

Sustainable Process Industry (SPIRE)

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SPIRE Rationale

EU process industries sit at the core of most industrial value chains and have the key challenge that they are highly dependent on resources (energy, materials and water).

The eight EU industrial sectors covered (chemical, steel, cement, ceramics, minerals, non-ferrous metals, industrial water and process engineering), most of which are world-leaders.

SPIRE represent together 6.8 million jobs in 450,000 enterprises and over €1,600 billion/year in turnover.

However, they are struggling with competitiveness at global level and striving for long-term sustainability.

SPIRE Rationale

The SPIRE industry sectors cannot address alone their energy and resource efficiency challenges in line with the EU2020 objectives. In fact, there are high risks and long-term investments with long RoI timeframes.

There is a need for cooperation along the value chains to make a difference for Europe at global level, and for public support.

To radically increase resource and energy efficiency, EU process industries need to jointly tackle the common challenges at EU level and employ a stable R&D budget in a contractual PPP.

The SPIRE Roadmap

- Part 1: Vision
 - A Sustainable Process Industry for a resource-efficient and low-carbon economy: Rejuvenate the European process industry base and help decoupling economic growth from resource impact
- Part 2: Research and Innovation Strategy
 - 6 Key-components: Feed, Process, Applications, Waste2Resources, Horizontal and Outreach
- Part 3: Expected Impacts
 - Up to 30% reduction in fossil energy intensity from current levels
 - Up to 20% reduction in non-renewable, primary raw material intensity compared to current levels
 - Up to 40% improvement in CO₂-equivalent footprints
 - Leveraging additional investments (factor 5 to 10)



European
Commission



SEARCH...

HOME > ABOUT US > SPIRE VISION > LIBRARY > CONTACT > MEMBERS' PORTAL >

Members

INDUSTRIES RESEARCH ASSOCIATIONS ASSOCIATE

 AkzoNobel	 ALFRAN	 ArcelorMittal	 Arkema	 BASF
 Bayer	 Britest	 CEMEX	 Clariant	 CMI
 Cynar PLC	 Dow	 DSM	 Elkem	 Emerson
 EVONIK	 fimecc Finnish Metals and Engineering Competence Cluster	 fives	 FORESA	 GREEN CHEMISTRY CAMPUS

 HeidelbergCement	 Holcim	 Hydro	 HyGear	 INEOS Group AG
 Innovacio i Recerca Industrial i Sostenible	 Lafarge	 Lanxess	 LKAB	 Perstorp
 Process Design Center B.V.	 Procter & Gamble	 Repsol	 SABIC	 Solutex
 SOLVAY	 Supren	 Tata Steel	 Tenaris	 TERRA S.A.
 Terreal	 ThyssenKrupp Steel Europe	 Voestalpine		

Research and
Innovation

A once in a lifetime opportunity to make a real and lasting impact on the process industry – A paradigm shift

