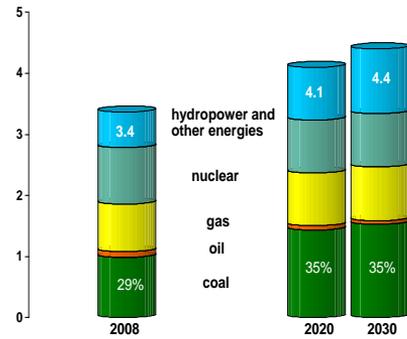


Figure 1.2 Share of coal-based electricity generation in EU 2008-2030
Source: EURACOAL

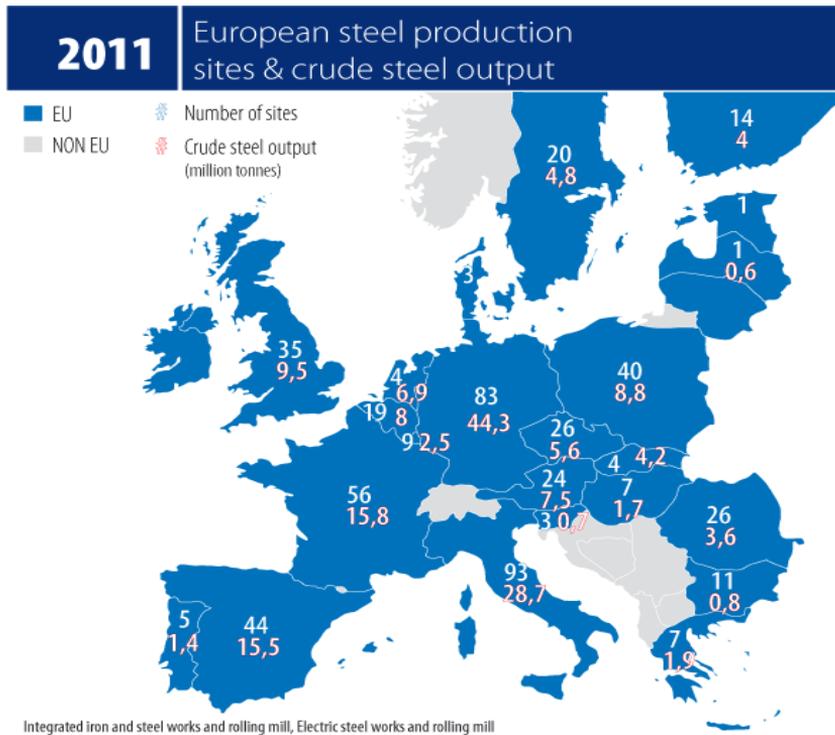


Figure 1.3 (Source: EUROFER)
European steel production sites & crude steel output

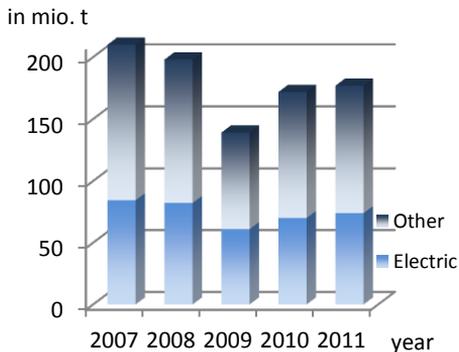


Figure 1.4 Crude steel production by process
Source: EUROFER

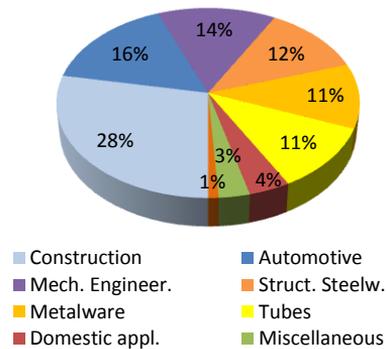


Figure 1.5 Sector shares of steel consumption (average 2007-11)
Source: EUROFER

The ECSC was financed by levies which most coal and steel producers had to pay based on their production. Over the 50-year period of the Treaty, a Guarantee Fund was built up, constituting the major part of the assets generated. This funding mechanism allowed overcoming the difficulties resulting from several financial crises in the 1970s and 1980s by avoiding stop-go policies on research funding which would have hindered the improvement of the European coal and steel industry's competitiveness.

With the expiry of the ECSC Treaty and following intensive discussions during the 1990s, the Council of Ministers

reached an understanding in spring 2001 on all issues related to the expiry of the ECSC Treaty and a follow-up regime. The key decision was the establishment of the new "Research Fund for Coal and Steel" (RFCS) and the transfer of all remaining assets of the (expired) ECSC to this new fund. The legal basis of the RFCS was adopted by the Council on 1 February 2003. The Commission was put in charge of the management of the RFCS. The actual legal basis of the RFCS was adopted by the Council on 29 April 2008 (Council Decision n°2008/376/EC) and published in the Official Journal on 20 May 2008 (OJ L 130/7).

1.2. Structure of the RFCS Programme

The Research Programme shall support the competitiveness of the Community sectors related to the coal and steel industry. This includes the general aim of contributing to sustainable development, clean and safe production, protection of the environment, conservation of

resources, health and safety aspects as well as improvement of working conditions.

The RFCS Programme is managed by the Commission in accordance with principles similar to those of the expired ECSC Research Programme.

Several bodies assist the Commission in implementing the Research Programme (see fig. 1.6). They usually meet once a year.

The Coal and Steel Committee (COSCO) is composed of representatives of the Member States. Main decisions concern the final approval of the management of the RFCS Programme and especially of the selected projects to be funded.

The Coal and Steel Advisory Groups (CAG and SAG) are independent technical advisory groups. The members are appointed by the Commission to serve in a personal capacity. They must be active in the coal or steel area and aware of the industrial priorities. A broad and balanced composition regarding expertise, geographical representation and gender aspects is given. Main

consultations concern all aspects of the overall development of the RFCS Programme, the objectives and priorities, the evaluation of proposals, the documentation and manuals and the Technical Groups.

Several Coal and Steel Technical Groups (TGC# and TGS#) advise the Commission on monitoring of the projects and the definition of priorities of the Research Programme. The members are appointed by the Commission. They must come from sectors related to the coal and steel industries including research institutes and users and must be highly experienced. They review the Technical Implementation Reports and the Final Reports. There are twelve Technical Groups established to cover all the technical aspects of the Research Programme, three for coal and nine for steel. Details are given in the Annex.



Figure 1.6 Management scheme of the RFCS Programme

The objectives of the Research Programme are:

For Coal:

- Improving the competitive position of Community coal
- Health and safety in mines
- Efficient protection of the environment and improvement of the use of coal as clean energy source

- Management of external dependence on energy supply

And for Steel:

- New and improved steelmaking and finishing techniques
- RTD and the utilisation of steel
- Conservation of resources and improvement of working conditions

The RFCS Programme supports the following actions:

- Research Projects are intended to cover investigative or experimental work with the aim of acquiring further knowledge to facilitate the attainment of specific practical objectives such as the creation or development of products, production processes and services. Funding is up to 60 %.
- Pilot Projects shall be characterised by the construction, operation and development of an installation or a significant part of an installation on an appropriate scale and using suitably large components with a view to examining the potential for putting theoretical or laboratory results into practice and / or increasing the reliability of the technical and economic data needed to progress to the demonstration stage, and in certain cases to the industrial and / or commercial stage.
- Demonstration Projects shall be characterised by the construction and / or operation of an industrial-scale installation or a significant part of an industrial-scale installation with the aim of bringing together all the technical and economic data in order to proceed with the industrial and / or commercial exploitation of the technology at minimum risk.
- Accompanying Measures shall relate to the promotion of the use of knowledge gained or to the organisation of dedicated workshops or conferences in connection with projects or priorities of the Research Programme.

Furthermore, the legal basis allows Support and Preparatory Actions from the Commission to assure the sound and effective management of the Research Programme, e.g. the evaluation of proposals or the monitoring and assessment exercises.

According to the legal basis the participation in the RFCS Programme is as follows. Any undertaking, public body, research organisation or higher or secondary education establishment, or other legal entity, including natural persons,

- established within the territory of a Member State may participate in the Research Programme and apply for financial assistance, provided that they intend to carry out an RTD activity or can substantially contribute to such an activity.
- in Candidate Countries shall be entitled to participate without receiving any financial contribution under the Research Programme, unless otherwise provided under the relevant European Agreements and their additional Protocols, and in the decisions of the various Association Councils.
- from Third Countries shall be entitled to participate on the basis of individual projects without receiving any financial contribution under the Research Programme, provided that such participation is in the Community's interest.

The RFCS Programme is based on cost-sharing RTD grant agreements. The total public funding must conform to the applicable rules on State Aid. In principle, only actual costs incurred for the execution of the RFCS projects are eligible. This applies for all beneficiaries but also for subcontractors working on scientific work packages.

The maximum total financial contribution is

- up to 60 % for research projects
- up to 50 % for pilot and demonstration projects
- up to 100 % for accompanying measures.

Eligible costs of the Research Programme are exclusively

- staff costs comprising in principle scientific, postgraduate or technical staff and manual workers directly employed by the beneficiary.
- equipment costs for purchasing or hiring of equipment needed.
- operating costs, e.g. for raw materials, consumables, energy, transportation, rental or alteration of equipment, analysis and tests, assistance from third parties or protection of knowledge.
- indirect costs which are defined as flat rate amounting to 35 % of the eligible staff costs and are to cover all other expenses of the project including e.g. overhead costs and travel and subsistence costs.

Calculations methods are detailed in the Information Package. At the end of a project all costs must be certified by a certificate of an external auditor.

An open call for proposals for the RFCS Programme is published with a submission date of 15th September each year.

The submitted proposals must comply with the rules of the Research Programme and the stipulations laid down in the Information Package. Each proposal must include a detailed description of the proposed project and contain full information on objectives, partnerships, including the precise role of each partner, management structure, anticipated results and expected applications. An assessment of anticipated industrial, economic, social and environmental benefits is requested as well. The proposed total cost and its breakdown must be realistic and effective including a favourable cost / benefit ratio. Since 2011 a new electronic submission process has been in operation. There are only a few boundary conditions. No limits are set for project budgets or project duration.

Submitted proposals are reviewed for eligibility by the Commission and eligible proposals are evaluated by independent experts in the last quarter of the year in Brussels. Each is evaluated by at least three experts who have to find a consensus. Based on this evaluation the Commission draws-up ranking lists for the coal and the steel proposals which are presented to the Coal and the Steel Advisory Group (CAG and SAG) for consultation and finally to the Coal and Steel Committee (COSCO) for endorsement at its annual meeting usually in April.

After the final decision of the Commission, a Grant Agreement is signed for the projects retained for funding with a targeted starting date, usually on the 1st July of the year after submission.

On average, each research project receives a funding of 1-1,5 million €, comprises 6-7 Partners and has a duration of 36 months. Some pilot / demonstration projects are awarded significantly higher funds. Accompanying measures are much smaller with 0,2 million € of funding on average.

In the course of a RFCS project, several reports must be submitted to the Commission and the Technical Groups describing the technical progress made and the financial situation. According to the RFCS Guidelines for Technical Reporting, published in the yearly Information Package, one Annual Report has to be produced every calendar year covering the respective project progress. Additionally, a Mid-term Technical Report on the accumulated results and a Final Report on the whole project, including an assessment of exploitation and impact, must be provided by the beneficiary. Both reports must be accompanied by Financial Statements.

The dissemination of research results is achieved by presentations to the Technical Groups, mainly by publishing

the Final Report and also by other publications. Other forms of dissemination are encouraged.

1.3. Relation to Other Programmes and Technology Platforms

The RFCS Programme is coordinated with other funding activities carried out in the Member States, such as national or regional programmes, and with the Framework Programme of the European Union for research, technological development and demonstration activities (FP6 and FP7). For coal, there are research funding activities in the Member States and at European level in the Framework Programme, especially in the fields of coal conversion, clean combustion and carbon capture and storage. The RFCS Programme efficiently complements these activities for aspects not covered by those other programmes. For steel, some research activities are funded at national level for crude iron and steel production. Many research projects are funded at national and European level for steel applications and innovative steel solutions. The RFCS Programme also effectively complements these funding activities.

An excellent example for coordinated activities is the ULCOS umbrella ("ULTRA low-CO₂ emission in steelmaking") in the steel sector by which an ambitious research programme on CO₂ reduction was launched. The initial project "ULCOS – New Blast Furnace" gathered 48 stakeholders from the European steel sector. Several other highly innovative projects have started and are still running.

The Commission has initiated European Technological Platforms in course of the European Research Area (ERA) and the Framework Programme. Meanwhile there are more than 30 Technology Platforms in all technical fields. The

European Steel Technology Platform (ESTEP) and the Zero Emission Fossil Fuel Power Plant Platform (ZEP) are the most relevant for the RFCS Programme. Both have established effective links to the other Technology Platforms and all relevant European associations.

The European Steel Technology Platform contributes to the definition of long term RTD priorities in the steel sector to achieve a sustainable competitiveness through innovation in a global context. In cooperation with the Technical Groups ESTEP supports the Commission in defining annual research priorities.

ESTEP has established effective links with other European technology platforms and research associations where stakeholders are also active within the RFCS programme, e.g. Technology Platforms as ECTP (construction), ERTRAC (road transportation), Photovoltaics, TPWind, Manufuture, SMR (mineral resources) as well as the European Engineering Industry association EUnited, the European Convention for Steel Constructional Steelwork ECCS and the European Association for Automotive EUCAR.

The European Technology Platform for Zero Emission Fossil Fuel Power Plants supports CO₂ Capture and Storage (CCS) as a key technology for combating climate change. ZEP serves as an advisor to the European Commission on the research, demonstration and deployment of CCS.

