

# Innovating the raw materials value chain

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EIT RawMaterials is supported by the EIT,  
a body of the European Union



# Challenges are opportunities

Rapidly increasing  
and diverse demand

Decreasing quality  
of resources



Vulnerable ecosystems



Unused material  
flows and stocks



Siloing across the  
value chain



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# EIT Raw Materials



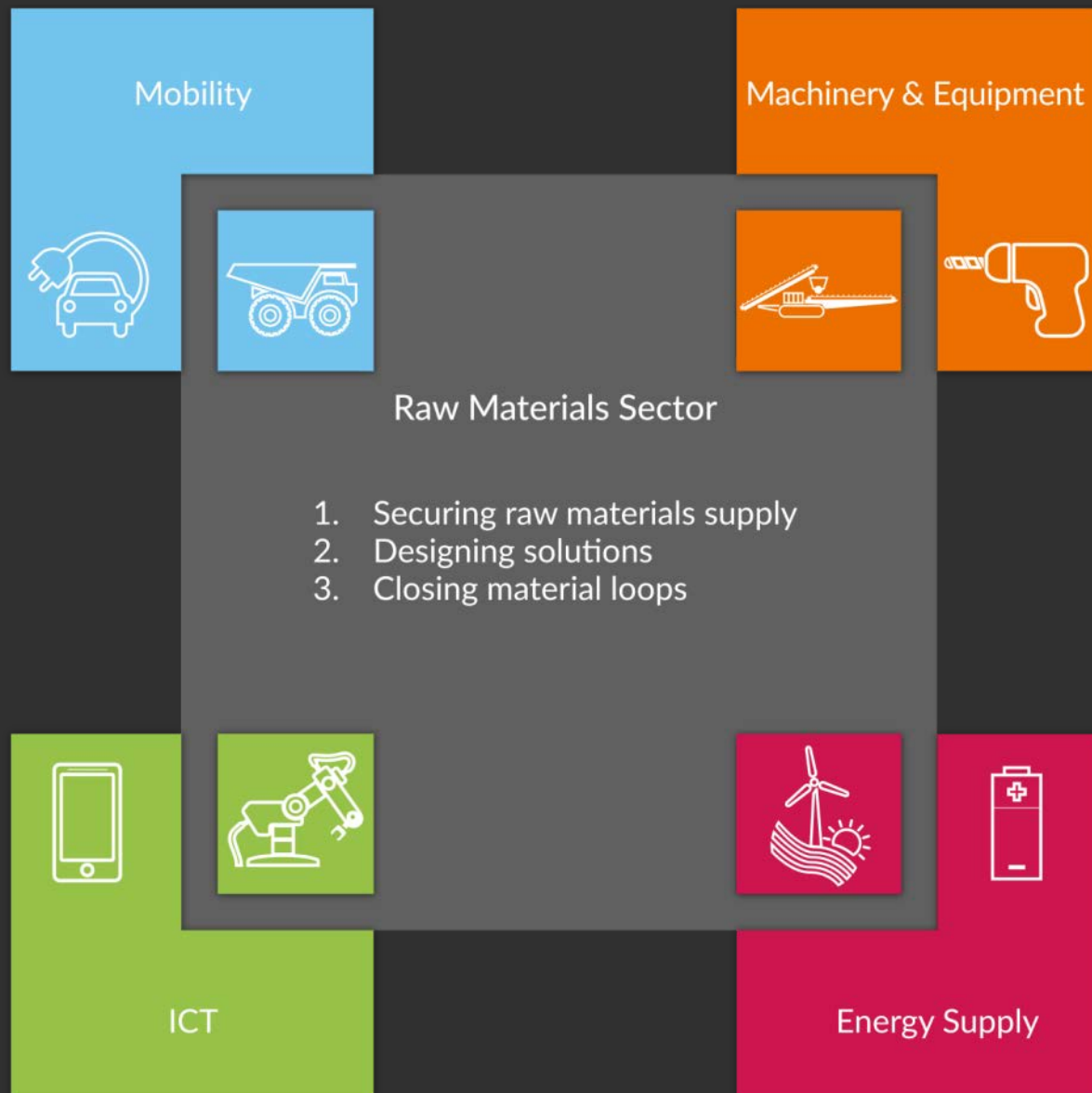
## Goals

1. Creating and developing new “game changing” businesses
2. Boosting the existing RM sector through the market introduction of new materials, investment in new production and processing units, system integration and the setting up of new partnerships
3. Achieving a “paradigm shift” in RM education by introducing entrepreneurship, supporting the effective transformation of ideas into businesses



# Focus Markets

- Material intensive
- Providing solutions for the raw materials sector





# A pan-European Network of Excellence

- Partner types:

- Core
- Associate
- Task
- Support

Well-balanced  
consortium with  
115 partners

Partners in 22 EU  
countries with special  
focus on ESEE

Full coverage of  
value chains and  
commodities  
(especially CRMs)