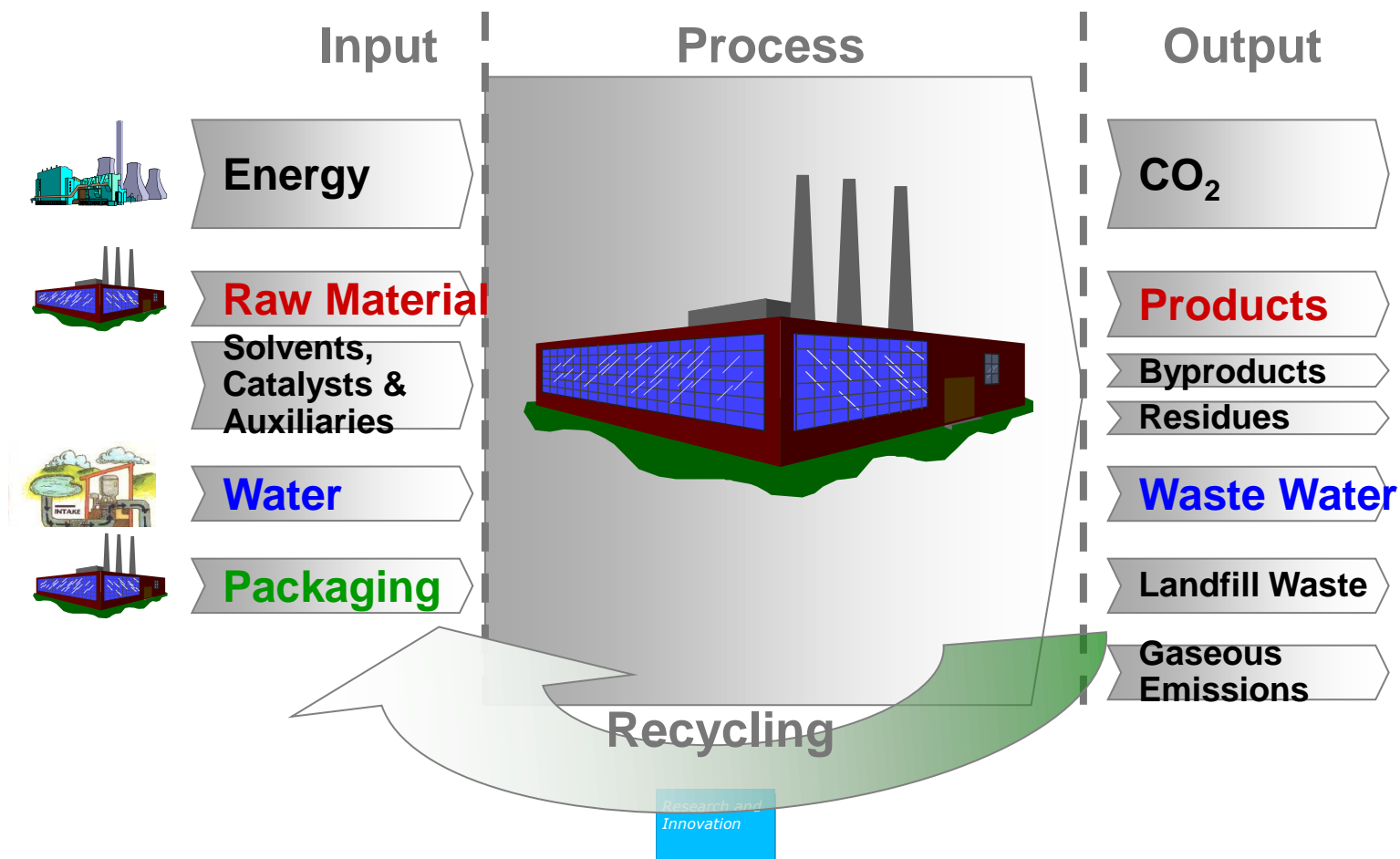


 **Follow-up to lighthouse projects like F³-Factory, COPIRIDE and ULCOS...**



**Two years ago SusChem set out to implement the SPIRE concept in Horizon 2020
With SUCCESS**

Dedicated EU research funding for 900 million € over 7 years



SPIRE - General Objectives

- To develop innovative technologies that improve the impact of the European process industry, and to contribute to the EU2020 goals
- ✓ Develop processes and systems for increased energy and resources efficiency
- ✓ Contribution to the overall EU industrial competitiveness
- ✓ Contribution to Europe's efforts towards ensuring growth and jobs with long-term sustainability
- ✓ Contribution to major EU innovation policies (e.g. EIPs on Water, Raw Materials, Smart Cities, KETs)
- ✓ Contribute to standardisation and rapid market uptake
- ✓ Ensure knowledge and technology transfer within and across the European process industry sectors
- ✓ Create opportunities in global markets for process, ICT and materials sectors

Support 2014-15 for the process industry in the framework of SPIRE

PROCESS

- *SPIRE 1 - 2014 Integrated Process Control - Research & Innovation Action*
- *SPIRE 3 - 2015 Improved downstream processing of mixtures in process industries – Innovation Actions*

FEED

- *SPIRE 2 - 2014 Adaptable chemical processes allowing the use of renewables as flexible feedstock for chemical and energy applications – Innovation Action*

HORIZONTAL:

- *SPIRE 4 - 2014 Methodologies, tools and indicators for cross-sectorial sustainability assessment of energy and resource efficient solutions in the process industry - Support action*



PROCESS:

- *SPIRE 5 - 2015 New adaptable catalytic reactor methodologies for Process Intensification – Research and Innovation Action*
- *SPIRE 6 – 2015 Energy and resource management systems for improved efficiency in the process industries - Research and Innovation Action*

WASTE2RESOURCE

- *SPIRE 7 - 2015 Recovery technologies for metals and other minerals – Innovation Action*

