



European  
Commission



# SPIRE and Sustainability

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# Overview:

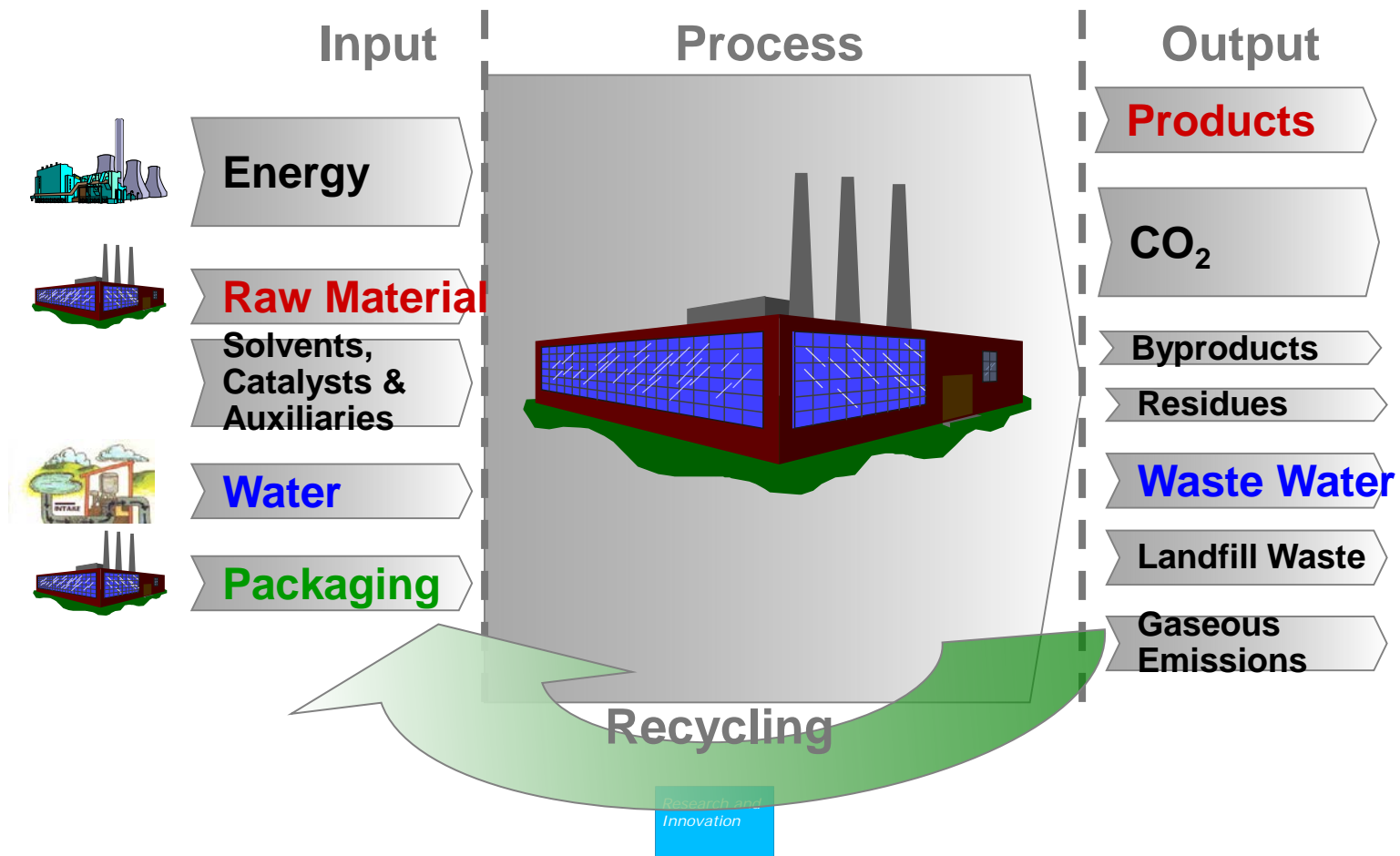
- cPPP SPIRE introduction
- Sustainability Related Objectives
- Relevant activities
- Conclusions



# SPIRE: Sustainable Process Industry through Resource and Energy Efficiency

- New cPPP initiative part of H2020, with a foreseen EU contribution of 900 Million Euro for the period 2014-2020.
- Research and Innovation programme addressing the process Industry, which targets the achievement of energy and resource efficiency breakthrough.
- SPIRE offers a unique platform for cross-sectorial cooperation across the European process industry sectors.
- The Process industry has been identified as critical to European Industrial competitiveness. It is key to build a sustainable European Economy. High potential for jobs and growth creation in line with Europe ambitious objectives (e.g. EUROPE 2020 strategy).

