



# ***SPIRE PPP***

*EU Process Industries on Metal Recovery and Hubs  
for Circularity*

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## The European Process Industry at the forefront of innovation

### Strengths

- 6.3 million direct jobs
- 19 million indirect jobs
- 450,000 enterprises
- €1,8 trillion/y turnover
- 4.7% OF EU28 GDP

### Challenges

- Resources & energy
- Competitiveness
- High-risks/long-term investments



# GOVERNANCE SPIRE cPPP

## PRIVATE PARTNER

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



ASSOCIATION SPIRE

## PARTNERSHIP BOARD

- Discuss priorities & call topics
- Assess progress



## PUBLIC PARTNER

- Develop work programme
- Publish open calls



## SPIRE ADDED VALUE



# SPIRE IMPACT

## SPIRE PMR'18

### PRIVATE LEVERAGE

- **7 leverage factor** (*Target: 5 to 10*)
- INVESTED by COMPANIES: 3 bn €

### ENVIRONMENTAL KPIs

- 30% reduction of emissions (*Target: 40%*)
- 36% less dependency on fossil energy (*Target: 30%*)
- 25% less dependency of non-renewable, primary resources (*Target: 20%*)
- 32% reduction of waste (*no initial target established*)

### JOBS

- 83 new jobs being created, directly related to projects
- 438 new Jobs created, directly related to SPIRE companies

### SIGNIFICANT INNOVATIONS

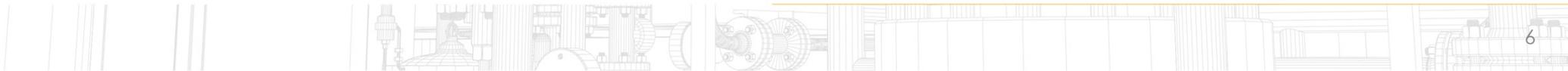
- 221 developed or being developed (of which 74 major innovations) (*Target: 40*)
- 65% of projects planning to patent / commercialise / deploy

### SPIRE SMEs

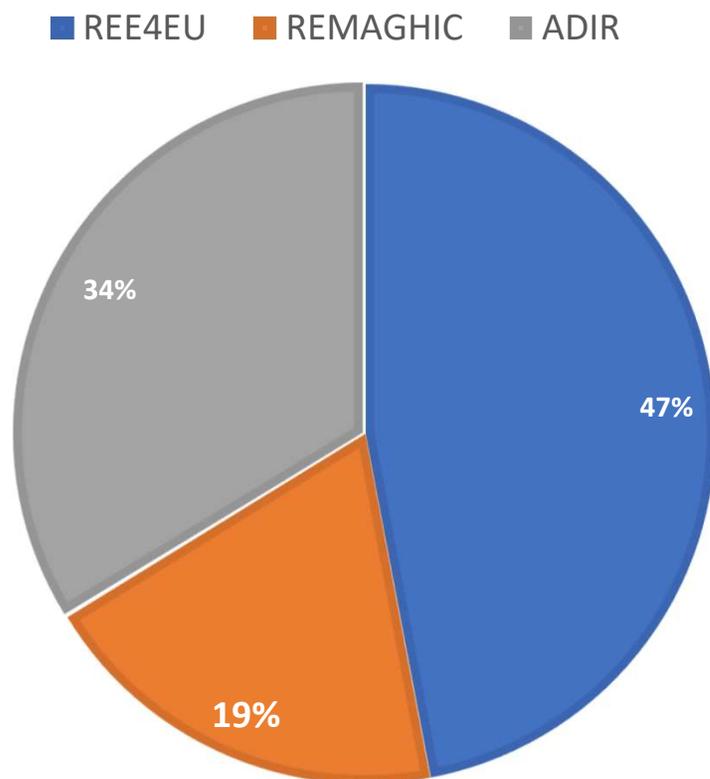
- 9 new employees / SME (*higher than EU average = 2*)
- 25% growth in turnover (*double than EU average*)
- 16% increase in sales