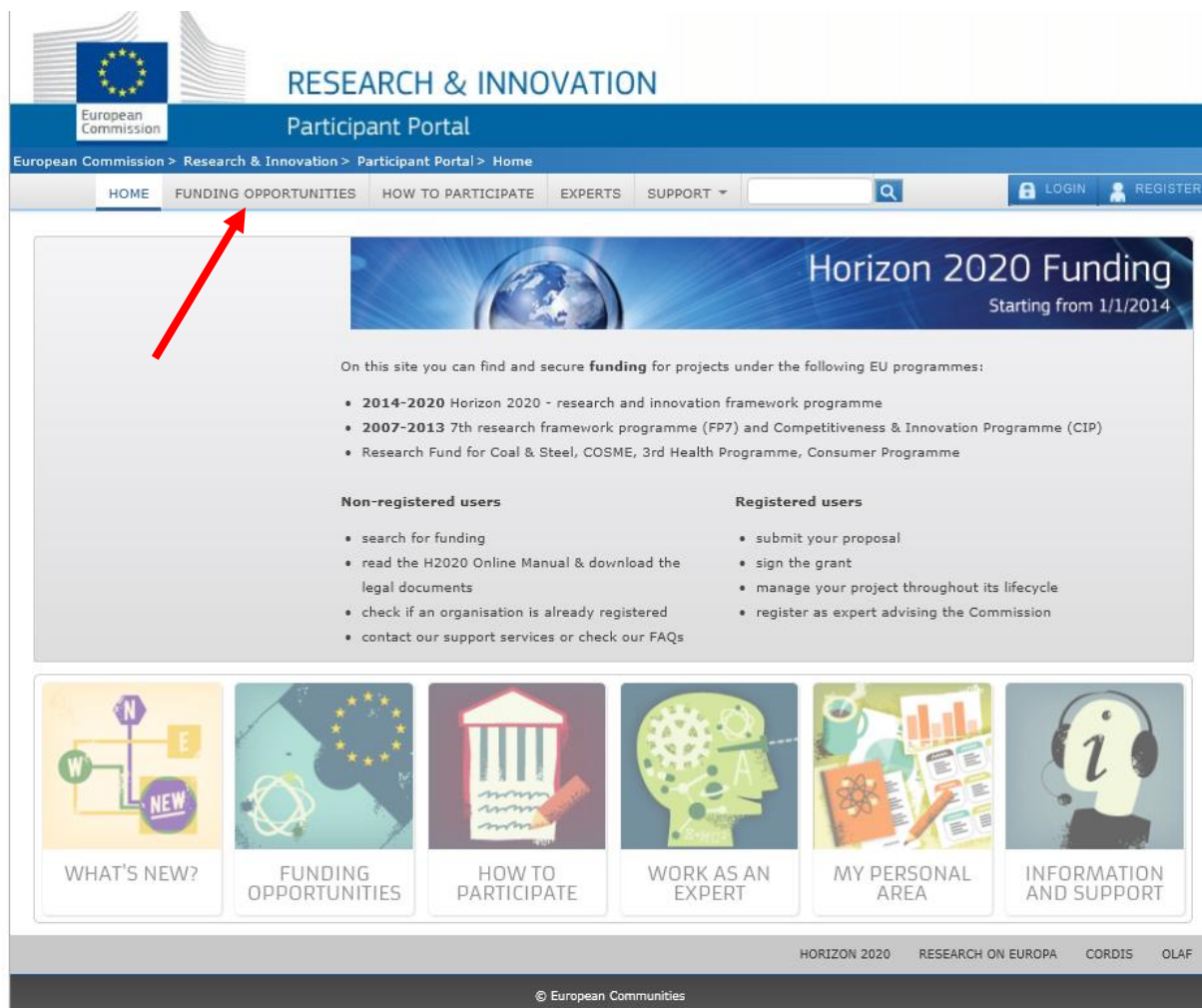
APPLICATIONS

- *SPIRE 8 – 2015: Solids handling for intensified process technology – Innovation Action*

