



ESTEP: 2017 Highlights



European Steel Technology
Platform - ESTEP

Foreword

We jointly take this opportunity to thank all those who have supported and cooperated with the European Steel Technology Platform (ESTEP) during what has been an intense 2017.

The main priority for ESTEP is increasing the visibility of the decarbonisation challenges facing the steel industry *vis-à-vis* the economic competitiveness needed to make low-carbon innovation possible. To this end, ESTEP – alongside sister organisation the European Steel Association (EUROFER) – began advocating the Big Scale Initiative and the launching of an EU masterplan for steel. A high point in this advocacy strategy was a letter sent to the President of the European Commission, Jean-Claude Juncker, signed by all Vice-Presidents of EUROFER on 29 September 2017.

In addition, the update of the Strategic Research Agenda (SRA) and the relaunch of ESTEP's website were achieved due to the strong support of the whole ESTEP community.

Innovation is the key for success and sustainability. The Research Fund for Coal and Steel (RFCS) is a very important funding programme for the steel community. In 2017, we were facing shrinking budgets due to the low interest rates on the RFCS' assets. Together with the European Commission, the steel community initiated countermeasures to keep RFCS alive and operational.

We look forward to a challenging business year in 2018 with several important decisions. Specifically, these include the successor to Horizon 2020, the consequences of Brexit, and the transition of ESTEP into an *Association Internationale Sans But Lucratif* (AISBL) (i.e. the separate legal entity status of ESTEP). We would be pleased if the ESTEP community could count on your contribution within the Working Groups, the Support Group and beyond.

On behalf of ESTEP,



Klaus Peters, Secretary General, ESTEP



Carl De Maré, Chairman, ESTEP

Introduction


The year 2017 saw the 60th anniversary of the Treaties of Rome. It was also the year that work began on the next framework programme for research and innovation – the 9th.

Throughout the year, ESTEP's advocated for, and raised awareness about, steel. The success of this strategy has been proven by several high-level events and communication activities on steel (see also box 3 on page 13).

ESTEP also established its mission in 2017, as more and more joint research proposals are submitted via its Working Groups. ESTEP aims to engage in collaborative actions and projects on technology & innovation which tackle EU challenges (notably on digitisation, the low-carbon future, circular economy, resource & energy efficiency, etc) in order to create a sustainable European steel industry.

With the help of its members, ESTEP contributed successfully to various workshops, supported common research projects at European level and launched several initiatives. ESTEP also continued its relationship with the EUROFER Research Committee, with whom it cooperates on joint activities. ESTEP's work is highlighted in this activity report, which gives an insight into the organisation's many actions and achievements during the year 2017.

This report describes the main activities and meetings held in 2017. It then outlines the Working Groups' efforts and engagements, as well as ESTEP's involvement in different platforms, initiatives and programs. It finally gives a brief overview of activities and actions planned for 2018.



"ESTEP aims to engage in collaborative actions and projects on technology & innovation, which tackle EU challenges (notably on digitisation, the low-carbon future, circular economy, resource & energy efficiency, etc.) in order to create a sustainable European steel industry".

Activities in 2017

January

Working Groups Chairmen meeting

In January, Klaus Peters and the Chairmen of the Working Groups held an informal exchange. The discussion focused on a range of shared issues, such as possible improvements to ESTEP's internal communication and organisation. They also brainstormed common activities and identified the needs of the Working Groups which feed into the discussions for the Support Group meetings.

March

EU Steel seminar: The future of the European Steel industry

On 8 March, more than 80 stakeholders and decision-makers discussed the future of European steel at a [seminar](#) organised by the European Commission's Directorate General for Research and Innovation (DG RTD). Both ESTEP and EUROFER contributed considerably to this meeting. The seminar shed light on Research & Innovation results in the steel sector. It focused on energy savings and environmental aspects of the steel production, as well as on innovative construction and automotive applications. The EU steel 'Big ticket' initiative (now called the 'Big Scale Initiative') on ultra-low carbon future European steelmaking was presented by ESTEP and discussed with high-level Commission representatives from European Commission's Directorate General Climate, Growth, Trade and Energy.



14th ESTEP Steering Committee meeting



On 24 March, the 14th ESTEP steering committee took place. A new ESTEP chairman was nominated. Heribert Fischer (thyssenkrupp Steel Europe, left), chairman since 2011, stepped down and Carl De Maré (ArcelorMittal, right) took his place. The members of the steering committee appreciated that nearly all ESTEP objectives were met in 2016. Some aims required further acceleration, including the low carbon future steelmaking innovation initiative (the Big Scale Initiative) and the process of formalising of ESTEP's legal entity status.



May

Extra EUROFER Research Committee meeting in Düsseldorf

Michael Steinhorst, chairman of the ESTEP Support Group, was in charge of the extra EUROFER Research Committee. The meeting, which took place on 5 May, was hosted by the German Steel Institute (VDEh).

