



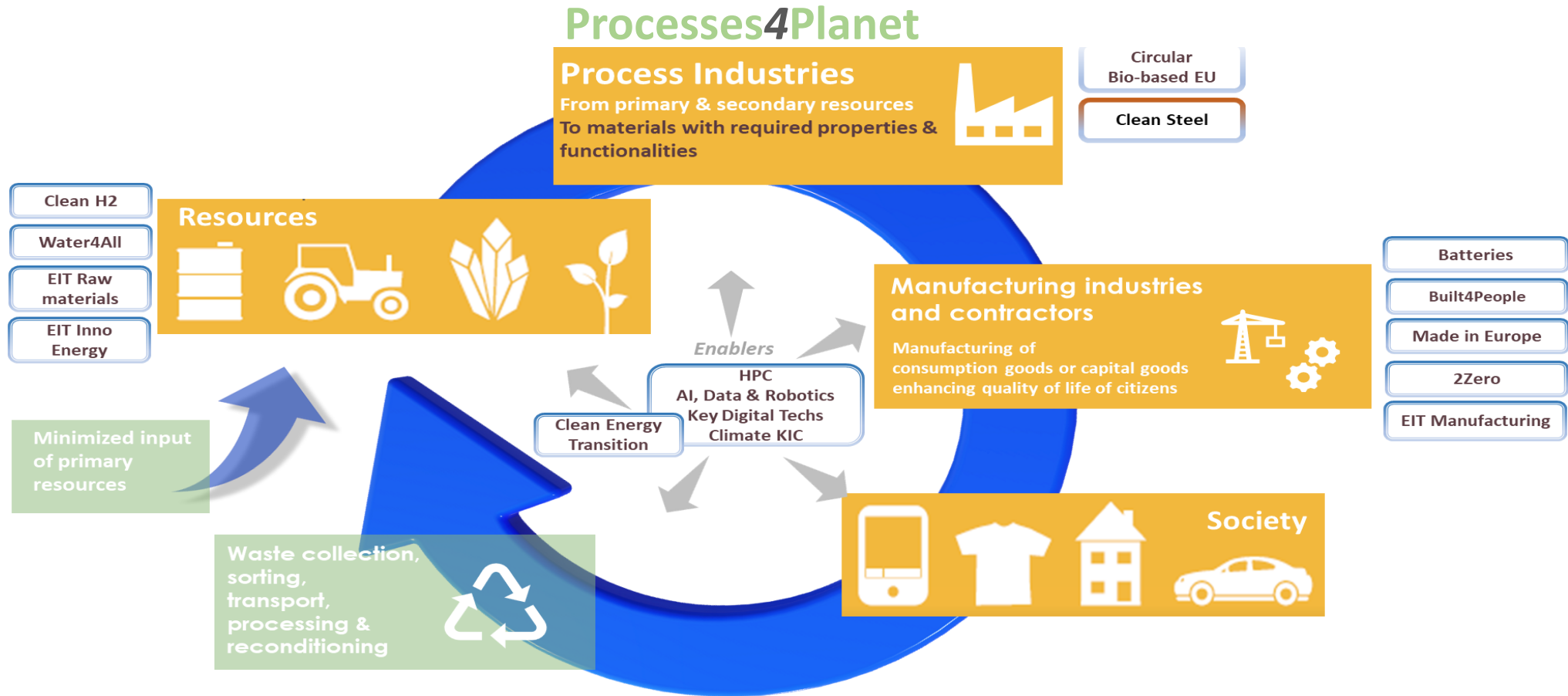
# Processes4Planet<sup>(\*)</sup> (CNCI) 2050

Brussels, 2020

[www.spire2030.eu](http://www.spire2030.eu)

*(\*) Processes4Planet is the proposal of the private side for the new name of SPIRE (CNCI) as future partnership. The private partner being A.SPIRE*

# Processes4Planet in the Circular Value Chain of Partnerships & Initiatives



# PROCESSES4PLANET (CNCI) ADDED VALUE: The European Process Industry at the forefront of innovation

+150  
Members teaming up



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

€900  
Million budget  
(2014-2020)