1.4. Methodology of the Monitoring Exercise

A first monitoring of the RFCS Programme covering the years 2002 to 2005, as foreseen in Article 2 of the Council Decision 2003/78/EC of 1 February 2003, has been accomplished and presented to the Commission, the Council and the European Parliament at the end of 2006. It delivered an external view on all aspects of the RFCS Programme and expected benefits. The main output of the exercise was recommendations on the role and membership of the Advisory and Technical Groups.

The current monitoring exercise is based on the modified legal basis of 29 April 2008 (2008/376/EC) which requests in Article 38 to carry out a monitoring exercise of the Research Programme, including an assessment of the expected benefits, and to nominate a panel of highly qualified experts for assistance. Following proposals of the Coal and Steel Advisory Groups the Commission has appointed the members of the Expert Committee (ExCo) responsible for the monitoring. The ExCo is an independent body in charge of the whole exercise. The Commission participates in the ExCo meetings and gives support to this body. Decisions are taken jointly by the ExCo. Individual tasks, such as the drafting of reports, interviews and analyses are assigned to rapporteurs. In a first step, the ExCo has drawn-up in early 2011 Terms of Reference which were endorsed by the Advisory Groups and COSCO. The Terms of Reference give the following boundaries for the work:

The scope of the monitoring exercise is to monitor the Research Programme implementation since 2003. The monitoring shall encompass all aspects of the operation of the Research Programme, including the achievement of the Research Programme objectives,

and draw, if needed, any recommendation for improvement. The main objectives of the monitoring exercise are:

- to analyse the functioning of the RFCS Programme,
- in the light of the above-mentioned analysis, to draw any recommendations of relevance for the improvement of the operation of the programme and its effectiveness, thus paving the way for a possible revision of the multi-annual technical guidelines of the RFCS Programme,
- to assess the expected benefits of the Research Programme.

Special attention shall be paid to the objectives, the main framework and the implementation of the RFCS Programme as well as any possible simplification of the current procedures and any possible reduction of administrative work for the Commission and the beneficiaries.

The monitoring methodology comprises data analysis, evaluation of reports, consultation of the concerned Technical Groups, site visits and interviews with selected beneficiaries and other stakeholders. The following means are used:

- key items addressed in a short questionnaire to be used for interviews with the Technical Groups,
- a long questionnaire to be used for interviews with selected beneficiaries and other stakeholders,
- statistical analysis of data and evaluation of reports provided by the Commission.

The period covered by this monitoring exercise comprises all 475 coal and steel projects which were submitted between 2002 and 2010, selected for funding and with project start dates between 2003 and 2011.

Information and knowledge used in this monitoring exercise come from the Commission's statistical data and the expertise of the ExCo members. The perception of the beneficiaries is evaluated by a Long Questionnaire (LQ) which was sent to participants of the Research Programme at the level of "Innovation Managers" meaning positions like board members, executive, CAG/SAG members, general managers, head of research, plant managers, project managers, R&D administrative responsible etc. coming from technology users, manufacturers, research centres and universities related to the coal and steel sector. Their opinions refer to a broad spectrum of European projects carried out over the last decade. They have great experience of the overall needs, exploitation and impact of Research and Innovation. In total, 302 questionnaires were circulated and 103 responses received (34 %). This is a high and significant response rate.

Additional experience has been brought in by the exchange with all the members of the Technical Groups using the short questionnaire which mainly addressed assessment issues. The discussions provided valuable information from those actually involved in RFCS projects.

Last but not least, all conclusions drawn and recommendations made reflect the Expert Committee's own judgement and ideas.

In this survey - unless the context clearly indicates otherwise:

- "RFCS Programme" and "Research Programme" are used as synonyms
- "Beneficiaries" means those who have answered the Long Questionnaire (LQ)
- "Comment" refers to the supplementary answers and ideas given by beneficiaries to the questions of the LQ.

2. PROGRAMME OBJECTIVES, INSTRUMENTS AND FRAMEWORK

2.1. RFCS Programme Objectives

The Research Programme shall support the competitiveness of the Community sectors related to the coal and steel industry. This includes the general aim of contributing to sustainable development, clean and safe production, protection of the environment, conservation of resources, health and safety aspects as well as improvement of working conditions. The Research Programme shall support research activities aimed at the following objectives:

For Coal:

- Improving the competitive position of Community coal
- Health and safety in mines
- Efficient protection of the environment and improvement of the use of coal as clean energy source
- Management of external dependence on energy supply

And for Steel:

- New and improved steelmaking and finishing techniques
- RTD and the utilisation of steel
- Conservation of resources and improvement of working conditions

These objectives are further detailed by specific areas for eligible research activities.

The results of this survey clearly show that these objectives of the RFCS Programme are still meeting the needs of the coal and steel sector. On average, 56 % of high and further 35 % of medium coherence are seen (see fig. 2.1). The steel objective "conservation of resources and improvement of working conditions" and especially the coal objective "management of external dependence on energy supply" are rated below average.

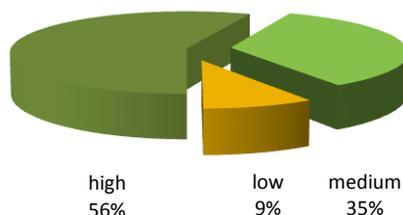


Figure 2.1 RFCS objectives meeting the needs of the coal and steel sector

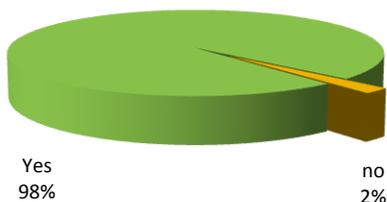


Figure 2.2 RFCS objectives still relevant in the future

The objectives of the Research Programme are also seen as highly relevant for the future activities of the sectors with an agreement of 98 % (see fig. 2.2).

Even on the level of the beneficiaries' specific technical objectives there is a significant coherence with the programme objectives. Full support of the beneficiaries' technical objectives is seen by 57 % with additional more than 40 % of partial coverage (see fig. 2.3).

The coverage of the objectives for the coal and the steel sector by projects clearly underlines the industrial character of the Research Programme. Most projects deal with improved competitiveness and production techniques, environment protection and the use of coal and steel. These research areas are of outstanding industrial interest. Roughly half of these projects focus on the application of coal or steel products and nearly half deal with production technology and environment.



Figure 2.3 RFCS Programme supporting technical objectives of beneficiaries

Only a minor share of projects directly covers the objectives working conditions, health, safety and energy dependency. These objectives, however, are in many cases indirectly addressed by projects primarily aiming at other - more technical or economical - objectives nevertheless having an indirect positive influence e.g. on health and safety. The members of the Technical Groups estimate that each objective of the Research Programme is met for more than 30 % by the results of the different research projects because these often contribute to several objectives (see fig. 2.4).

There are some comments from beneficiaries referring to needs for focussing or splitting or for stronger addressing post mining activities, but all this can be implemented within the existing legal framework.

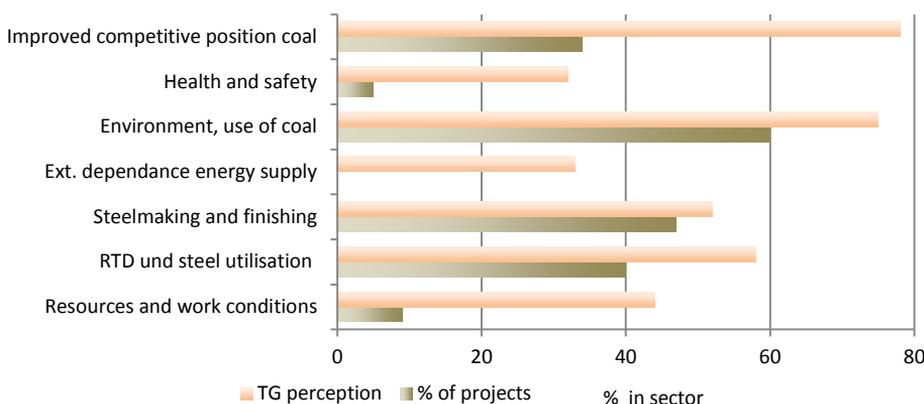


Figure 2.4 Coverage of RFCS objectives by projects and TGs' perception

Conclusion:

The objectives of the RFCS Programme have been and will be of high relevance for the coal and the steel sector. The objectives also meet the requirements of the different beneficiaries to a high extent. Some editorial rearrangements can be made within the existing legal framework. All objectives are relevant and are addressed by results of the research activities. Hence, there is no need for changes.

Recommendation:

Maintain the objectives of the Research Programme.

2.2. Priorities and Dedicated Calls

For some years, the Commission - in agreement with the Coal and Steel Advisory Groups (CAG, SAG) - has introduced varying annual priorities in order to focus on specific topics within the frame of the objectives of the Research Programme. These priorities are proposed by the respective Technical Groups and finalised by the Commission after consultations with CAG and SAG. For the steel sector the European Steel Technology Platform (ESTEP) supports the Technical Groups in defining the priorities. The annual priorities are published in the Information Package. During evaluation, proposals fulfilling a priority are awarded an additional point.

The Commission may also decide to launch dedicated calls for proposals. In such a case, the dates and modalities for submission and evaluation, the priorities, the types of eligible projects and the envisaged funding must be published in the call. This option of a dedicated call has not yet been used.

Results of this survey: The RFCS Programme is a sectorial, industry driven programme focusing on broad incremental research including the important pilot and demonstration stages rather than on break-through innovations. That is why for a long time

and in continuation of the successful ECSC Programme the open call within the framework of the objectives of the RFCS Programme has been seen as appropriate to obtain these objectives. A top-down approach of setting annual priorities or even defining dedicated calls to some extent is a contradiction to the character of the Research Programme and its successful incremental approach.

In connection with the already described finding that the whole broad spectrum of Research Programme objectives has been and will be of high relevance for the coal and the steel sector and also for all beneficiaries in their special technical field, the future steering of the RFCS Programme by means of top-down set priorities must leave sufficient budget for other projects not falling under these (yearly) priorities. Up to now the broad approach contributed in a major way to the remarkable success of the RFCS Programme.

With slight differences between the sectors, the actual use of the two available instruments for priority setting is considered as adequate for meeting the sectors' objectives by a clear majority of beneficiaries (see fig. 2.5). Obviously the actual

distribution of roughly equal balance between projects being upgraded by a priority point and those not seems an acceptable balance. Furthermore, dedicated calls are neither requested by the beneficiaries nor assessed as helpful.

There are various and contradictory comments from beneficiaries referring to priority setting. These include proposals for fewer or more annual priorities, longer-lasting or faster-adapted priorities, use of roadmaps and dedicated calls or not, as well as a higher bonus in the evaluation for proposals addressing priorities.

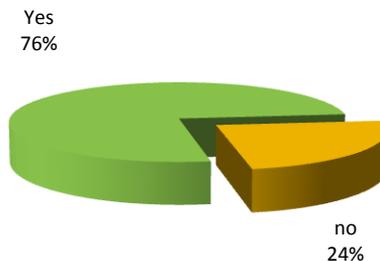


Figure 2.5
Adequate use of priorities and dedicated calls

Conclusion:

Priority setting basically offers means to stronger focus RFCS research and to introduce a more top-down steering of the RFCS Programme. However, a balance must be achieved with projects not addressing priorities. Dedicated calls have not been used but remain a possibility.

Recommendation:

Improve the implementation of priority setting, i.e. the optimum number of priorities and the process of yearly priority selection. Fewer and longer-lasting priorities may assist in achieving a real focus.

2.3. Allowable Actions

The RFCS Programme supports research, pilot and demonstration (RTD) projects, accompanying measures and support and preparatory actions (see also chapter 1.2).

Research projects are intended to cover investigative or experimental work with the aim of acquiring further knowledge. Funding is up to 60 %.

Pilot projects are characterised by the construction, operation and development of an installation on a larger scale with the aim of putting research results into practice. Funding is up to 50 %.

Demonstration projects are characterised by the construction and / or operation of an industrial-scale installation in order to proceed with the exploitation of a new technology. Funding is up to 50 %.

Accompanying measures mainly relate to the dissemination of knowledge gained e.g. by dedicated workshops. Funding may be up to 100 %, usually 60%.

Furthermore, the legal basis allows support and preparatory actions from the Commission to assure the sound and effective management of the Research Programme, e.g. the

evaluation of proposals or the monitoring and assessment exercises.

In the period of this survey all allowable actions have been used each year (see fig. 2.6). With regard to the number of funded projects, research projects are by far the most used action (nearly 90 %). The actions

pilot/ demonstration projects and accompanying measures have a share of about 5 % each. Accompanying measures are mainly carried out by TGS 8 for dissemination and recommendation of technical guidance applicable to the use of steel in building, construction and industry.