This extra meeting of the EUROFER Research Committee was held to define common topics for EU level collaborative projects between steel producers. A first list of 10 topics was created. This meeting was also an opportunity to establish ESTEP's mission, which is defined as follows: *"to engage in collaborative EU actions and projects on technology & innovation, which are tackling EU challenges (notably on renewable energy, climate change (low-carbon emission), circular economy) in order to create a sustainable EU steel industry"*.



European Steel Day: A digital, low-carbon future for steel

Hosted by the European Steel Association (EUROFER), the [European Steel Day 2017](#) took place on 10 May 2017 in Brussels. This high level conference, featuring top steel industry executives, policy makers and stakeholder representatives, explored how to build a digital, low-carbon future for steel, examined how innovation in the European steel industry will change everything from the way steel is produced, to the way people work in the



industry, and to the type of products we make. In particular, the European Steel Day investigated the potential for CO2 mitigation with steel and using steel, as well as looking at the impacts of digitisation and industry 4.0. Carl De Maré, ESTEP's Chairman and Harald Peters, Chairman of Working Group I2M, participated in the panel discussion.



Eurosteelmaster

The IXth edition of the [Eurosteelmaster](#), the advanced training course for the European steel sector, was successfully held from 15 to 19 May. The course was organised by RINA and the Centro Sviluppo Materiali (CSM) with the support of the European Commission, EUROFER, Federacciai and ESTEP.

Steel production and application aspects as well as relevant external influences on the European level were key topics during this training course.

June

Life-cycle assessment workshop

As a follow-up on the ESTEP and EUROFER co-organised workshop on carbon valorisation in October 2016, on 6 June 2017 the European Commission organised a [workshop on Life-cycle Assessment](#) (LCA). The main objective was to discuss benchmarking LCA approaches and methodologies for Carbon Capture Usage (CCU) applications in order to start a process in establishing a common understanding and to improve the comparability of the various studies. The workshop was attended by 100 stakeholders from all sectors of CCU and LCA practitioners.

Cooling EU

On 19 June, the [cooling EU launch event](#) was held in Brussels. Cooling EU is an open initiative to promote the issue of cooling. ESTEP is supporting this initiative to keep the focus of cooling EU not only on space cooling (buildings, food sectors, etc.) but also on cooling applied in the process industry.

October

Updated Strategic Research Agenda (SRA)

As of 17 October 2017, the updated electronic version of the Strategic Research Agenda (SRA) has been adopted by the ESTEP Support Group and Steering Committee. The updated version is available on [ESTEP's website](#).



ESTEP new website

On 17 October 2017, ESTEP launched its renewed website: www.estep.eu. It is designed with a fresh new look and user-friendly navigation, updated with the latest information about its activities. In the past, the European Commission provided the service of hosting the ESTEP website. From now on, ESTEP is managing it on its own with the help of EUROFER.

All members and visitors are encouraged to explore the new website and to provide comments and additional content to the ESTEP Secretariat. There is also the possibility to subscribe to the newsletter.

December

Blueprint: "New skills agenda steel": Industry-driven sustainable European steel skills agenda and strategy

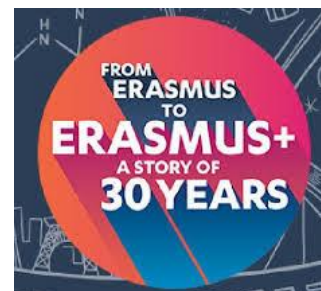
In 2017, the ESTEP Working Group People, together with EUROFER, was engaged in developing an application for the Erasmus+ call related to the initiative of the [Sector Skills Alliances](#), especially in lot 3. As the European Commission has already



launched sectoral skills alliances in six sectors (automotive, maritime technology, space, defence, textile, and tourism), the steel sector is part of the second wave of six other sectors (additive manufacturing, construction, maritime shipping, green technologies and renewable energy, paper-based industry, and the steel industry). The proposal - with a funding of €4 million for a period of 4 years- is coordinated by Antonius Schröder (Technical University of Dortmund) and is working in close cooperation with Miikka Nieminen (EUROFER) and Dean Stroud (Cardiff University).

In December 2017 almost 15 steel companies, steel associations, training actors and research institutions committed to participating.

In order to successfully address the demands of increasingly high-tech production processes and energy efficiency improvements, the industry needs to continually update the qualification, knowledge and skills profile of its workforce. Hence, the aim of this project is to realise an industry driven, sustainable and coordinated *European Steel Skills Agenda* (ESSA) and to tackle the challenges (economic, digital, technological developments and energy efficiency demands) that the steel sector is facing. It will also deliver a Blueprint strategy for the development of human capital through a Sector Skills Alliance (SSA) involving various key stakeholders (companies, education and training institutions, researchers, trade unions, sector associations, sector experts). Building on the strong foundations provided by previous and ongoing sector initiatives (e.g. ESTEP, Sector Skills Council) and research projects (e.g. [GT-VET](#)), this project will provide a consolidated approach to meet the demands and challenges of the industry 'skills. In this regard, the project will develop concrete and practical strategies and programs (modules and tools) by anticipating skills demands.