Business partners  
represent  
>700,000 jobs  
>200 billion €  
turnover

Partners' roles in EIP  
RM commitments:  
>75% participation  
40% coordination

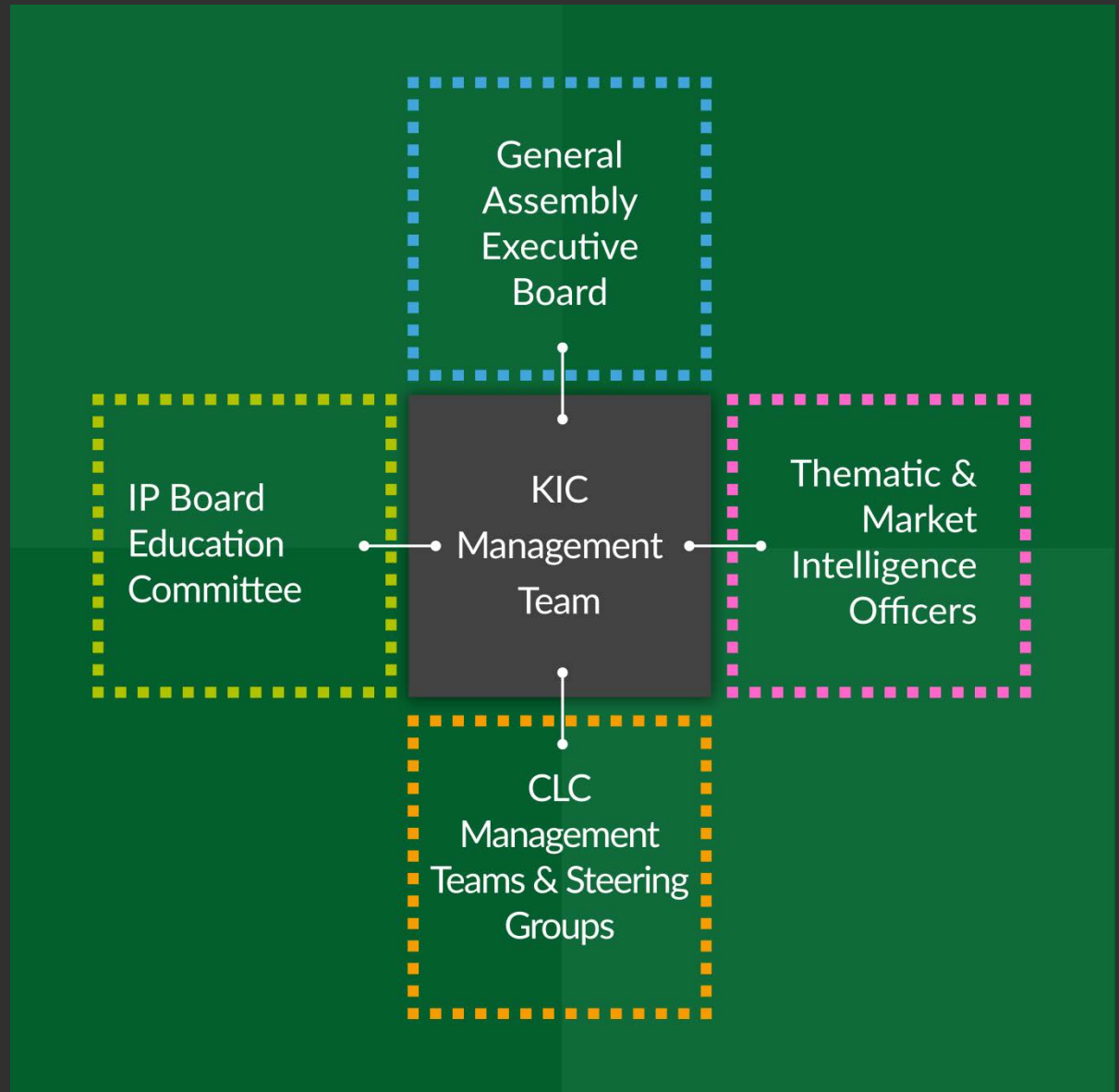


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# Governance

- eV
- GmbH





# Knowledge and Innovation Themes

- ◆ *De-siloing*
- ◆ *Value Chain thinking*
- ◆ Exploration and raw materials resource assessment
- ◆ Mining in challenging environments
- ◆ Increased resource efficiency in mineral and metallurgical processes
- ◆ Recycling and materials chain optimisation for End-of-Life products
- ◆ Substitution of critical and toxic materials in products and for optimised performance
- ◆ Design of products and services for the circular economy



# Activities

## Matchmaking & Networking

1. InfoCentre
2. Matches
3. Idea Camp
4. Intrapreneurship Facilitator

## Education & Learning

7. PhD Education
8. Master Education
9. Lifelong Education
10. Wider Society Learning

## Validation & Acceleration

5. Upscaling projects
6. Network of Infrastructure

## Business Creation & Support

11. Entrepreneurship Support services
12. Start-Up Booster
13. SME Growth booster
14. Kick-start Funding
15. Funding instruments