**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


8  
Sectors  
(currently)



20  
Countries



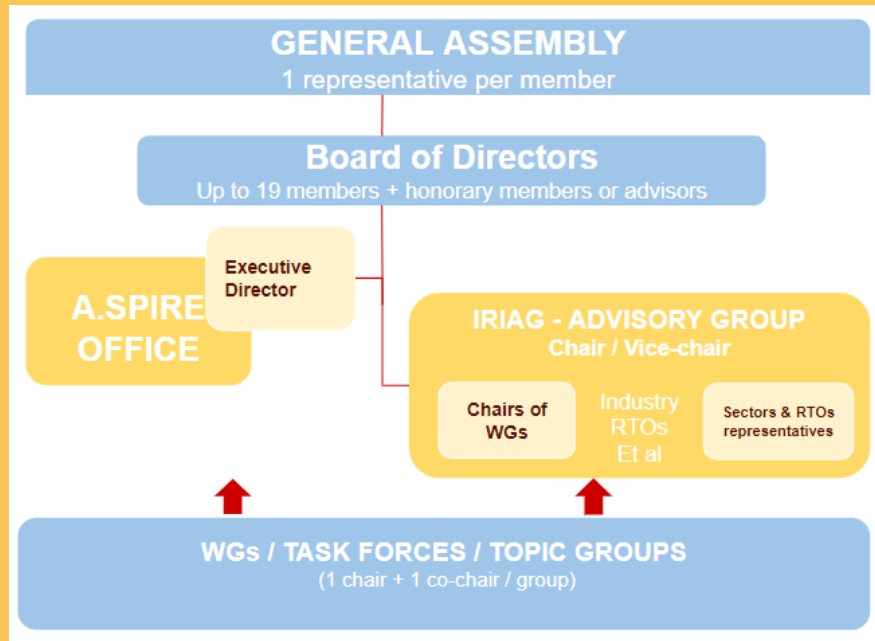
95%  
Of investments in EU



# GOVERNANCE SPIRE cPPP

## PRIVATE PARTNER ASSOCIATION SPIRE

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



## PARTNERSHIP BOARD

- Discuss priorities & call topics H2020/HEU
- Assess progress



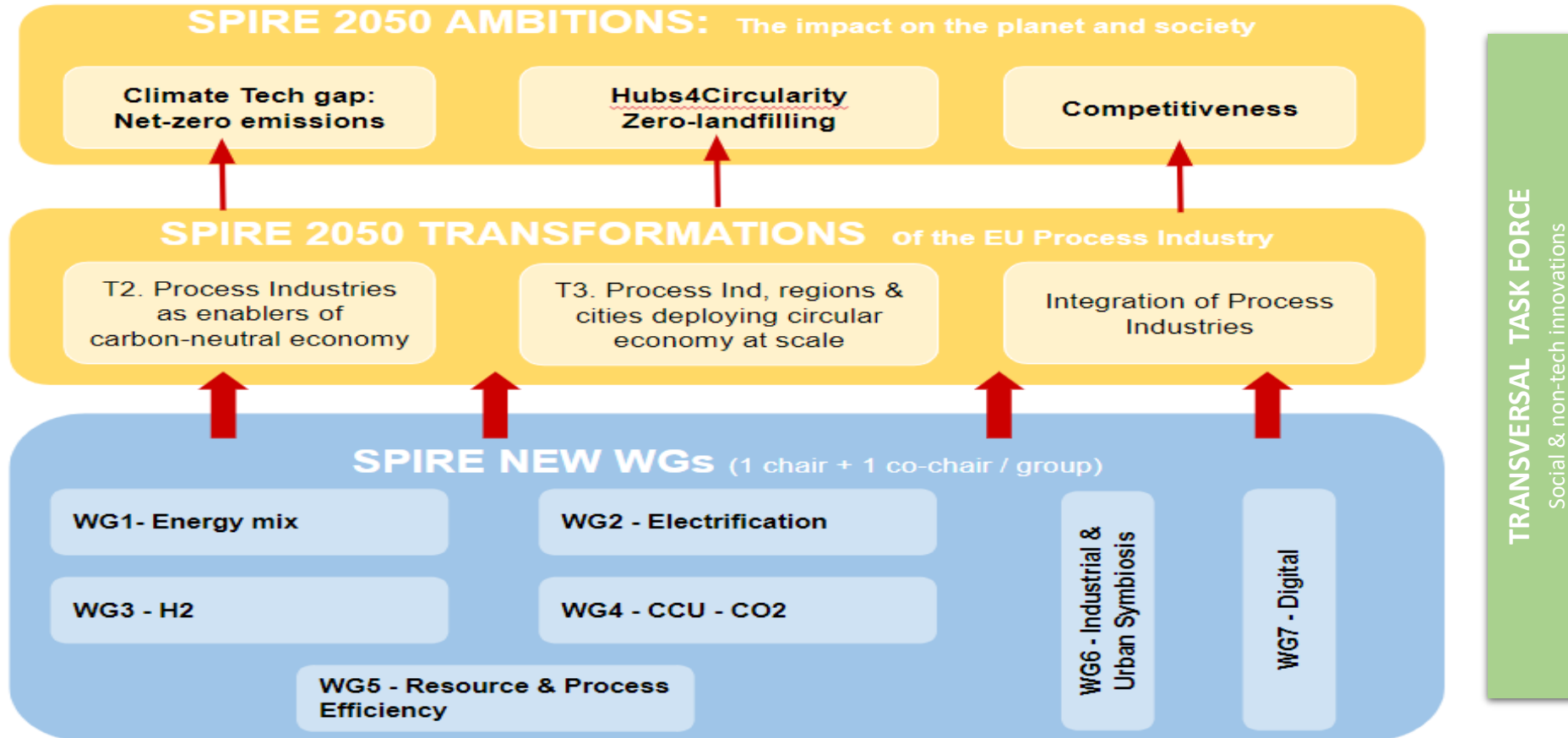
## PUBLIC PARTNER

- Develop work programme
- Publish open calls

**European  
Commission**

# PROCESSES5 PLANET 2050 ROADMAP – NEW WGs

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



# SPIRE Topics in 2020

- 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, 70%)
- LC-SPIRE-08-2020: Novel **high performance materials and components** f (RIA)
- CE-SPIRE-09-2020: **Alternative Mineral resources** for high volume production (IA, 70%)
- \*\*\*\*\*
- CE-NMBP-42-2020: **Materials lifecycle sustainability analysis** (RIA)
- DT-SPIRE-11-2020: **Artificial Intelligence** and Big Data Technologies for Process Industries (CSA)

**63 on-going projects + 37 finalised = 100 SPIRE Projects**

43 RIAs / 49 IAs / 8 CSAs

# SPIRE's impact in the four year period up to 2018

SPIRE-Processes4Planet will be building on the experience, achievements and lessons learnt from its predecessor. Despite its relatively short existence, SPIRE cPPP has already managed to deliver high impact:

## PRIVATE LEVERAGE

- **8.5 average leverage factor** (*Target: 5 to 10*)
- INVESTED by COMPANIES: 4.52 bn €

## ENVIRONMENTAL KPIs

- 29% reduction of emissions (*Target: 40%*)
- 38% less dependency on fossil energy (*Target: 30%*)
- 31% less dependency of non-renewable, primary resources (*Target: 20%*)
- 43% reduction of waste (*no initial target established*)

## JOB

- 100 new jobs being/to be created, directly related to projects
- 1523 new jobs being/to be created, directly related to SPIRE companies