Working Groups

Three Support Group (SG) meetings took place in 2017. The exchange between the Working Groups (WG), the Heads of Research of steel producers and key representatives of steel stakeholders, allowed providing valuable feedback to the work programme of the Working Groups. The chairman of the SG, Michael Steinhorst, strongly supported the cooperation between the Working Groups as today's challenges are often broader than the scope of one working group.

Working Group Planet

During 2017, the main activities on sustainability and circular economy for the Working Group Planet were covered in four meetings (January, May, September and December). The main inputs were a contribution to the review of the ESTEP' Strategic Research Agenda (SRA), the preparation of common research proposals, the search on the definition of WG Planet with the Big Scale Initiative and links within its stakeholders. It also finalised the internal document entitled "*ESTEP: 2050 Sustainability Roadmap for Steel meeting the needs of a changing society*".

Participation in the Working Group is stable with about 11 active members representing universities (10%), RTOs (40%), industries (33%) and associations (19%).

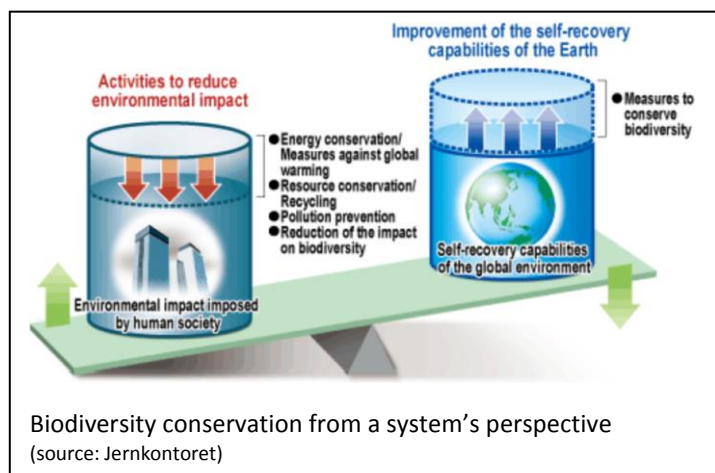
Research proposals for Research Fund for Coal and Steel (RFCS) and Horizon 2020

Working Group Planet is looking forward to contributing to ongoing collaborative activities, especially in the field of circular economy, which is one of the three pathways of the EU steel Big Scale Initiative.

For the first time, the Working Group has worked in 2017 on topics related to the preparation of common research proposals for RFCS and Horizon 2020. One of the RFCS common projects is the REUSteel

dissemination proposals for the implementation of the circular economy approach in the steel sector, in which all five partners are members of the Working Group. The second project is the ECOSLAG R&D proposal, which also involves four active members of the Working Group.

Based on the internal questionnaire, six main topics related to Horizon 2020 have been selected out of more than ten. At the moment, the building of the consortia and the discussion of the detailed research topics are under progress. This is particularly the case for the topic on recovery of industrial water, thermal energy and substances contained therein and the other topic on raw material for circular economy.



Link with stakeholders

The link with the EUROFER Sustainability Credentials Working Group (SCWG) was decided through the participation of Enrico Malfa, chairman of the Working Group Planet, into the SCWG. In addition, he attended “future of European Steel: innovation and sustainability in a competitive world” event and EU circular economy in March and the workshop on benchmarking life-cycle assessment for carbon valorisation applications in June 2017.

The dissemination activity, a well-established action over the past years, continued with the publication of the article *“Steel and biodiversity: a promising alliance”* in *Matériaux & Techniques*. Enrico Malfa also participated as a keynote speaker at the World Congress on Sustainable Technologies (WCST) 2017 of the Institute of Electrical and Electronics Engineers (IEEE).

Working Group Construction

In 2017, Working Group Construction has set up its main objective, which is defined as *“ensuring that steel has the place it deserves and is well represented in the European construction research area”*. In the first semester of 2017, the Working Group held two internal workshops on Envelop & Re-use and participated at a seminar on “Smart steel for construction” from Materials Common House (MATCH).







The Working Group has also worked on the analysis of construction research projects in the frame of the RFCS programme. As an outcome, an average on 30 to 35 projects per year address topics in the field of industry, construction, building, technical and products. 2017 also saw the attendance of the Working Group at the General Assembly of the European Construction Technology Platform (ECTP), which was held on 7 October 2017.

