



SPIRE PPP
Sustainable Process Industries
through Resource & Energy
Efficiency

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Miembro del Board of Directors of SPIRE



SPIRE PPP

- Officially launched on 17 December 2013 in the framework of HORIZON 2020
- First-ever 7-year innovation Public-Private Partnership (PPP) with Europe's process industry



Why a PPP?

- To solve problems together with industry
- To strengthen European industrial leadership
- To facilitate prioritization of R&I in line with the Europe2020 objectives and industry needs
- To leverage research and innovation elements
- To strongly commit industry to joint objectives

Why SPIRE?

- EU process industries sit at the core of most industrial value chains and are highly dependent on resources (energy, materials and water)



- 8 sectors representing together 6.8 million jobs in 450,000 enterprises and turnover of over €1,600 billion/year
- They are struggling with competitiveness at global level and striving for long-term sustainability. High risks and long-term investments. There is a need for co-operation amongst them and along their value chains.

CERAMICS



CEMENT



CHEMICALS



W E

WATER



ENGINEERING



1
Cut on dotted line

2
Rotate 180°

3
Be inSPIRED

STEEL



NON-FERROUS METALS



MINERALS

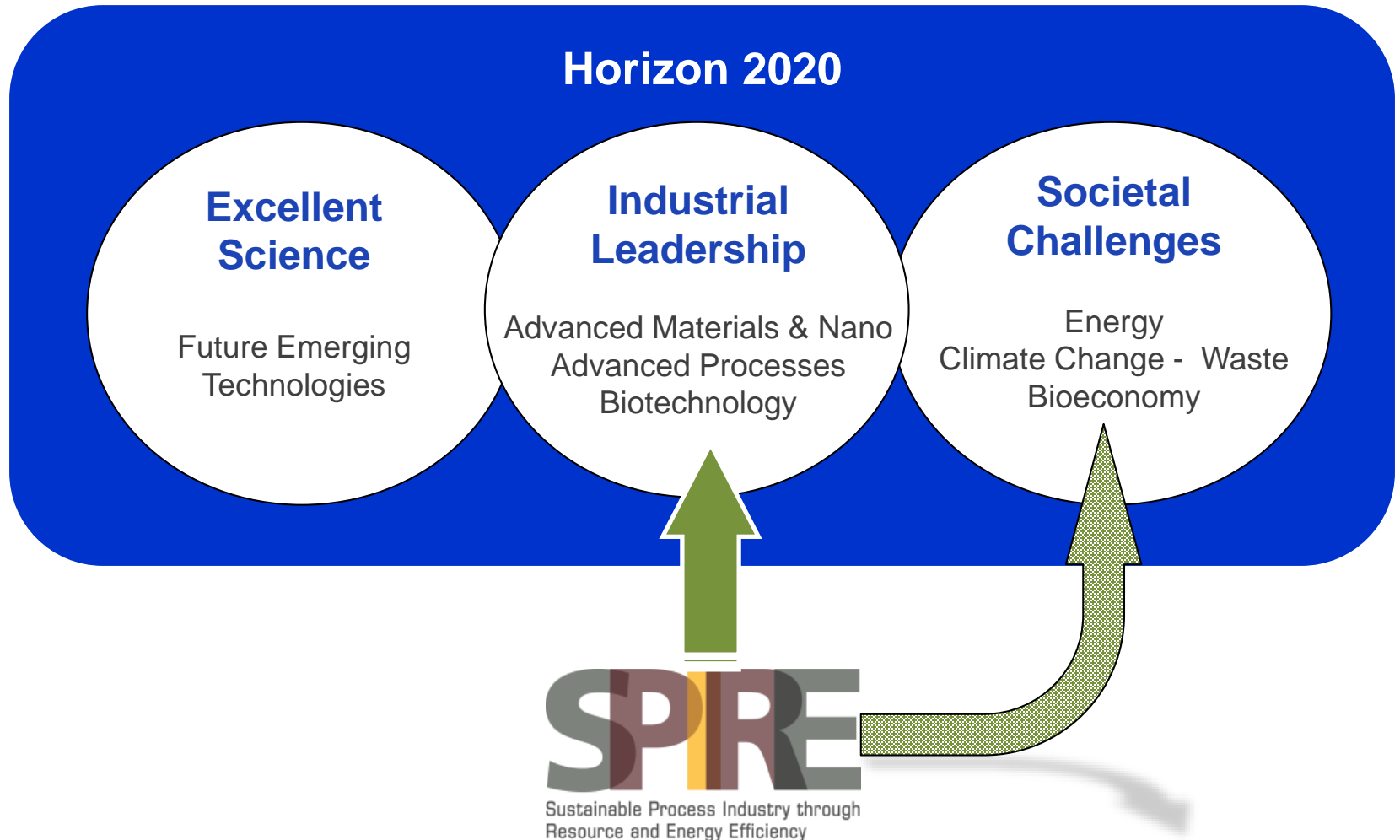


The systemic approach



- From raw resources to the end user industries = **the value chain**
- From research to demonstrations and market = **the innovation chain**
- From the big to small and medium enterprises = **the industrial chain**

Horizon 2020 & PPPs



PPP in practice...

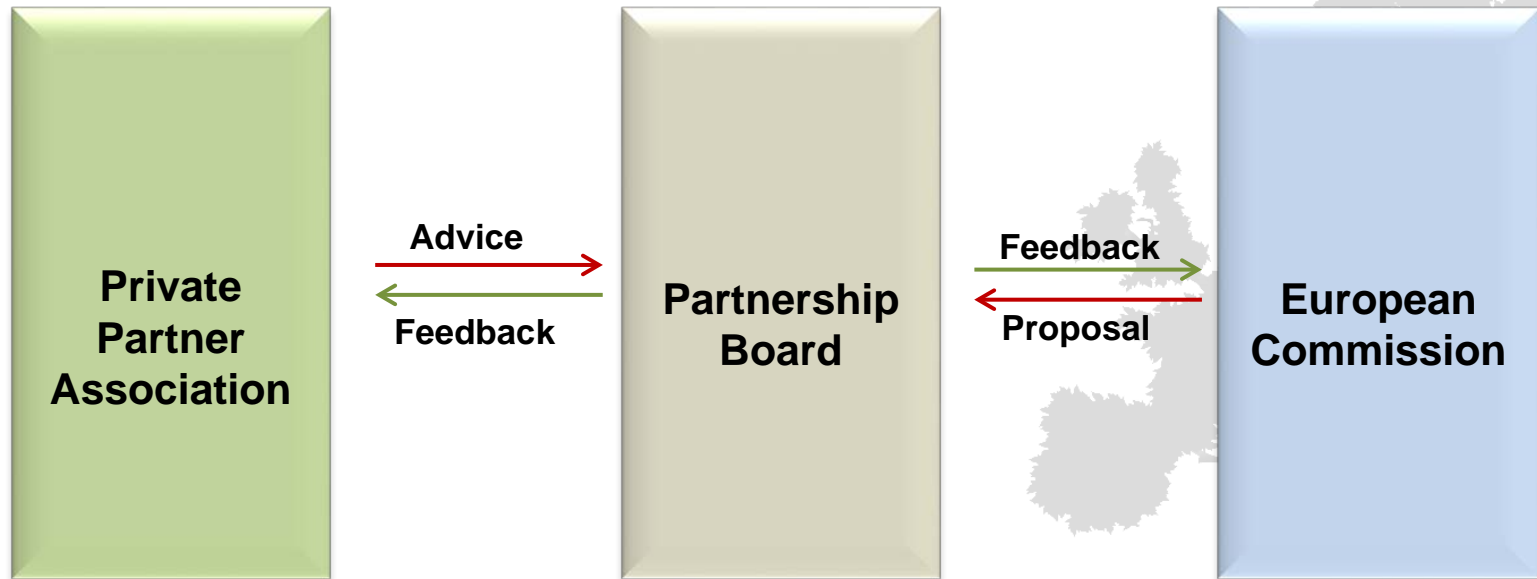
While some of it is the same as in normal Horizon 2020:

- The financial rules are those of Horizon 2020
- Final responsibility for the Work Programme stays with the European Commission
- Implementation remains with the European Commission: selection of proposals, negotiation, review of progress and payments

There are significant advantages:

- Long-term commitment by European Commission to support the field
- Long-term commitment by industry to invest, with a need to demonstrate its fulfilment (monitoring & KPIs); TRLs = 3-6 / 4-7
- Roadmap-based strategy for the content of the calls

... the Governance

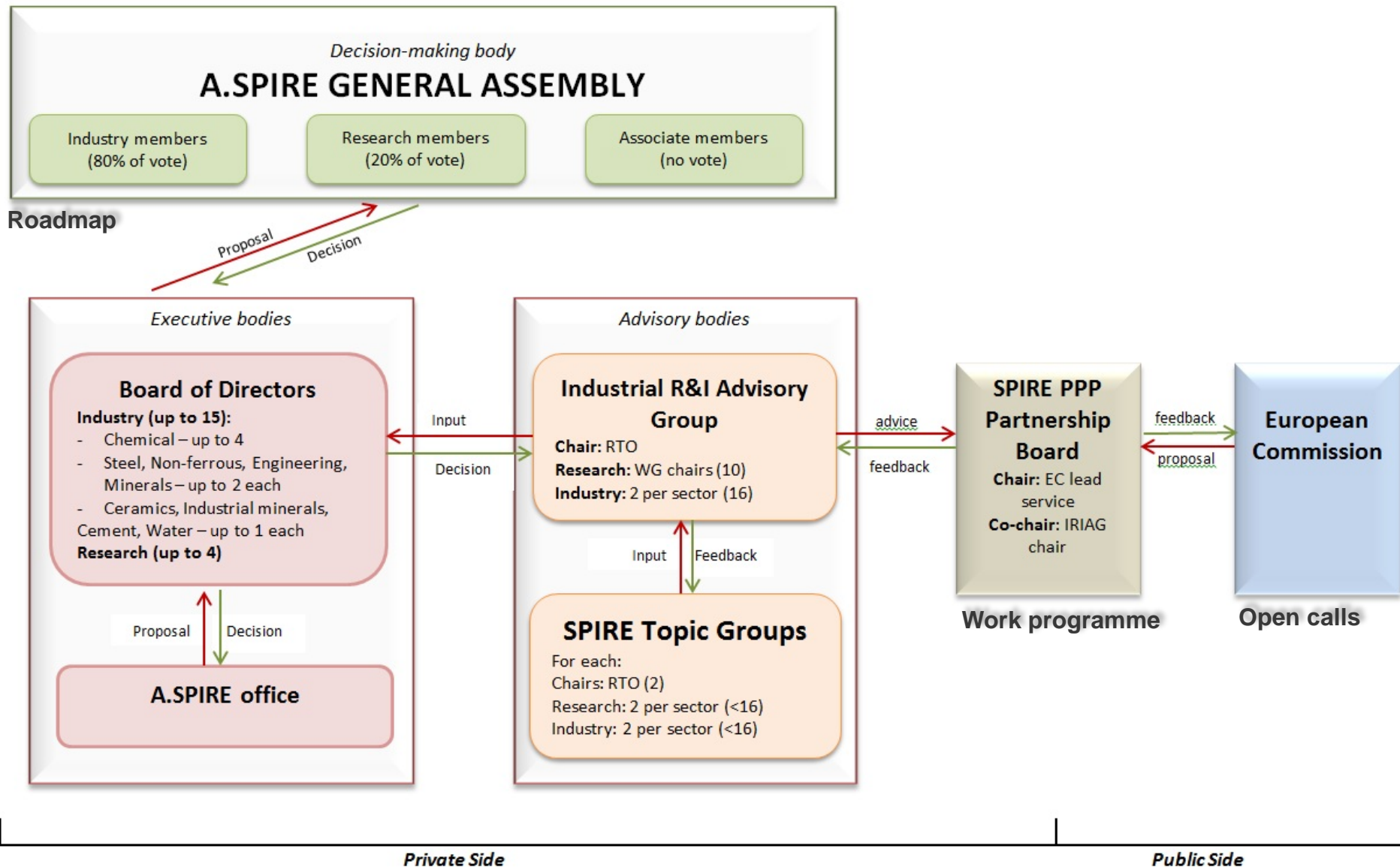


- Discuss priorities
- Propose call topics
- Form consortia
- Apply to calls

- Discuss priorities & call topics
- Assess progress

- Develop work programme
- Publish open calls

A.SPIRE organisational structure



Roadmap

Proposal
Decision

Executive bodies

Board of Directors

- Industry (up to 15):**
- Chemical – up to 4
 - Steel, Non-ferrous, Engineering, Minerals – up to 2 each
 - Ceramics, Industrial minerals, Cement, Water – up to 1 each
- Research (up to 4)**

