

# EIT Manufacturing

Endeavours in the green transition of large industries

Blanca Chocarro Ruiz, PhD

Project Manager Circular Economy & Water Scarcity

03.01.20212



Co-funded by the  
European Union



The largest European Innovation Network for  
Manufacturing

# EIT Manufacturing – What We Do



## Our vision

Global manufacturing innovation is led by Europe.



## Our mission

Bring together manufacturing actors across Europe to integrate innovation and education for an entrepreneurial and sustainable Europe.

# Unique approach: Innovation based on industry needs

- Public-private partnership
- A holistic, tested method
- Focus on solutions to high-value manufacturing challenges
- 65+ full members, 50+ activity partners: leading companies, universities and research organisations
- €400M budget until 2026



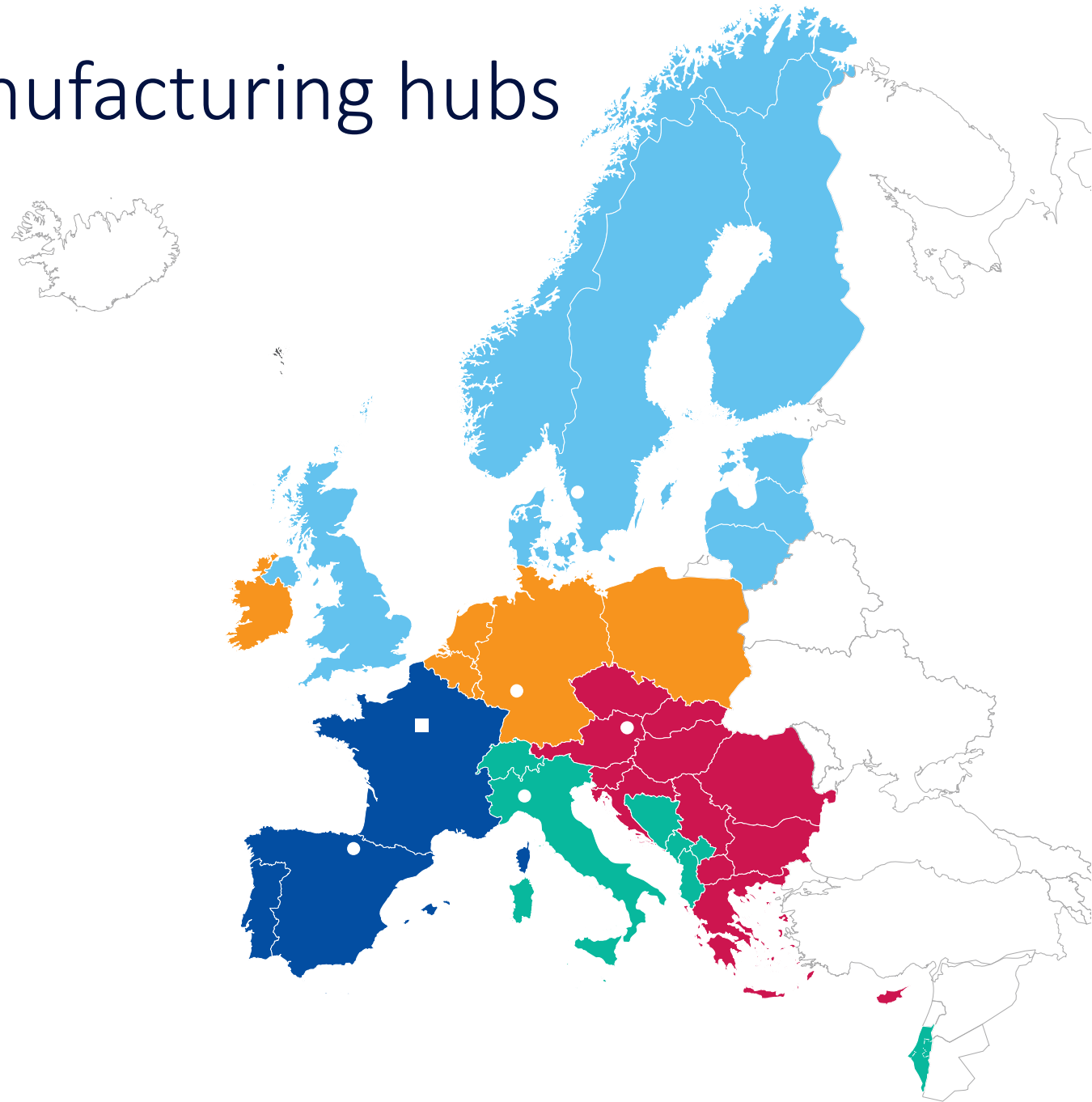
# Locations: Linking key manufacturing hubs