Working Group Energy Market

In 2017, the Working Group continued to strongly support the European Commission on Public-Private-Partnership (PPP) initiatives dealing with the group thematic topics such as Sustainable Process Industry Resource Efficiency ([SPIRE](#) - Applications) and Energy Materials Industrial Research Initiative ([EMIRI](#)). Various initiatives on more specific energy topics, such as oil & gas transportation, renewable energy, energy storage, power generation and many other energy topics were also conducted.

Concerning both the proposals and projects presented and approved in the RFCS framework: the increase in these numbers has to be highlighted despite the reduction of the available funding. Interest in energy

Various initiatives and actions in the framework of Horizon 2020 have been carried out. Among them, representatives of the Working Group participated in various brokerage events regarding SPIRE (applications) and EMIRI held in Brussels. In 2018, additional workshops on renewable steel applications and power generation are foreseen.

Energy Union		SET-Plan 10 Key Actions	
No1 in Renewables		1	Performant renewable technologies integrated in the system
Consumers in the Energy System		2	Reduce costs of technologies
Efficient Energy Systems		3	New technologies & services for consumers
Sustainable Transport		4	Resilience & security of energy system
Carbon Capture Utilisation and Storage		5	New materials & technologies for buildings
Nuclear Safety		6	Energy efficiency for industry
		7	Competitive in global battery sector and e-mobility
		8	Renewable fuels and bioenergy
		9	Carbon Capture Storage / Use
		10	Nuclear safety

Working Group Process provided its final contribution to the Strategic Research Agenda in 2017. On the topics for joined projects, the Working Group has shown its willingness to take the lead on several topics. With the chairman's strong involvement and with the proposition of some members, the Working Group followed up on climate-oriented actions such as the important Project of Common European Interest (IPCEI), the Big Scale Initiative, [Set Plan Action 6 & 9](#) (picture right), and the EUROFER Low-Carbon and Energy Efficiency Working Group.

In 2017, three main topics strongly influenced the work of Working Group Integrated Intelligent Manufacturing, which were covered in three regular meetings and one workshop. The main inputs were the contribution to several international conferences in the field of Industry 4.0 / Integrated Intelligent Manufacturing, the development of research proposals and the start of a cooperation with another ESTEP Working Group, namely with WG People (see box 1 on page 9). The membership of the working group is still growing due to the large importance of the topic. New members are always welcome.

There were a number of conferences on Industry 4.0 in 2017. These included the [Future Steel Forum](#) in Warsaw, the European Steel Technology and Application Days ([ESTAD](#)) in Vienna and the [Digitalisation of the Metals Industry](#) in Ijmuiden. At all these conferences, members of the Working Group I²M presented results of finished or running projects and contributed to discussions. Harald Peters, the chairman of the WG, gave a presentation on “Digitalisation and Industry 4.0 in steel industry” at the 50th Anniversary of Worldsteel (combined with the General Assembly) in October in Brussels.



Although the Working Group did not have much success with research proposals in previous years, additional attempts were made in 2017. Besides two flagship proposals that were prepared for RFCS, many other proposals were submitted to several national and international research funding organisations.

Cooperation WG I²M with WG People

On 24 January, a workshop entitled “Knowledge Management / Management of Knowledge” between WG I²M and WG People took place in Brussels. The aim of this workshop was to discuss new research and development approaches on the management of knowledge from a social (people) and a technological perspective (intelligent manufacturing).

After a collective brainstorming, common topics for research were developed, such as the interrelation of people and machine/technology, industry 4.0 (learning, skills development), new intelligent knowledge management systems as well as the need for more collaboration and communication. The combined social and technological perspective led to a new approach: technological solutions for social challenges and company demands.

In the next few months, a suitable research call has to be selected and a consortium has to be created in order to finally submit a first common research proposal.



ESTEP was represented by Antonius Schröder (Vice-chairman of WG People) and Klaus Peters (ESTEP Secretary General).

The SI-DRIVE conference brought together about 250 participants from 44 countries all over the world. Researchers, innovators, practitioners, and policy makers discussed the results of the project. These mainly included the relevance of a new innovation paradigm that needs to focus much more on societal challenges and social demands; but also, on the consequence of combining technological and social innovation in a better way. One of the highlights of the conference was the policy debate about the contours of a social innovation policy, which stressed the importance of combining technological and social innovation. Indeed, people and human resources have to be part of every innovation process in order to guarantee impact and sustainability. This is in line with the current trend of traditional innovation, which is now much more focused on the development of socio-technological systems, thus integrating the user's perspective as an essential part.

operations applied to the rolling area”. The first proposal has been positively evaluated and the project will probably start in summer 2018. The second one has still a chance because it is on the reserve list. Both proposals have a strong consortium based on steel producers, plant manufacturers, SMEs and research organisations. They are looking for new solutions in order to extract knowledge out of “Big” or “Smart Data” that are focussed on the various challenges facing the European steel industry.

Working Group People

In 2017, Working Group People went to several events and had three meetings in January, May and October. In addition to these activities, the joint workshop with WG I²M held in January (see box 1) was fruitful.

