



## *Strategic research and innovation partnership - Networks for the transition to circular economy*

„BOOSTING INNOVATION FOR EU INDUSTRY“

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Slovenia

# Slovenian Smart Specialization Strategy – S4

9 priorities of SRIPs

SRIP - Circular  
economy

1. Technologies for sustainable biomass transformation and new bio-based materials.

2. Technologies for use of secondary and of raw - materials and reuse of waste.

3. Production of energy based on alternative sources.

SRIP – Circular economy:  
- eco system,  
- cluster

**WHO?**

State of Slovenia /  
financial support -  
collaboration

Business entities,  
Educational- research  
organizations,  
NGOs,  
Chambers

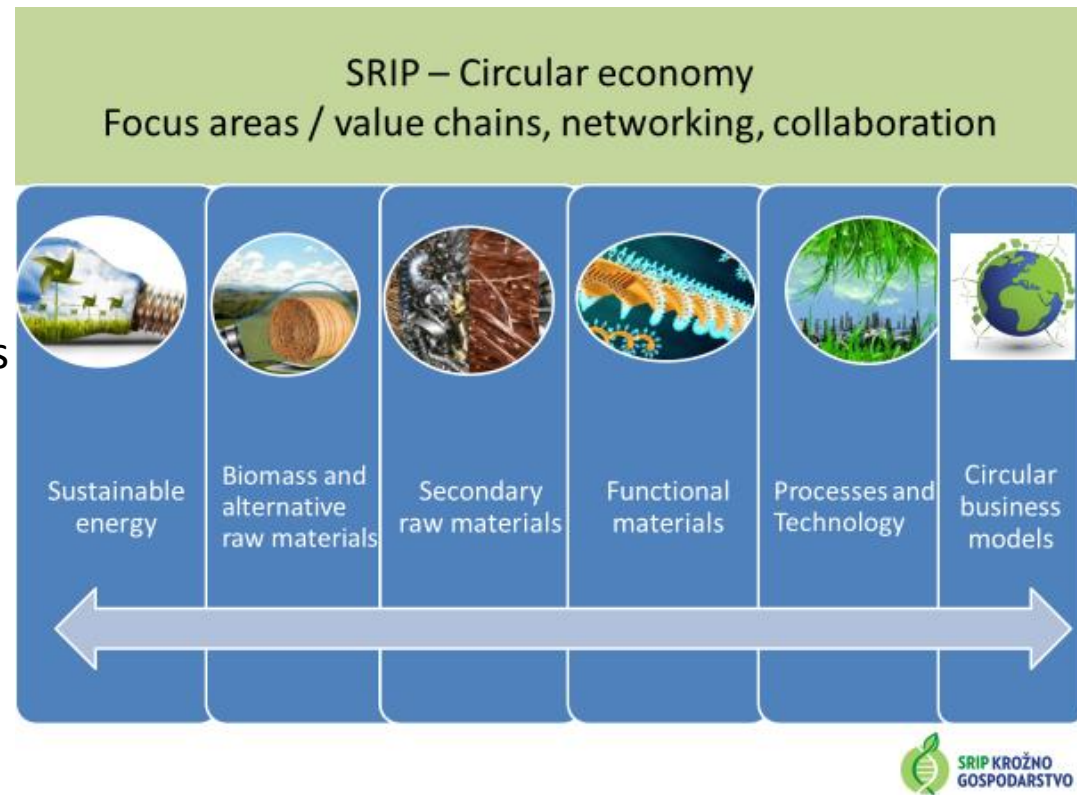
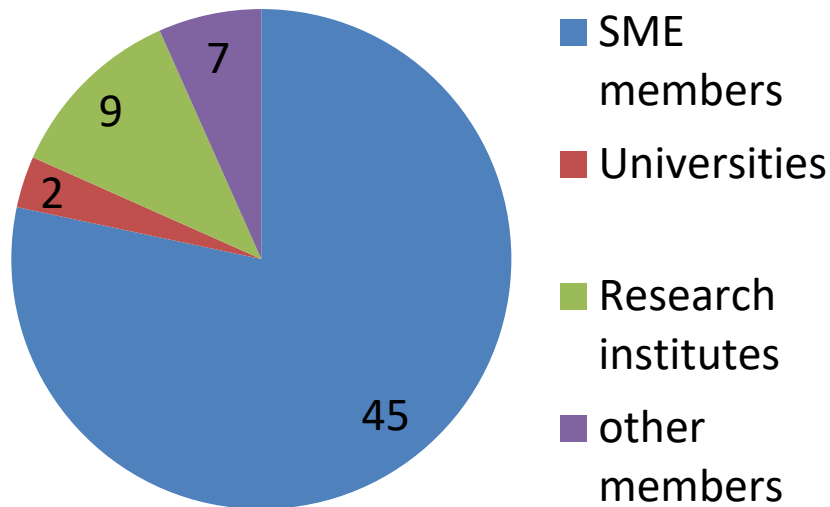
**WHY?**

