

CIRCE Research Center for Energy Resources and Consumption

BlackCycle Workshop
2021

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CIRCE is energy

25 YEARS OF R&D&i SERVICE TO COMPANIES,
THE SOCIETY AND THE ENVIRONMENT



MISSION

To improve the competitiveness of **companies** by generating and transferring **technology** through market-oriented R&D&i and training activities in the field of sustainability and resource efficiency, energy networks and renewable energies.



VISION

- International **reference** in energy.
- Investment **multiplier** in R&D&i.
- Focus on **talent**.
- Generator of ideas and **solutions**. Innovative and competitive.



VALUES

- **Quality** and agility
- **Commitment** and responsibility
- Passion for challenge and **innovation**
- **Transparency**
- Enthusiasm for **collaborative** work
- **Vocation** for economic, social and environmental sustainability



We are a technology centre funded in 1993, seeking to provide innovative solutions for a **SUSTAINABLE DEVELOPMENT**.

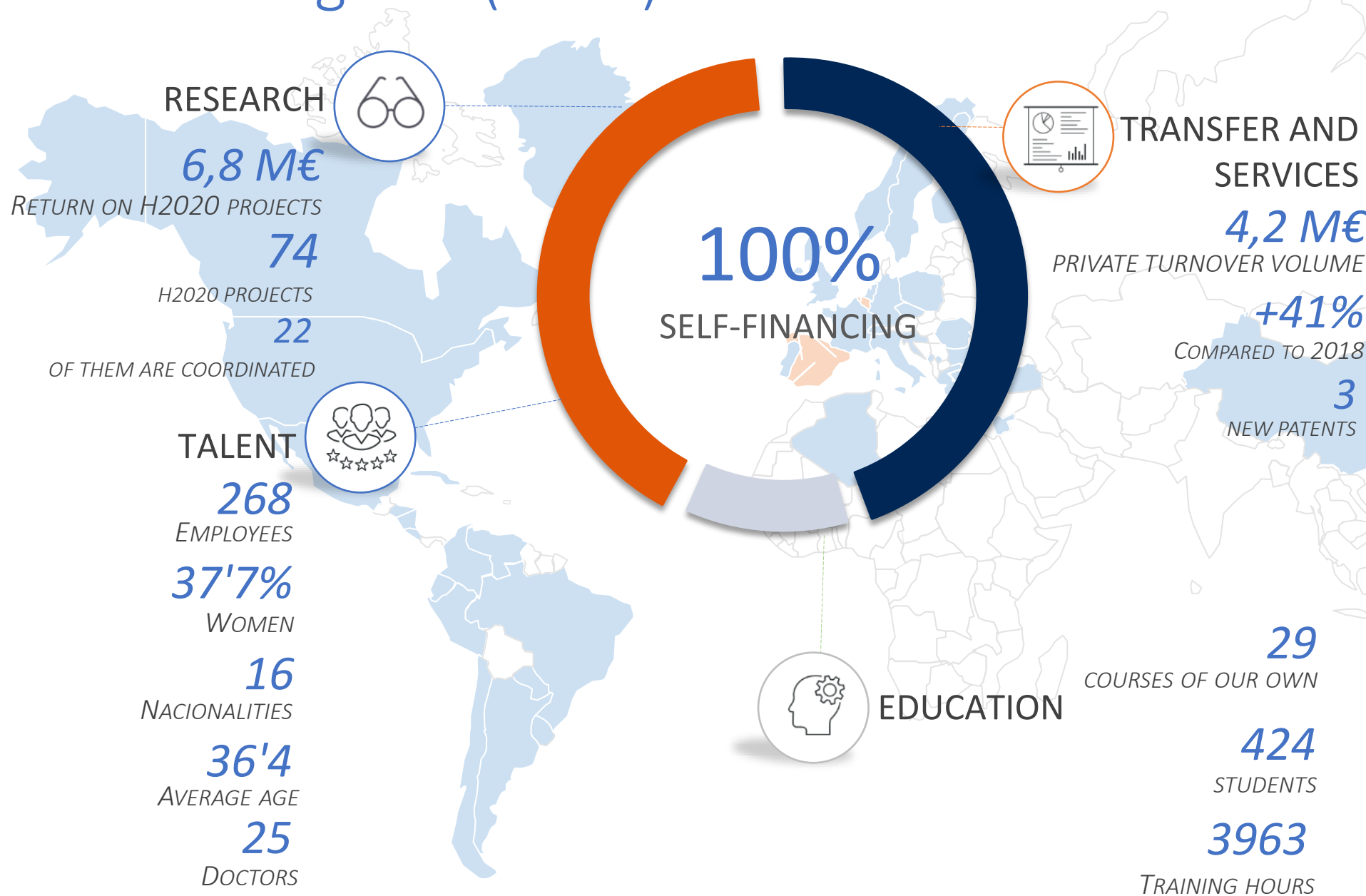
Our research centre consists of a highly qualified and multidisciplinary team, composed by **more than 268 professionals**.

We work towards improving the competitiveness of enterprises through **generation of technology transfer** by means of R+D activities and market-oriented training within the field of resource sustainability and effectiveness, energy grids and renewable energies.