SI-DRIVE Conference

The “Social Innovation – Research and Policy of the Future - [Towards a Comprehensive Innovation Policy](#)” conference took place on 24-25 October 2017. This important event had also a session on “Social Innovation: Driving Force of Social Change” (the so-called [SI-DRIVE](#)), in where



Blueprint Development of a New Skills Agenda for the Steel Industry

Together with the EUROFER Social Affairs Committee and the Sectoral Social Dialogue Committee on Steel (SSDC), Working Group People is engaged in developing an application for the Erasmus+ call “Sectoral New Skills Agenda”. The main objective of the project is to develop a sustainable, industry driven and coordinated European skills agenda, which is a strategy for an ongoing and short-term implementation of

new demands for skills. This will be piloted by the development of modules and tools for the awareness of new skills for a global competitive industry, ready to anticipate new skills demands and to allow proactive and practical activities to meet the future requirements of the industry. In addition to the steel companies and stakeholders at the European level, the main steel actors on Member States level (namely steel companies, steel and vocational education and training actors on the level of the steel producing and processing) will be involved to guarantee a national roll out of the blueprint.

Lectures at European Steel master 2017

Veit Echterhoff, chairman of Working Group People, held a lecture on “Future challenges for human resources in the EU steel industry” at the 2017 Eurosteelmater course (May 2017). In addition, Antonius Schröder presented at the 2017 Italian Steelmater (21st edition), which took place in Cremona (9-13 October 2017) and Terni (6-10 November 2017). Antonius Schröder discussed the role of ESTEP and its Working Group People, the results of the recent surveys conducted, as well as the importance of people and human resources in the European steel industry in the context of combining social and technological innovation with the participants.

Working Group Transport

In 2017, the Working Group members provided their final contribution to the Strategic Research Agenda. The importance of LCA related to steel efficiency in lightweight design and its lower impact on greenhouse gas emissions has been particularly emphasised. Moreover, as the drivetrain is getting more CO₂ efficient by electrification, the significance of material production and recycling phases towards emissions will be higher. The Working Group has also proposed insisting on enabling technologies of new generation “advanced high strength steels” as well as introducing the proposal of electrical steels related to optimisation of electric vehicles and plug-in hybrid electric vehicle machines.

In line with the extra EUROFER Research Committee outcomes, the potential collaborative projects that could be proposed within RFCS or Horizon2020 funding calls related to transport was another key activity of 2017. The proposed topic “New modelling approaches for sheet metal application (multiscale modelling, mathematical formulation of material behaviour/ characterisation)” is quite well aligned with the topics already discussed in the previous WG meetings, especially on enabling technologies needed for the new generation of advanced high strength steels.

To that purpose, the recent Horizon 2020 work program for the period of 2018-2020 was reviewed by the members that participated in the last meeting in November. Only few strategic orientations could be a good umbrella for the topic related to steel enabling technologies or modelling approach for sheet steel application. While some members worked in research organisations or universities and prepared project proposals for the next meeting, it was suggested that each steel company needs to define what could be done individually or in collaborative projects.

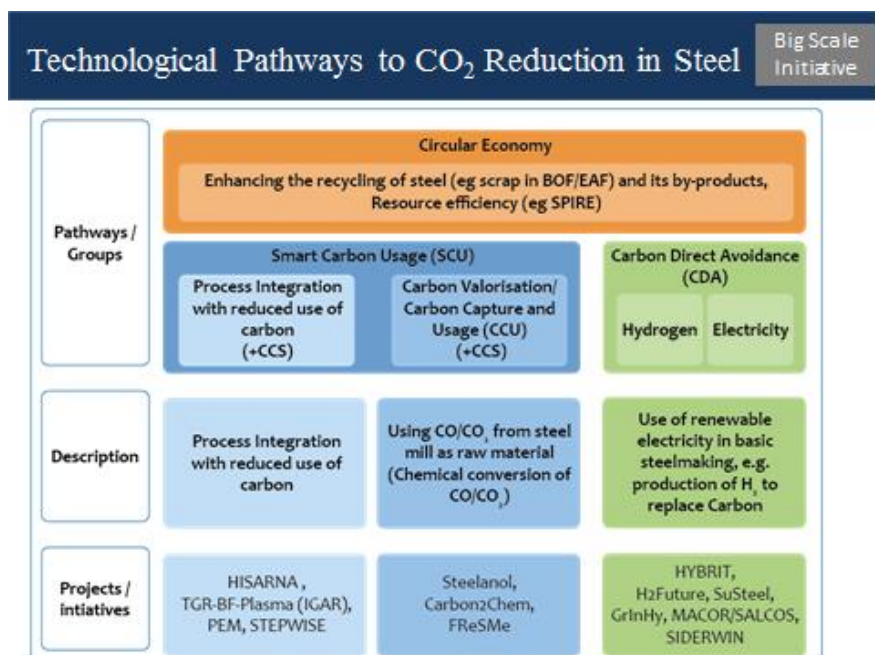
Additionally, there are some opportunities in the Horizon 2020 call related to green vehicles, but this will not start before 2020.