- \* Support, connection,  
collaboration
- \* Establishing:
  1. long term public-private  
partnership,
  2. value chains,
  3. new business models
  4. new products, services

# Structure of the SRIP

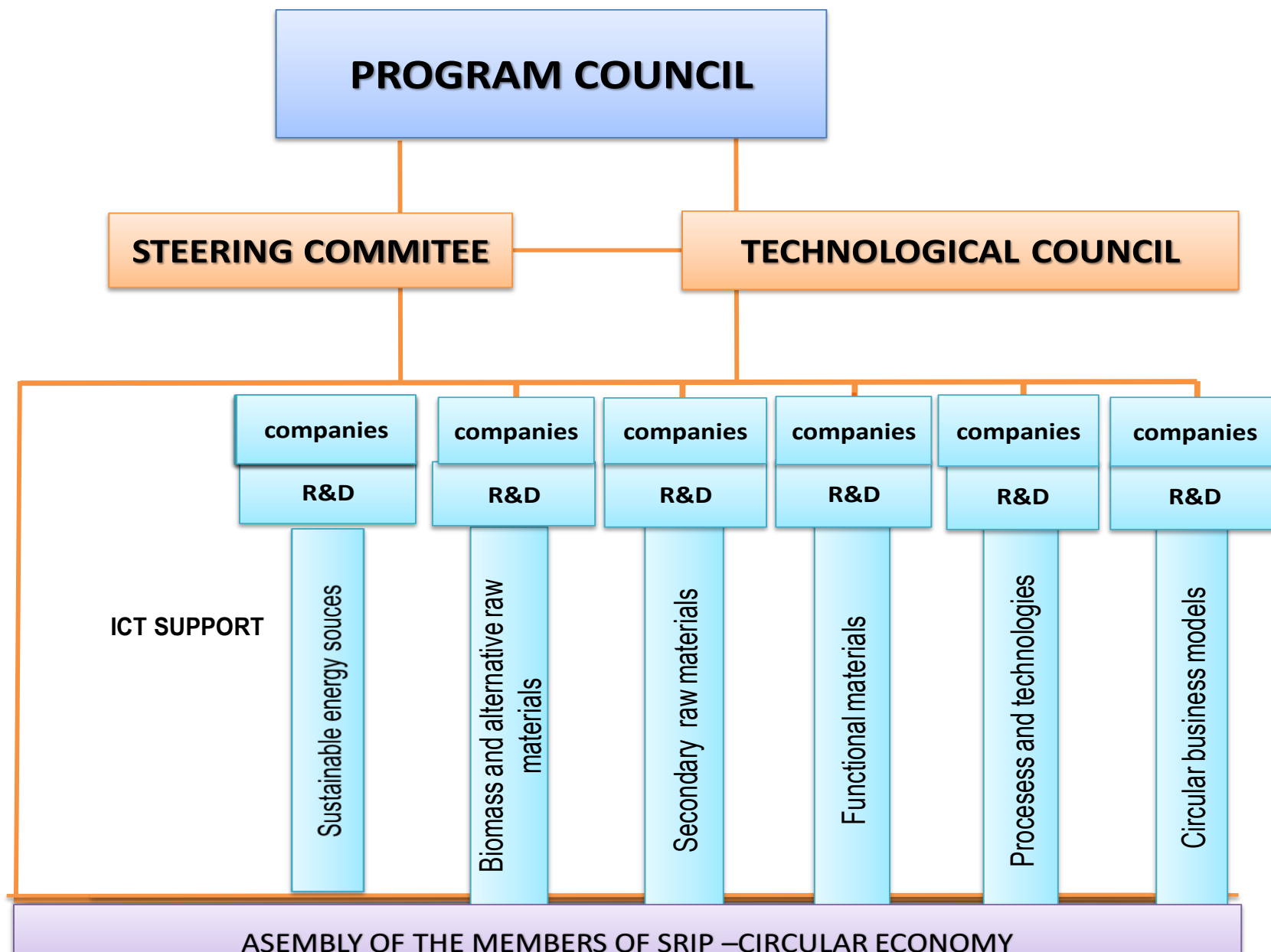
**Start-up year of SRIP: 2016**

**SRIP membership 2019: 63**



# SRIP – Circular economy: Business model

SRIP-NETWORKS TO TRANSITION  
TO CIRCULAR ECONOMY