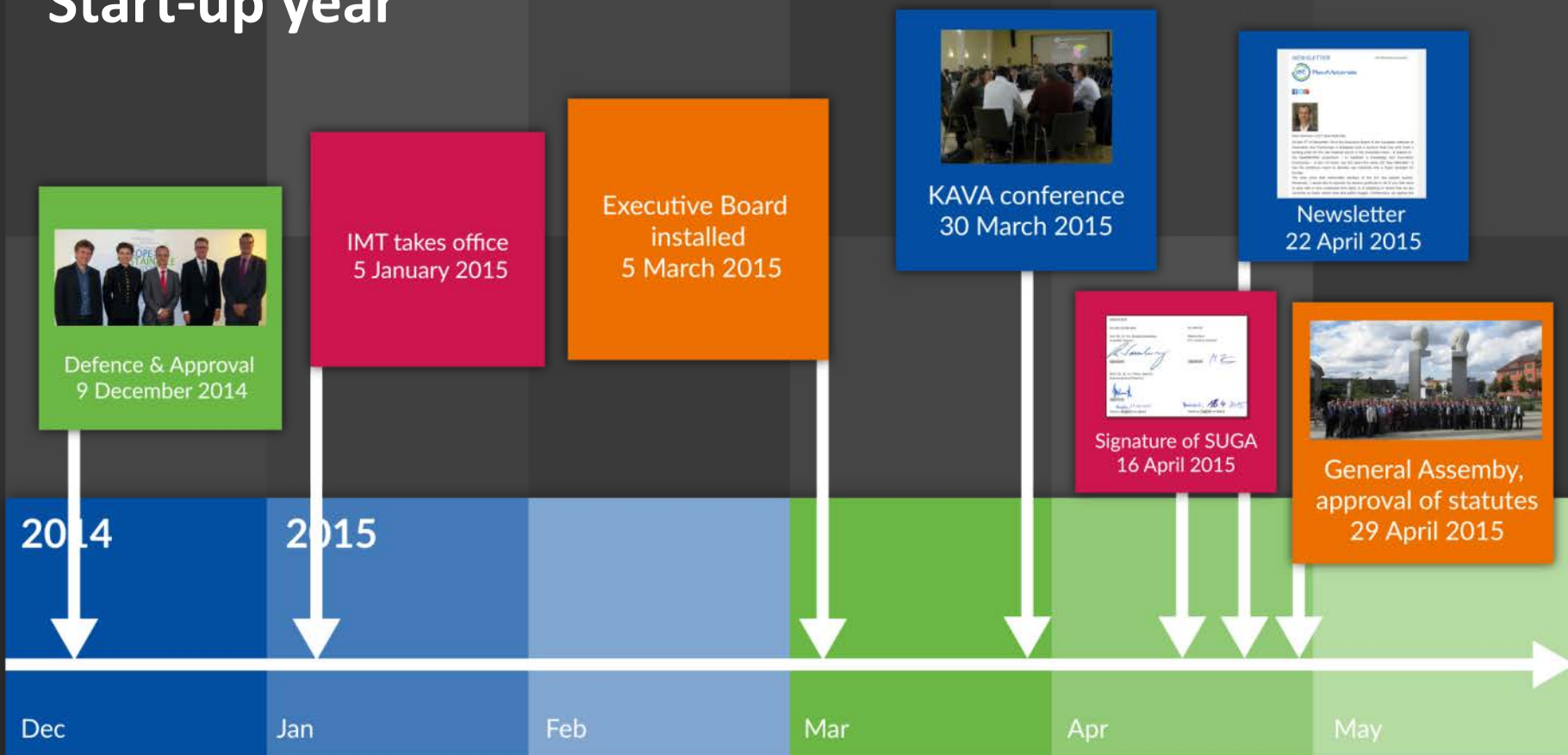


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# Start-up year





# Impact

- Goals for 2022



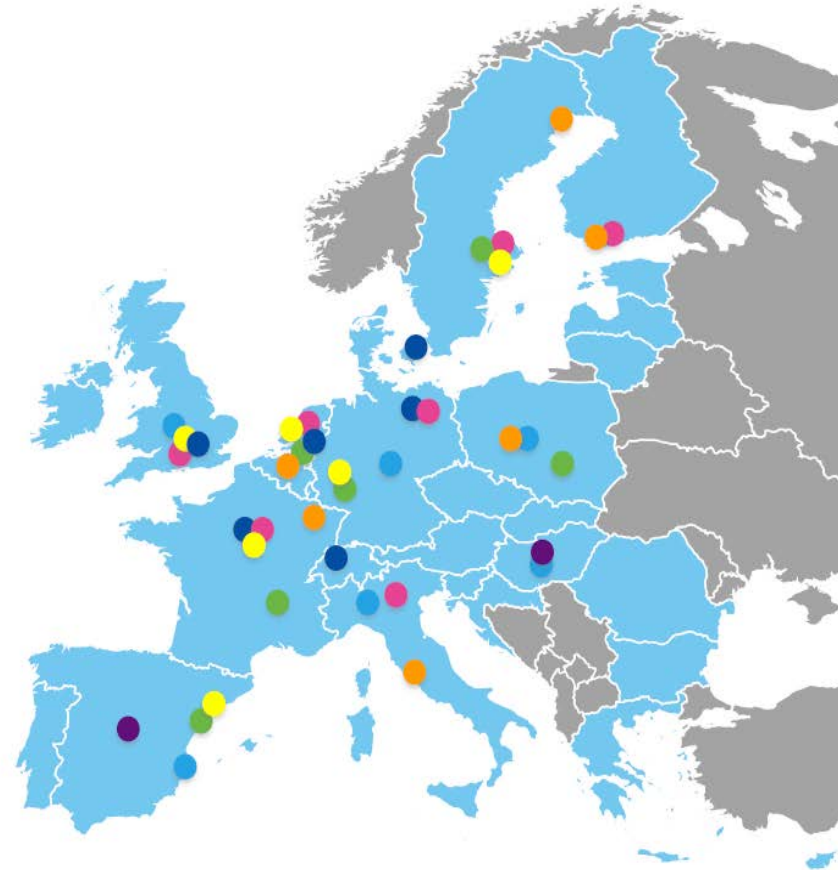
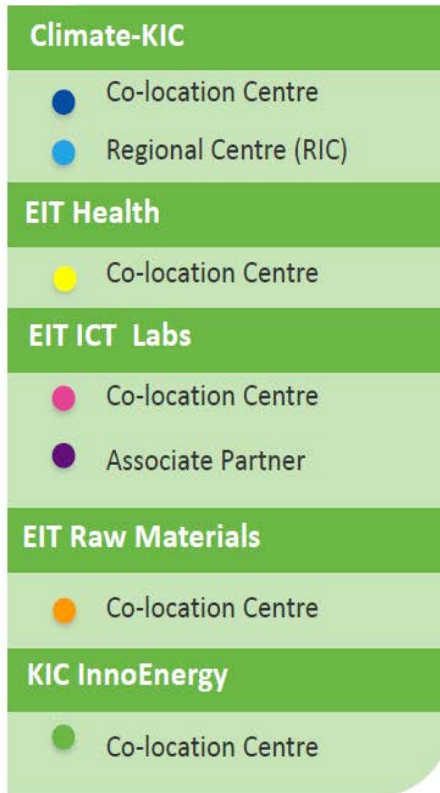
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## Western CLC

- located in Leuven

## KICs EIT across Europe: KICs' Co-location Centres



European Institute of  
Innovation & Technology



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# Western CLC

## ♦ PARTNERS

CORE PARTNERS **Business:** H.C. Starck (DE), Recylex (DE), UMICORE (BE); **Research institutes:** CRM (BE), CUTEC (DE), TNO (NL), VITO (BE); **Universities:** Clausthal U (DE), TUDelft (NL), UGent (BE), KU Leuven (BE), RWTH Aachen (DE), ULg (BE)