## SIGNIFICANT INNOVATIONS

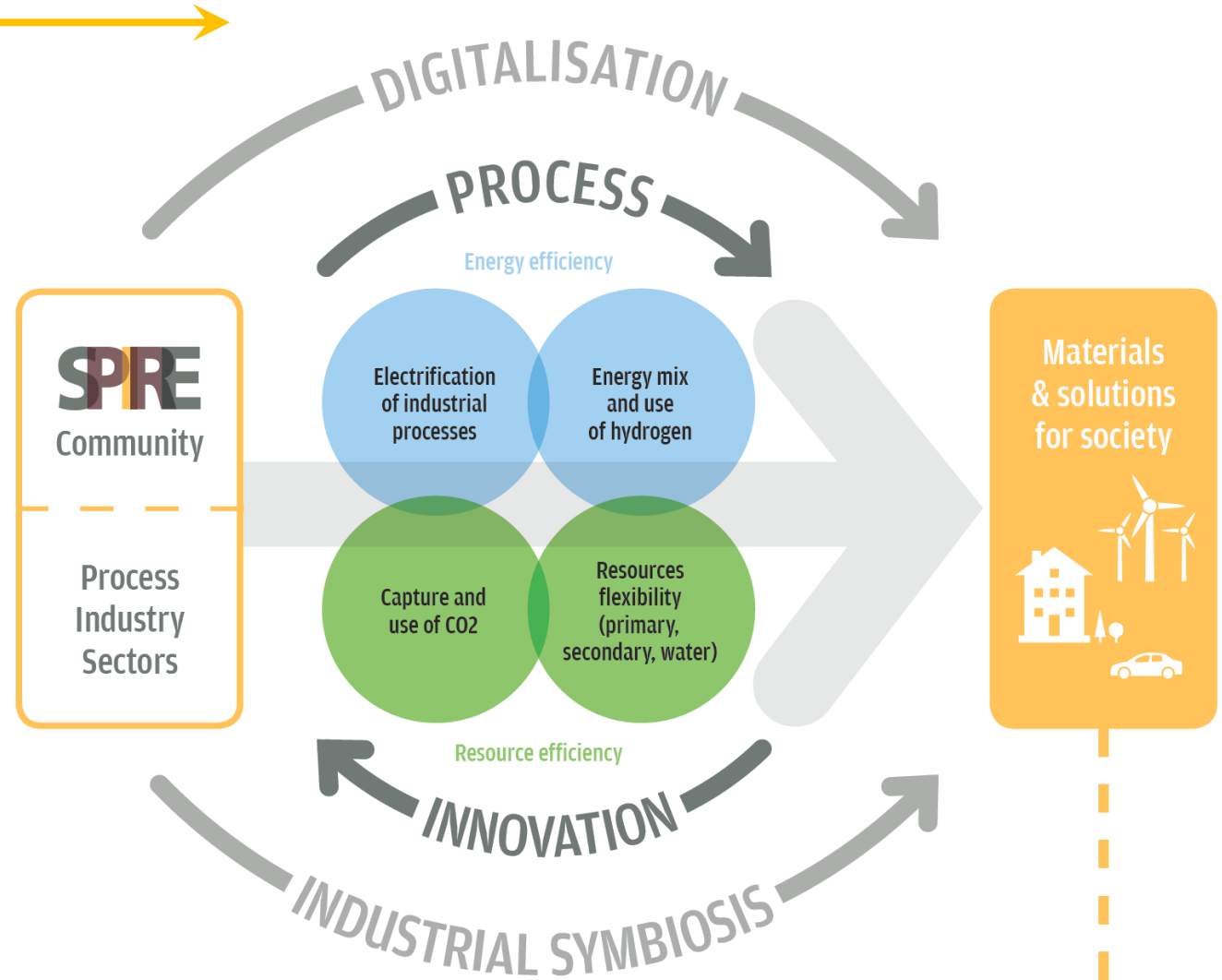
- 264 developed or being developed (of which 86 major innovations) (*Target: 40*)
- 68% of projects planning to patent / commercialise / deploy

## SPIRE SMEs

- 7 new employees / SME (*higher than EU average = 2*)
- 40% growth in turnover (*double than EU average*)
- 27% of SMEs won new business through SPIRE contacts

# Processes4Planet (CNCI) Vision 2050

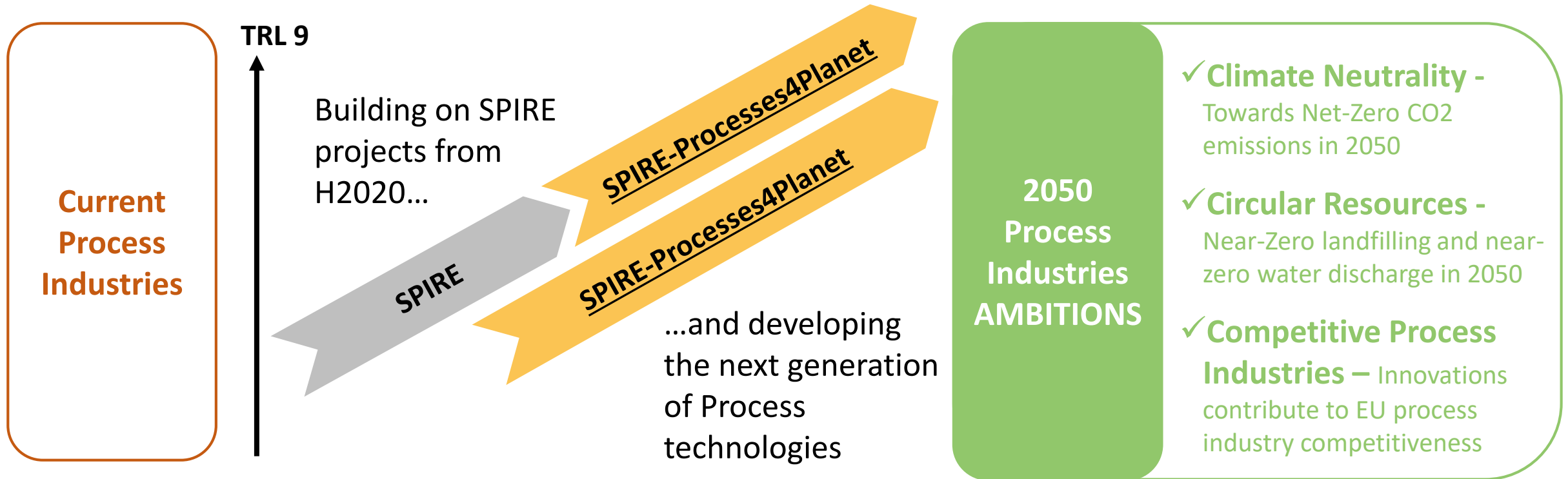
An **integrated** and **digital** European process industry fostering a “**well-below 2°C**” scenario and a fully **circular** economy.



More information:

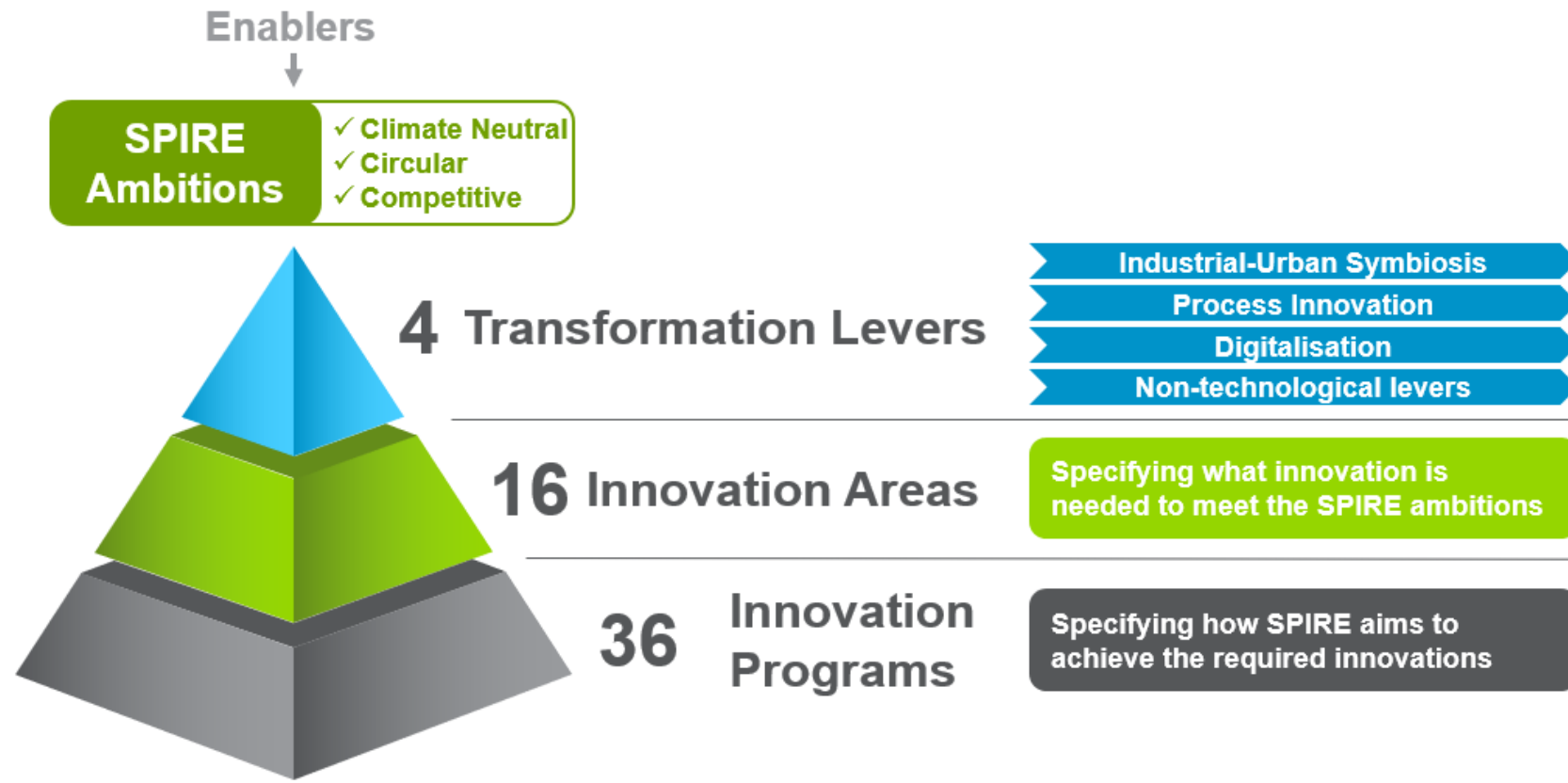
<https://www.spire2030.eu/news/new/spire-2050-vision>

# Processes4Planet 2050 Roadmap: Map of the innovations towards AMBITIONS



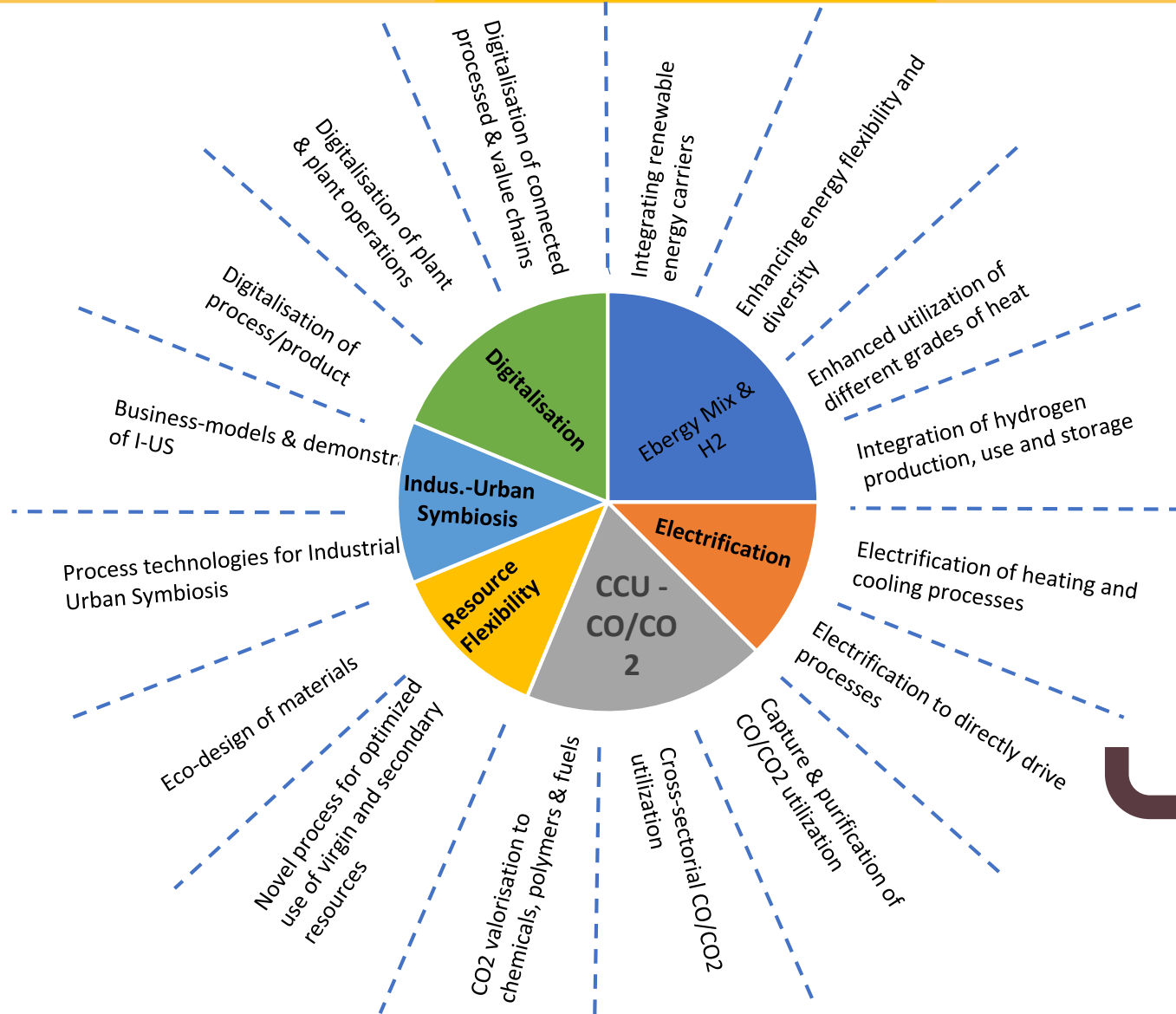
# Processes4Planet Roadmap 2050 to achieve transformation in Process Industry

Transformation levers and tools that will enable SPIRE-Processes4Planet to achieve its ambitions:



SPIRE-Processes4Planet strives for positive change at local, regional, national and European levels, delivering a positive triple bottom-line value creation - **for business, planet and society** - that can be exported outside Europe.