Call 2015



<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

A screenshot of the Horizon 2020 Participant Portal website. The page has a blue header with the European Commission logo and the text "RESEARCH & INNOVATION Participant Portal". Below the header is a navigation bar with links: HOME, FUNDING OPPORTUNITIES, HOW TO PARTICIPATE, EXPERTS, and SUPPORT. A red arrow points to the "FUNDING OPPORTUNITIES" link. To the right of the navigation bar is a search bar and buttons for LOGIN and REGISTER. The main content area features a banner for "Horizon 2020 Funding Starting from 1/1/2014" with a globe image. Below the banner, text states: "On this site you can find and secure **funding** for projects under the following EU programmes:". A list of programmes follows: "2014-2020 Horizon 2020 - research and innovation framework programme", "2007-2013 7th research framework programme (FP7) and Competitiveness & Innovation Programme (CIP)", and "Research Fund for Coal & Steel, COSME, 3rd Health Programme, Consumer Programme". Below this, there are two columns: "Non-registered users" and "Registered users", each with a list of actions. At the bottom, there is a row of six icons with labels: "WHAT'S NEW?", "FUNDING OPPORTUNITIES", "HOW TO PARTICIPATE", "WORK AS AN EXPERT", "MY PERSONAL AREA", and "INFORMATION AND SUPPORT". The footer contains the text "HORIZON 2020 RESEARCH ON EUROPA CORDIS OLAF" and "© European Communities".

Call 2015



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Search Topics

Calls

Call Updates

Other EU Programmes 2014-2020

Research Fund for Coal & Steel

COSME

3rd Health Programme

Consumer Programme

FP7 & CIP Programmes 2007-2013

Calls

Call Updates

Other Funding Opportunities

4 Results

Keyword Search: SPIRE-2015

SEARCH

If you don't find your topic, you can also use the [free text search](#).

Status

☐ Open

☐ Closed

☒ Forthcoming

Sort by

☒ Title

☐ Call Id

☐ Publication Date

☐ Deadline Date

Topic: [Energy and resource management systems for improved efficiency in the process industries:SPIRE-06-2015](#)

Specific challenge: manufacturing sustainability has been improved considerably in environmental,

Call title: [Call for SPIRE - Sustainable Process Industries](#)

Call identifier: [H2020-SPIRE-2015](#)

Status: **Forthcoming**

Deadline: 04-02-2015

Topic: [New adaptable catalytic reactor methodologies for Process Intensification:SPIRE-05-2015](#)

Specific challenge: The reduction of the number of steps and unit operations in industrial

Call title: [Call for SPIRE - Sustainable Process Industries](#)

Call identifier: [H2020-SPIRE-2015](#)

Status: **Forthcoming**

Deadline: 04-02-2015

Topic: [Recovery technologies for metals and other minerals:SPIRE-07-2015](#)

Specific challenge: Metals and other minerals, such as non-ferrous and ferrous metals, ceramics,

Call title: [Call for SPIRE - Sustainable Process Industries](#)

Call identifier: [H2020-SPIRE-2015](#)

Status: **Forthcoming**

Deadline: 04-02-2015

Topic: [Solids handling for intensified process technology:SPIRE-08-2015](#)

Specific challenge: Decentralised on-site plants and modular approaches towards small- and

Call title: [Call for SPIRE - Sustainable Process Industries](#)

Call identifier: [H2020-SPIRE-2015](#)

Status: **Forthcoming**

Deadline: 04-02-2015



Call for SPIRE - Sustainable Process Industries

H2020-SPIRE-2015

Sub call of: [H2020-SPIRE-2014-2015](#)

Planned Opening date	22-10-2014	Deadline Date	04-02-2015 17:00:00 (Brussels local time)
Publication date	11-12-2013	Main Pillar	Industrial Leadership
Total Call Budget	€75,170,000	OJ reference	OJ C 361 of 11 December 2013
Status	Forthcoming		

Topic: Recovery technologies for metals and other minerals

SPIRE-07-2015

Topic Description

[Topic Conditions & Documents](#)

[Submission Service](#)

Specific challenge: Metals and other minerals, such as non-ferrous and ferrous metals, ceramics, glass, cement and chemicals are utilised in numerous applications in many industrial sectors. Their demand, in particular those used in specialised applications, will increase in the coming years. Because of their increasing importance or economic value, a key issue is the development of processes for an effective and efficient recovery of these materials, from primary sources or from waste streams of the current industrial processes. Novel integrated recovery processes should result in increased resource efficiency and sustainability for the European industry, allowing the recovery of significant amount of metals and other minerals, even from low concentration streams. This should lower the dependency on imports of these materials, sheltering Europe from possible shortages in supply and reducing production costs and environmental impacts.

Major improvements in separation processes are needed to achieve an efficient and cost effective recovery from the different streams in the process industries.

Scope: new approaches combining several existing techniques (e.g. precipitation, adsorption, extraction, physical or biological treatment and separation) or new alternative solutions could provide a cost-effective way to achieve major improvements in the efficiency of recovery operations for metals and other minerals, leading to waste reduction and minimising the environmental impact of industrial operations.