# SPIRE Relevant Activities

- Metal Recovery
- Industrial Symbiosis



# SPIRE budget dedicated to Metal Recovery (SPIRE-7: 2015)



## Metal Recovery SPIRE projects funded so far:

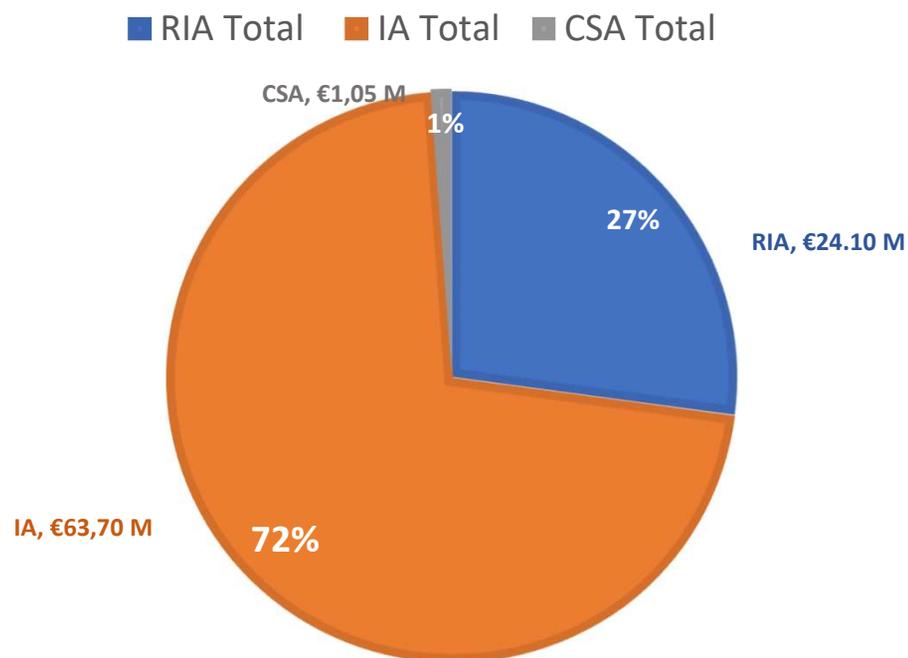
CSA Total  
0 mil

RIA Total  
0 mil

IA Total  
**€19,28 mil**

# SPIRE budget dedicated to Industrial Symbiosis (M€)

From 2014 - 2018



## Industrial Symbiosis (IS) SPIRE projects funded so far:

|                             |                 |
|-----------------------------|-----------------|
| RIA Total                   | €24.1M          |
| IA Total                    | €63,7           |
| CSA Total                   | €1,05M          |
| <b>INDUSTRIAL SYMBIOSIS</b> | <b>€88,84 M</b> |

# P4P report on Low Carbon Process Industry (See [here](#))

## Recommendation on Industrial Symbiosis

✓ Develop a supportive framework to promote industrial symbiosis (IS)

❖ *A SPIRE dedicated Thematic Workshop on IS in 2017*

### ❖ *2 dedicated SPIRE CALLS:*

**SPIRE-06-2015:** Energy and resource management systems for improved efficiency in the process industries (RIA)

**CE-SPIRE-01-2020:** Industrial symbiosis (IA)

Several calls on Process Control

### ❖ *88 M€ SPIRE funds for IS projects (to date)*

#### **2014: WASTE 01 – Circular Economy**

- RESYNTEX (IA)
- FISSAC (IA)

#### **2015: SPIRE 06 – Energy & Resource management systems**

- EPOS (RIA)
- MAESTRI (RIA)
- SHAREBOX (RIA)
- SYMBOPTIMA (RIA)

#### **2017: SPIRE 13 – Industrial Symbiosis**

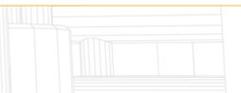
- SCALER (CSA)

#### **2018: SPIRE 02 – Energy & resource flexibility in energy intensive industries (IA, 50%)**

- PreMa
- CIRMET
- BAMBOO

## SPIRE topics in 2020 – Metal Recovery and IS

- ❖ **CE-SPIRE-01-2020: Tapping into the potential of Industrial Symbiosis (IA; 50%/70%)**
- ❖ CE-SPIRE-07-2020: Preserving fresh water: recycling industrial waters industry (IA)
- ❖ LC-SPIRE-08-2020: Novel high performance materials and components (RIA)
- ❖ CE-SPIRE-09-2020: Alternative mineral resources for high volume production (IA)
  
- ❖ CE-NMBP-42-2020: Materials life cycle sustainability analysis (RIA)
- ❖ DT-SPIRE-11-2020: Artificial Intelligence and Big Data Technologies for Process Industries (CSA)





## **SPIRE 2050 VISION**

Answering:

- Global Challenges
- The demands from society





***“An integrated and digital  
European process industry  
fostering a “well-below 2°C” scenario  
and a fully circular future  
for our planet and society.”***

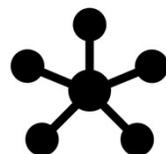
**SPIRE 2050**  
***Our Value Proposition***

