

Member Newsletter



Issue 3, April 2009

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Word from the Secretary General/ ESTEP New initiatives to contribute to the low-carbon economy



More than ever our steel platform is committed to help the European steel sector to go through the current deep economic crisis and to bridge the future. The long term vision of ESTEP has been revisited over the past months and updated roadmaps were endorsed in the latest March Steering Committee. By engaging more and more in research and innovation, adding its effort to the contribution of other relevant European platforms and research institutions, ESTEP seeks to provide the European steel sector and the whole European industry with new competitive and sustainable manufacturing technologies and green products. Through the UlcOS II project and programmes dedicated to lean-energy processes, sustainable use of resources and invention of new high performance and light-weight steel solutions, the steel industry will contribute to the low-carbon economy of tomorrow.

Steering Committee of March 5th/important decisions taken with the support of EU Commission and Member states representatives



One of the most important meetings (6th meeting) of the Steering Committee held on March 5th. All ESTEP's stakeholders attended or were represented, including a high level representation of the EU Commission and Member states representatives.

The European steel industry and its policy-making partners decided to proceed with the ULCOS II project and endorsed new programmes fully in-line with the Private-Public partnership initiatives (PPP initiatives) set forth by the EU Commission in its Recovery Plan.

The ULCOS II project consists first in setting up a pilot plant at Eisenhüttenstadt (Germany) during the 2010-2014 period to validate the TGR-BF concept in a mid-sized blast furnace. Moreover an industrial demonstrator in Florange (France) will be installed at full industrial scale during the 2011-2015 period which will be combined later with a ground-breaking experiment to store captured carbon dioxide underground in the Lorraine region.



The aim of this project is to demonstrate the technical and economic viability of both the Top Gas Recycling (TGR) and Carbon Capture and Storage (CCS) concepts, and to open the way to deployment of the technology within existing steelmaking facilities after 2020.

The cost associated with such a demonstration project for one blast furnace is estimated between €300 and €400 million. However the total budget corresponding to a longer term demonstration of the 4 possible routes selected in the ULCOS phase I project is estimated to be in the range of €700-800 million.

Other programmes fully in-line with the R&D initiatives of the Recovery Plan were also approved:

-Intelligent manufacturing: Towards the process industry of the 21st century

This project aims at building progressively an integrated control of the whole manufacturing chain, from suppliers to customers. This concept mainly developed in discrete manufacturing will be extended to the high energy process industry. Besides an interest to achieve the highest standards of quality, just in time delivery at minimal costs, the IM project will result in a global optimization of energy production and usage alongside other environmental benefits. This IM large project is fully in-line with the 3rd R&D partnership initiative “factories of the future” of the European Recovery Plan and a cooperation with the Manufacture platform was decided.

-Energy efficient building: Steel a flexible key material to save energy

The largest programme of ESTEP's construction programme addresses energy efficiency and eco-efficient solutions in buildings (old and new buildings as well as renovation). Through this steel construction programme, ESTEP aims to contribute to the EU's policy relating to “Energy efficient buildings” which is also endorsed by the European Recovery plan. Furthermore, this activity will be carried out in partnerships with the E2BA association of the Construction platform.

-The Steering Committee also gave its strong support to an additional programme related to “green cars” which is another

priority initiative referred to in the European Recovery Plan.

It is noteworthy that all these projects were strongly supported by the Member States representatives of the Steering committee. Finally both People activity and Communication programme 2009/2010 were adopted, in particular a Mirror group Meeting in 2009.

Follow up of the Steering meeting/preparing a steel contribution to the PPP initiatives.

Further to the steering committee's recommendations, meetings with the persons of the EU commission responsible for the 3 Private-public Partnerships initiatives (PPP) of the Recovery Plan have been organized: Green car (March 31st), Factories of the Future (April 2nd) and Energy-efficient building (April 21st). The ESTEP's working group chairmen explained to the Commission how their updated programmes and roadmaps could effectively contribute to the PPP initiatives.

WG1 Profit

The first meeting of 2009 held in January in the Brussels ESTEP office had good attendance. However due to the retirement of several members, new appointments have to be made.



The discussion was mainly focused on the analysis of the RFCS proposals submitted for the 2008 call and in line with the ESTEP priorities. One flagship proposal related to the priority “Intelligent manufacturing” has been retained and globally around 50% success rate for IM proposals. A list of priorities for the 2009 RFCS call was issued. The driving idea was to aim one or two flagship projects for each priority item. A high focus will be kept on the items: “To recover thermal energy from high temperature processes”, “Intelligent Manufacturing” and “The sustainable use of natural resources”, an option well appreciated by the Support Group of ESTEP.



Short updated documents are available on “Scale free processes” and “Intelligent manufacturing”.