## 14 Innovation Areas



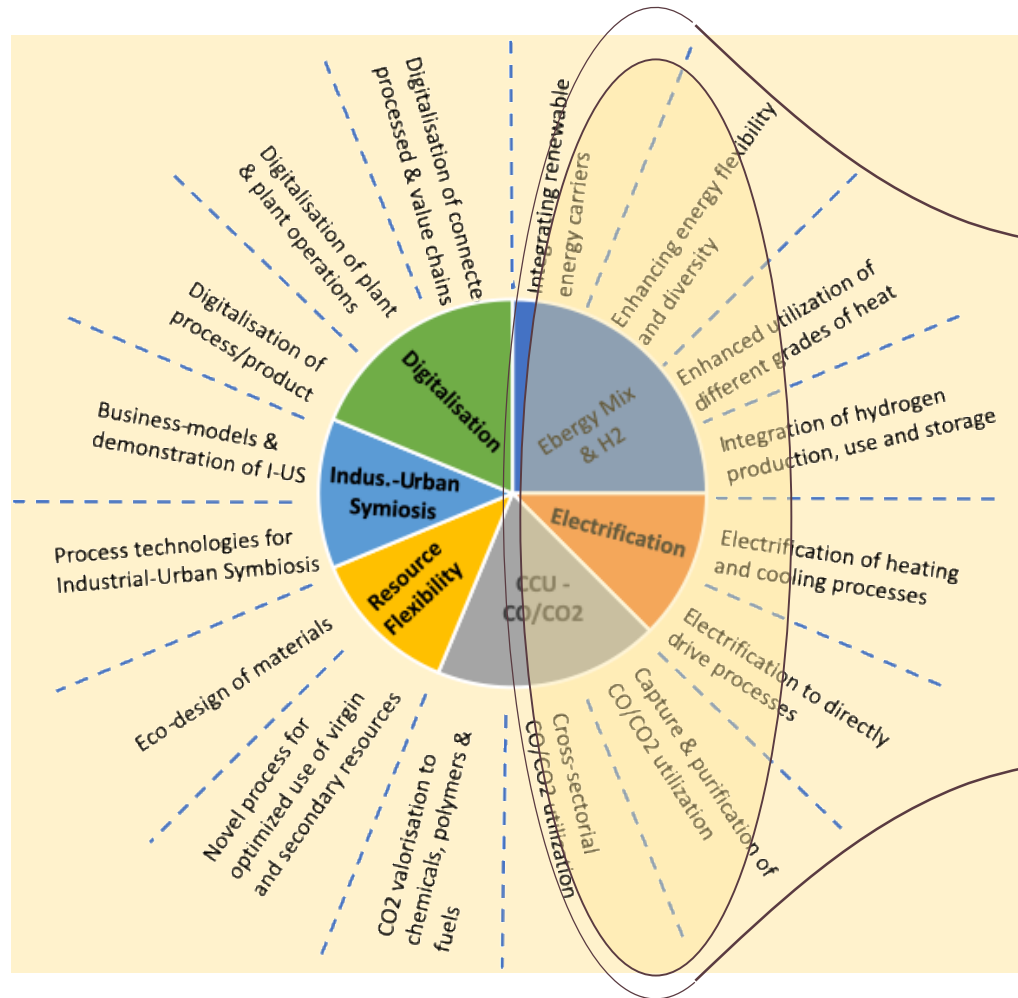
## Innovation Programs

- IP.5.a. Electrochemical conversion of CO2 to bulk materials
- IP.5.b. Direct electrolysis of raw materials
- IP.5.c. Selective production of high-value molecules using electrochemistry
- IP.5.d. Electrically-driven separation

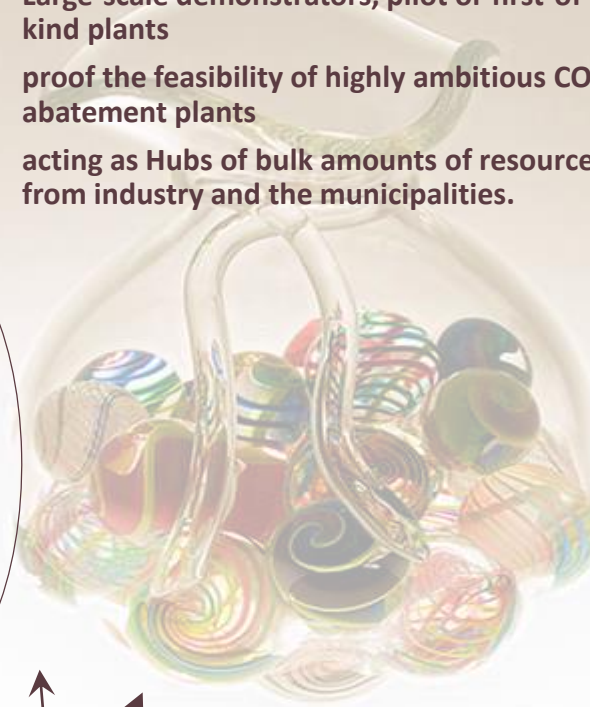
# Processes4Planet 2050 FUNNEL towards first-deployment

## 36 Innovation Programmes

## The "Marbles"



- Large-scale demonstrators, pilot or first-of-a-kind plants
- proof the feasibility of highly ambitious CO<sub>2</sub> abatement plants
- acting as Hubs of bulk amounts of resources from industry and the municipalities.



## PRIVATE INVESTMENTS

- Industry commitment
- When technical and economic feasibility is proved
- Public support needed to de-risk

# HUBS FOR CIRCULARITY (H4C)

## THE CONCEPT

### A SPIRE “HUB FOR CIRCULARITY” IS DEFINED AS:

a focal point of interconnected industrial (large companies as well as SMEs) and/or public facilities, within a given geographical area, that collectively achieve a demonstrable level of circularity and carbon neutrality in their use of resources (including feedstock as well as energy and water) whilst boosting global competitiveness of the EU Process Industry and sustainable growth.