Legal Entity **France**

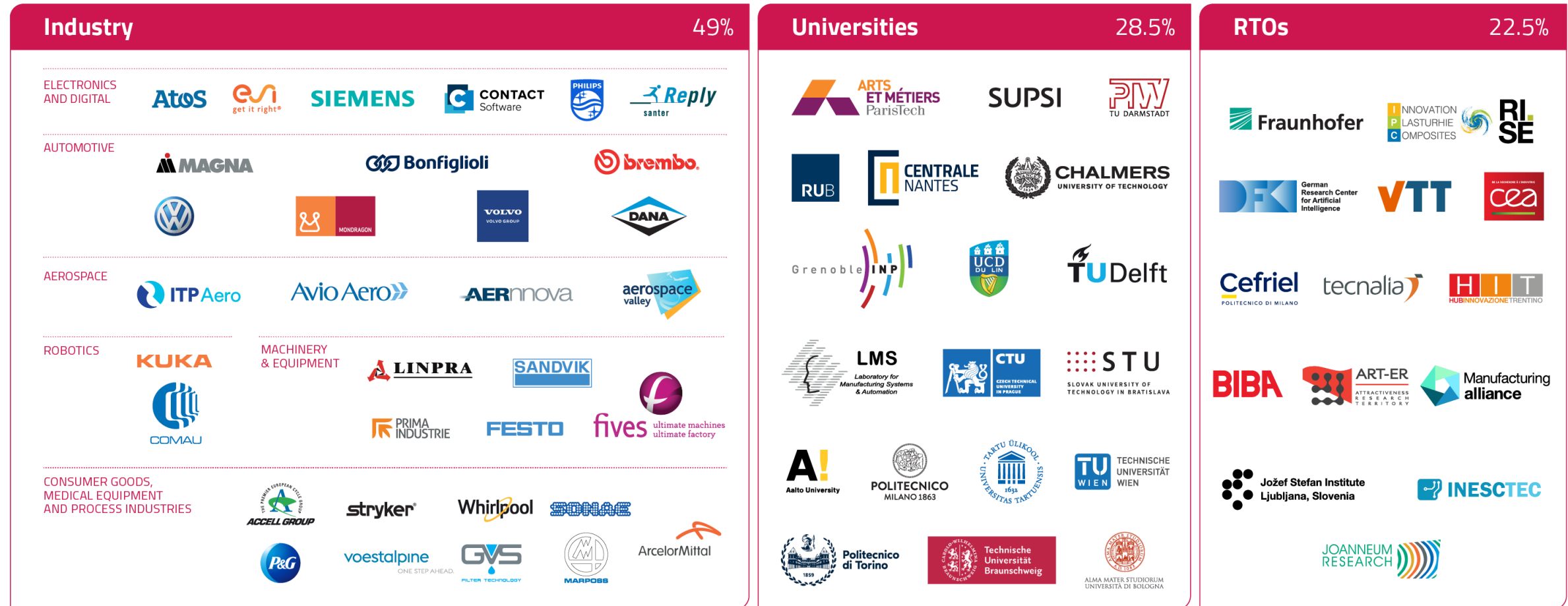
Headquarters **Paris**

5 Co-location Centers (CLCs)

- **San Sebastian** Spain
- **Göteborg** Sweden
- **Darmstadt** Germany
- **Milan** Italy
- **Vienna** Austria