The dates for the 2009 meetings have been fixed:

April 2, 2009 (IM)

April 22, 2009

June 17, 2009

October 14, 2009

WG2 Automotive

WG2 held its meeting on March 4th and further to contacts with both EUCAR and the transport Platform ERTRAC, it was suggested to update and open the initial ESTEP's SRA to fit with light environmentally enhanced vehicles (LEEV) requirements and “green car” PPP initiatives. Use of modern semi-finished products are considered (tailored welded and rolled products, etc.) and steel in the value chain of green transportation vehicles (forming, cutting, joining). Collaborative projects should cover “multi-materials products design”, “simulation house”, surface engineering, use of “technology convergence” and LCA.

In RFCS 2008, 7 proposals were approved and the approval rate was near to 50%. Priorities for 2009 have been suggested (see the list).

Further to the replacement of Professor Ameling by Dr Wuppermann as representative of the BFI in the Steering committee a new chairman has to be appointed in the coming months and the WG2 reorganized. Dates of next meetings will then be chosen.



WG3 Construction



WG3 held a meeting on January 8th. The roadmap on Energy Efficient building has been finalized for presentation to the Steering Committee. It was felt that

Joining the E2BA of the construction platform would be the best way to implement the Energy efficient building part of the ESTEP's construction programme. Concrete proposals are being prepared in collaboration with the ECCS.

In RFCS 2008, 9 new proposals in-line with the ESTEP priorities have been accepted, thus confirming the high success rate of the 2 past years. This is the reason why only one priority was suggested for 2009 RFCS.

Dates for the 2009 meetings:

20th and 21st April

14th May

WG4 Planet

The major collective production of the WG4 was a roadmap on the “Sustainable Use of Resources in the Steel Industry”, which focuses on 6 major themes: 1. a sustainability methodology, proposing a New Metrics extending beyond Life-Cycle Thinking to describe the Social Value of Steel and materials in general (SOVAMAT); 2. energy efficiency, capitalizing on a smart optimization of energy networks in the Steel Mill; 3. logistics, a service which is a scarce resource at various scales (micro, meso and macro); 4. resource efficiency, with 3 pillars: reuse, recycle and by-product exchange with other industries (industrial ecology or global village approach); 5. Global Warming, addressed in the development of breakthrough process routes in ULCOS and its future developments; 6. the Steel Industry and the management of the Ecological Services of the environment, air, water, soil and biodiversity. This roadmap was distributed to the participants of the steering committee on March 5th.

WG4 has fostered two on-going research programs in FP6 and FP7, ULCOS and PACT (Pathways to a post-Carbon Transition). Unfortunately, several more projects presented to FP7, have not been accepted and sometimes refused several times: SATECH, SURESTEP, PROTECT, INTERCARE, ENEMELT and “Increase of





energy efficiency of selected industrial processes and reduction of the primary energy use by optimisation of process gas network". This latter proposal could be resubmitted in 2009 as answer to the topic Energy.2009.8.1.1.

Five proposals have been accepted In RFCS 2008.

2009 meetings: To be decided

WG5 People

WG5 has been launching new and ambitious activities over the past months. It met on January 15th and stated about these different current activities:

- Toolbox best practices
- Analysis of attracting and recruiting activities in the European steel industry
- Preparing a proposal "Steel Cities". The application was submitted in Feb. 2009 in the LEONARDO DA VINCI Programme of the EU lifelong Learning Programme. The main objective of the proposal is to set up a regional public-private partnership between steel companies and regional authorities to coordinate and improve lifelong learning activities and vocational education. Steel companies, regional authorities and scientific institutions from Germany, Poland, Great Britain and Italy intend to be partners in the project. The project is scheduled to start in October 2009 and the duration is 24 months thereafter.

ESTEP was presented at the 16th Students' Day of Metallurgy on April 23rd to 25th 2009 in Ostrava, Czech Republic

1st Steel Spring School approx. 2011.

Due to the current economic crisis the EUSTEELFORUM and the Warsaw follow up conference 'Talent management in the Steel Industry ' are postponed to one year later.

WG6 Energy

The SAPCO2 project (previously the tentative name was HighPerPipe)



has been submitted to the FP7 call with deadline of April 1. This project from the WG6 group will tackle the transport of CO2 by pipelines as one of the main topics of interest for the EC.

The project aims to address the CO2 transport via pipeline from capture site to disposal site (offshore and onshore), while developing knowledge and unified rules for design, fracture control and overall fitness-for-service of pipelines for safe transport during entire life-span of the pipelines.

A proposal named "MACPLUS" concerning coal fired power plant is under preparation for a FP7 call, in order to be submitted by next 29 of April. Moreover the roadmap preparation of WG6 tackling the three main items of the groups (Oil & gas, material for power generation, wind energy) has been issued and distributed to the Steering Committee participants on the 5th of March.

Visits of both the Krupp-Mannesmann plant and SZMF laboratories have been organized in January at the occasion of the latest WG meeting in Duisburg.