### The H4C will become the new business centres of the future:

- Act as a competence and resource hub developing RDI initiatives
- Set up a voluntary industrial and social culture of emissions and waste reduction
- Driven by Process Industry and connecting their solutions to territorial demands
- Set up a Business to Territory (B2T) Plan
- Connected to other sectors and regions



# Hubs for Circularity

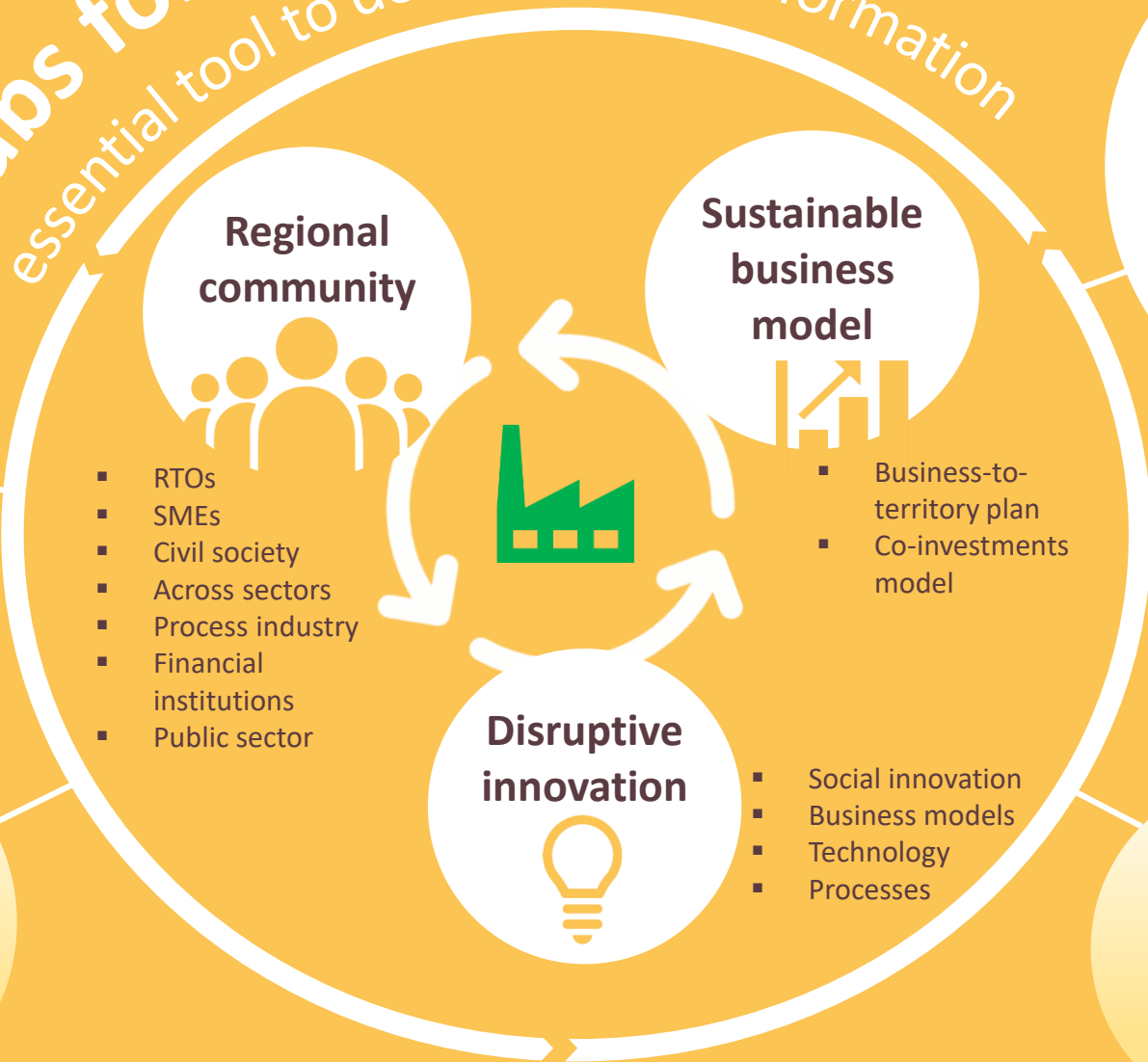
essential tool to deliver the transformation

### Regional demands

- Societal needs
- Customer needs
- Stakeholder demands




### Knowledge sharing through Community of Practice



### Regional benefits

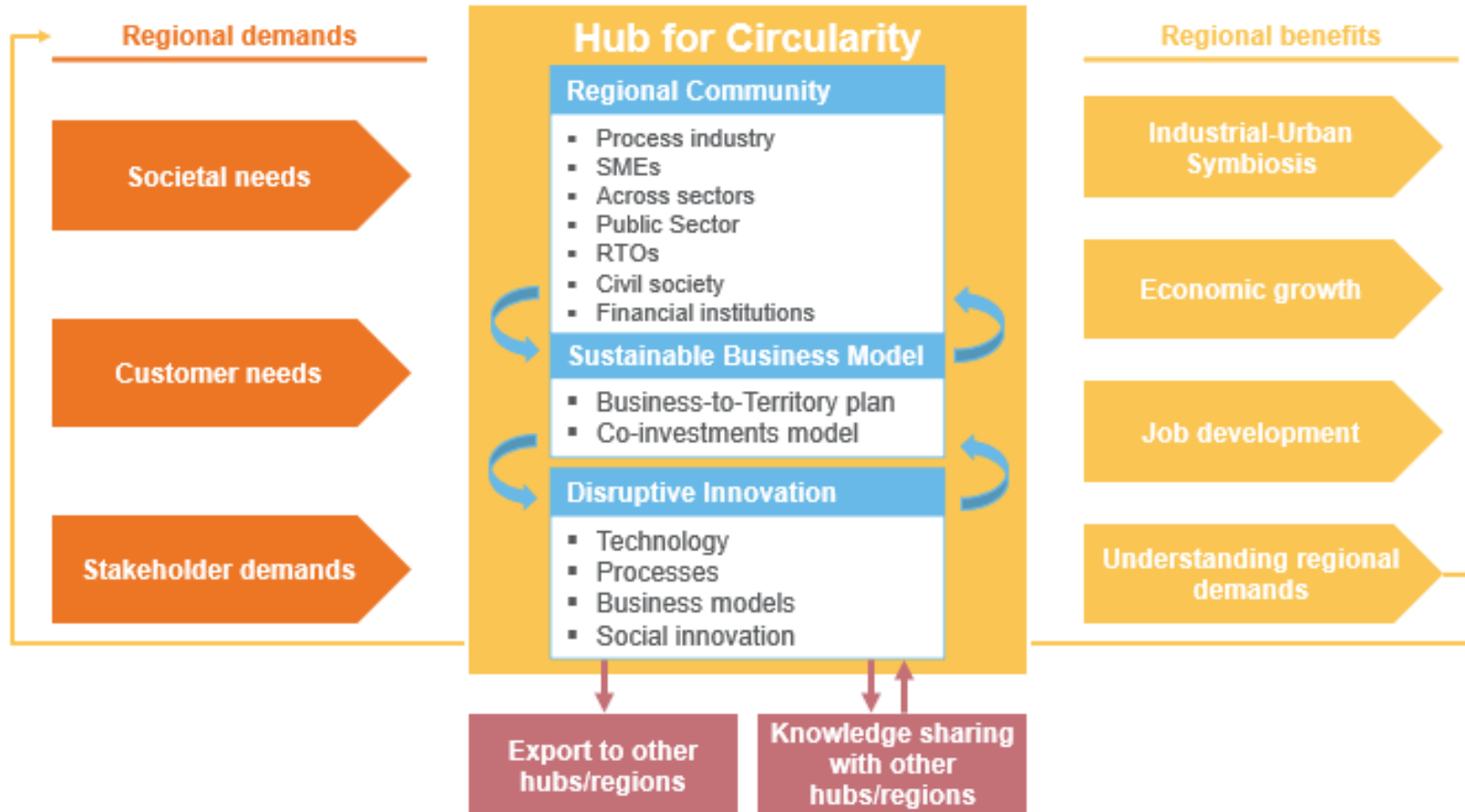
- Industrial-Urban Symbiosis
- Economic growth
- Understanding regional demands