# Our ambitions



## Closing the climate technological gap

Development of the required solutions to fully contribute to the EU Climate Policy targets



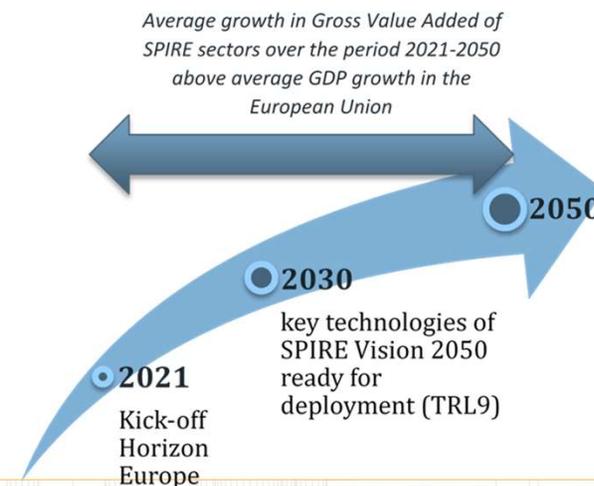
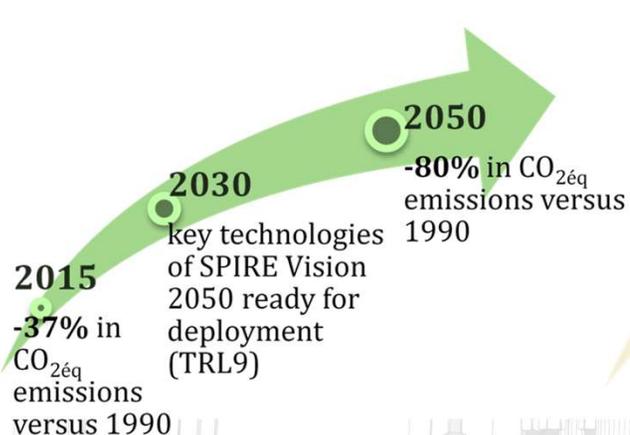
## Process industries as Hubs for circularity

Development of required solutions to move towards zero-waste-to-landfill and create Hubs for circularity across Europe



## Global competitiveness

Development of technologies which create new investment opportunities for globally competitive EU Process Industries