ESTEP's projects & contributions

ESTEP is involved in a number of initiatives and is advocating for increasing EU funding opportunities for the European steel industry. ESTEP continued its participation in various activities in 2017 in order to strengthen the position of the steel sector, especially by contributing to the Research Fund for Coal and Steel (RFCS), to Public Private Partnerships (PPP) on Sustainable Process Industries through Resource and Energy Efficiency (SPIRE), to Factories of the Future (FoF) and the Energy Materials Industry Research

Initiative (EMIRI). In addition, the success of access to increasing funding opportunities depends on the extent to which the attention of EU politicians can be directed to steel. ESTEP has therefore contributed to several events and supported several communication documents on steel (box 3 on page 13).

Big Scale Initiative



ESTEP and its stakeholders are exploring new opportunities and future activities related to the large scale ultra-low carbon future steelmaking project, the so-called Big Scale Initiative. The initiative started in late 2016 with an expected budget of €200-300 million for research projects. However, in December 2017, ESTEP, together with EUROFER and DG RTD, developed the idea to aim for €1.5 billion.

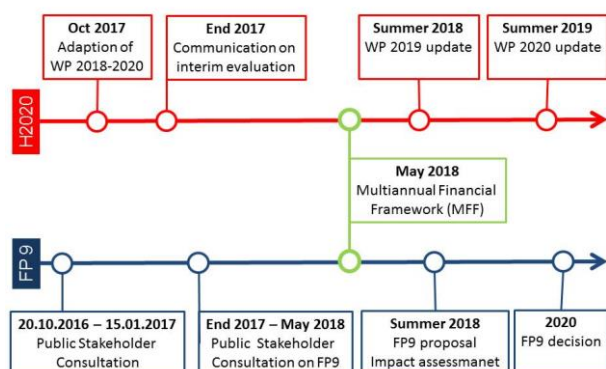
This steel companies' driven initiative, which is clustered among technological pathways, is aimed at establishing collaboration at EU level. Nevertheless, this will not succeed without combining efforts and links among the several pathways. Indeed, the possible synergies

and pathways are complementary to each other.

In order to demonstrate the firm commitment of the steel sector to extensive decarbonisation, EUROFER's Vice-Presidents signed a letter of intent for the Big Scale Initiative. This was sent to Jean-Claude Juncker, the President of the European Commission, and all Commissioners in September. Besides explaining the opportunities for Europe, the letter clearly pointed out that several preconditions need to be fulfilled in order to make sure the transition of the EU steel sector towards its low-carbon future is sustainable.

Additionally regarding EU funding opportunities, ESTEP strongly supported the accompanying measure "LowCarbonFuture" in the RFCS framework, which supports the Big Scale Initiative. This accompanying measure will start in spring 2018.

In 2017, ESTEP and the steel community also provided input towards policy makers in an attempt to implement the Big Scale Initiative in the next Framework Programme for Research & Innovation (FP9) (box 2 on page 12).



As for 2018, there are several steps in the run-up to the next Framework Programme. May 2018 will be the next important milestone for the decision on the Multiannual financial framework (MFF). Once there is more clarity on the content of FP9, ESTEP and the steel community will adjust their input and advocacy.

Research Fund for Coal and Steel (RFCS)

ESTEP is strongly involved in RFCS as a member of the Steel Advisory Group. ESTEP has repeatedly received a mandate to reconcile the various opinions of the steel stakeholders to send joint proposals to the European Commission's Directorate General for Research and Innovation (DG RTD). This was successfully done as the ESTEP Working Groups, the EUROFER Refocus Group along with other steel experts contributed to this exercise. The main objectives were to further balance the projects between the Technical Groups of steel and to find countermeasures against the shrinking RFCS budget.

In 2017, the outcomes of the RFCS call for steel proposals were as follows: on a total of 140 submitted proposals (1 is not admissible because of its length), accompanying measures received 10 proposals, 9 for pilot & demonstration, and 120 for research projects. With a budget of approximatively €20 million, in 2018 less than 20 projects for steel are expected to be financed.

It must be acknowledged that the budget of the RFCS programme is shrinking (a total of only €27 million available). The Unit for Coal and Steel in DG RTD is applying considerable effort to implement countermeasures to keep the budget for the 2018 call and 2019 calls at the same level as for the 2017 call. However, this will depend on when the decisions are made and when the funding becomes available. Moreover, as the intended countermeasures are only operable on a single occasion, the outlook for the interest rates on the asset base is not encouraging, which is the reason why additional action is needed. The steel community is intensively working on this issue with the close cooperation of the European Commission.