# SRIP – Circular economy: Action Plan – Business Strategy / Sustainability / Research and Career Platform / Entrepreneurship / Investment



Action plan of SRIP:  
research &  
development products,  
services, human  
resources development,  
entrepreneurship,  
internationalization,  
sharing the capacities

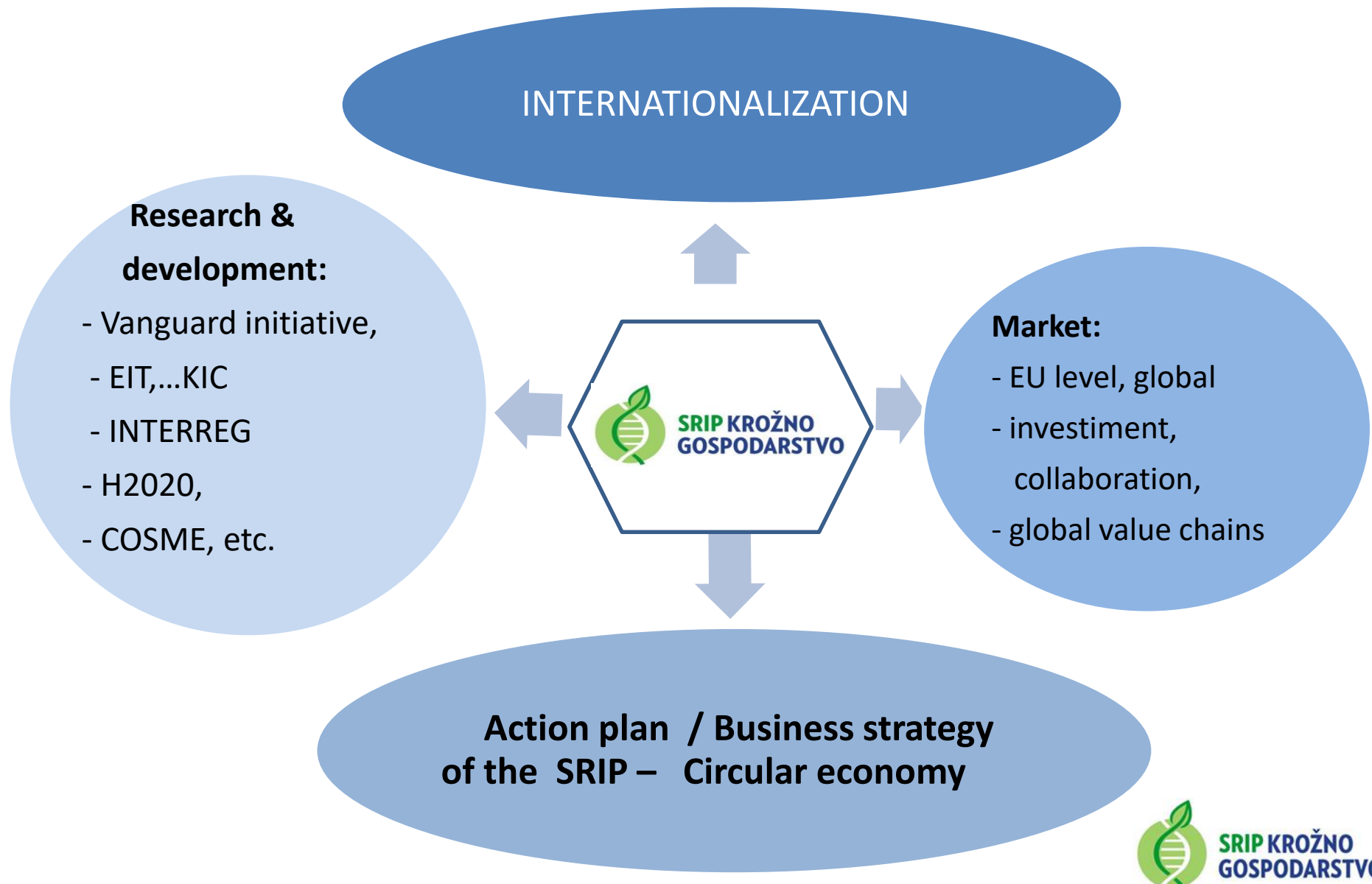
Public – Private  
Investment /  
Public calls:  
- Slovenia,  
- EU  
Private  
Investment