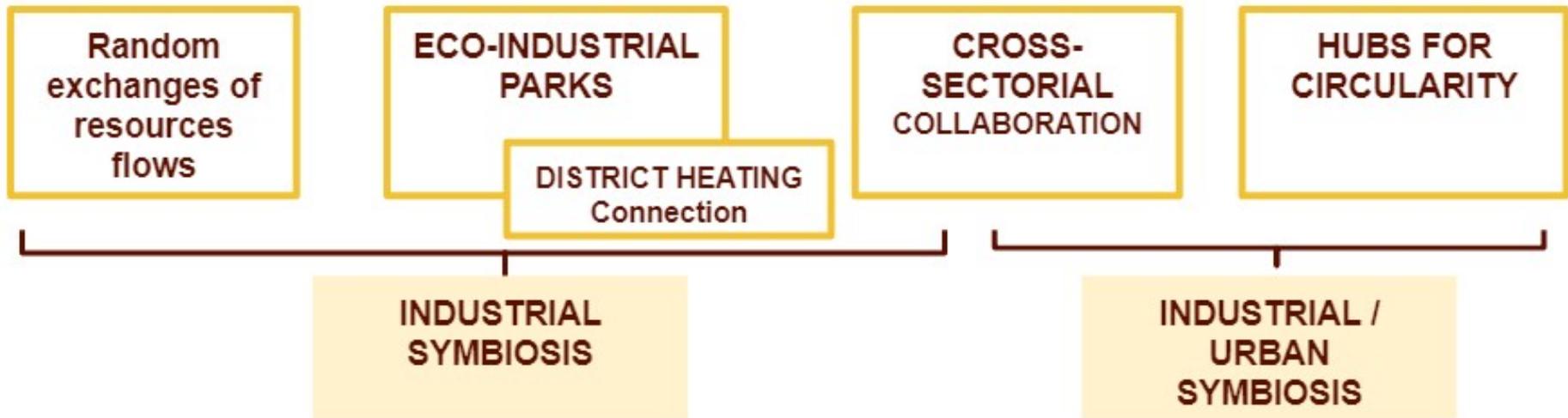
# INDUSTRIAL SYMBIOSIS

## THE FUTURE IS CIRCULAR

### MOVING FROM INDUSTRIAL TO “HOLISTIC” PERSPECTIVE

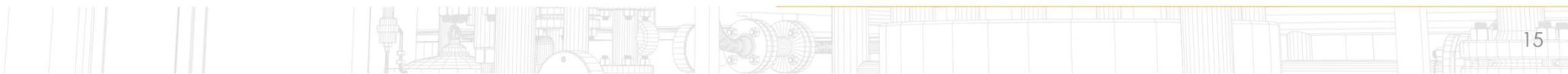
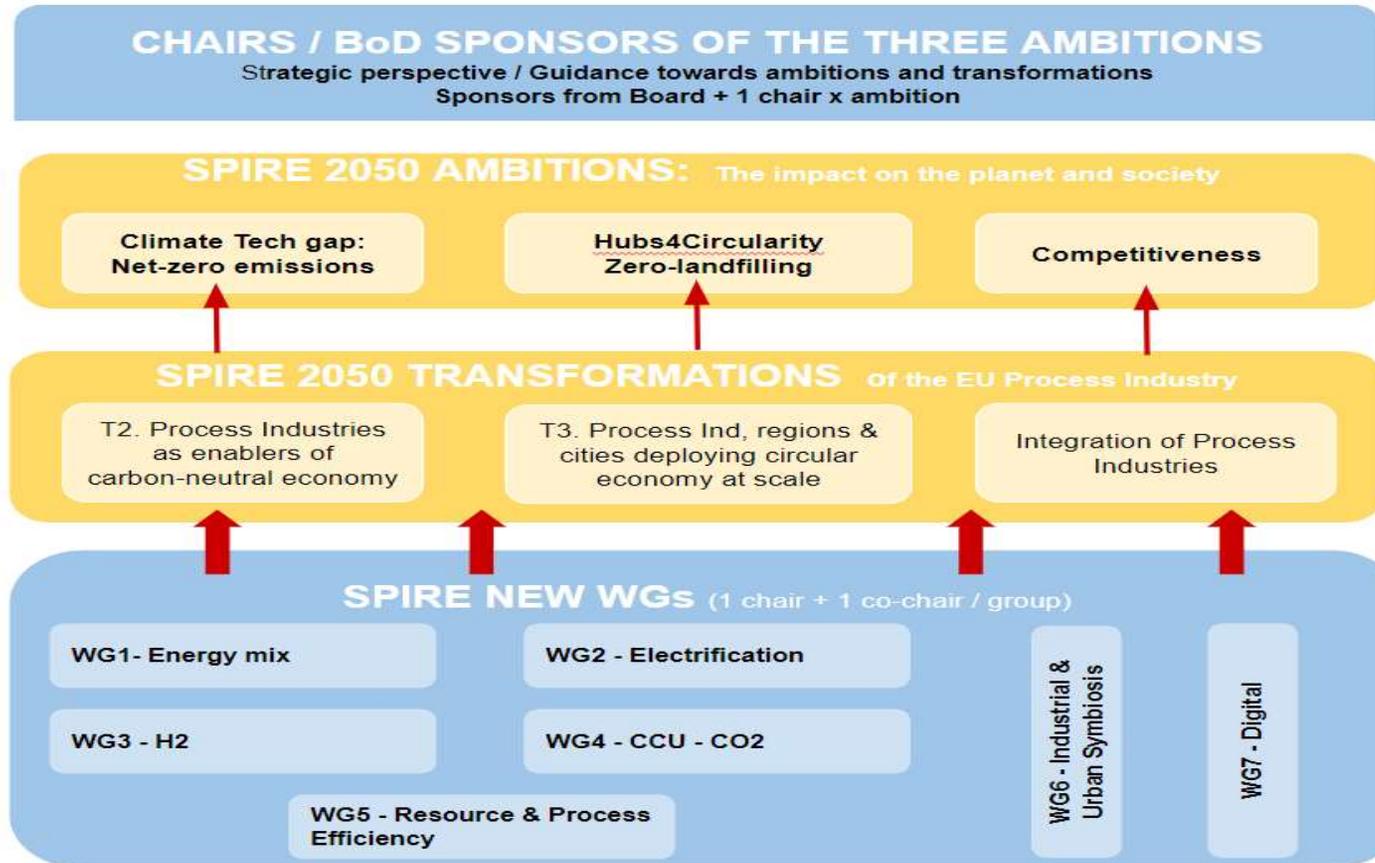
**SPIRE  
2030  
Roadmap**

**SPIRE  
2050  
Vision**



# SPIRE 2050 ROADMAP – NEW WGs

BE PART OF IT: JOIN US TO DEFINE THE NEXT DECADES OF R&I





# Connected across borders and to citizens

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