In RFCS 2008, 2 proposals on vessels will be funded. Priorities have been transmitted for 2009 and a short list of proposals already established.

Next meeting on May 26th in Brussels.

Support Group Meeting/selecting RFCS priorities for the 2009 SAG meeting



The support Group met in January to help prepare the agenda of the Steering Committee of March 5th and to finalize the 2009 RFCS priority list which was submitted in the SAG meeting of January 27th.

Dates of next meetings:

- June 3rd
- October 28th.



2009 RFCS priorities submitted to the SAG.

Complementary information can be found on the ESTEP web-site.

Novel integrated routes and energy efficient process

- **To recover thermal energy**
 - Improved energy efficiency compared to present technologies in high temperature processes (e.g thermal energy or waste prevention, low temperature heat recovery, alternative fuels/energy input, innovative burners in reheating, annealing or thermal treatment furnaces)

Intelligent Manufacturing

- **Total control of the process**
 - Flexible automation and production through Smart Control and Cognitive Concepts (automatic fault detection and diagnosis; fault tolerant control; flexible reaction strategies; integration of through process and multi-physics models; adaptive "feedback" planning; multi sensor fusion; multi criteria optimization; cooperative human-machine interfaces)

The Greenhouse gases challenge

- **Breakthrough technologies**
 - Development of breakthrough CO₂-lean technologies for making steel (pilot and demonstration project).

Energy effectiveness and resources savings

- **The sustainable use of energy and resources**
 - Characterization, conditioning and using residues (e.g slags, scales, sludges, dusts..) coming from steel production cycle or from the outside as secondary raw materials or lower quality primary raw materials in internal (e.g sintering, BF, BOF, EAF, LF, ...) or external processes (symbiosis among different industries).
 - solutions for minimizing the ecological footprint of the Steel Mill (air, water, soil,

biodiversity)

Advantages of steel: the societal impact of materials

- **Dynamic material assessment model**
 - methodologies, implementation and demonstration for the sustainability assessment of materials

Automotive sector

- **New steel grades and innovative manufacturing methods for complex components**
 - body and power train solutions for lightweight and improved safety
- **Surface technology on steel sheets for automotive applications**
 - improved corrosion resistance and manufacturability

Construction sector


- **Sustainable steel-intensive constructions**
 - Development of a common approach to demonstrate, quantify and optimize buildings in terms of sustainability and complete life-cycle

Energy sector

- **Steel pipes & components for cost efficient fluid transportation**
 - high strength-high toughness pipes (plastic deformation, high welding speed, corrosion)
- **New classes of heat resistant steels**
 - steels with very high creep strength
- **New steels for alternative energies**
 - Overall reliability of steel components for wind farms (gear box, structures)

Health and Safety

- improvement of working conditions through innovative solutions on



technologies, ergonomics and work organization

Past and Forthcoming Events

EWEA-Marseille. March 16 2009 Pietro Gimondo.

SAM3, Freiberg April 29,30, JP Birat, JS Thomas Sovamat project

CCMI meeting, April 23 2009, Enrico Gibellieri.

Ostrava, 16th Students day of Metallurgy April 23,24 2009 J.C Charbonnier.

Implementation meeting June 2nd 2009, October 27 2009

Support Group June 3rd, October 28 2009

Mirror Group, June 2009 (date to be decided)

FP7/next relevant calls

Cross thematic calls will be issued in July 2009. The 3 PPPs initiatives include FP7 themes:

-Theme 3-Information and Communication technologies

-Theme 4-Nano-sciences, Nano-technologies, Materials and new Production Technologies

-Theme 5-Energy

-Theme 6-Environment (including Climate Change)

-Theme 7-Transport (including Aeronautics).

Proposals have to be prepared for the beginning of 2010.

Glossary

JTI:Joint Technology Initiative

E2BA Energy Efficient Building Association

FP: Framework programme

LEEV: Light Environmentally Enhanced Vehicles

LCA: Lifecycle analysis

PPP: Public Private Partnership

TGR-BF: Top Gas Recycling – Blast furnace

SOVAMAT: Societal value of materials

ULCOS: Ultra low steel making

CCS: Carbon Capture & Storage

ECCS: European Convention for Constructional Steelwork

EUCAR: European Council for Automotive R&D

ERTRAC: European Road Transport Research Advisory Council

Colophon

The ESTEP Member Newsletter is issued on a regular basis by the ESTEP Secretariat to the ESTEP members. The editorial panel consist of JC Charbonnier, N. Remoy and WHL Moonen. Contributions for the newsletter can be sent to the ESTEP secretariat.

C/o EUROFER

Avenue Ariane 5, Third floor

B-1200 Brussels

Tel +32 2 738 79 43

Fax: + 32 2 738 79 56

Email: secretariat@steelresearch-ESTEP.eu