Career Platform:

- Profession of future,
  - Individual career plan,
  - Training, Education,  
Innovation
- Digitalization



SRIP – Circular economy: collaboration in Vanguard, associated member of Bio based Industry Consortium, EU Cluster Collaboration Platform



## 1. **CEL.CYCLE – „Potential of biomass for development of advanced materials and bio-based products**

**Consortium:** Pulp and Paper Institute, “Jožef Stefan” Institute, Slovenian National Building and Civil Engineering Institute, Kolektor Sisteh, Petrol, Melamin, Faculty of Polymer Technology, Slovenj Gradec, National Institute of Chemistry Slovenia, University of Maribor, Faculty of Mechanical Engineering, University of Ljubljana, Faculty of Mechanical Engineering

### **Goals:**

- **to develop** / exploit the potential of biomass for development:
  - \* advanced materials, bio-based products: nanocellulose and green chemicals: /environmentally acceptable additives: paper, board and yarn/,
  - \*value chains for material and energy utilisation of biomass /cascading utilisation.
- **to contribute** long-term competitiveness of Slovenian industry: chemical, textile, paper, wood processing and automotive industry, construction, engineering and innovative sistem for energy recovery from waste.

Source: <http://celkrog.si/?lang=en>





## 2. RESYNTEX: A New Circular Economy Concept For Textiles And Chemicals

**Consortium:** Institute for environmental protection and sensors, Ltd, Tekstina Ltd, University of Maribor, Faculty of Mechanical Engineering, partners from EU states.