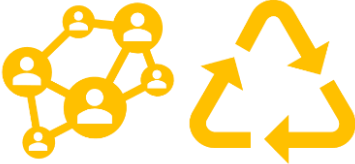
### Exporting innovations



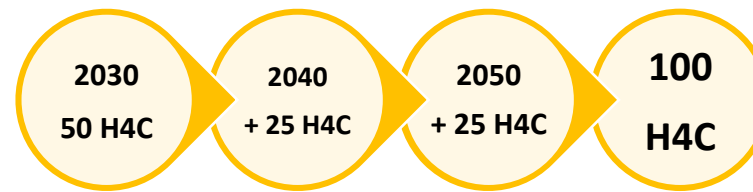
# H4C: INNOVATING SOLUTIONS FOR REGIONAL DEMANDS



# Different maturity levels of Hubs for Circularity

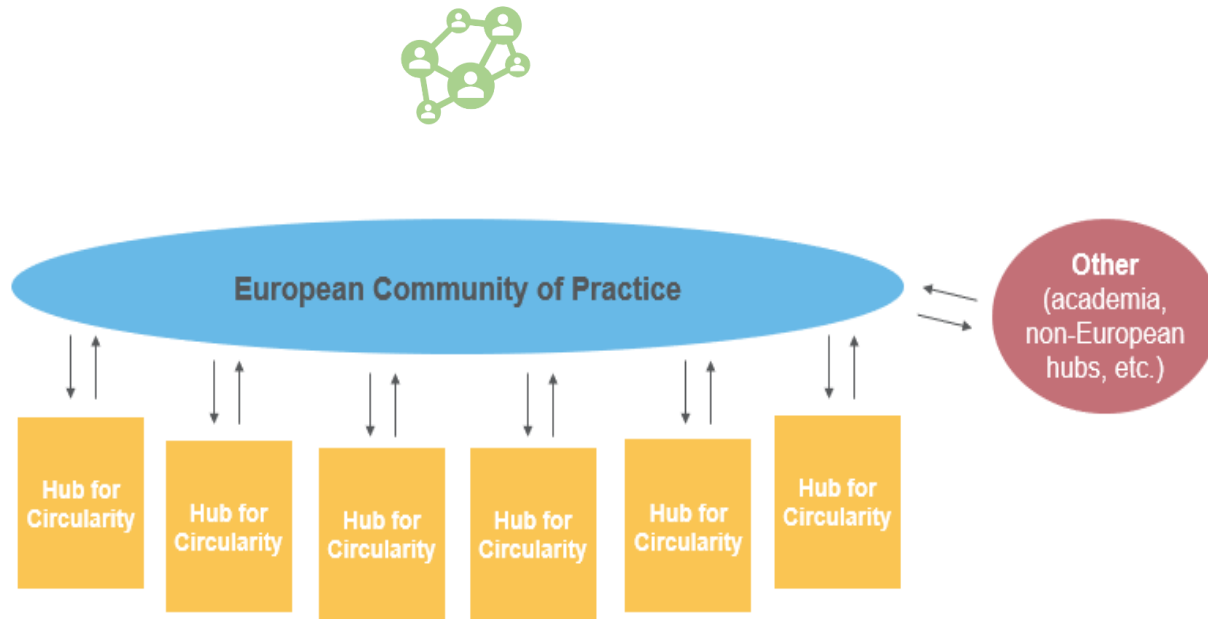
Starting Hubs	Intermediate Hubs	Advanced Hubs	Mature Hubs
			
<p>Starting hubs create the structure, agenda and business plan. In this phase they:</p> <ul style="list-style-type: none"> <li>▪ <b>Set up governance structure</b></li> <li>▪ Develop initial value proposition and B2T plan as in SME instrument</li> <li>▪ Analyse the reality of the H4C, including relevant actors and agree on needs and demands</li> </ul>	<p>Intermediate hubs have a good inventory of problems and opportunities. Partners have engaged actively and adhere to a common vision for the hub. In this phase they:</p> <ul style="list-style-type: none"> <li>▪ Advance B2T with a well-defined co-investment plan</li> <li>▪ Define transition to create hub-culture modus operandi</li> </ul>	<p>Advanced hubs have a plan that they are implementing to accelerate the development of solutions. In this phase they:</p> <ul style="list-style-type: none"> <li>▪ <b>Focus on boosting synergies and maximising impact</b></li> <li>▪ Have adequate metrics and progress measurements</li> <li>▪ Show benefits on climate, waste and competitiveness.</li> </ul>	<p><b>All hubs should aim to reach this level.</b> Mature hubs can be even more ambitious and expand their impact within and beyond their H4C. They:</p> <ul style="list-style-type: none"> <li>▪ Foster continuous improvement</li> <li>▪ Act as a lighthouse to inspire others</li> <li>▪ Convince other regions to adopt the H4C model</li> </ul>

## MILESTONES



# COMMUNITY OF PRACTICE: CONNECTING H4C

## Multidisciplinary team to support the H4C



### ACTIONS:

- Enable priority of I-US projects (Symbiosis Readiness Level / impact)
- Collecting knowledge and tools & making them accessible
- Synthesize findings into generic learning/frameworks & keep knowledge about state-of-the-art solutions up to date
- Train circular practitioners that can drive H4C roll-out across Europe