Box 2 **9th Framework Programme for Research & Innovation (FP9)**

The discussions about shaping the successor of Horizon 2020 (H2020) accelerated in 2017. A workshop was organised by DG RTD in June to define concepts for mission-oriented and impact-focused approaches to address future global technology challenges. This workshop, to which European Technology Platforms (ETP), including ESTEP, and some Public Private Partnerships (cPPP) were invited, was a kick-off to sketch out which emerging technologies and new research fields of research should be funded by FP9.

The report of the independent High Level Group on maximising the impact of EU Research and Innovation Programmes, the so-called [Lamy report](#), published in July 2017, presents eleven recommendations for the future of European research and innovation, including one on the concept of a mission-oriented approach. This report clearly identified a potential mission for the steel industry as following: *“producing steel with zero carbon in Europe by 2030”* (page 16).

Nevertheless, throughout the year, it appeared that the mission will not be stated as such in the proposals but some there are some causes for optimism. Indeed, the important role of industry in the research and innovation ecosystem is well understood by institutional actors.



Sustainable Process Industries through Resource and Energy Efficiency (SPIRE)

ESTEP is closely involved in SPIRE, especially because it has a seat in all decision bodies, which helps ensure good information flow between the whole ESTEP community and SPIRE. ESTEP contributed to the definition of SPIRE calls for the period of 2018-2020, especially those addressing social innovation and people's aspect. This will then allow the ESTEP WG People to be engaged in SPIRE.

In January 2017, the SPIRE community called for the continuation of SPIRE under FP9 in a position paper, which strongly advocated the furthering of cPPPs and the strong involvement of industries is outlined. SPIRE has also asked for an almost doubling of the budget (to € 1.5 billion) compared to the share of the budget of Horizon 2020.

The new Executive Director of A.SPIRE, Angels Orduña attended the ESTEP Support Group meeting in February 2017, where she mentioned her commitment to the steel sector.



In September 2017, the first SPIRE conference, “the [SPIRE 2017 EU process industry conference](#)” took place in Brussels. The steel sector was also well represented with the participation of ESTEP’s Secretary General, Klaus Peters, in the panel discussion about the future of the process industry. This conference was also the opportunity for Daniel Gauthier (from the cement sector) to become the new A.SPIRE President.

Energy Materials Industry Research Initiative (EMIRI)

EMIRI continued to provide opportunities for materials solutions in this challenging time of energy transition. As a member of the EMIRI Steering Committee, ESTEP provides input to the EMIRI position papers and call texts according to the steel industries’ needs.

Strategic Energy Technology plan

By re-joining the [Strategic Energy Technology](#) (SET) plan, which is a platform bringing EU policy makers and EU Member States together, ESTEP, along with EUROFER and VDEh, strengthened the position of the steel sector. They contributed particularly to action 6, which focuses on energy efficiency, and action 9, which deals with the application of Carbon Capture and Storage (CCS) and commercial viability of Carbon Capture and Usage (CCU). They also succeeded in integrating the projects of the Big Scale Initiative.

In 2017, the SET Plan finalised the [implementation plans](#) in the dedicated working groups. The WG 6 on energy efficiency is preparing the implementation workshops. EUROFER and ESTEP are contributing to the preparation of these workshops, which are foreseen for mid-2018.



In December 2017, the SET Plan community went to the 10 year anniversary of the Central European Energy Conference in Bratislava. In the [Panel discussion](#) on “Decarbonisation: Industry and transport fuels”, the steel sector was represented by Franz Hörzenberger from ArcelorMittal. He explained the situation of the EU steel sector in regard to reducing greenhouse gas emissions and introduced the EU Big Scale Initiative to the community.

Steel is high on the political agenda

Box 3

- Commission Communication on [steel](#) with defence and space (16 March 2016)
- [EU Industry Day](#) including speeches from J. Katainen and E. Marcegaglia (Business Europe) (28 Feb. 2017)
- Seminar on the [future of the European steel](#) (8 March 2017)
- [European Steel Day](#) by EUROFER, including speeches from J-C Juncker, A. Tajani, and E. Bienkowska (10 May 2017)
- SET-Plan – [Action 6](#) Efforts to make EU industry less energy intensive and more competitive
- The [Lamy report](#) - Independent High Level Group on maximising the impact of EU Research and Innovation Programmes (3 July 2017)
- Trade Defence Instruments - [Trade Communication](#) and [Harnessing Globalisation White Paper](#) (13 September 2017)
- Commission Communication on A [renewed EU industrial Policy Strategy](#) (13 September 2017)

Knowledge4Innovation (K4I)

Since 2016, ESTEP became a member of Knowledge4Innovation (K4I), which has important connections with the European Parliament in regards to Research and Innovation. ESTEP use this platform and its connections to communicate its advocacy messages.