# Powerful partnership: 67 partners from 17 countries



As of April 2021

# EIT Manufacturing – How We Do It

## Our flagships – Four focus areas



**Flexible production systems** for competitive manufacturing



**Low environmental footprint** systems & circular economy for green manufacturing

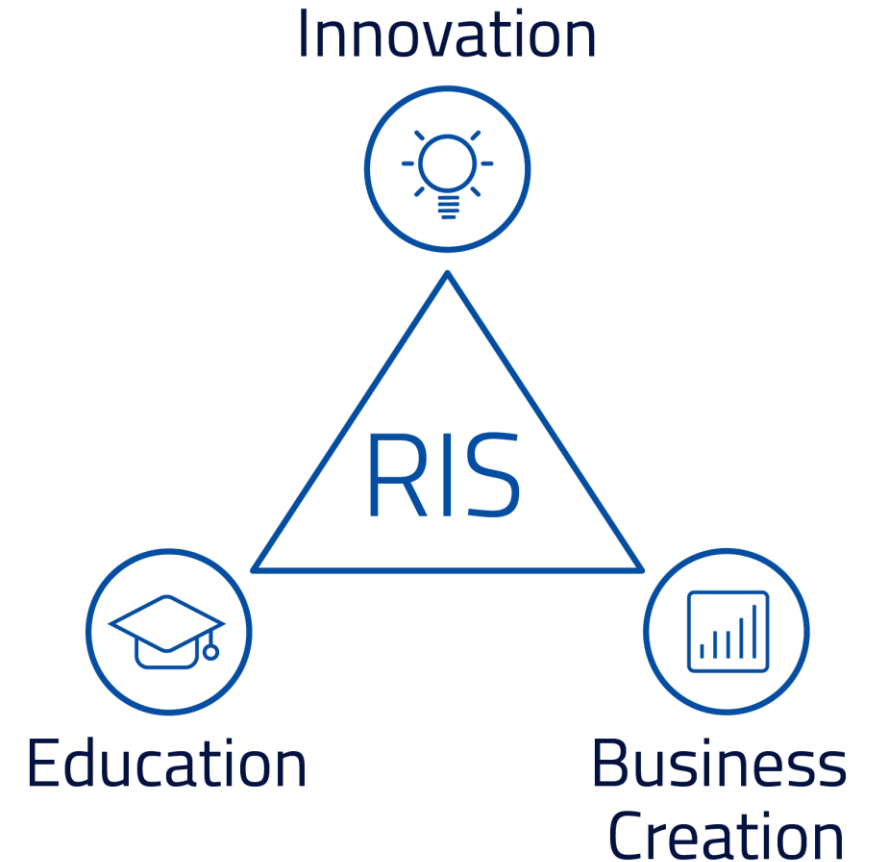


**Digital & collaborative solutions** for innovative manufacturing ecosystems



**Human-machine co-working** for socially sustainable manufacturing

## Our Approach



# Challenges in the green transition of large industries (1/2)

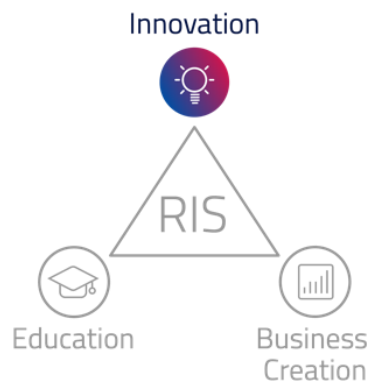
- **Investments risks** for the development of new green technologies.
- Demonstration of new technologies often requires the **collaboration** between different industries and partners on the regional level and **across borders**.
- Substitution of raw material for the **use of recycled or renewable materials**.
- Transition to **renewable sources of energy** while using technology to reduce energy wastage.



# Challenges in the green transition of large industries (2/2)

- **Digitize manufacturing processes** to support sustainable operations.
- **Regulatory barriers** in the transformation of production processes.
- Implement a **circular economy business model** in order to reduce waste and ensure optimal use of resources.
- Implementation of IoT sensors with AI to monitor and maintain **efficient energy consumption**.





# Innovation: Creating value and impact

Supporting European manufacturing community of companies & tech organisations to industrialise innovative projects.