Pacto Mundial
Red Española

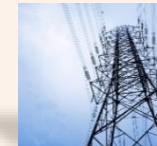
CIRCE in figures (2021)



BUSINESS LINES



RENEWABLE
ENERGY



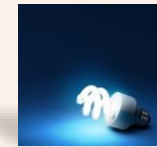
ELECTRICAL GRIDS
OF THE FUTURE



SMART
MOBILITY



INDUSTRY
4.0



ENERGY
EFFICIENCY



CIRCULAR
ECONOMY AND
SUSTAINABILITY

The challenge posed by technology transfer in European projects: The polynSPIRE case

Challenges:

Obstacles to reach the market

IPR Management

Demand Pull for what appears to be more “green”

Regulation changes



Water in tetra brick: “Good for you, Good for the environment”

Circular Economy: The polynSPIRE case

Polynspire and partners:



Circular Economy: The polynSPIRE case

Motivation:

- *Plastics materials are used in a wide range of applications because of their properties, versatility, lightweight and price → Plastic waste is continuously increasing*
- *Plastic waste coming from other sectors than packaging reveals a low rate of recycling due to the higher heterogeneity → lot of resources unexploited*

Technological barriers

The existing sorting and waste management systems not able to separate plastics blends and composites.

The lack of efficient and flexible valorisation technologies

The heterogeneity of plastic difficult the mechanical recycling of these plastic materials

Non-technological barriers

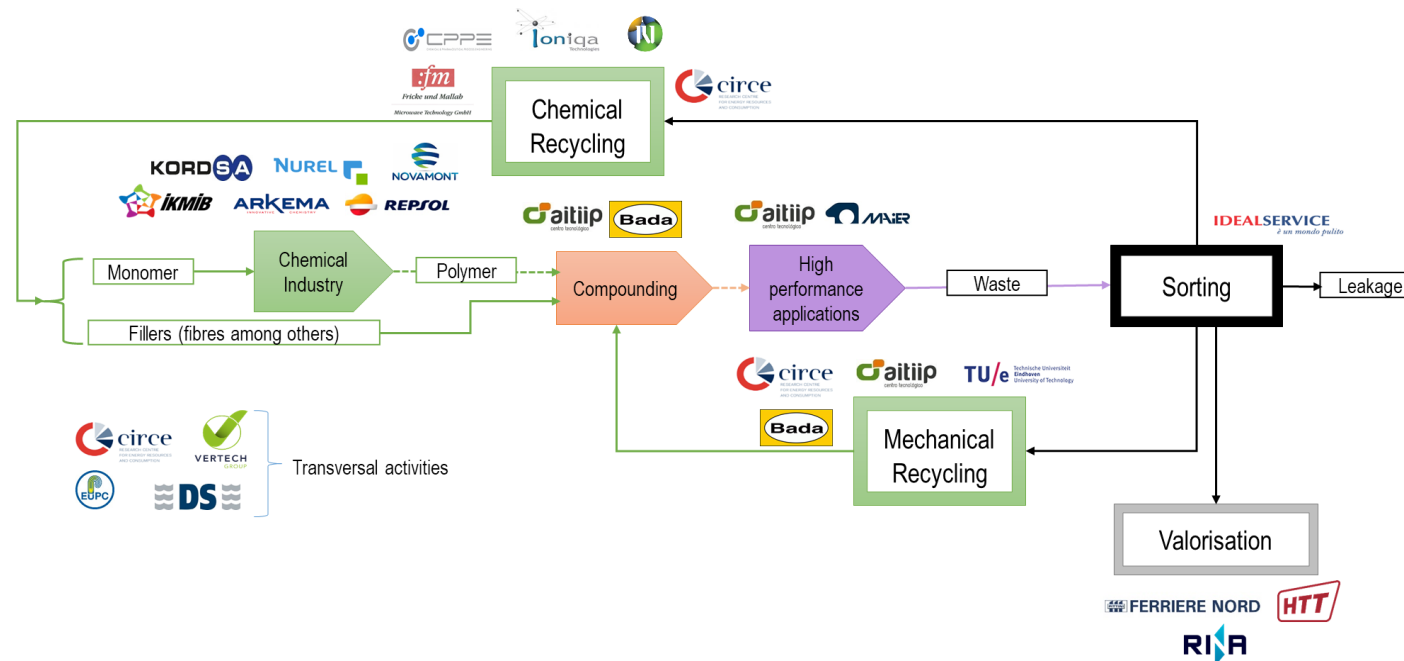
Plastic waste is generated at different points of the value chain

Existing standards are not homogeneous along Europe. In particular, Waste Directive and End of Waste Criteria.

Circular Economy: The polynSPIRE case

Impact:

Demonstrate a comprehensive set **of innovative, cost-effective and sustainable solutions**, aiming at improving the energy and resource efficiency of the recycling processes for **post-consumer** (after product's end of life) and **post-industrial** (produced during transformation processes from raw materials to final product) plastic containing materials. To this end, three innovation pillars are demonstrated at operational environments reaching **TRL 7**.



Circular Economy: The polynSPIRE case



Circular Economy: El caso polynSPIRE

Conclusions



FLEXIBILITY



ALLINGMENT WITH EC



***BRING SOLUTIONS CLOSER TO THE
MARKET***



LITERATE THE USER



THANK YOU VERY MUCH FOR YOUR ATTENTION



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