# SPIRE Vision in a nutshell





# Why is the process industry considered a strategic domain?

- EU process industry sits at the core of most industrial value chains.
- The 8 EU industrial sectors covered by SPIRE, represent together around 6.8 million jobs in 450,000 enterprises, with over €1,600 billion/year in turnover.
- Due to the nature of the industrial operations involved, with high dependence from resources (energy, materials and water), the process industry has significant environmental impact.
- This industrial domain is struggling to compete at global level and is striving to ensure long-term sustainability.



# Why should the **PUBLIC** support the process industry?

- Novel technologies can provide significant environmental and social impacts but are not economically viable in the early stage.
- High risks and long-term investments with long ROI timeframes.
- SPIRE sectors represent around 20% of the manufacturing sector in Europe. Key industrial domain to trigger jobs and growth creation.

## Value added of an EU wide approach?

- Providing strong cross-sectorial clustering of different value chains to make a difference for Europe at global level, for the better
- Common challenges across EU process industries
- Synergies across sectors and across Member States and regions can provide radical improvements resource and energy efficiency



# Why a SPIRE cPPP is needed?

- To work closer, public and industry to better address industry issues.
- A cPPP can provide a structured multi-annual framework with clear objectives for the EU process industry for faster technology development and market uptake.
- Allows devising a strategic approach to achieve the ambitious energy and resource efficiency breakthroughs, targeted.
- These sectors are heavily supported by public investments in other world regions (e.g. USA) due to their strategic relevance, public support is fundamental to keep these industries in Europe.



# SPIRE Objectives, sustainability

- Development of technologies and strengthen cross sectorial integration to improve efficiency (energy, resources)
- A reduction in fossil energy intensity of up to 30% by 2020
- A reduction in non-renewable, primary raw material intensity of up to 20%:
- increase in renewables, reduction and re-use of waste (even cross-sectorial) with ambition to achieve a close loop
- Reduction of the water footprint of industrial processes
- Efficiency improvement of CO<sub>2</sub>-equivalent footprints of up to 40%
- achievement where possible of carbon-neutral sectors
- Creating new high quality knowledge intensive jobs through knowledge transfer and training





# SPIRE and sustainability assessment

- Strong need for sustainability assessment tools suitable for benchmarking the technologies developed against the existing ones.

## **Approach:**

- Gather the existing knowledge and best practises across the SPIRE sectors, identifying best practises, potential for cross-sectorial transfer.
- Development of new tools able to assess sustainability of complex processes, including cross sectorial concepts.



## Relevant activities:

- Topic SPIRE (CSA) already included in the 2014 WP (3 projects selected, currently in Grant preparation)
- Sustainability assessment central in most topics (e.g. SPIRE 2, SPIRE 6)
- The activities undertaken may pave the way to potential further support to sustainability assessment tools and concepts development.



# Conclusion

- SPIRE has set ambitious objectives to make the European process industry more competitive and more sustainable.
- Sustainability assessment is central in SPIRE activities to provide clear benchmarking against existing alternatives.
- Sustainability assessment is mentioned and central in most of the SPIRE activities (e.g. SPIRE 2, SPIRE6)
- Several activities have already been undertaken to develop such tools and gather existing knowledge (e.g. CSA SPIRE 4).
- SPIRE aims to develop tools for sustainability assessment that suit the cPPP vision (industrial symbiosis, multi-sector integration).



# Thank you for your attention!

Info-day 21<sup>st</sup> October 2014:

[http://ec.europa.eu/research/industrial\\_technologies/information-day-for-ppp-2014\\_en.html](http://ec.europa.eu/research/industrial_technologies/information-day-for-ppp-2014_en.html)



## 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*