The [9th European Innovation Summit](#), organised by K4I took place from 27 November to 1 December 2017. The discussions centred on concrete solutions to major challenges that require innovative solutions, as well as on the importance of continuing to invest in R&D&I.

High Level Group of Energy Intensive Industries (HLG EII)

ESTEP is also a member of the High Level Group of Energy Intensive Industries, which is the successor of the High Level Group on Steel. During the kick-off meeting, the topics of energy, innovation and overcapacity in the subsequent meetings were decided upon as target topics. ESTEP has reinforced its relationship with DG Growth and DG Climate.

Outlook 2018

2018 will be an important stage in the transition of ESTEP towards an international ASBL (Belgian non-profit organisation). Becoming a legal entity will enable ESTEP to directly participate in funded projects, increase ESTEP's awareness and ability to provide further services towards its members. ESTEP will need, in 2018, to finalise the update of the governance structure, the statutes and the internal rules.

2018 will also be marked by the continuous update of the Strategic Research Agenda (SRA). A printed booked version will likely be created, which will highlight the new format, structure, and new priority topics.

As ESTEP is not simply involved in research nor only connected with the Commission through the Horizon 2020 and RFCS programs; it is also a European Technology Platform and will as such, continue working on its visibility and on providing input for the decision making process at European level. It will also continue on finding opportunities for its community in order to provide topics of the highest interest for its members. By this way, ESTEP will carry on going to EU events and meetings, to establishing new links with key European actors and to attract new potential members.

In the context of RFCS and Horizon 2020, ESTEP will keep on submitting collaborative proposals, disseminating results via workshops and leading the informal follow-up meetings of the Steel Advisory Group, which is one voice from the steel stakeholders. ESTEP's Working Groups will play the key role.

The progress on the Big Scale Initiative is very important and will be aligned with the EUROFER discussion paper "Towards an EU Masterplan for a Low-Carbon Competitive European Steel Value Chain". The activities of the Working Groups will focus on contributing to the Big Scale Initiative.

Furthermore, in order to maintain and to increase further awareness of steel success stories, ESTEP will participate in, and contribute to, several initiatives and high-level events during the course of 2018. One of the main activities will be the steel seminar "European steel: the wind of change" organised by DG RTD. ESTEP and EUROFER will contribute actively to a "European steel industry main pathways towards the smart, low carbon industry of the future" workshop at the Second European Industry Day.

In 2018, the cornerstones of the next framework programme (FP9) will be defined. ESTEP will provide its input to the various consultations and activities in order to continue on from the success of Horizon 2020. In addition, the decision on the budget will be the next important milestone in May 2018 for the Multiannual financial framework (MFF) and in June for the next framework programme (FP9) itself.

Glossary

AISBL	Association Internationale sans but lucratif (internationally non-for-profit acting association)
CEFIC	European Chemical Industry Council
CEMBUREAU	European Cement Association
CCU	Carbon Capture and Usage
CCS	Carbon Capture and Storage
DG GROW	Directorate General for Internal market, Industry, Entrepreneurship & SMEs
DG RTD	Directorate General for Research & Innovation
EERA	European Energy Research Alliance
EMIRI	Energy Materials Industry Research Initiative
EPOS	Enhanced energy and resource Efficiency and Performance in process industry Operations via onsite and cross-sectorial Symbiosis
ESTEP	European Steel Technology Platform
EU	European Union
EUROFER	European Steel Association
FOF	Factories of the Future
FP9	9 th Framework Programme for Research & Innovation
H2020	Horizon 2020
I2M	Intelligent Integrated Manufacturing
LCA	Life Cycle Assessment
MATCH	Materials Common House
New InnoNet	Near-Zero European Waste Innovation Network
PPP	Public Private Partnerships
R&D	Research & Development
RFCS	Research Fund for Coal and Steel
RTO	Research and Technologies Organisation
SET	Strategic Energy Transition
SPIRE	Sustainable Process Industries through Resource and Energy Efficiency
SRA	Strategic Research Agenda
ULCOS	Ultra-Low CO ₂ Steelmaking
WG	Working Group

Links

Frontpage picture: Steel Old Gasometer in Leipzig by Werner Schwehm, <https://www.flickr.com/photos/laga2001/37050199262/>,
Page 4, Future of the European steel seminar, European Commission, <http://ec.europa.eu/research/index.cfm?pg=events&eventcode=5FC19929-EAC3-7F44-A953BB390CF82DB8>
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Page 13, Harnessing Globalisation White Paper (13 September 2017), https://ec.europa.eu/commission/sites/beta-political/files/reflection-paper-globalisation_en.pdf, Page 13, Commission Communication on A renewed EU industrial Policy Strategy (13 September 2017), <http://eur-lex.europa.eu/legal-content/EN/TXT/?uri=COM:2017:479:FIN>
Page 14, K4I – 9th European Innovation Summit, <http://www.knowledge4innovation.eu/9th-eis-outcome>

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