## What can we do for you?

Decreasing risks in projects to provide higher business growth potential

Market introduction of green production and processes

Give innovative edge through access to technologies and business implementation

Foster engagement with the right partner

# Low Environmental Footprint Systems & CE for Green Manufacturing is focused on technology innovations programs to restore, reduce and avoid resources



**Low environmental footprint** systems & circular economy for green manufacturing

- Waste-free Manufacturing through digital support and AI
- Automation of Visual Inspection and Finishing Processes for Aero-engines
- End-to-end digitalized production test beds
- Air purification unit for manufacturing environment
- Smart Measurement Assisted Assembly Lines for large-scale structures
- Digital Twin towards zero-defects manufacturing (ZDM) and circular economy
- Zero-defect welding for e-mobility
- Sensor integrated high speed machining for Zero-Defects
- Edge intelligence for condition monitoring and status visibility of assets in harsh industrial environments.
- To support the transformation of existing SME's, Tier 1 & Tier 2's into volume automotive composite material suppliers
- FactoryBricks: Smart Learning @Home for the Management of Connected Factories
- Simulation Enhanced/Enabled Nuggets for Learning and Mastering Manufacturing for Light weighting
- Circular Economy Collaboration
- Learning Factories for Digital Transformation of SMEs
- Circular, Regenerative Economy in Western Balkans



# Technical Enablers for a Green Manufacturing across sectors

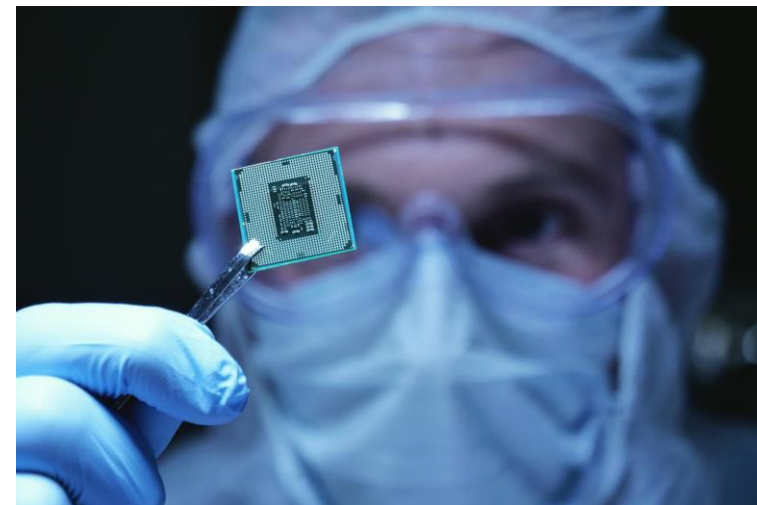
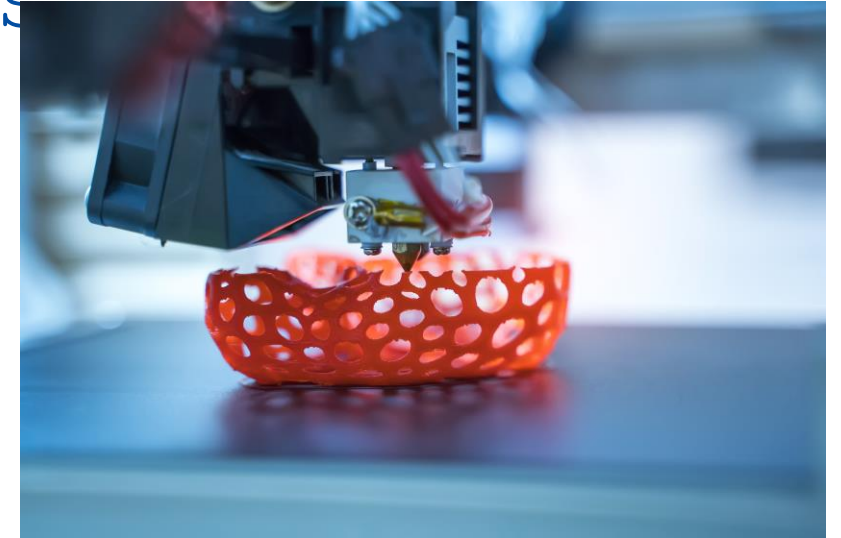
Technology	Benefit
<b>Artificial intelligence (AI)</b>	- Intelligence can help monitor current emissions, forecast future emissions and also identify further opportunities to reduce emissions across the value chain.
<b>Augmented Reality (AR)</b>	- Real-time knowledge and information sharing to improve decision-making and work procedures - Predictive maintenance
<b>Digital twins</b>	- To predict product life, - To improve design,
<b>Internet of Things (IoT)</b>	- Better monitor emissions while also enabling optimal energy consumption.
<b>Blockchain</b>	- helps measure emissions at every stage of a product's lifecycle as well as monitor emissions along the value chain. It also helps maintain a transparent record of GHG emissions.
<b>Automatic digital Visual systems</b>	- Quality control systems