Proposal
Decision

A.SPIRE office

Advisory bodies

Industrial R&I Advisory Group

Chair: RTO
Research: WG chairs (10)
Industry: 2 per sector (16)

Input
Feedback

SPIRE Topic Groups

For each:
 Chairs: RTO (2)
 Research: 2 per sector (<16)
 Industry: 2 per sector (<16)

advice
feedback

SPIRE PPP Partnership Board

Chair: EC lead service
Co-chair: IRIAG chair

Work programme

feedback
proposal

European Commission

Open calls

Private Side

Public Side



UNIVERSITÀ
DEGLI STUDI
DI PADOVA



TU/e Technische Universiteit
Eindhoven
University of Technology

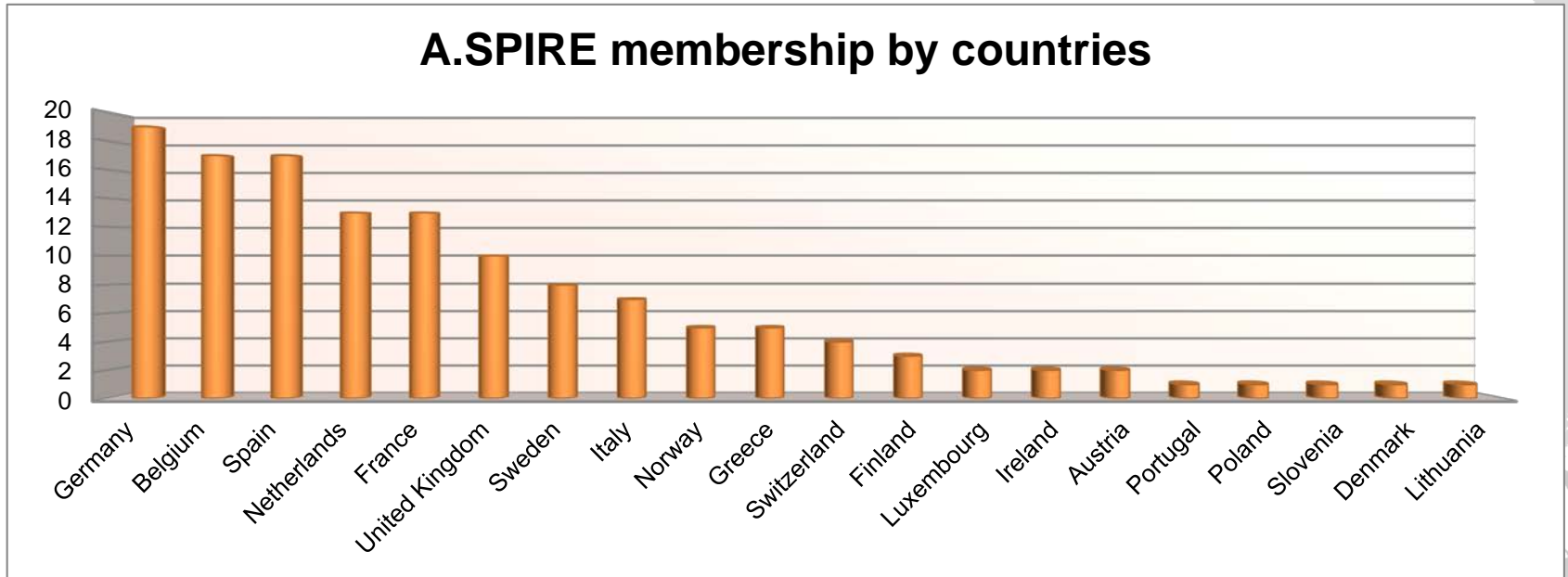


UNIVERSITY of OULU
OULUN YLIOPISTO



MEMBERSHIP OVERVIEW

A.SPIRE membership by countries

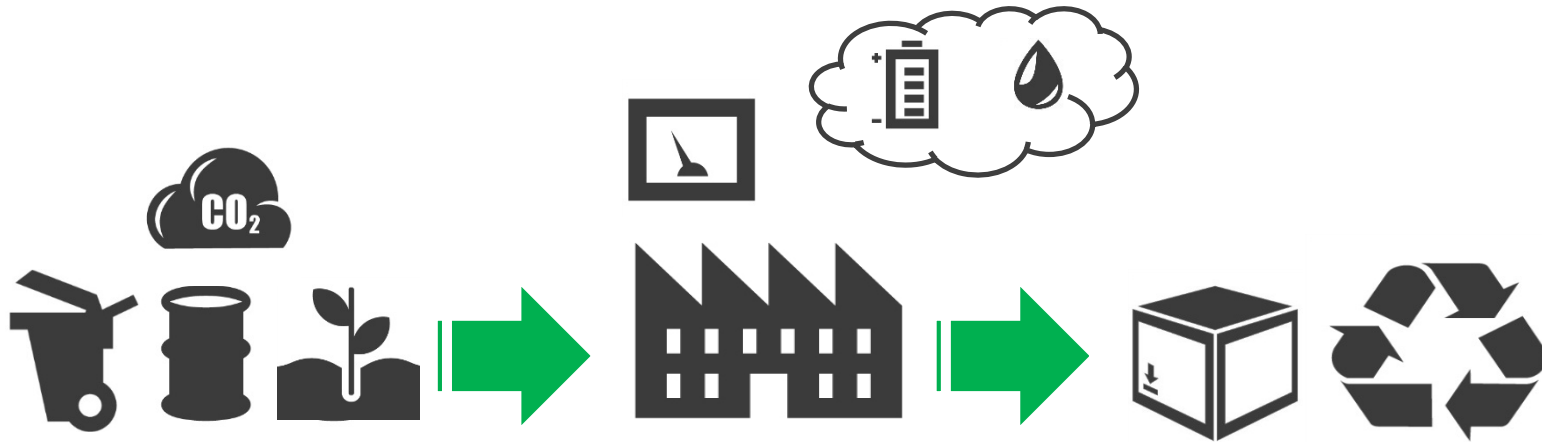


Membership type	Number of members
Associate member	8
Associations	13
Industry member (intermediate)	1
Industry member (large)	31
Industry member (medium)	4
Industry member (small)	11
Research member (large)	36
Research member (small)	28
Total	132

Sector	Number of companies & associations
cement	4
ceramics	4
chemicals	27
engineering	7
minerals	2
non-ferrous metals	6
steel	7
water	2
Other	1
Total	60

SPIRE 2030 Roadmap

TO TOMORROW'S SCENARIO:



- **(Re)invent** feedstock (waste, bio, CO₂)
- **Reduce** emissions; **(re)invent** energy & resource management concepts, incl. industrial symbiosis
- **Introduce** digital devices for better monitoring and control
- **(Re)invent** materials for optimised processes
- **(Re)invent** processes & materials with a significantly increased impact on resource & energy efficiency down the value chain: transport, housing
- **Reduce** waste & **(re)invent** technologies for valorisation of waste streams within and across sectors



Concrete objectives

R+I to integrate and demonstrate at least 40 innovative systems and technologies:

- 7 in Adaptable processes able to use different feedstocks
- 6 in Reduction and re-use of waste with ambition to close the loop
- 9 in Innovative processes leading to CO₂ reduction
- 8 in Green technologies to develop novel materials for new and existing markets
- 6 in Industrial processes reducing water use
- 4 using Technology uptake within/between sectors to enable industrial symbiosis

... and capable of achieving across all process industry sectors (by 2030):

- A reduction in fossil energy intensity of up to 30%
- A reduction in non-renewable, primary raw material intensity of up to 20%
- Efficiency improvement of CO₂-equivalent footprints of up to 40%
- 10 new types of highly skilled jobs