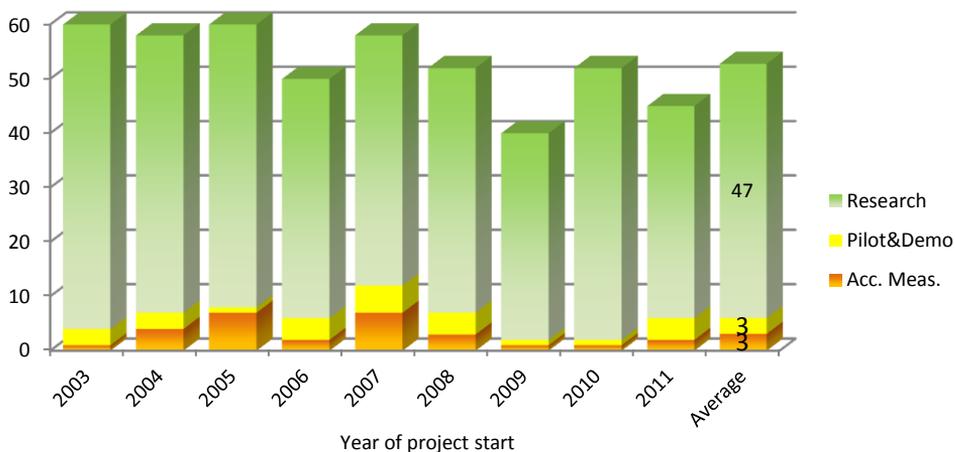


Figure 2.6 Number of funded projects by action

The yearly distribution of funds per allowable action deviates from the number of projects (see fig. 2.7). The average allocation of funds to the different actions is 91 % for research, 8 % for pilot and demonstration and 1 % for accompanying measures. The significant share of funds for pilot / demonstration projects - as compared with other R&D programmes - clearly indicates the industrial orientation of the RFCS Programme. For both project numbers and funding, there are strong variations from year to year, depending on the submitted proposals and the availability of funds.

From the beneficiaries' point of view, the actual share of the different allowable actions is adequate (see fig. 2.8). Notably, an increased use of pilot and especially demonstration projects would be preferred in principle. This would be in coherence with the industrial orientation of the RFCS Programme and the quite unique possibilities to fund these important stages of innovation. The accompanying measures in general are rarely used and have a low awareness except for the applications in the construction sector. But there is obviously limited need for an increased use of this instrument.

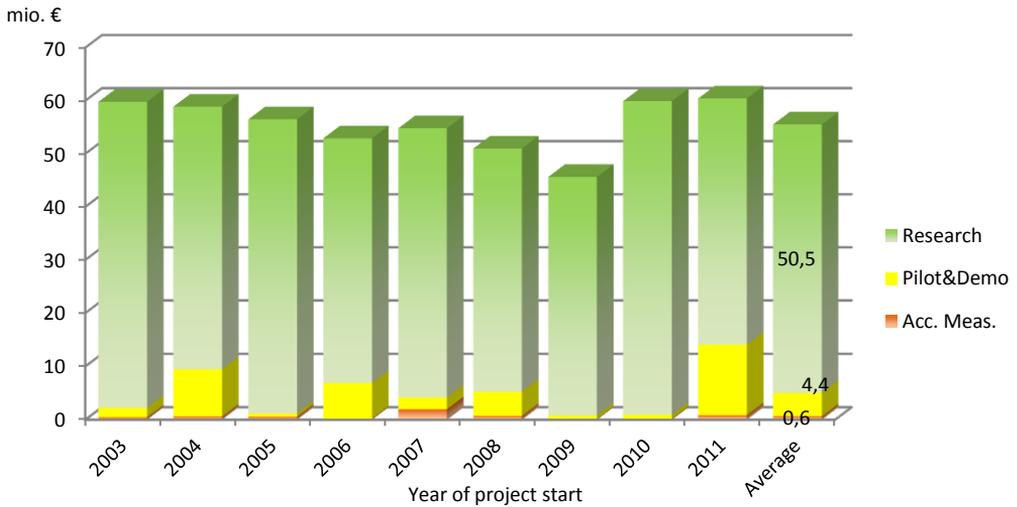


Figure 2.7 Funds by action

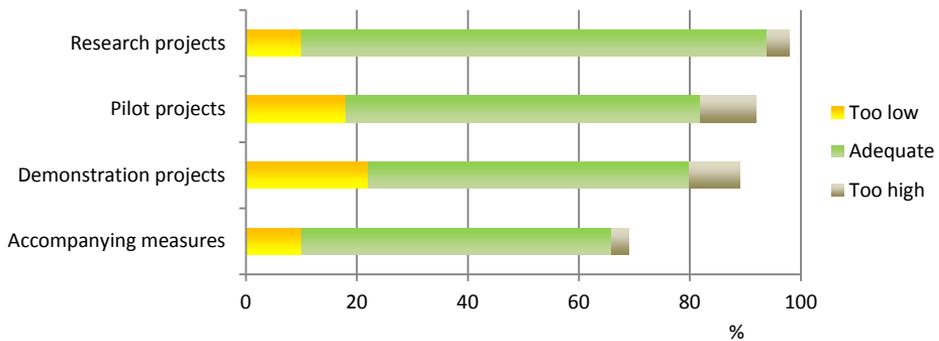


Figure 2.8 Beneficiaries' view of actions used

There are many further comments of the beneficiaries preferring more or less of the different allowable actions, but no clear picture is given except the

general support for more pilot and demonstration projects e.g. by an adaption of the evaluation rules. Some comments consider the inclusion of standardisation actions as helpful.

Conclusion:

The RFCS Programme supports all actions along the typical stages of innovation, from research over pilot to demonstration projects as well as accompanying measures e.g. for dissemination of knowledge and results. Research projects are by far the most used action. The actual share of allowable actions is in principle seen as adequate. The encouragement of more pilot and demonstration projects is proposed because these actions are important for the industrially oriented RFCS Programme. Accompanying measures are rarely, but adequately used.

Recommendation:

Encourage the submission of more pilot and demonstration projects. Measures could be a priority on pilot and demonstration projects with an additionally awarded point and making these projects financially more attractive.

2.4. Annual Budget of the RFCS Programme

The revenue from investments of the net worth of the assets of the ECSC and the assets of the RFCS, are assigned to the RFCS, which is intended exclusively to fund research projects outside the Community framework programme for RTD in the sectors related to the coal and steel industry. The coal and the steel producers have formerly brought up the total assets of the ECSC / RFCS with a share of 27,2 % and 72,8 %.

Programme is 500 million € leading to an average yearly budget of approximately 56 million € (see fig. 2.9). There are strong variations in the yearly available funds ranging from 45 to 60 million € depending on the actual interest rates of the RFCS assets. 135 million € (27 %) of the total RFCS funds of the 9 years period have been assigned to coal projects and 365 million € (73 %) to steel projects. In general, the yearly budget shares for the coal related and the steel related projects still reflect the former financial contributions of each sector.

During the period under consideration the cumulated total budget of the RFCS

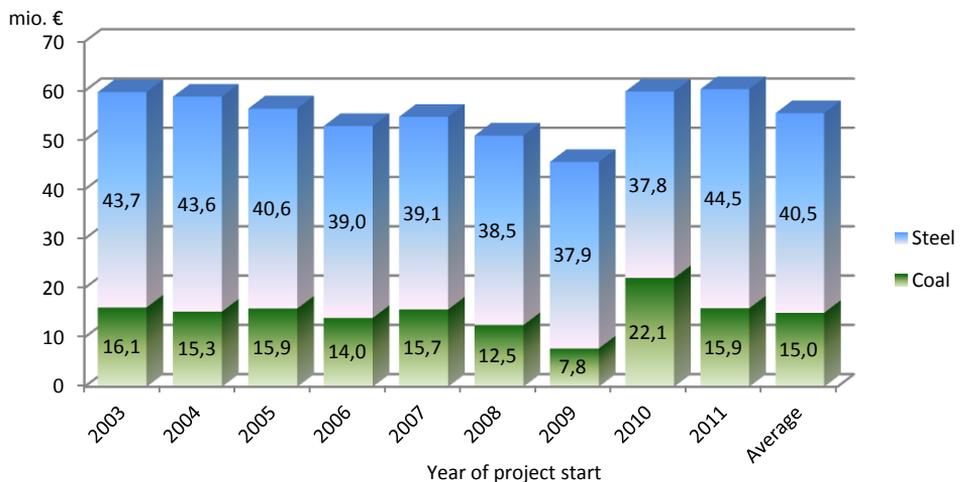


Figure 2.9 RFCS funding

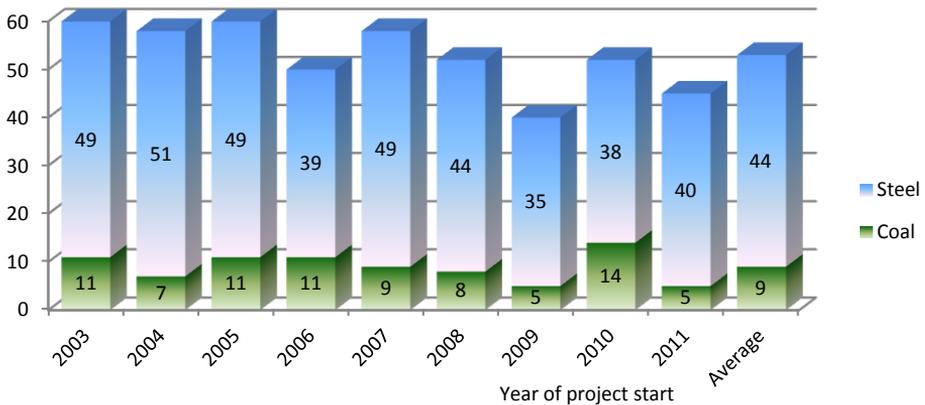


Figure 2.10 Number of funded projects

The average annual RFCS budget of 56 million € corresponds to an average number of 53 projects per year selected for funding of which 9 relate to the coal area and 44 to the steel area (see fig. 2.10). The actual yearly number and attribution strongly varies depending on available funds and submitted proposals.

The overall success rate in the RFCS Programme varies from year to year depending on the available funds and the number, size and quality of the submitted proposals. In general, the success rate (ratio of accepted to requested funds) is around 33 % (see fig. 2.11). It varies between 28 % and 41 % but is significantly higher than for comparable Framework Programmes for research (e.g. FP6 or FP7 / NMP). A major reason for this might be the application orientated sectorial character of the RFCS Programme with a strong focus on incremental research reflecting the industrial needs of the proposers.

The average distribution of funds among the 12 Technical Groups of the RFCS Programme is uneven but more or less balanced (see fig. 2.12). Similar to the available funds and the selected projects, there are strong variations in

the yearly assigned budgets. Regarding coal, the main funding is attributed to mining (TGC1) and the use of coal (TGC3). For steel, about 60 % of the RFCS funds are related to the production processes of the steel works (TGS 1-5 and 9). The remaining 40 % support the development and utilisation of steel in the major application sectors automobiles, packaging, home appliances, building, construction and industry.

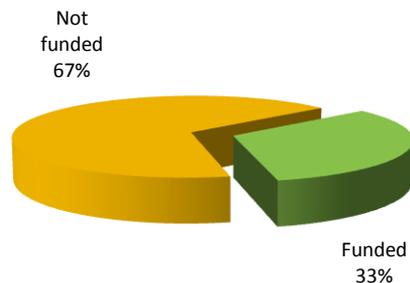


Figure 2.11 Average proposal success rate

Some comments suggest dedicated budgets for the different Technical Groups. But there is broad consensus that the quality of proposals shall be the main criterion for their approval.

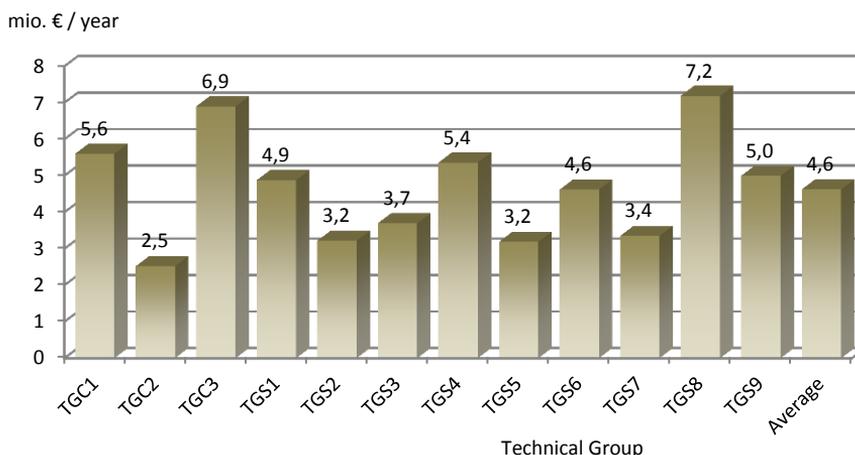


Figure 2.12 Average yearly funding of technical areas

Conclusion:

The RFCS funds of 56 million € on average are allocated satisfactorily to the two sectors and to their research fields. In general, the shares of coal and steel areas and the different Technical Groups are adequate.

Recommendation:

Maintain the rules and the implementation for the allocation of funds.

2.5. Participation in the RFCS Programme, Third Countries

Participation in the Research Programme is possible for undertakings, public bodies, research organisations or other legal entities which are established in a Member State or a Candidate Country or on the basis of individual projects also from Third Countries (see also chapter 1.2). Funding is restricted to participants from Member States.

Both the coal and the steel sector count among heavy industry and are characterised by mass production, the use of basically well-known technologies, the necessity for large investments and consequently long planning horizons, a fierce global competition and small profit margins.

Therefore only a small number of large companies (big industry) producing coal and steel as well as coal using power plants exist in Europe. There are also small and medium sized companies (SME) especially in the steel sector but only a few of them are active in research. From experience, the participation of such SMEs in RFCS projects is often as a subcontractor to a large company rather than as a direct participant. But this cannot be identified from the statistical data. Only some university institutes (higher education) and research centres - some of these being affiliates of coal or steel producers - are specialised in coal and steel production technology, products and applications.

In the period under review, the share of the different types of beneficiaries (big industry, SME, research centres, academic institutions) remained rather stable (see fig. 2.13), although the total number varies yearly with the number of selected projects and available funds. Roughly half of the participants belong to industry, mainly coal and steel producers and fossil power plants. The other half belongs to research centres and university institutes dedicated to coal and steel. This distribution of partners reflects the limited community having the necessary personnel, equipment and qualification to conduct research for the production, use and application of coal and steel.