The proposed solutions should also have potential for integration in the current industrial scenario, and should be suitable for different sectors in the process industry. It is essential to consider the compatibility of the technologies with currently existing plants, taking into consideration the capital -intensive nature of some industrial sectors involved.

Demonstration activities should focus in the following research areas:

- Innovative technologies for minerals and metals treatment from solid, gaseous and/or liquid waste streams.
- Development of new approaches for the design and scale up of industrial processes. In particular, these

SPIRE-07-2015

Recovery technologies for metals and other minerals

Specific challenge: Development of processes for an effective and efficient recovery of these materials; Lower the dependency of imports (shortage in supply) but reducing production costs and environmental impacts; major improvements in separation processes, ...

Scope: Combination of existing technologies or new alternative solutions; Integration in the current industrial scenario; demonstration activities in industrial environments; initial exploitation and business plan; seek synergies including cumulative funding with regional/national/European structural funds. Significant SME participation; 6-10 M€ EU contribution;...

Expected Impact: proof of economic and industrial feasibility (life cycle and cost assessment); impact on resource efficiency (40% increase in recovery compared to conventional processes); shorter time to market; technology transfer; help to achieve EIP Raw Materials;...

Type of Action: Innovation action

Particularities of the PPP calls

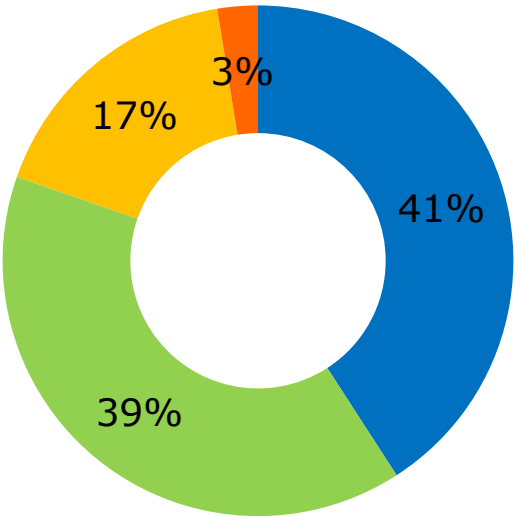
- **Involvement of industry** in the preparation of the WP
- Added value from (and for) **industrial stakeholders**
- **High involvement of experts from industry in the evaluation process (> 50%)**
- **One stage evaluation to reduce time-to-grant**
- Many **DEMO** topics
- **Exploitation of results** is a very high priority
- **Subject to the same rules and regulation as other H2020 calls**

For proposers – Do not forget to consider:

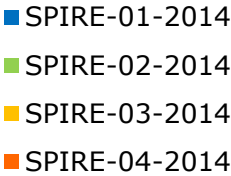
- **Value Chain Approach**
- **Cross Sectorial / Transferable Technologies**
- **Lifecycle perspectives**
- **Outline Business Plan**
- **Valorisation of results and products**
- **Address Non-technological barriers / bottlenecks**
- **Links to Legislation and Standardisation**
- **No negotiation of proposals ➡ Only **complete** proposals can be funded**
- **(AND don't forget to Pre-register your proposal and submit IN TIME)**



