ECSC-STEEL C - Medium-term guidelines for the ECSC steel RTD programme of research and pilot/demonstration projects, 1996-2002

The ECSC steel research and technological development programme is established in the context of Article 55 of the ECSC Treaty which requires the Commission to ‘promote technical and economic research relating to the production and increased use of coal and steel...’ and Article 130f of the Treaty on European Union which requires the Community to pursue the objective of strengthening the scientific and technological basis of Community industry and encouraging it to become more competitive at international level.

The current research programme builds on the achievements of previous ECSC steel research activities and, in particular, the work carried out under the technical steel research and pilot/demonstration programmes under the 1991-1995 guidelines. Over the years, the various ECSC steel research programmes and activities have supported the efforts of the steel industry by increasing overall research efficiency. This has enabled the steel industry to tackle jointly large projects which could not have been carried out by individual companies and the creation, throughout the Member States, of a network of researchers through which there is an effective exchange of information related to the projects and their results.

For the period 1996-2002, ECSC Steel RTD activities are carried out under one programme which are based on a set of common guidelines. These guidelines incorporate the requirements for future steel RTD for the period up to 2002, the date when the ECSC Treaty is due to expire. The initial guidelines were published in Official No C 294 of 9.11.1995. The medium term programme guidelines were amended by Official Journal C 326 of 24.10.1998 and Official Journal C 373 of 10.12.96).

Activities carried out under the steel RTD programme are divided into two parts: steel research projects; and steel pilot and demonstration projects. Collectively, both parts of the programme promote collaboration between the steel industry and its research laboratories on the one hand, and complementary centres of excellence in industry, universities and research institutes on the other. The composition of the majority of the projects are now multi-partner and multi-national.

The RTD actions covered by the programme should consider specific market needs from sectors such as:

- Automotive industry;
- Building and construction;
- Mechanical industries;
- Consumer products;
- Energy and industrial reactor vessels and components;
- Off-shore structures;
- Packaging;
- Rail transport.

Steel-orientated RTD activities are to be carried out within an integrated approach in which topics ranging from raw materials handling to final products are addressed. This process should incorporate a strong feedback of product and environmental requirements into production parameters. It should also take into account and include studies on the most effective options for recycling the product at the end of its life and of recycling, using or safely disposing of the by-products of the production itself.

In addition to the integration of environmental aspects in all actions carried out under the programme, a specific environmental RTD line is to be established. This is necessary in order to:
- Assess the impact of production and utilization of steel on the environment;
- Improve recycling, utilization or safe disposal of wastes and by-products, in particular those arising from steel production, with the aim of achieving an economical use of waste in the form of secondary raw materials.

In anticipation of the termination of the ECSC Treaty in the year 2002, the Commission has created the possibility for some steel research activities, carried out until now under the ECSC Treaty, to be progressively incorporated into other Community programmes, notably the RTD Framework Programme as provided for in Article 130i of the Treaty on European Union. As the Framework Programme emphasizes generic, precompetitive research of multisectoral applications, ECSC steel research activities outside this area (pilot and demonstration projects, specific research for steel production processes, promotion of steel use, and development of new or improved steel grades) are to be carried out under the ECSC steel RTD programme. Thus, over the coming years, the ECSC steel RTD programme and the RTD Framework Programme are to run in parallel, providing the iron and steel industry with access to both programmes.

To sustain and develop the Community steel industry's competitiveness in changing industrial, commercial and political contexts with an emphasis on: reducing production costs; improving quality; sustaining outlets for steel in its traditional markets and developing new products and markets; and adapting and developing new production processes and improving recycling capability in order to meet increasingly stringent commercial requirements.

Three areas:

- Processes:
  RTD for the improvement of steel production processes in the following fields:
  . Energy savings and efficient use of materials;
  . Modelling of production processes, process control, automation and robotization;
  . Maintenance and reliability;
  . Total quality policy, including the development of measuring techniques to establish product quality and RTD aimed at improving product quality;
  Secondary metallurgy techniques;
  . Environmental impact;
  . Recycling, including scrap processing and valorization of by-products;

(RTD actions under this heading are also to focus on the development of new technologies which can increase flexibility and cost effectiveness and can produce smaller quantities and grades, with an emphasis on: production of virgin iron; electric arc furnaces; reducing coke requirements; near net shape casting; new rolling, coating and furnishing techniques.)