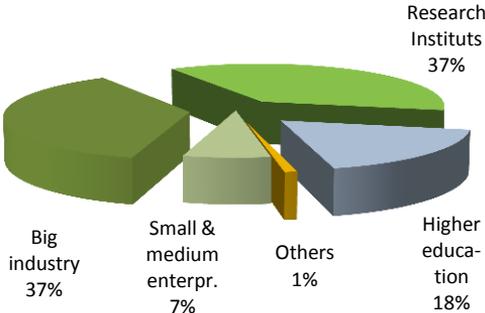


Figure 2.13 Beneficiaries of the RFCS Programme

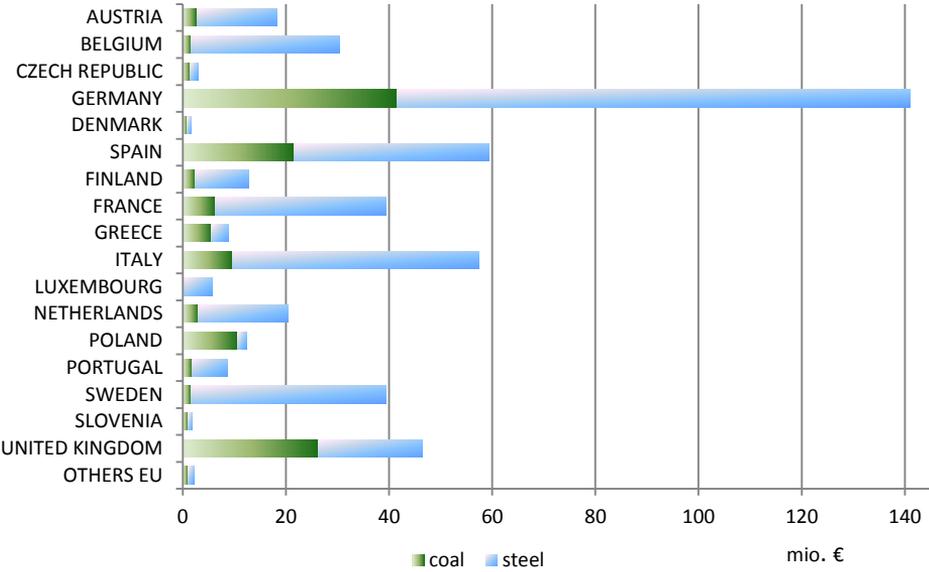


Figure 2.14 RFCS funds to countries

Regarding the geographic distribution, RFCS funds are distributed to beneficiaries from the Member States (see fig. 2.14), mainly states of the old ECSC. Only a small share is allocated to new Member States. Third Countries participate only to a minor extent and do not receive any funding. The rankings for coal and steel are slightly different due to historical reasons and developments within the different countries as well as the actual size and importance of the sectors. For coal Germany, UK, Spain, Poland and Italy receive the most funding whereas for steel the ranking is Germany, Italy, Sweden, Spain, France and Belgium.

The participation of partners coming from Candidate or Third Countries is common practice in the RFCS Programme although the total number is low. Approximately 1 % of the project partners come from Third Countries mainly from Norway but also some from Switzerland and Canada. According to the legal basis they can't be funded. Their involvement is always based on the requirements of particular projects.

The participation of partners from Third Countries in the RFCS Programme has been under discussion since ECSC times. The comments from both sectors still clearly support the restrictive handling of such participation. There is a large majority refusing a further

opening for companies and also - though somewhat less - for research institutes from Third Countries (see fig. 2.15). It is stressed that such participation shall only be possible if the partner's competence is indispensable or if it brings additional benefit to a project or enhances the application potential of the technology developed. The latter may become increasingly important for the coal sector as a means of opening markets for newly developed technologies.

In accordance with today's practice, any funding of Third Country participants is strongly opposed. Major reasons for the refusal are technical, financial and intellectual property rights.

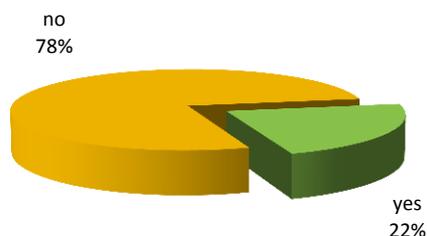


Figure 2.15
Further opening for Third Countries

Conclusion:

The RFCS Programme addresses a small community of highly qualified and well equipped companies and research institutes. The actual representation of the various types of beneficiaries is seen as adequate in view of the industrial character of the Research Programme. The same applies for the participation of parties from Third Countries. In accordance with today's practice, any funding of non EU partners by the RFCS Programme is opposed.

Recommendation:

Maintain the rules for participation. There is no need to intervene for an increased participation of certain types of beneficiaries or parties from Third Countries. Keep today's practice that non EU partners cannot be funded by the RFCS Programme.

2.6. Typical RFCS Project Profile

There are only few boundary conditions for RFCS projects restricting the participants, the research topics within the given objectives of the Research Programme, the budget or the duration. Nevertheless, during almost one decade of RFCS research a kind of "typical" RFCS research project can be identified. It is strongly application oriented and influenced by the more incremental than break-through character of the innovation process in the coal and steel sector. The limited yearly budget available for funding and the comparatively small number of highly qualified and well equipped European partners have a similar impact. Finally, the very intensive evaluation of all proposals by highly qualified experts from the respective areas and the constant monitoring of the projects contribute to forming such successful "typical" RFCS research projects.

And even for research projects the quality of the proposal still is the key for success as the impressive span of funded projects indicates.

Reflecting the special industrial situations in the coal and steel sector the "typical" profile of a research project is slightly different especially regarding the budget. The average funding of a "coal" research project is about 1,5 million €, whereas the average funding of a "steel" research project is clearly smaller with 1,0 million € (see fig. 2.16). For comparison, pilot or demonstration projects in the coal sector are awarded, on average, more than twice the funding at 3,55 million €, whereas in the steel sector, they receive a funding of 0,76 million €. In both sectors, accompanying measures are much smaller with 0,2 million € of funding on average.

But to be clear, there are also the quite different pilot and demonstration projects and the accompanying

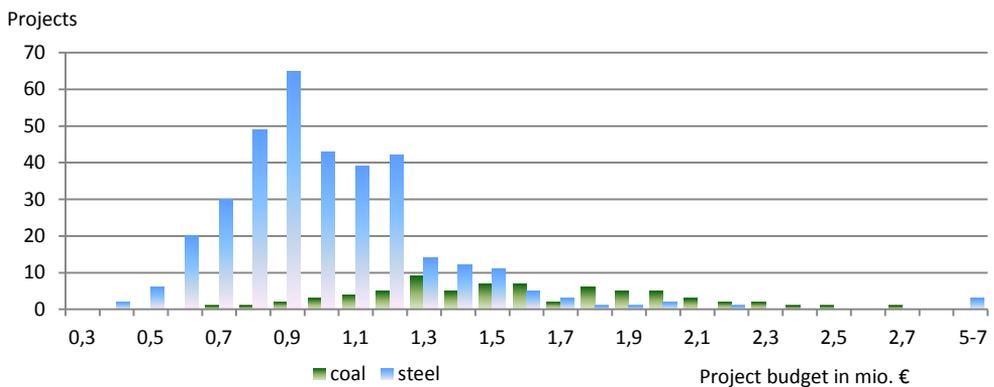


Figure 2.16 Budget distribution of research projects

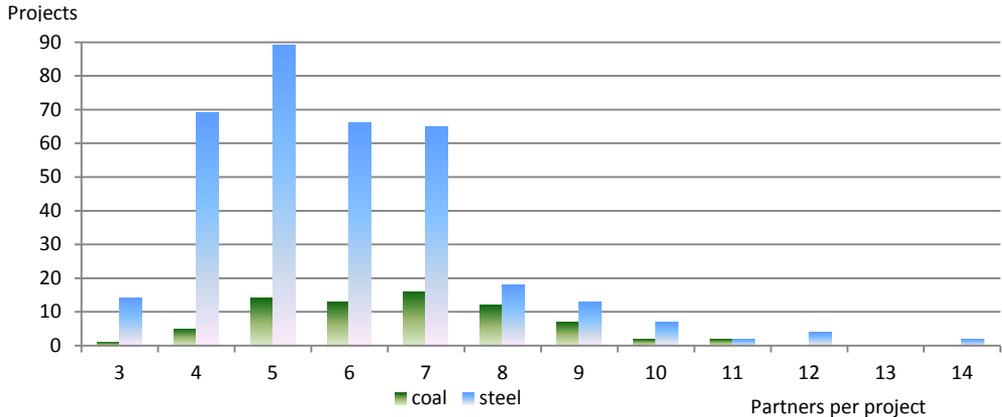


Figure 2.17 Partner number in research projects

Notably, there are some RFCS projects with extraordinary funding of 5 million € or more. In particular, the two significant projects COMTES700 (coal) and ULCOS (steel) are both of common interest for Europe, being dedicated to the energy and CO₂ issues. COMTES700 was allocated 6,1 million € out of a total budget of 15,2 million €. ULCOS, which comprises several RFCS projects belonging to the ULCOS umbrella, received a total funding of 21,2 million € for costs of 39,1 million €. An additional part of ULCOS was funded by the Framework Programme FP6 with 20 million € for 35 million € costs.

For the vast majority of research projects the consortium comprises between 4 and 7 partners (see fig. 2.17). The statistical average is 6,7 partners for coal and 5,9 for steel. The average funding per partner is 0,23 million € for coal and 0,17 million € for steel.

The typical duration of a RFCS project is 36 months, for steel meanwhile tending to 42 months because this does not change submission dates for reports and may avoid project extensions which are often refused. In few cases, RFCS projects last up to

72 months, depending on the requirements of the particular project.

Regarding their research objectives RFCS projects are typically focused on a specific and often small area. Broad projects or those with break-through innovations are rare. Nevertheless, the projects are usually highly innovative and successful in their field which is no contradiction to an incremental approach. The same applies for pilot and demonstration projects which deal with known techniques but promote significantly the application of research results.

In general, RFCS projects are amazingly successful (see also chapter 4.1). Besides the effects of focussing on incremental innovation with high industrial relevance it is the consortium of project partners which has a major influence (see fig. 2.18). In view of the beneficiaries, the commitment and an active involvement of experienced (industrial) partners with strong leadership are most relevant criteria of success. Both are well covered by the existing evaluation criteria. In contrast, the influence of the number of partners, the size and duration of the project and even the innovative aspects - a major evaluation criterion - are assessed lower.

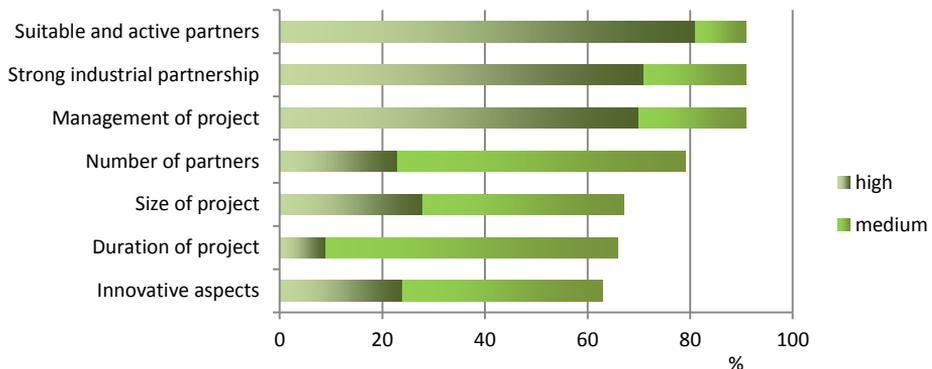


Figure 2.18 Success factors for projects

Conclusion:

Differing slightly between the sectors, the “typical” RFCS research project receives funding of 1,0 - 1,5 million € for 5 - 7 partners and a duration of 36 - 42 months. Some strategic projects are awarded higher funds. On average, RFCS projects are remarkably successful. The commitment of the project partners and a strong industrial partnership are the major keys for success.

Recommendation:

Maintain the character and rules of the industrially oriented sectorial RFCS Programme.

2.7. The Advisory and the Technical Groups

The Research Programme is managed by the Commission. Several bodies assist the Commission in implementing the Research Programme.

The Coal and Steel Committee (COSCO) is composed of representatives of Member States and assists the Commission in the overall programme management.

The Coal and Steel Advisory Groups (CAG and SAG) are composed of technical advisers, active in the field concerned and aware of the industrial priorities. Members are appointed by

the Commission to serve in a personal capacity for a period of 42 months. The CAG and the SAG assist the Commission in the programme management.

Technical Groups (TG) are composed of technical experts and assist the Commission in monitoring research and pilot / demonstration projects. Members are appointed by the Commission and advise on research strategy, management or production in the sectors related to the coal and steel industry, research organisations or user industries. In total, 12 Technical Groups have been established to cover 32

all the technical aspects of the Research Programme, 3 for coal (TGC#) and 9 for steel (TGS#).

All bodies meet once a year. The communication between these different groups is limited but sufficient. The participation of the TG chairmen in the CAG / SAG meetings allows a direct discussion of the current implementation and the development of the RFCS Programme, e.g. steering by priority setting.

The activities of the Coal and Steel Committee (COSCO) and the Coal and Steel Advisory Groups (CAG and SAG) are smooth and effective. Meetings are well prepared by the Commission.