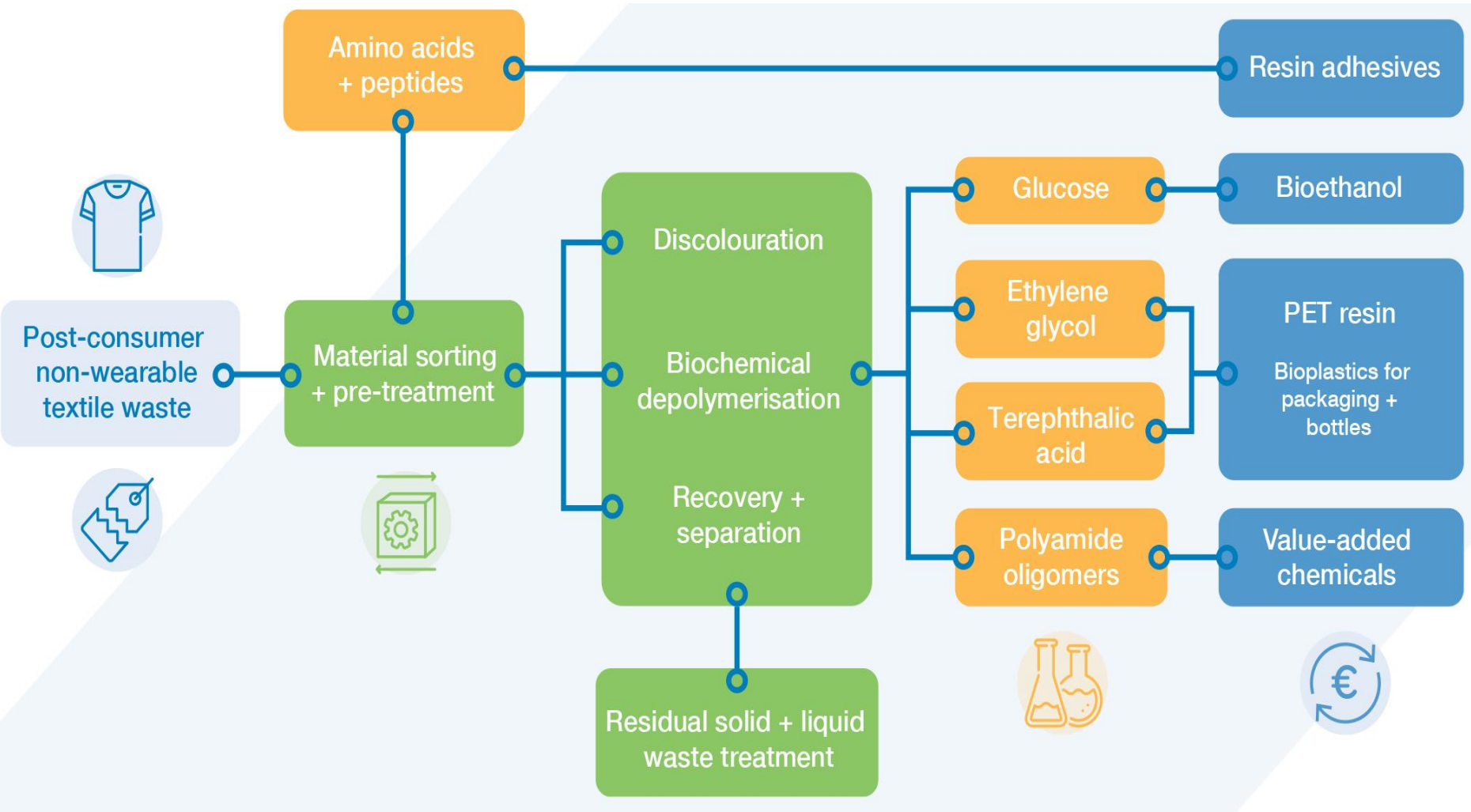
**RESYNTEX:** research to:

- create a new circular economy concept – a new business model
- reduce environmental impact
- create new chemical feedstock and state-of-the-art processes
- increase public awareness and enable better recycling
- inform governing bodies and policymakers on circular economy
- value chain from textile waste collection: production of new feedstock
- traceability of waste using data aggregation
- new value chains: life cycle assessment (LCA), life cycle costing (LCC)
- demonstrate a complete reprocessing line for basic textile components, including liquid and solid waste treatment

**Technology :** industrial symbiosis - to produce secondary raw materials from unwearable textile waste.

Demo production: in Maribor, Slovenia

<http://www.resyntex.eu/>; Contact: aleksandra.lobnik@ios.si



### 3. BAmBI:

## The development of bio-butylated amino resin

**Consortium:** Melamin Ltd, University of Maribor, Faculty of Chemistry and Chemical Engineering

#### Goals:

- production of new hightech product from natural, renewable raw materials (wood biomass) with added value, i.e. bio-butylated amino polymer for the coating industry on a laboratory scale / bio-butylated amino resin

#### Results:

1. 5 prototypes of the new product (innovation processes)
2. increasing the index of resource efficiency
3. New product with a market potential

Contact: [zorka.novak@um.si](mailto:zorka.novak@um.si); [srecko.stefanic@melamin.si](mailto:srecko.stefanic@melamin.si)

## 4. Cinderela – New Circular Economy Business Models for More Sustainable Urban Construction

**Consortium:** Slovenian National Building and Civil Engineering Institute, Nigrad Ltd, Maribor, partners from EU /Italy, Spain,...