Advantages of being in SPIRE

- Building on past and current advancements
- Participation in shaping the future of the process industry and addressing its R&D needs
- Synergy opportunities in and across the eight major process industry sectors
- Being up to date on technological developments, funding and EU strategic agenda
- Addressing non-technological issues and barriers
- (Political) visibility across and support from different sectors and players

All 2014 awarded projects within SPIRE (started January & June 2015)

SPIRE 1 – process control

- RECOBA
- ProPAT
- DISIRE
- CONSENS
- iCspec

SPIRE 2 – use of renewables

- SteamBIO
- MefCO2
- MOBILE FLIP

EE18 – use of heat recovery

- TASIO

SPIRE 3 – downstream processing

- PRODIAS

SPIRE 4 – sustainability tools

- STYLE
- SAMT
- MEASURE

WASTE1 – circular economy

- RESYNTEX
- FISSAC
- CABRISS
- RESLAG
- BAMB

All 2015 awarded projects within SPIRE (started October 2015)

SPIRE 5 – process intensification

- ADREM
- MEMERE
- PRINTCR3DIT
- ROMEO
- TERRA

SPIRE 6 – energy & resource mngt. systems

- EPOS
- MAESTRI
- SHAREBOX
- SYMBIOPTIMA

SPIRE 7 – recovery technologies

- REMAGHIC
- REE4U
- ADIR

SPIRE 8 – solids handling

- IbD

EE18 – use of heat recovery

- Indus3Es
- I-ThERM
- SuSPIRE

A.SPIRE activities (2015-2016)

1. Prepare industrial priorities

- Defining strategic topics for 2016-17
- Gap analysis
- Defining strategic topics for 2018-2019

2. Create added value for the PPP

- Brokerage event and Open Innovation brokerage for SMEs
- Setting up the **knowledge and dissemination platform**
- Improved communication towards members (newsletter, looking for partners tools) & events

3. Follow-up on the contractual commitments of SPIRE PPP

- **Impact Workshop and PPPs Infoday**
- Follow up on the SPIRE projects – SPIRE projects day

4. Keep and ensure **alignment between policies and technologies**

- Circular Economy, ICT, energy, financial instruments, etc

SPIRE – be more!


- Belonging to a strategic continuum of a community: you are not alone!
- Communication support
- Outcomes useful to all
- Visibility across different sectors and players

WE NEED EACH OTHER TO BE SUCCESSFUL!
(impact workshop / progress report / mid-term review)

Communication and dissemination support to projects

- Support information exchange between projects which address the same calls and/or sectors
- Capture progress and knowledge generated by projects
- Ensure the link between projects from one bi-annual work programme to the other
- Support exploitation of projects' results beyond the consortia life-time
- Capture projects' outputs to allow for identification of technology gaps and in order to develop policy framework recommendations
- Provide visibility and recognition among targeted stakeholders in the SPIRE community and beyond
- Ensure dissemination of EU funding opportunities for process industries
- Co-organise events and meetings to disseminate projects' results to the SPIRE community at large

Communication tools

- SPIRE logo and SPIRE project's label 
- **SPIRE Knowledge and Dissemination platform – available as of March 2016**
 - **SPIRE projects repository** (search for projects, publish project's outcomes, find interlinks and synergies through keywords assigned to Work Packages and Deliverables, follow-up on KPIs of the SPIRE PPP, introducing case studies, etc.)
 - **SPIRE Members' space**
 - **SPIRE Public website**
 - **SPIRE projects' public websites** (9 hosted by SPIRE)

Communication tools – links to SPIRE website



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

Projects

SPIRE-1 SPIRE-2 SPIRE-3 SPIRE-4 EE 18 2014 WASTE-1

Topic title: SPIRE – 1-2014: **Integrated Process Control**



RECOBA

Cross-sectorial real-time sensing, advanced control and optimisation of batch processes saving energy and raw materials

[» View project](#)



DISIRE

The DISIRE project has been inspired by the real existing needs of multiple industrial sectors, including the world leading industrial partners in the non-ferrous, ferrous, chemical and steel industries that are highly connected and already affiliated with the SPIRE PPP and its objectives.