This survey shows that in general the needs of the coal and steel sectors are fully or at least reasonably well reflected by the current distribution of technical fields to the Technical Groups (see fig. 2.19). The results are clearly positive in the coal sector (75 % fully or reasonably well) and more critical in the steel sector where various adjustments in the distribution are proposed. There are some comments and proposals for improvements. For coal especially, the more prominent inclusion of post mining research issues is suggested in view of the situation and perspective of the European coal mining industries. For steel it is proposed to give more attention to long and niche products, packaging, engineering steels, specific markets and the core processes of iron and steel making.

There is broad consent amongst the beneficiaries that the Technical Groups cover fully or at least partially their technical needs (see fig. 2.20). However, the consent is much higher for the coal sector (73 % full coverage) than in the steel sector (80 % partial coverage) where many different areas of products and applications are addressed by the beneficiaries. There are comments to adapt the distribution

of the existing and new R&D topics amongst the Technical Groups Steel to the new needs of industry in a global context. This particularly applies for the "horizontal group" TGS9 which is seen as too large and covering too many different topics.

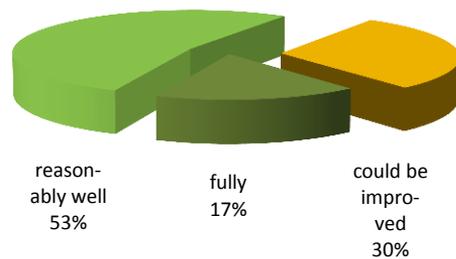


Figure 2.19
Technical Groups meet needs of sectors

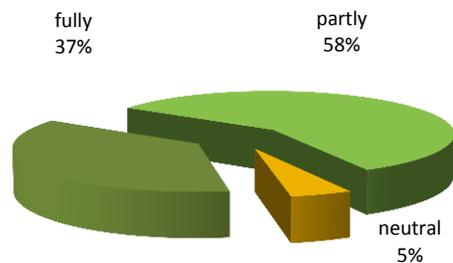


Figure 2.20
Technical Groups cover technical fields

The composition of the Technical Groups is assessed as adequate by the beneficiaries for assuring the best possible competence and a broad view on the RTD (see fig. 2.21). For both sectors, most types of beneficiaries are represented well. The responses give no clear picture for small and medium enterprises (SME). However, these companies conduct research mostly on rather narrow areas and on short-term views which does not fit well to the requested qualifications for members. Comments on the current composition of the Technical Groups suggest more industrial participation - including coal users - as well as more academic members but without a clear consensus. A certain continuous refreshment of the experts is addressed and also the possible rotation of the chairmanship.

project coordinators and an improved communication in general. In order to provide more time for these key activities and a closer monitoring the suggestion is made to increase the number of TG meetings. Furthermore, the Commission should also consider equal reimbursement of all TG members. Other comments regard the dissemination of results, the quality of final reports, the reduction of administrative burdens, rules for the internal management of the groups and the possible development of roadmaps (see also chapter 3.6).

The functioning of the Technical Groups is assessed as good concerning all aspects of their working, except a weakness in the communication of project results and also a restricted technical exchange in general (see fig. 2.22). Nevertheless, many improvements are proposed. The main issues are an increased monitoring of projects, a deeper technical exchange within these groups and with the

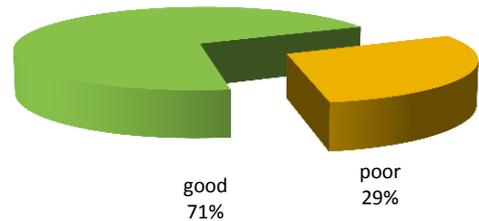


Figure 2.21
Composition of Technical Groups

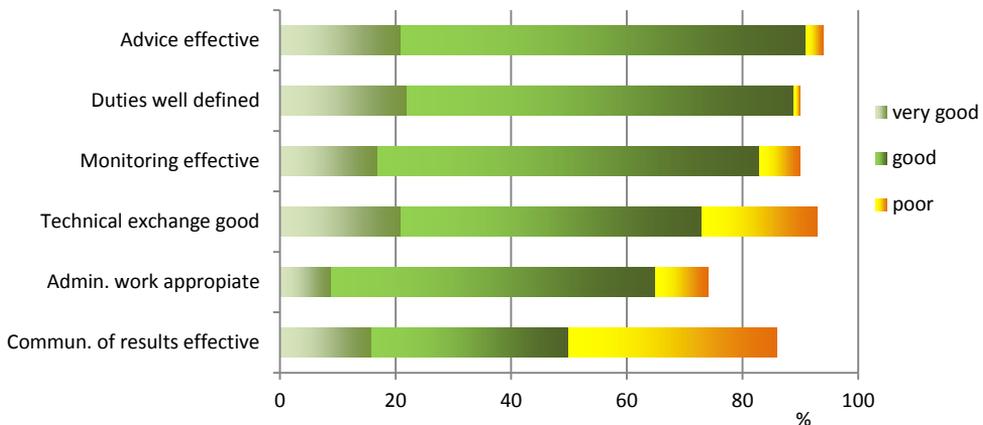


Figure 2.22 Functioning of Technical Groups

Conclusion:

The activities of the Coal and Steel Committee (COSCO) seem to be smooth and effective. The Coal and Steel Advisory Groups (CAG and SAG) concentrate on general advice and support the management of the Research Programme. The distribution and balance of Technical Groups reflect the needs of the coal and steel sector. They also sufficiently cover the technical needs of the beneficiaries, particularly for the coal sector, less for the steel sector. The composition of experts within the Technical Groups is adequate. Big industry, industry-led research centres and academic institutions are well represented whilst SMEs are less well, but satisfactorily represented. The functioning of the Technical Groups is good in general. Issues to be improved further are the optimum distribution of technical fields in the steel sector to Technical Groups, efficient monitoring, general technical exchanges, the communication of results and the reimbursement of TG members.

Recommendation:

Reconsider the optimum distribution of existing and important new technical fields and projects to the Technical Groups Steel without increasing the number of Technical Groups. The Commission should also consider equal payment of all TG members.

3. IMPLEMENTATION OF THE RFCS PROGRAMME

3.1. Provision of Information

Information about the RFCS Programme and especially the yearly information package for applicants is published by the Commission on the RFCS website. The Information Package sets out the detailed rules for participation, the methods of managing proposals and projects, application forms, rules for the submission of proposals, model grant agreements, eligible costs, the maximum financial contribution allowable, methods of payment and the annual priority objectives of the Research Programme.

The evaluation criteria are also described in detail.

The quality of information about the Research Programme and the procedures is nearly unanimously rated (very) "good" by the beneficiaries (see fig. 3.1). The information on the yearly priorities however should be available at least six months in advance of the submission deadline to support a targeted proposal preparation.

Conclusion:

The information provided by the Commission about the Research Programme and the procedures is (very) good. Priorities should be published as early as possible.

Recommendation:

Keep quality of information and publish priorities at least six months in advance of the submission deadline. Divide the Information Pack into a section which remains unchanged for several years and a section comprising the regularly revised parts such as the annual priorities.

3.2. Proposal Preparation and Submission

With the adoption of the Research Programme, the Commission launched a continuous and open call for proposals with a submission date of 15. September. The submitted proposals must comply with the rules of the Research Programme and the stipulations laid down in the Information Package. Each proposal must include a detailed description of the proposed project and contain full information about the project details and anticipated impact. The regulations, the submission process and the application forms are unchanged since the beginning of the RFCS regime, with small successive

improvements and alterations in details. Since 2011, a new electronic submission process has been in operation.

The beneficiaries rate the lay-out of the application forms and the technical, financial and administrative information requested for proposals as "good" with more than 80 % (see fig. 3.1). The new electronic submission process is clearly welcomed. The most appropriate submission deadline has always been a topic of debate and different opinions still exist, especially in the steel sector. However, the vast majority of beneficiaries is satisfied with the existing deadline.

Many useful comments are made on the new electronic submission process in order to improve details and make it more user-friendly. They should be discussed with the users and the

Advisory Groups. Although this is certain to be a continuous process, the first improvements should be available for the next call.

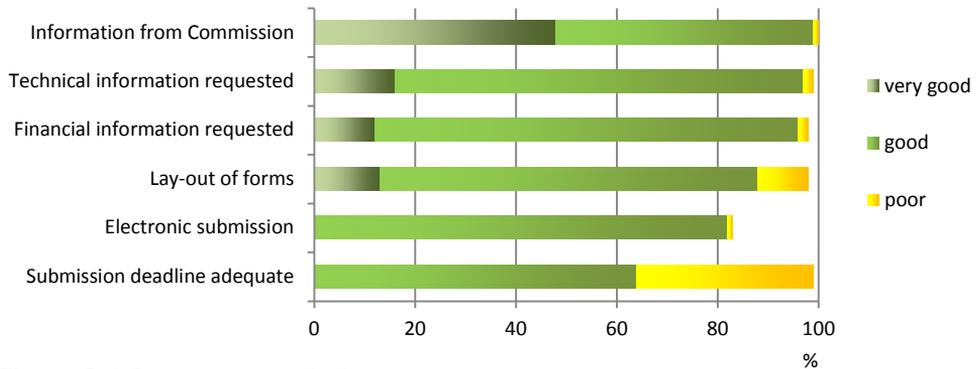


Figure 3.1 Proposal submission process

Conclusion:

The beneficiaries are content with the rules for preparation and the submission process for proposals. This also applies for the submission deadline, despite some proposals for alteration. There is no necessity for major changes. The new electronic submission system is welcomed by the beneficiaries, but a lot of improvements in detail are suggested to make it more user-friendly.

Recommendation:

Keep submission process and rules. Based on the suggestions made by the beneficiaries, improve the user friendliness of the electronic submission system. The transition to the electronic system should be used for a major step to improve the lay-out of the application forms and to check which information details are actually needed.

3.3. Eligible Costs

The RFCS Programme is based on cost-sharing RTD grant agreements. The total public funding must conform to the applicable rules on State aid. In principle, only actual costs incurred for the execution of the RFCS projects are eligible. This applies for all beneficiaries but also for subcontractors working on scientific work packages.

The maximum total financial contribution is up to 60 % for research projects, up to 50 % for pilot and demonstration projects and up to 100 % for accompanying measures.

Eligible costs comprise staff costs, equipment costs, operating costs and indirect costs. Further details and calculation methods are published in the Information Package. In continuation of proven processes the RFCS funding system is restricted to these few cost categories. For reasons of simplicity travel costs are no longer eligible since 2008. But this has been compensated by an increase of the flat rate for indirect costs from 30 % to 35 %. At the end of a project all costs claimed in the Final Financial Report must be certified by an audit certificate of an external auditor.

In general, a clear majority of the beneficiaries rates the funding principles, the eligible cost and the cost calculation methods of the RFCS Programme basically as satisfactory (see fig. 3.2).

As eligible costs are a key feature of a funding programme and all proposers must comply with these rules many comments and proposals for alterations have been made on nearly all financial aspects.

By far the most comments deal with the cost category "indirect costs" which today is covered by a flat rate fixed at 35 % (including travel). This is rated unrealistic low for big industries' overheads and the eligibility of actual overheads is proposed if they can be proved in an audit. Furthermore, many beneficiaries ask for the re-introduction of travel and subsistence costs as eligible. Reasons range from improving the cooperation within the European

projects, through visiting jointly executed experiments at distant locations, to the presentation of results at seminars or international conferences.

Some comments propose a higher financial contribution for universities and public entities because it is difficult for institutions to balance the difference to their actual cost. Several comments see the depreciation period of 60 months for IT equipment as unrealistic and a re-adoption of 36 months is requested. Some comments propose the improved funding for project coordination efforts to encourage and increase the quality of coordination and also cooperation between the partners. The regulations about interest-bearing accounts are felt inappropriate by some comments.

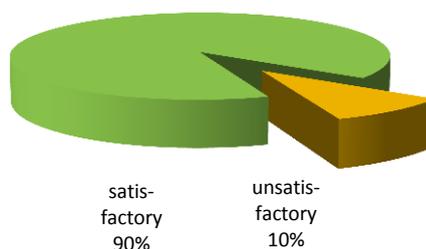


Figure 3.2 Eligibility of project costs

Conclusion:

In continuation of proven processes, the RFCS funding system is restricted to a few cost categories, including a flat rate for indirect costs. The funding principles are, in general, seen as appropriate by the vast majority of beneficiaries. Nevertheless, certain improvements should be taken into consideration with the Advisory Groups such as the increase of the flat rate for indirect costs, the appropriate funding of travel costs without additional administrative effort and the appropriate depreciation periods for IT equipment.

Recommendation:

Keep the RFCS funding system in general with minor improvements. Consider means to fund a higher share of the actual indirect cost of the beneficiary, e.g. by raising the flat rate for indirect costs to 40 %. This seems to be appropriate to promote the participation of innovative SME and research institutes and to support dissemination activities as well. Reconsider the appropriate funding of travel costs without additional administrative effort. Given the fast obsolescence of IT equipment and software, their depreciation period should also be shortened to 36 months.

3.4. Evaluation Process

After registration of the submitted RFCS proposals and a first eligibility check by the Commission the proposals are evaluated by independent experts in a centralised, confidential and equitable process. For the usual yearly call the procedure is conducted in four sessions in Brussels from October to December.

In the course of this process, each proposal is in a first step individually evaluated by at least three experts according to the criteria which are in detail laid down in the evaluation manual. Two of the five evaluation criteria have thresholds such that the proposals must pass 3 out of 5 marks. A proposal can reach a maximum of 25 marks plus one additional mark when complying with an annual priority.

The second step is a consensus meeting of the experts and the responsible scientific officer of the Commission where the final evaluation report is produced based on the individual results and on intensive discussions among the experts. In the rare case of no consensus among the three experts, further experts evaluate the respective proposal. The whole exercise is accompanied by at least one observer reporting to the CAG respectively to the SAG.