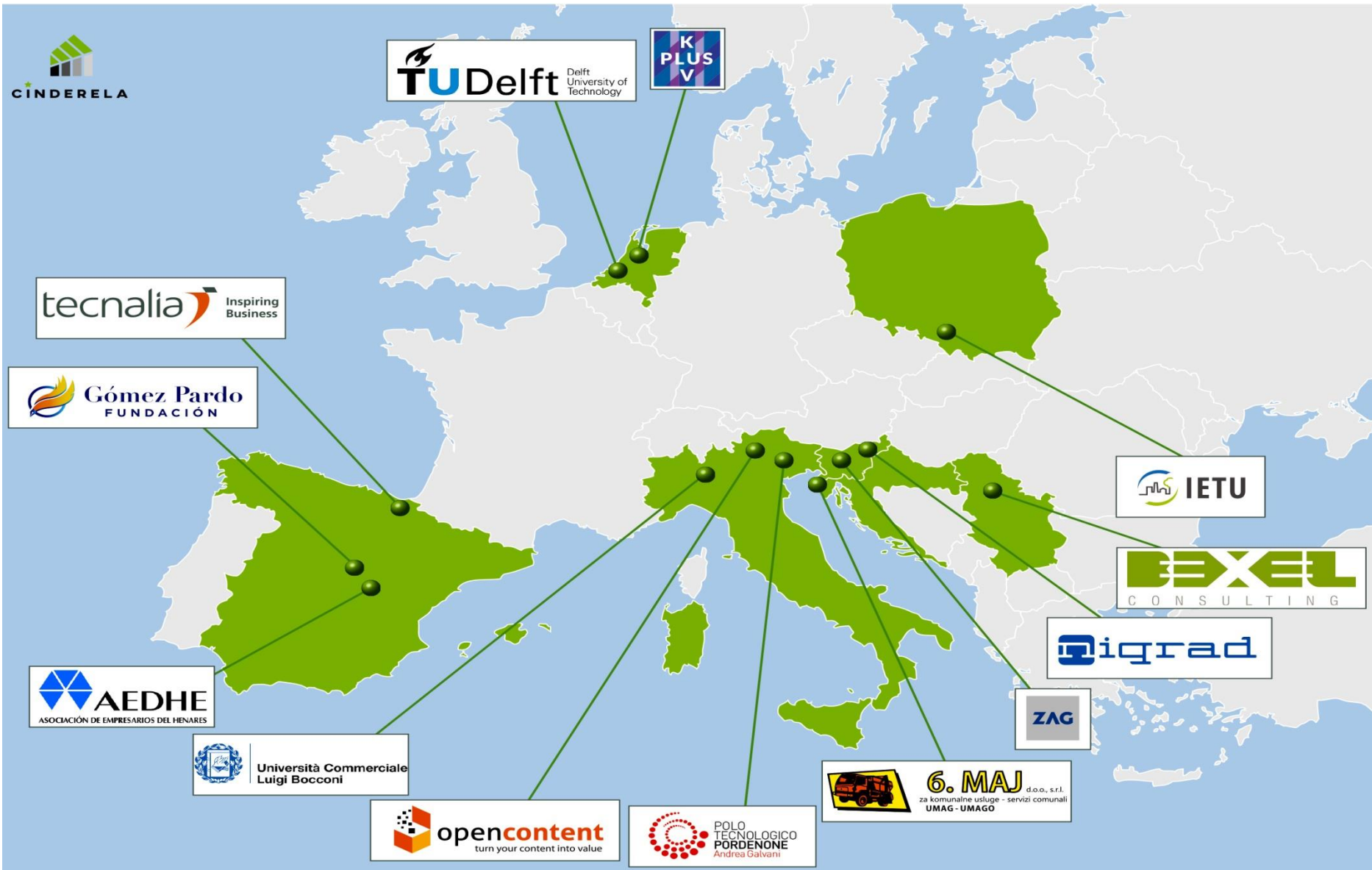
### **Goals:**

- to develop a new Circular Economy Business Model (CEBM) for use of secondary raw materials (SRM) in urban areas,
- connecting different industries, the construction sector and municipal services, decision makers and the general public with the support of CinderOSS, a “One-Stop-Shop” service:
  - (i) on-line ICT platform for tracking and modelling the urban waste-to-product flows,
  - (ii) on-line marketing and sharing knowledge and information along the value chain,
  - (iii) production and marketing of (SRM) based construction products, building with SRM based construction products supported by building information modelling (BIM).