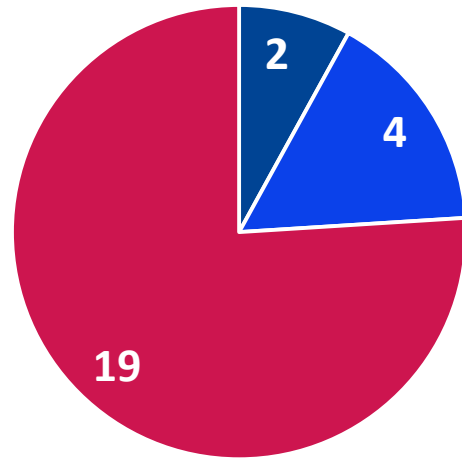
# Technical Enablers for a Green Manufacturing across sectors

Technology	Benefit
Carbon Capture and Sequestration technologies	- Set of technologies that can potentially greatly reduce CO <sub>2</sub> emissions.
Novel materials	- Nanomaterials and advanced biomaterials in catalysis, electrochemical, photochemical, energy production, and polyester synthesis
Smart sensors	- Real-time data to improve monitoring. - Predictive maintenance - Improve traceability of raw materials and products
Test beds	- Mirror real-life manufacturing sites bring the challenges of process digitisation to live, by making processes tangible and accessible.
Additive Manufacturing (3D printing)	- To create a three-dimensional object with less material



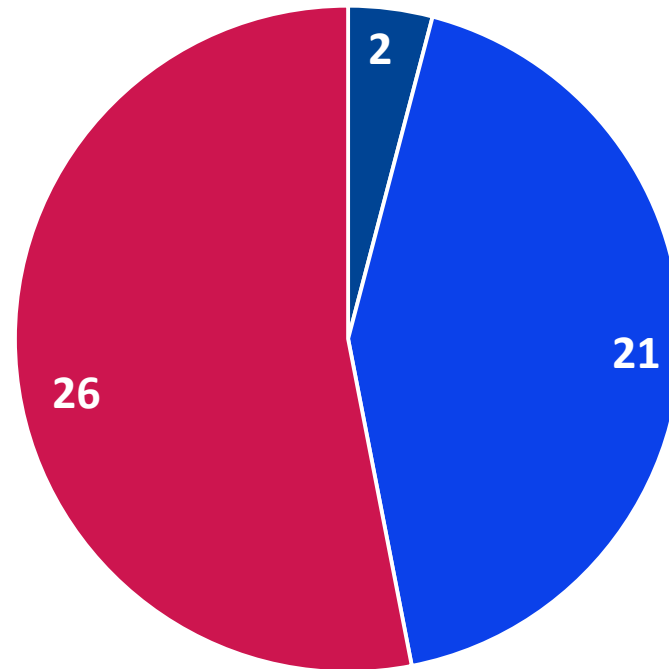
# EIT Manufacturing technology innovation contributes to resources efficiency, to reduce emissions and to increase quality and value

**Total Green Manufacturing Activities in 2020: 25 projects**



■ Business creation ■ Education ■ Innovation

**Total Green Manufacturing Activities in 2021: 49 projects**



Production efficiency  
Flexibility of production lines  
Less defects  
Less waste  
Less rework  
Less stock  
Less energy

**Less Resources**  
**Less Emissions**

**High quality**  
**More value**

# EIT Manufacturing West is part of the ETV Secretariat



The Environmental Technology Verification Secretariat is managed by  
LGI

Arctik, Technopolis Group

With the support of  
**EIT Manufacturing**  
EIT Raw Materials



## EIT Manufacturing support activities:

Ensure **consistency and development of synergies** with the EIT and its network KICs which are thematically aligned with the ETV:

- Mutual benefit from cooperation. Output: **ETV support call as part of the X-KIC Circular Economy**
- The EIT and the KICs, through their very extensive network of partners and their portfolio of activities, can be a significant source of input for the development of ETV activities.