The evaluation process delivers a rejection of all proposals which are not eligible or below any threshold and a ranking according to the marks achieved of all proposals which are in principle acceptable for funding. The sequence is separately drawn-up for the two Research Programme areas coal and steel resulting in two ranking lists.

Because the requested funding usually exceeds the available budget each ranking list is split into three sections. The first section comprises all proposals retained for funding and covered by the budget. The second section is the Reserve List comprising proposals being retained for funding but exceeding the budget; these proposals are referred to in case proposals of the first priority don't come about or if the negotiations result in savings sufficient for the funding of an additional project. The third section of the ranking list is formed by the rejected proposals.

Usually in December and January the Commission presents the respective ranking lists to the Coal and the Steel Advisory Group (CAG and SAG) for consultation. The order of the proposals in the ranking lists however remains untouched. The Advisory Groups usually endorse the projects retained for funding. Afterwards, those projects proposed for funding are presented to the Coal and Steel Committee (COSCO)

at its annual meeting, usually in April. After their endorsement and the Commission's internal process of agreement, the publishing of the final list of funded projects is the end of the selection process.

In general, most of the submitted eligible proposals are of good quality which corresponds to 15 marks if each of the five evaluation criteria is rated as good with 3 marks (see fig. 3.3). Those proposals which also pass the necessary thresholds are given on

average even 17 marks. And the actually funded proposals received more than 18 marks on average. Usually, proposals prioritised for funding need at least more than 17 marks in total to secure funding. This demonstrates the high quality of the finally selected projects.

In general, the beneficiaries rate the proposal evaluation process as "good"; including those being only "satisfied" means that 80 % have a positive opinion (see fig. 3.4).

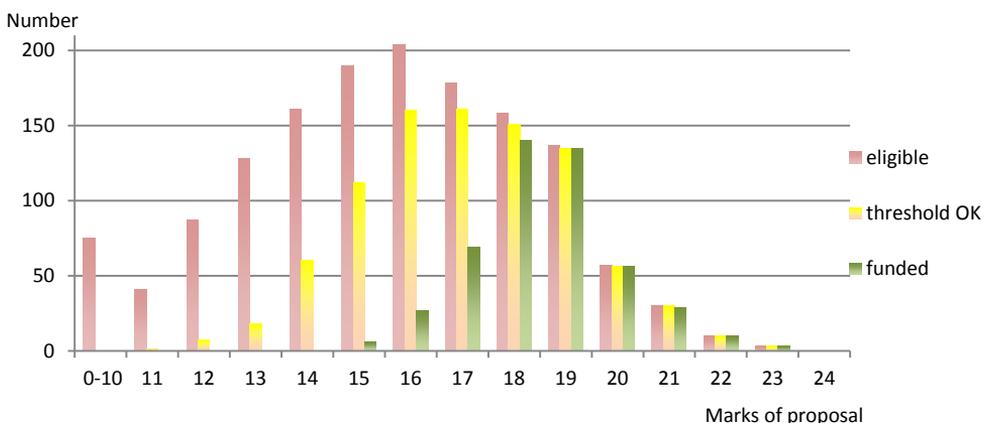


Figure 3.3 Average marks of proposals

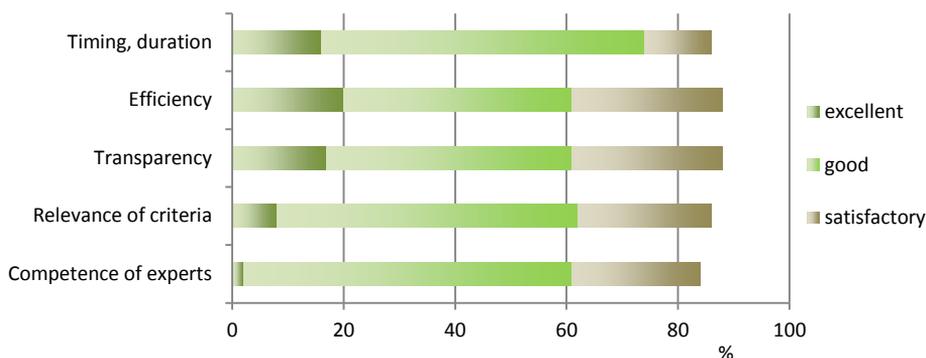


Figure 3.4 Quality of proposal evaluation process

Many comments and proposals for improvements are made by the beneficiaries on the organisation of the evaluation procedure. A major concern is the rather long time of five days which the experts usually have to stay in Brussels, often being an obstacle for qualified experts to participate. Several comments suggest to organise the first stage as remote individual evaluations and to hold only the Consensus Meeting on site in Brussels. Furthermore, earlier information for those experts who are finally appointed for the evaluation is requested and proposals for improved briefing of new or inexperienced evaluators are made.

Many beneficiaries complain about the inconsistent assessments of re-submitted proposals and the marks they receive in the re-evaluation.

Dedicated statistics on this issue are not available. To ensure a consistent evaluation of re-submitted proposals, the evaluators should at least be provided with the results of the first submission and the scientific officer responsible for the consensus meeting should take care of this aspect.

Several comments point out that some evaluation criteria should be better defined and more clearly differentiated. This particularly applies for the criterion "Innovative Content" which should especially with regard to Pilot and Demonstration projects be better explained to the evaluators in the briefing. The perception is that the Commission's concept - which includes both incremental and break-through research - is not necessarily shared by all evaluators.

Conclusion:

The evaluation of the RFCS proposals is carried out in a centralised, confidential and equitable process. In several steps the Commission, independent evaluators, the Advisory Groups and the Coal and Steel Committee contribute to the final selection. The result of the evaluation is indeed the funding of the best proposals, limited by the Research Fund's annual budget. The beneficiaries rate the procedure generally as good. Nevertheless, many comments and proposals for improvement show the strong interest of the beneficiaries in a well organised and efficient evaluation process.

Recommendation:

Keep the evaluation process basically as it is. The evaluation criteria should be checked for overlap and better assignment and common understanding, particularly the criterion "Innovative Content". Ensure that "innovation" is adequately addressed in the evaluation process of pilot and demonstration projects. Improve the organisation of the evaluation procedure, aiming at a maximum 3-day stay in Brussels by avoiding any idle time. As a matter of routine, arrange the Consensus Meetings immediately after the individual evaluation by experts. Reconsider the organisation of the first step as a remote evaluation and a centralised second step in Brussels with the Consensus Meetings only, thus also improving the availability of experts. In order to obtain a common understanding and optimal "calibration" of the experts' judgements, the evaluation criteria should be explained carefully in the evaluators briefing. Assure the consistent evaluations of re-submitted proposal by providing the evaluators with the results of the first submission. The scientific officer responsible for the Consensus Meeting should pay special attention to the considerations of the first evaluation.

3.5. Contracting Procedures

Based on the results of the evaluation, the Commission starts the negotiation procedure for all those RFCS proposals which are selected for funding. The negotiation comprises all aspects of a proposal, but the focal point is usually on the eligible costs. After the final approval, a grant agreement is signed on the basis of the relevant RFCS model grant agreement between the Commission and the coordinator of the project. The other partners accede by signing a form.

This final grant agreement of a project defines the financial contribution allocated under the Research Programme on the basis of the eligible costs, as well as the rules concerning cost reporting, the closure of accounts and certificates on financial statements. In addition, it contains provisions on access rights, dissemination and use of knowledge. The Commission aims at getting all grant agreements signed before the starting date of the RFCS projects which is usually the beginning of July. If this is not possible for any reason, the Commission meanwhile sends letters to the respective coordinators confirming the funding decision. The time from the submission in September to signing the grant agreement is about nine months.

The majority of the beneficiaries assesses the negotiation and contracting procedures including the requested documents and time to contract as adequate (see fig. 3.5).

Comments request, however, that the legally binding approval of a project should be given in the form of the Grant Agreement or at least a letter with comparable legal effect before the

start date of the project to avoid a delay or a project start without formal approval. Other comments concern the appropriate timing of EU meetings necessary for the approval or the acceptance of electronic signature.

Many comments address the request for much detailed personal data during the negotiation phase, which is seen as inappropriate given the 3-year duration of the average project and current data protection requirements. Neither the acting personnel nor the requested accuracy in hourly rates can be predicted in advance with sufficient reliability. Since only audited actual costs are ultimately accepted, it seems inappropriate to request too much sensitive personnel information during this phase.

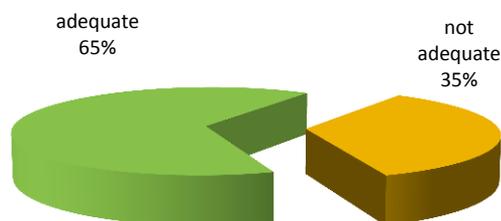


Figure 3.5
Grant Agreement contracting procedures

Conclusion:

The proposal negotiation process and contracting procedure as well as the (Model) Grant Agreement and the forms used are seen mainly as adequate. The Commission aims at having the Grant Agreements signed before the start date of a project. Otherwise the Commission meanwhile confirms the funding decision by simple letter. This written confirmation is important for the beneficiaries or even necessary e.g. by most universities. The request during the negotiation phase for detailed personnel data is seen as inappropriate for research projects lasting three years or more and raises sensitive data protection issues.

Recommendation:

Keep the process of contracting and especially the practice to give beneficiaries sufficient confidence about the negotiated RFCS funding before the start date of the project. The Commission should re-consider how much detail on personnel cost estimates is necessary during negotiation.

3.6. Technical and Financial Reporting, Monitoring of Projects

In the course of a RFCS project, several reports must be submitted to the Commission and to the Technical Groups describing the technical progress made and the financial situation. According to the RFCS Guidelines for Technical Reporting the beneficiaries have to produce, each calendar year, an Annual Report covering the respective project progress in the reporting period. Additionally, a Mid-term Technical Report on the accumulated results and a Final Report on the whole project, including an assessment of exploitation and impact, must be provided. Mid-term and Final Report must be accompanied by Financial Statements covering the respective periods. The Final Report, as the essential means for the dissemination of project results, is published by the Commission. For the Technical Groups these reports, in

addition to the coordinators' presentations at TG meetings, are the essential and only basis for their monitoring of on-going projects.

The Draft Final Report for a usual project of 36 months is due three quarters of a year after the project end date. This time delay is neither beneficial for a prompt dissemination nor a motivation for the coordinator and the project partners, particularly as this effort is not eligible for cost recovery.

The beneficiaries rate the reporting requirements generally as "good" (see fig. 3.6). Including those who are "satisfied", more than 80 % satisfaction is obtained for all aspects addressed, including the monitoring by the Technical Groups which nevertheless has potential for improvements.

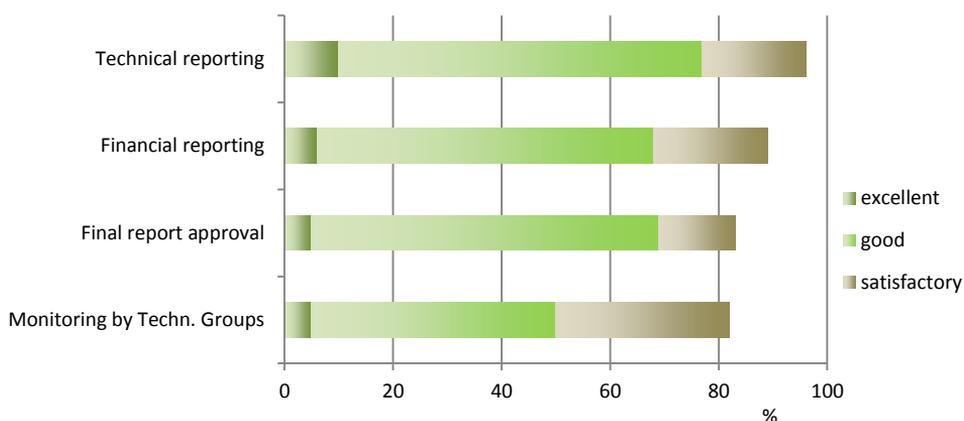


Figure 3.6 Quality of reporting and monitoring procedures

Several comments complain about the limited possibilities of the Technical Groups to efficiently monitor projects and to intervene in due time if necessary. This could be improved by more frequent TG meetings, but also by simple measures such as prompt distribution of minutes and templates for reporting to be developed with the TGs. Other comments concern the Final Report. Particularly in view of the essential role it plays for dissemination, the timetable for final reporting should be reconsidered.

In parallel, the timing and frequency of the various consulting bodies should be reconsidered, all in an effort to see earlier dissemination. Sufficient time

should be foreseen within the duration of a project for the preparation of the final report e.g. by an extended project duration to the end of the calendar year as is already accepted for steel projects.

The written procedure for the acceptance of re-submitted Final Reports should be regularly used by the Technical Groups. Some comments propose the better highlighting of project achievements in the publishable report and the systematic evaluation of the success of the completed projects by the Technical Groups e.g. 2-3 years after completion.

Conclusion:

The requirements of the technical and financial reporting by the beneficiaries and the monitoring of projects by the Technical Groups are widely accepted and rated as good. A couple of suggestions are made in order to improve the efficiency of the monitoring by the Technical Groups and in order to obtain an early approval and publication of the Final Report as an essential basis for the dissemination of results.

Recommendation:

Basically, keep the process and the rules for reporting and monitoring. Improve the possibility for efficient Technical Group monitoring e.g. by prompt distribution of minutes and by templates for reporting. One additional TG meeting per year would significantly contribute to this objective. Check during the negotiation of the Grant Agreement that sufficient time is foreseen within the project plan for the production of the final report, for example, some RFCS projects already apply for 42 months. To secure early publication of the Final Report, the timing of the consulting bodies involved should be checked for possibilities of optimisation. Make general use of the written procedure for the approval of re-submitted Final Reports.