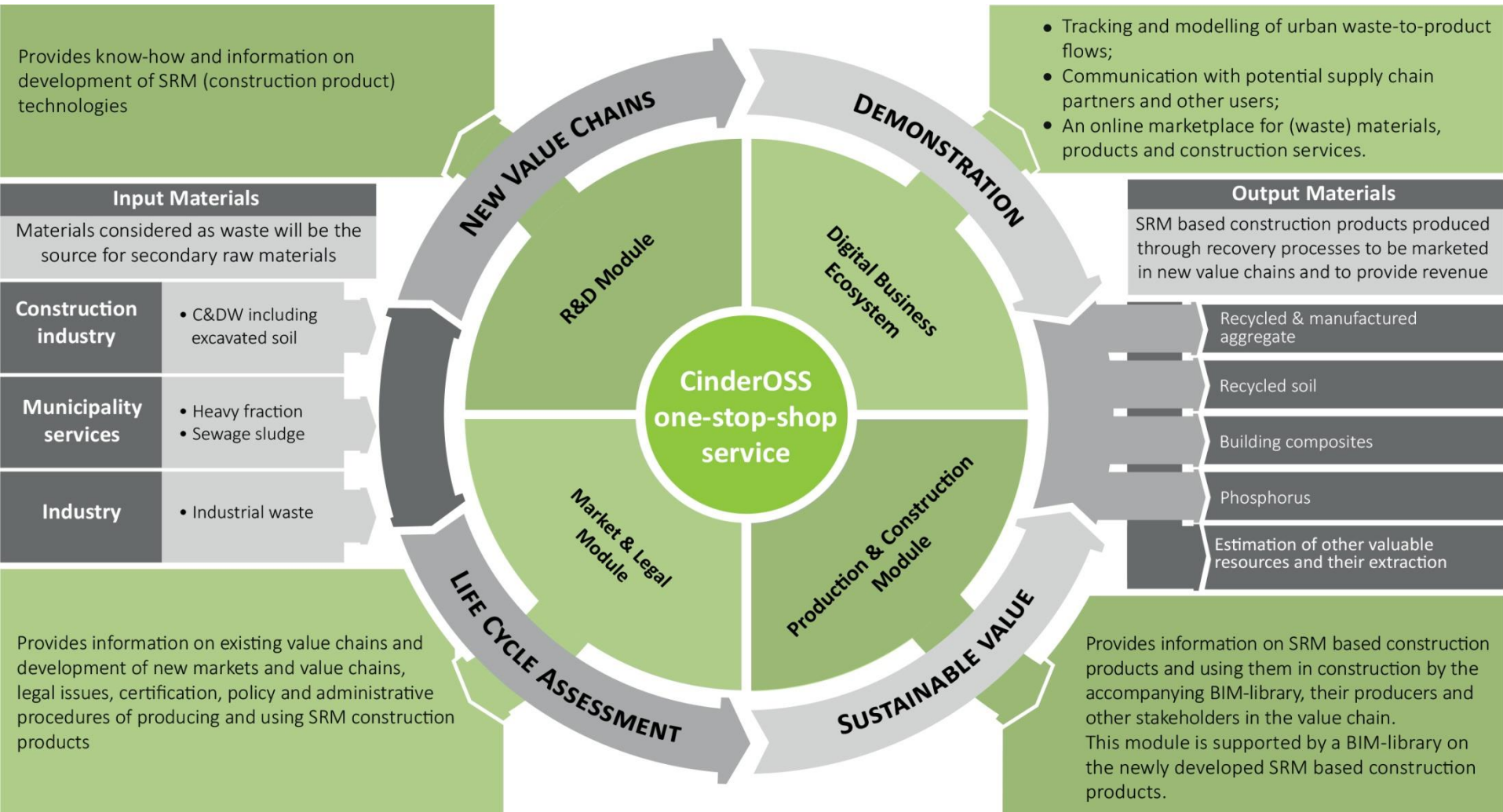
<https://www.cinderela.eu/>, [info@cinderela.eu](mailto:info@cinderela.eu)

Contact : Alenka Mauko Pranjić and Ana Mladenović

# Cinderela partners



# CINDERELA Circular Economy Business Model





# SRIP – Circular economy

## Proposal of collaboration:



- Research projects: SMEs, research institutions,
- Pilot / Demo projects / Vanguard initiative
- Exchange knowledge,
- Learning (workshops, conferences),
- B2B meetings,
- Study visit
- Trade fair participation,
- Networking,
- Collaboration in the value chains.



**Thank you!**

Contact:

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