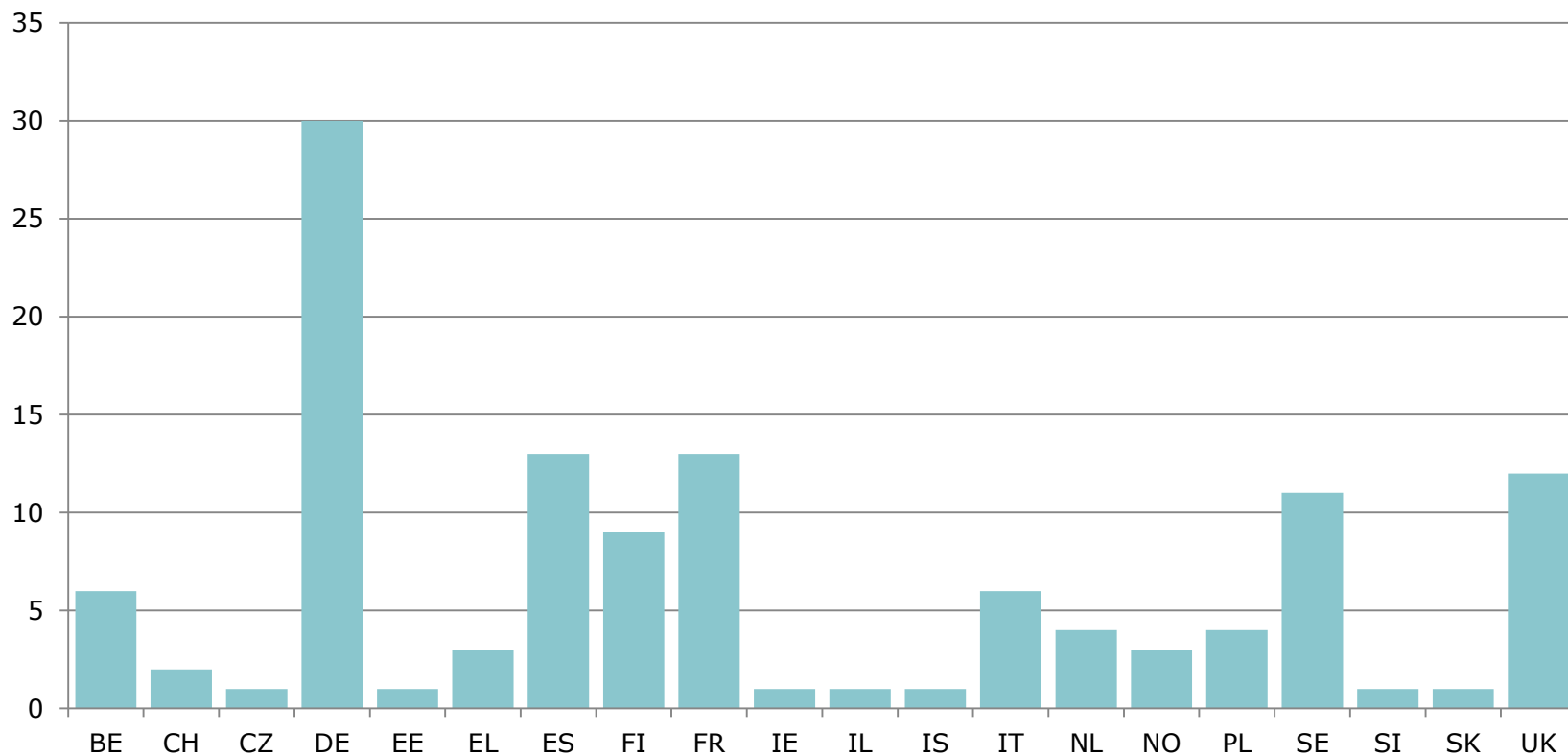
PROPOSALS		
Eligible	Main List	
nb	nb	EC Contribution
28	4	€ 23,900,000
21	3	€ 23,000,000
10	1	€ 10,000,000
9	3	€ 1,500,000
68	11	€ 58,400,000



Main List Ec contribution



Number of participants by country Main List





European
Commission

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RESEARCH & INNOVATION

Key Enabling Technologies

[European Commission](#) > [Research & Innovation](#) > [Key Enabling Technologies](#) > [Public Private Partnerships...](#) > [H2020 Information Day on Research PPPs'](#)



H2020 Information Day on Research PPPs 21 October 2014



[Home](#) > [Public Private Partnerships in research](#) > [H2020 Information Day for PPPs 21 October 2014](#)

Information Days on the Research PPPs on Factories of the Future, Energy-efficient Buildings, Green Vehicles and Sustainable Process Industry Brussels, 21 October 2014



An Information Day on the Research PPPs will take place on 21 October 2014 in Brussels.

The aim of the event is to give the research community an overview of ongoing activities, and to support the preparation of proposals for the 2015 calls.

The info day will also offer plenty of opportunities for networking.

[Register for the info day](#)

[Privacy Statement](#) (PDF version, 137KB)

Energy-efficient Buildings (EeB)

Factories of the Future (FoF)

Sustainable Process Industry (SPIRE)

Other PPPs

Meetings and workshops

H2020 Information Day for PPPs 21 October 2014

- Programme
- Practical information
- Brokerage activities
- Registration

H2020 Information Day for PPPs' 16-17 December 2013

e-Library



HORIZON 2020

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HORIZON 2020

Thank you for your attention

More information:

HORIZON 2020:

<http://ec.europa.eu/research/participants/portal/desktop/en/home.html>

Contractual Public-Private Partnerships in research and innovation:

http://ec.europa.eu/research/industrial_technologies/ppp-in-research_en.html