3.7. Alteration of Projects

As in any research activity, RFCS projects are typically at risk of total or partial failure, delays or new discoveries which all may necessitate adjustments and alterations of the original project plan. Furthermore, many RFCS projects directly involve plant resources and therefore are dependent on their availability and unexpected events, such as delays in the purchase or installation of equipment, repairs, changes to production plans or production stoppages caused by technical difficulties or market fluctuations. The same applies if RFCS projects compete for scarce resources that are needed to maintain production. Such problems normally cannot be influenced and can rarely be anticipated by the project leader at the project start. Besides contingencies in the work plan, the funding system itself should be as flexible as possible and allow for any necessary adjustments to projects as a result of unforeseen reasons.

In principle, all RFCS Grant Agreements can be altered by amendments and indeed, most of them are amended once or more in the course of a project, mostly for minor details like changes in a beneficiary's name or bank account number which are often caused by new circumstances in the commercial world such as corporate mergers. The

procedure to fix such minor changes meanwhile has been significantly simplified. A simple information memo from the coordinator to the Commission is sufficient, which can then be confirmed. Although project extensions, without alterations of the technical content, are also, in principle, minor changes, requests for this kind of change have been by default refused for some years. The handling of major changes, including alterations of work packages or even change of partners, is more complicated, but a certain minimum of administrative duties is inevitable in order to manage public funding in a responsible manner.

From the beneficiaries' experience the reasons for alterations or even premature termination of RFCS projects result mainly from technical difficulties, followed by defaulting project partners and its management (see fig. 3.7). Financial issues and expected benefit are less important.

Despite all these risks inherent in RFCS projects, only a few proposals for major alterations, including changes of the technical program, are discussed with the Commission and sometimes accepted.

Many beneficiaries, particularly from the coal sector, complain about the

restrictive handling of project extensions by the Commission over recent years. This is a major contradiction to the character of R&D where risks and new findings may make it necessary to react with flexibility. Refusals of an extension by default may jeopardise the achievement of an applicable project result and its successful dissemination. Precaution must be taken that the

inflexible application of administrative rules does not result in wasting of public funds. For steel projects, there has been some relief to this problem because proposers lately have increased the project durations by six months which are then usually dedicated to the preparation of the final report, but also gives some flexibility for delays.

Reasons for alterations of projects

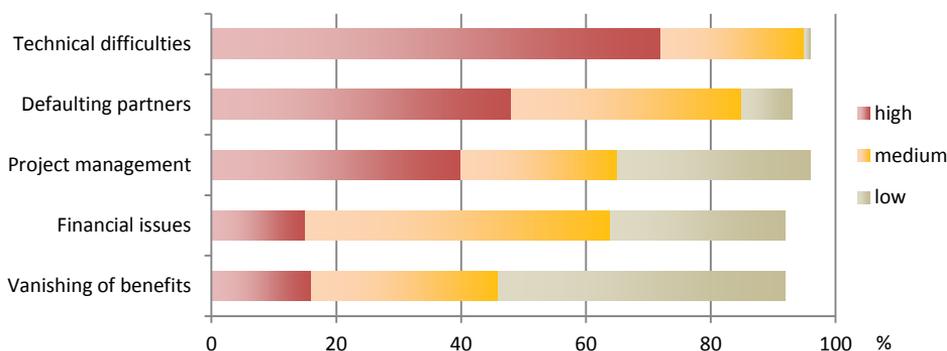


Figure 3.7 Reasons for alterations of projects

In general, the majority of beneficiaries rate the flexibility for technical alterations as sufficient (see fig. 3.8). The flexibility for project extensions is rated considerably lower, particularly by the coal beneficiaries. But about half of the beneficiaries are still satisfied. A reason may be the increased precaution made in project planning and the extended duration of many steel projects.

Concerning the broad aspect of administrative hurdles, it is surprising and even more satisfying that the

beneficiaries do not see major hurdles or at least rate their influence as very moderate (see fig. 3.9). On average, nearly 60 % are not aware of any hurdle worth mentioning and an additional 19 % see only a low influence. The areas most affected by administrative hurdles are the project management and somewhat less implementation and dissemination of results. Only a small impact is seen on the success of a project which - besides all the criticism about administrative issues - may be the most important message.

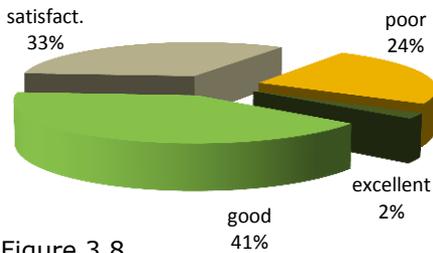


Figure 3.8
Flexibility for technical alterations

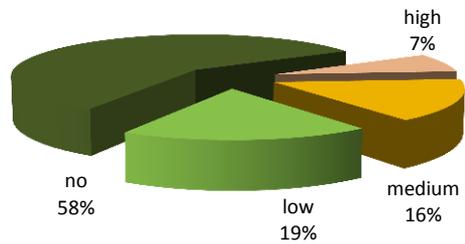


Figure 3.9
Influence of administrative hurdles

Conclusion:

The need for alterations is a normal feature of truly innovative and thereby risky R&D projects. Adaptions to new findings, not foreseeable at the submission date, are necessary to secure the research goals and to enable their dissemination. Whereas the handling of minor administrative changes has meanwhile been simplified, any extensions of projects are difficult to achieve. However, project extensions are sometimes needed and are often a simple way to achieve the originally expected results. Refusing it by default may jeopardise the objectives of public funding. Besides all the comments on difficulties in the day-to-day project implementation, the beneficiaries in general see only a few administrative hurdles and only small effect on the success of projects.

Recommendation:

Keep the process used for dealing with requested alterations in general but improve the handling of project extensions. In order to reduce extension requests, the Commission should indicate in the Information Package the possibility to apply for a suspension or extension of the project duration as it is used already for steel projects.

4. IMPACT AND DISSEMINATION

4.1. Impact of the RFCS Programme

The positive impact of the Research Programme on the development of the coal and steel sectors is of major interest for all those participating in projects and investing their own resources, effort and money and, of course, for the Commission in managing it. It is quite unique and emphasizing the high industrial relevance and success of the RFCS Programme that nearly all beneficiaries have high or at least moderate expectations regarding the programme's impact (see fig. 4.1).

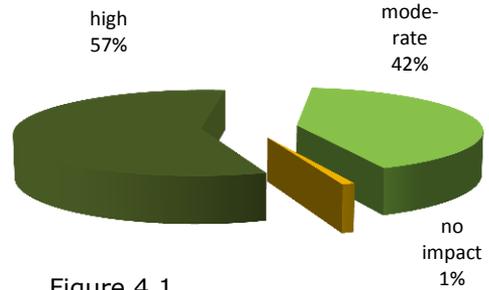


Figure 4.1
Expectations regarding the impact of RFCS Programme

In particular, the beneficiaries' expectations on technical development, the development of knowledge and the European networking are largely fulfilled (see fig. 4.2). Financial and funding expectations are at least partially satisfied. It is noteworthy that virtually no one says that their expectations are not satisfied.

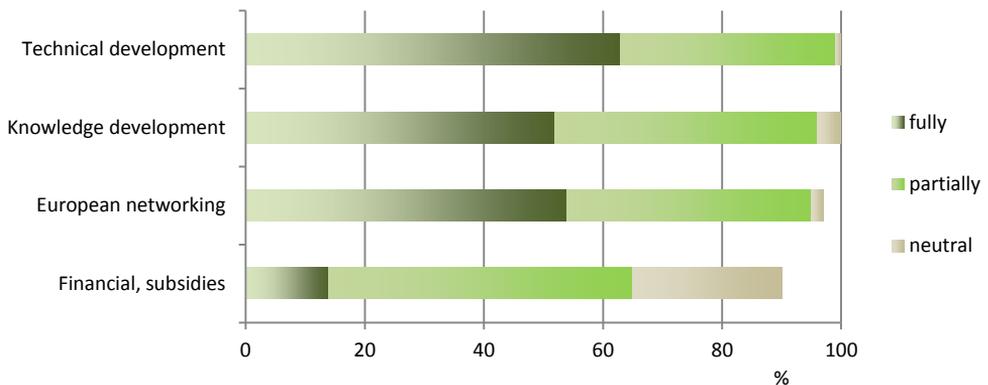


Figure 4.2 Beneficiaries' expectations satisfied

The overall very positive assessment is backed by the beneficiaries' assessments that the Research Programme is also of high importance

in their particular technical fields. Nearly 90 % estimate the needs in their special technical field as being

addressed excellent or good (see fig. 4.3).

In addition to this excellent rating of the impact of the RFCS Programme by the beneficiaries, there are some specific **comments**. The critical importance of the project partners' competence and their readiness to really cooperate and share knowledge is emphasised. The competence of partners, the composition of consortia and the coherence of project plans should therefore continue to be essential evaluation criteria. Some comments also address the competitive situation between partners, but this is not necessarily a hurdle for good cooperation.

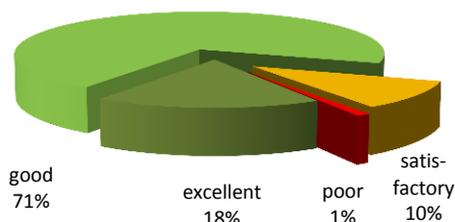


Figure 4.3
RFCS Programme addresses needs of beneficiaries' technical fields

Conclusion:

In accordance with the industrial character of the RFCS Programme, nearly all beneficiaries have high or at least moderate expectations regarding its impact. These expectations are clearly satisfied to a large extent, particularly in the fields of technical development, knowledge generation and European networking. The importance of competent project partners, their willingness to really cooperate and coherent project plans are emphasised.

Recommendation:

Maintain the Research Programme as an industrially oriented, sectorial programme with all major processes for implementation unchanged.

4.2. Dissemination of Results

Besides technical and economic success, the efficient dissemination of research results is a core concern of every publically funded research programme. Funding is not primarily intended to assist only the project partners but should above all generate benefits for the coal and steel sectors or even for the society.

In the RFCS Programme, research results are presented to members of the respective Technical Groups orally at their meetings, in the Mid-term and

the Final Reports and to the public in the Final Reports. Other forms of dissemination are encouraged.

According to the assessment of the beneficiaries, the degree of dissemination of project results is highest for the same or similar applications at the partners which were involved in the project (see fig. 4.4). Dissemination is less within the scientific and technical community and less still within the relevant industrial sectors. However, it must be

highlighted that the degree of dissemination, when including the “medium” response, is still more than 80 % for all these three groups, which can all, in principle, apply the technical research results. Dissemination within society as a whole is comparatively low, at about 35 %. However, it should be remembered that the sectors are highly specialised and so a wider dissemination beyond the sector itself can rarely be expected.

The Final Report is by far the most common means of dissemination and also seen as effective (see fig. 4.5). However, according to the beneficiaries’ experience, publications and conferences or workshops are clearly rated as more effective, followed by the internet. Nevertheless, all means are rated as very useful, with more than 75 % (including “medium”). Publications are the most appropriate means of dissemination.

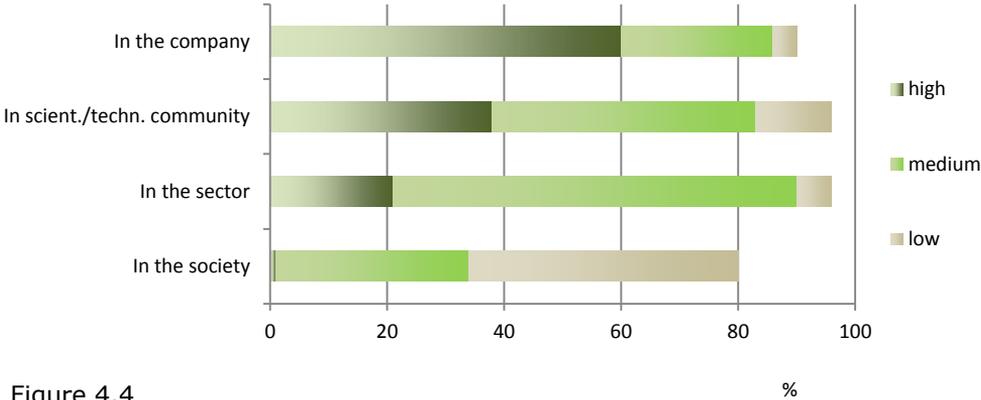


Figure 4.4 Degree of dissemination of projects results

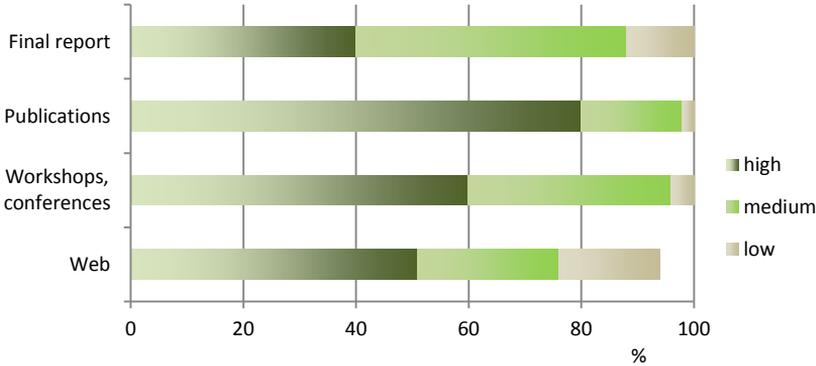


Figure 4.5 Useful means for dissemination of projects results

Some comments propose holding periodic international conferences dedicated to the RFCS Programme itself. Others recommend deeper involvement of the Technical Groups or

a commitment to publish project results or particular work packages dedicated to publications in technical journals and participation in international conferences.