### IMPACT

- Screening of projects' results and relevant technologies
- Track needs of regions: connect to existing circular initiatives
- Establish criteria and rate the services of the H4C
- Connecting sectors, initiatives and partnerships
- Communities evaluation & update: 2024

# Processes4Planet Roadmap 2050 in the context of Horizon Europe

SPIRE is transitioning into the co-programming partnership **Processes4Planet** in Horizon Europe  
the partnership to implement the goals of a Climate neutral and circular process industry

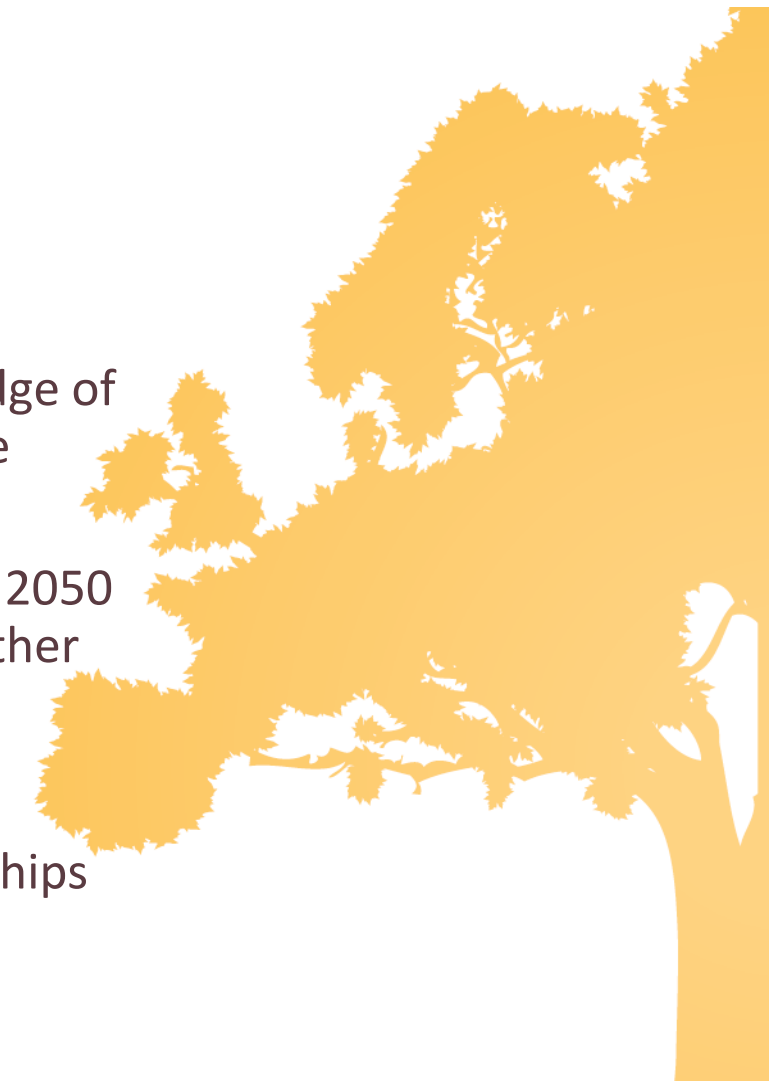
## **SPIRE-Processes4Planet's core vision relates to:**

- **Broad range of Intervention Areas under:**
  - **cluster 4 'Digital, Industry and Space'**
  - **cluster 5 'Climate, Energy and Mobility' of the Horizon Europe's Pillar 2.**
- **Some Intervention Areas within cluster 6 'Food and Natural Resources' (lesser extent)**
- **To a couple of the first Missions in HEU:**
  - **Adaptation to Climate change**
  - **Climate-Neutral & Smart Cities**

# Processes4Planet Partnership - a bottom-up and systemic approach

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- SPIRE facilitates **unique cross-sectoral innovation**
- We provide a **joint strategic perspective** and analysis of the innovation programmes development to assess what needs to be changed
- The **Hubs for Circularity** is a great leap forward building on the knowledge of Industrial Symbiosis projects and having the ambition to really close the circularity loops through Industrial-Urban Symbiosis
- Partnerships gather the whole **innovation ecosystems**: SPIRE Roadmap 2050 is the result of conversations with industry, RTOs, NGOs, regions and other stakeholders
- SPIRE connects the **industrial value chain**
- SPIRE connects the **value chains**, through **collaboration** across Partnerships and with other sectors



# Why A NEW PARTNERHIP: Processes4Planet (CNCI)?



- Process Industry is **committed** to contribute to reach the Climate Neutrality and Circular Economy goals for Europe
- The challenge and the extent the transitions that our society requires over the next decades are **unprecedented**. These goals will not be achieved without process industry:
  - any reduction of CO2 emissions by the Process Industry will have an immediate multiplying effect in all the value chain resulting in better products for society
  - Process Industries are the only ones which are able to close the loop and recuperate waste into new resources to be reintroduced in the industrial processes instead of going to landfill

# Implementation of Processes4Planet Roadmap 2050



- ❑ **Investments** needed for the Process Industry to tackle climate change and full circular society can represent trillions considering deployment and huge billions amount considering R&I. **SPIRE has estimated the need to invest €17 bn in its roadmap which is still in progress.**
- ❑ Process Industries need support to put the demonstrators and first-of-a-kind plants in place. **Support to de-risk innovation is needed now in order to trigger such investments. A strong HEU budget is essential and the cap to Partnerships could hinder achieving the Europe's climate-neutrality goals**

## *Teaming up to address the challenges of Climate Change, Circular Economy and Competitiveness together*

### **LARGER INDUSTRIES:**

- Continuous dialogue on R&I across SPIRE sectors and beyond
- Channel to raise your voice on R&I for HEU & other programmes
- Access to a pool of knowledge & talent (in Universities, research centres....)
- Direct access to SME providers
- Collaboration with the innovation ecosystem and value chain
- Access to developments by other projects, SMEs, universities...
- Protection of intellectual property
- Dialogue with the EC, MS, regions, MePs & other stakeholders



### **Further benefits to other members**

#### **SMEs:**

- Direct Access to growth opportunities
- Direct Access to new markets
- Direct Access to large industry customers



#### **RTOs, NGOs Innovation agencies et al.:**

- Direct Access to applied innovation
- Link to deliver impact to society and regions
- Collaboration for disruptive innovations

CONTACT OUR EXECUTIVE DIRECTOR:

Àngels Orduña

[aor@spire2030.eu](mailto:aor@spire2030.eu)

[www.spire2030.eu](http://www.spire2030.eu)



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