The overall clear and measurable objective of the DISIRE project is to evolve the existing industrial processes by advancing the Sustainable Process Industry through an overall Resource and Energy efficiency by the technological breakthroughs and concepts of the DISIRE technological platform in the field of Industrial Process Control (IPC).

[» View project](#)



ProPAT

ProPAT aims to develop novel sensors and analysers for providing measurements on composition, particle size and local bulk properties, as well as more traditional but smart sensors for measuring other process parameters, such as temperature, flowrate, pressure, etc., and integrate them into a versatile global control platform for data acquisition, data processing & mining and User Interface in order to measure properties of process streams and products, accurately and in real-time. The platform also provides selflearning and predictive capabilities aimed for dramatically reducing overcosts derived from even slight deviations from the optimum process.

[» View project](#)



CONSENS

Integrated Control and Sensing for Sustainable Operation of Flexible Intensified Processes

[» View project](#)



iCspec

in-line Cascade laser spectrometer for process control

Communication tools – project's public website

MEASURE **SPIRE**
Sustainable Process Industry through
Resource and Energy Efficiency

SEARCH...

MEASURE

- Home
- About
- Work Packages
- Partners
- News and Events
- Contact

WELCOME TO MEASURE!

The European project MEASURE stands for harmonised cross-sectorial sustainability assessment in the European process industries.

The project team will focus on the following main topics:

- › Critical points in current practice due to interfaces between sectors and/or along the supply chain,
- › From single sector to cross-sectorial supply chain [data] management by full Life Cycle Sustainability assessment on the example of the industrial sectors chemistry & consumer goods, steel & automotive as well as waste treatment, and
- › From research & development to full scale production using the right tools.

The outcome will be a roadmap providing recommendations for standards as well as best-practice methods and tools for life cycle based evaluation approaches in process industries and sustainable process design.

NEWS VIEW ALL

03 June 2015
1st MEASURE workshop
On May 13th, MEASURE organised a Life Cycle Sustainability Assessment workshop in collaboration with essencia, the Belgian Federation for Chemistry ... [Read more](#)

28 April 2015
Survey about current state of sustainability assessment in process industries started

PUBLICATIONS VIEW ALL

26 February 2015
Stakeholder communication
The SPIRE 4 projects SAMT, STYLE and MEASURE announce their ... [Read more](#)

SPIRE Sustainable Process Industry through
Resource and Energy Efficiency

Communication tools – project's public website



MefCO2

- Home
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The main aim of MefCO₂ is to develop an innovative green chemical production technology which contributes significantly to the European objectives of decreasing CO₂ emissions and increasing renewable energy usage.



www.spire2030.eu/project

SPIRE newsletter



Welcome to the **SPIRE Newsletter!**

Our purpose is to regularly inform you of key activities within and around our Public-Private Partnership as well as of other issues related to the European Process Industry.

In this issue, check out news about: the first SPIRE projects, the next SPIRE Brokerage event, the new A.SPIRE members and many more...

First 2014 SPIRE projects kicked-off

The first calls dedicated to the SPIRE PPP under the Horizon2020 Framework programme have demonstrated a broad participation from multiple process industry sectors. 13 projects were kicked-off in December 2014 and January 2015. More (coming from the 2-stage calls) will be officially launched in summer 2014. You will find out more about them on our website as we are shaping it out in collaboration with the SPIRE projects to ensure visibility and broad awareness of their developments.



[Learn More](#)

Launch of DISIRE

The European technology project DISIRE wants to set new standards in energy efficiency for chemical, steel and mineral processing as well as for combustion processes used in many industrial sectors. The DISIRE project was launched on the 28-29th of January 2015 in Brussels.



[Learn More](#)

2015 SPIRE projects: what's up?

Other communication tools

- Reaching out to **target audiences**
- Joint and widespread circulation of information through **newsletters and press releases**
- Featuring projects in **SPIRE publications**
- Sharing the projects' news/presentations/publications on **social networking sites**
- Support in preparing **publications, workshops, meetings** and other types of initiatives

A large, stylized logo for SPIRE. The letters are bold and blocky. The 'S' is grey. The 'P' is dark brown. The 'I' is a vertical yellow bar. The 'R' is dark brown. The 'E' is grey. The letters are set against a white background.

SPIRE

www.spire2030.eu