Conclusion:

The degree of dissemination is high for the same or similar applications at the beneficiaries, within the scientific and technical community and within the sector. All these groups can, in principle, technically apply RFCS research results. The best means for dissemination are in publications, at conferences or workshops and via the publishable final report, as well as via the internet.

Recommendation:

Keep the rules for dissemination basically unchanged. The dissemination of results during the lifetime of a RFCS project should be encouraged by respective lump sums for publication of results, including presentations at conferences or workshops. Improve the dissemination provisions within the sector and in a global sense by encouraging the consortia to publish results beyond the Final Report, e.g. present it in workshops.

5. SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Programme Objectives, Instruments and Framework

RFCS Programme Objectives

The objectives of the RFCS Programme have been and will be of high relevance for the coal and the steel sector. The objectives also meet the requirements of the different beneficiaries to a high extent. Some editorial rearrangements can be made within the existing legal framework. All objectives are relevant and are addressed by results of the research activities. Hence, there is no need for changes.

Recommendation:

Maintain the objectives of the Research Programme.

Priorities and Dedicated Calls

Priority setting basically offers means to stronger focus RFCS research and to introduce a more top-down steering of the RFCS Programme. However, a balance must be achieved with projects not addressing priorities. Dedicated calls have not been used but remain a possibility.

Recommendation:

Improve the implementation of priority setting, i.e. the optimum number of priorities and the process of yearly priority selection. Fewer and longer-lasting priorities may assist in achieving a real focus.

Allowable Actions

The RFCS Programme supports all actions along the typical stages of innovation, from research over pilot to demonstration projects as well as accompanying measures e.g. for dissemination of knowledge and results. Research projects are by far the most used action. The actual share of allowable actions is in principle seen as adequate. The encouragement of more pilot and demonstration projects is proposed because these actions are important for the industrially oriented RFCS Programme. Accompanying measures are rarely, but adequately used.

Recommendation:

Encourage the submission of more pilot and demonstration projects. Measures could be a priority on pilot and demonstration projects with an additionally awarded point and making these projects financially more attractive.

Annual Budget of the RFCS Programme

The RFCS funds of 56 million € on average are allocated satisfactorily to the two sectors and to their research fields. In general, the shares of coal and steel areas and the different Technical Groups are adequate.

Recommendation:

Maintain the rules and the implementation for the allocation of funds.

Participation in the RFCS Programme, Third Countries

The RFCS Programme addresses a small community of highly qualified and well equipped companies and research institutes. The actual representation of the various types of beneficiaries is seen as adequate in view of the industrial character of the Research Programme. The same applies for the participation of parties from Third Countries. In accordance with today's practice, any funding of non EU partners by the RFCS Programme is opposed.

Recommendation:

Maintain the rules for participation. There is no need to intervene for an increased participation of certain types of beneficiaries or parties from Third Countries. Keep today's practice that non EU partners cannot be funded by the RFCS Programme.

Typical RFCS Project Profile

Differing slightly between the sectors, the "typical" RFCS research project receives funding of 1,0 - 1,5 million € for 5 - 7 partners and a duration of 36 - 42 months. Some strategic projects are awarded higher funds. On average, RFCS projects are remarkably successful. The commitment of the project partners and a strong industrial partnership are the major keys for success.

Recommendation:

Maintain the character and rules of the industrially oriented sectorial RFCS Programme.

The Advisory and the Technical Groups

The activities of the Coal and Steel Committee (COSCO) seem to be smooth and effective. The Coal and Steel Advisory Groups (CAG and SAG) concentrate on general advice and support the management of the Research Programme. The distribution and balance of Technical Groups reflect the needs of the coal and steel sector. They also sufficiently cover the technical needs of the beneficiaries, particularly for the coal sector, less for the steel sector. The composition of experts within the Technical Groups is adequate. Big industry, industry-led research centres and academic institutions are well represented whilst SMEs are less well, but satisfactorily represented. The functioning of the Technical Groups is good in general. Issues to be improved further are the optimum distribution of technical fields in the steel sector to Technical Groups, efficient monitoring, general technical exchanges and the communication of results and the reimbursement of TG members.

Recommendation:

Reconsider the optimum distribution of existing and important new technical fields and projects to the Technical Groups Steel without increasing the number of Technical Groups. The Commission should also consider equal payment of all TG members.

Implementation of the RFCS Programme

Provision of Information

The information provided by the Commission about the Research Programme and the procedures is (very) good. Priorities should be published as early as possible.

Recommendation:

Keep quality of information and publish priorities at least six months in advance of the submission deadline. Divide the Information Pack into a section which remains unchanged for several years and a section comprising the regularly revised parts such as the annual priorities.

Proposal Preparation and Submission

The beneficiaries are content with the rules for preparation and the submission process for proposals. This also applies for the submission deadline, despite some proposals for alteration. There is no necessity for major changes. The new electronic submission system is welcomed by the beneficiaries, but a lot of improvements in detail are suggested to make it more user-friendly.

Recommendation:

Keep submission process and rules. Based on the suggestions made by the beneficiaries, improve the user friendliness of the electronic submission system. The transition to the electronic system should be used for a major step to improve the lay-out of the application forms and to check which information details are actually needed.

Eligible Costs

In continuation of proven processes, the RFCS funding system is restricted to a few cost categories, including a flat rate for indirect costs. The funding principles are, in general, seen as appropriate by the vast majority of beneficiaries. Nevertheless, certain improvements should be taken into consideration with the Advisory Groups such as the increase of the flat rate for indirect costs, the appropriate funding of travel costs without additional administrative effort and the appropriate depreciation periods for IT equipment.

Recommendation:

Keep the RFCS funding system in general with minor improvements. Consider means to fund a higher share of the actual indirect cost of the beneficiary, e.g. by raising the flat rate for indirect costs to 40 %. This seems to be appropriate to promote the participation of innovative SME and research institutes and to support dissemination activities as well. Reconsider the appropriate funding of travel costs without additional administrative effort. Given the fast obsolescence of IT equipment and software, their depreciation period should also be shortened to 36 months.

Evaluation Process

The evaluation of the RFCS proposals is carried out in a centralised, confidential and equitable process. In several steps the Commission, independent evaluators, the Advisory Groups and the Coal and Steel Committee contribute to the final selection. The result of the evaluation is indeed the funding of the best proposals, limited by the Research Fund's annual budget. The beneficiaries rate the procedure generally as good. Nevertheless, many comments and proposals for improvement show the strong interest of the beneficiaries in a well organised and efficient evaluation process.

Recommendation:

Keep the evaluation process basically as it is. The evaluation criteria should be checked for overlap and better assignment and common understanding, particularly the criterion "Innovative Content". Ensure that "innovation" is adequately addressed in the evaluation process of pilot and demonstration projects. Improve the organisation of the evaluation procedure, aiming at a maximum 3-day stay in Brussels by avoiding any idle time. As a matter of routine, arrange the Consensus Meetings immediately after the individual evaluation by experts. Reconsider the organisation of the first step as a remote evaluation and a centralised second step in Brussels with the Consensus Meetings only, thus also improving the availability of experts. In order to obtain a common understanding and optimal "calibration" of the experts' judgements, the evaluation criteria should be explained carefully in the evaluators briefing. Assure the consistent evaluations of re-submitted proposal by providing the evaluators with the results of the first submission. The scientific officer responsible for the Consensus Meeting should pay special attention to the considerations of the first evaluation.

Contracting Procedures

The proposal negotiation process and contracting procedure as well as the (Model) Grant Agreement and the forms used are seen mainly as adequate. The Commission aims at having the Grant Agreements signed before the start date of a project. Otherwise the Commission meanwhile confirms the funding decision by simple letter. This written confirmation is important for the beneficiaries or even necessary e.g. by most universities. The request during the negotiation phase for detailed personnel data is seen as inappropriate for research projects lasting three years or more and raises sensitive data protection issues.

Recommendation:

Keep the process of contracting and especially the practice to give beneficiaries sufficient confidence about the negotiated RFCS funding before the start date of the project. The Commission should re-consider how much detail on personnel cost estimates is necessary during negotiation.

Technical and Financial Reporting, Monitoring of Projects

The requirements of the technical and financial reporting by the beneficiaries and the monitoring of projects by the Technical Groups are widely accepted and rated as good. A couple of suggestions are made in order to improve the efficiency of the monitoring by the Technical Groups and in order to obtain an early approval and publication of the Final Report as an essential basis for the dissemination of results.

Recommendation:

Basically, keep the process and the rules for reporting and monitoring. Improve the possibility for efficient Technical Group monitoring e.g. by prompt distribution of minutes and by templates for reporting. One additional TG meeting per year would significantly contribute to this objective. Check during the negotiation of the Grant Agreement that sufficient time is foreseen within the project plan for the production of the final report, for example, some RFCS projects already apply for 42 months. To secure early publication of the Final Report, the timing of the consulting bodies involved should be checked for possibilities of optimisation. Make general use of the written procedure for the approval of re-submitted Final Reports.

Alteration of Projects

The need for alterations is a normal feature of truly innovative and thereby risky R&D projects. Adaptions to new findings, not foreseeable at the submission date, are necessary to secure the research goals and to enable their dissemination. Whereas the handling of minor administrative changes has meanwhile been simplified, any extensions of projects are difficult to achieve. However, project extensions are sometimes needed and are often a simple way to achieve the originally expected results. Refusing it by default may jeopardise the objectives of public funding. Besides all the comments on difficulties in the day-to-day project implementation, the beneficiaries in general see only a few administrative hurdles and only small effect on the success of projects.

Recommendation:

Keep the process used for dealing with requested alterations in general but improve the handling of project extensions. In order to reduce extension requests, the Commission should indicate in the Information Package the possibility to apply for a suspension or extension of the project duration as it is used already for steel projects.

Impact and Dissemination

Impact of the RFCS Programme

In accordance with the industrial character of the RFCS Programme, nearly all beneficiaries have high or at least moderate expectations regarding its impact. These expectations are clearly satisfied to a large extent, particularly in the fields of technical development, knowledge generation and European networking. The importance of competent project partners, their willingness to really cooperate and coherent project plans are emphasised.

Recommendation:

Maintain the Research Programme as an industrially oriented, sectorial programme with all major processes for implementation unchanged.

Dissemination of Results

The degree of dissemination is high for the same or similar applications at the beneficiaries, within the scientific and technical community and within the sector. All these groups can, in principle, technically apply RFCS research results. The best means for dissemination are in publications, at conferences or workshops and via the publishable final report, as well as via the internet.

Recommendation:

Keep the rules for dissemination basically unchanged. The dissemination of results during the lifetime of a RFCS project should be encouraged by respective lump sums for publication of results, including presentations at conferences or workshops. Improve the dissemination provisions within the sector and in a global sense by encouraging the consortia to publish results beyond the Final Report, e.g. present it in workshops.

Annex

A. Abbreviations

Beneficiary	mostly meant as those beneficiaries questioned in the monitoring exercise
CAG	Coal Advisory Group
COSCO	Coal and Steel Committee
ECSC	European Community for Coal and Steel, expired in 2002
ERA	European Research Area
ESTEP	European Steel Technology Platform
ExCo	Expert Committee for this monitoring exercise
FP	Framework Programme of the European Union for research, technological development and demonstration activities
Legal basis	Council Decision n°2008/376/EC 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, published in the Official Journal of the European Union on 20 May 2008, OJ L 130/7, replacing Council Decision 2003/76/EC of 1 February 2003, OJ L 29/28
LQ	Long Questionnaire used in the monitoring exercise
Research Programme	Research Programme of the RFCS
RFCS	Research Fund for Coal and Steel, successor of ECSC
RFCS Programme	similar as Research Programme
RTD, R&D	Research and technical development
SAG	Steel Advisory Group
SQ	Short Questionnaire used in the monitoring exercise
Survey	the monitoring exercise
TG	Technical Groups, there are 3 TGC and 9 TGS
TGC#	Technical Groups Coal (no. #)
TGS#	Technical Groups Steel (no. #)
ULCOS	Umbrella project "ULTRA low-CO ₂ emission in steelmaking"
ZEP	Zero Emission Platform

B. List of Technical Groups

There are in total 12 Technical Groups established to cover all technical aspects of the Research Programme, 3 related to coal (TGC#) and 9 related to steel (TGS#).

- TGC1 Coal mining operations, mine infrastructure and management, unconventional use of coal deposits
- TGC2 Coal preparation, conversion and upgrading
- TGC3 Coal combustion, clean and efficient coal technologies, CO₂ capture
- TGS1 Ore agglomeration and Iron making
- TGS2 Steelmaking processes
- TGS3 Casting, reheating and direct rolling
- TGS4 Hot and cold rolling processes
- TGS5 Finishing and coating
- TGS6 Physical metallurgy and design of new generic steel grades
- TGS7 Steel products and applications for automobiles, packaging and home appliances
- TGS8 Steel products and applications for building, construction and industry
- TGS9 Factory-wide control, social and environmental issues

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The research fund for coal and steel was established in 2002 to support the competitiveness of the European Coal and Steel sectors by supporting research, pilot and demonstration projects.

In accordance with the legal basis of the Research Fund for Coal and Steel (Council Decision 2008/376/EC) the Commission shall carry out a monitoring exercise of the Research Programme and a report shall be issued by the end of 2013. To this end an Expert Committee was established in 2011 following nominations by the Coal and Steel Advisory Groups in order to assist in this exercise.

This report represents the outcome of work carried out by the Expert Committee until November 2012 and contains the recommendations to be made to the Commission services.

Studies and reports