- Products:
  RTD in steel utilization, for the various sectors covered by the programme (see the "IMP" section of this record) in the following fields:
  . Techniques dealing with forming, welding and joining of steels;
  . Coating and surface treatment;
  . Thermal treatment;
  . Improvement of steel properties addressing topics such as: strength, toughness, hardness, mechanical properties at high and low temperatures, resistance to fracture, fatigue, wear, and corrosion;
  . Safety, in particular in relation to fire and earthquakes;
  . Steel-containing composites and multi-materials, such as concrete and non-ferrous metals);

(Under this heading, an emphasis is to be placed on ensuring that new materials are rapidly exploited in applications by making research results available promptly in the form of clear, simple-to-use guidelines for practising architects and engineers, public authorities dealing with regulations. An effort is also to be made to improve standardization, particularly the updating of Eurocodes.)

- Environmental protection and recycling:
  RTD is to be carried out in fields such as:
  . The design and development of steel grades and steel products which facilitate easy recovery of steel scrap and its conversion into usable steels;
  . Techniques for the recovery of steel from different types of products and classification of steel scrap (e.g. rapid analysis);
  . New processes for pretreating scrap;
  . Modification and adaptation of existing steel-making technologies and the modification of new ones, allowing the use of scrap as a base material;
  . Recovery and recycling of other materials involved with steel such as in alloys and coatings.

The Commission is responsible for the implementation of the programme assisted in the overall management by an advisory committee entitled, 'Steel Research and Development Committee (SERDEC), composed of a maximum of two members from each Member State appointed by the Commission to serve in a personal capacity. Members are drawn from senior research and technical management and have
substantial knowledge of the research and development needs of the steel sector. The chairman and secretariat of the Committee are provided by the Commission. If necessary, the Committee may establish ad hoc working groups for a specific period of time to carry out a clearly defined task.

The ECSC steel RTD programme is implemented through research and pilot/demonstration projects relating to the production and processing of iron and steel or to the properties, fabrication and utilization of steel products. In the pilot and demonstration sector, the pilot stage is characterized by the construction, operation and development of an installation, or a significant part of an installation on an adequate scale and using suitably large components, with a view to verifying the practicability of theoretical or laboratory results. This may also include 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. The demonstration stage is characterized by the construction and/or operation of an industrial-scale installation which should make it possible to bring together all the technical and economic data necessary to proceed to the industrial and/or commercial exploitation of the technology with the least possible risk.

Participation in the activities covered by the ECSC steel RTD programme is open to undertakings, research institutes or natural persons located in the Member States. Applications for financial support must be submitted to the Commission in each year by 1 September in order to be effective the following year. Special application forms have been set out which are accompanied by additional information concerning the programme, its status, submission of proposals, eligible costs, maximum financial support allowable, model contracts, execution of projects and modalities of payments.

Multi-partner proposals with participation from more than one Member State are encouraged under the programme. Research projects involving only one organization should not exceed ECU 1 million (total project cost for a duration of three years). Budgets for larger-scale multi-partner projects of major industrial importance may exceed this limit. For pilot and demonstration projects, at least one partner must be a steel producer. The level of participation of each partner must be significant and preferably should be at least 20% of that part of the total budget funded by the beneficiaries. Support, preparation and accompanying measures are also to be implemented.

Monitoring of the progress of projects concluded in the research sector and in the pilot and demonstration sector is undertaken, respectively, by a series of executive committees and a series of expert groups under the responsibility of the Commission. This involves regular meetings to examine progress and final technical reports, to comment where appropriate on financial aspects and to provide technical guidance on the future development of projects.

Context

From:

1 January 1996

To:

31 December 2002

Previous programme:

ECSC-STEELRES 8C

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