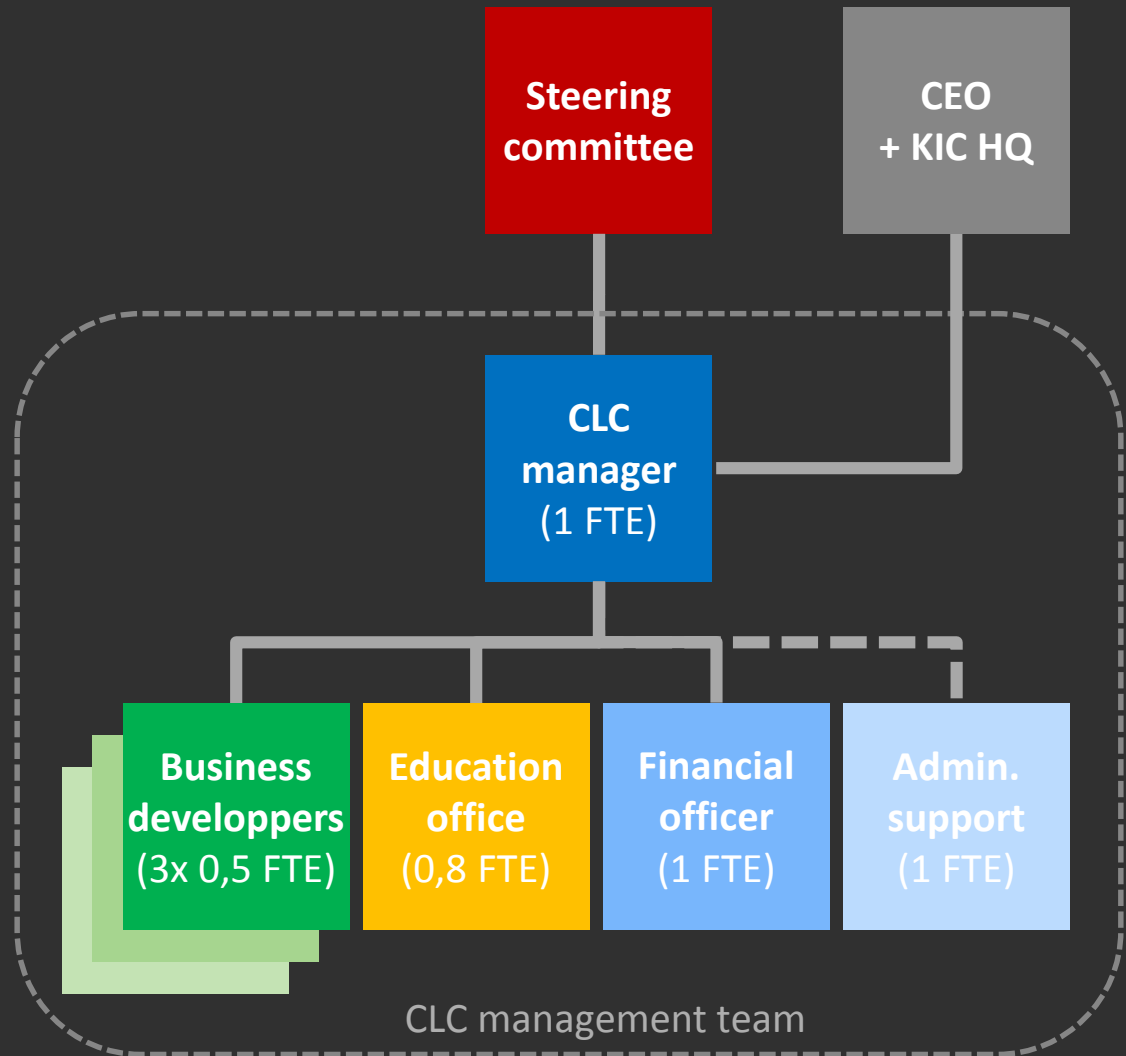
ASSOCIATE PARTNERS **Business:** OCAS (BE), BMT (UK), GM Recycling (BE); **Research institutes:** INESC TEC (PT), IMEC (BE), Wetsus (NL), Wuppertal Institute (DE); **Universities:** Radboud University (NL), Leiden University (NL), Imperial College (UK)

## ♦ ECO-SYSTEM

Recycling of complex End-of-Life products and urban mining;  
recovery of valuable RM from industrial residues and landfill mining; circular economy; substitutes (lightweight, composites);  
deep exploration and mining (incl. sea floor); mineral processing

# Western CLC governance

- VZW to be created
- CLC manager recruitment ongoing
- Regional business development (Netherlands, Germany, Wallonia, CLC manager is doing business development in Flanders)
- Fully operational by October 1, 2015





# Western CLC activities

high degree of participation in the KIC KAVA proposals for Networks of Infrastructure, Education, and Entrepreneurship Support Services

Example:

*Network of networks for zero waste valorisation of secondary resources*

EIT RAW MATERIALS - ZERO-WASTE valorisation of secondary resources

Secondary complex, low grade resources containing base and critical metals



New Metallurgical Technologies

Pretreatment

1 COMMUNITION  
BENEFICIATION

2 PHYSICAL  
SEPARATION

Metal extraction  
&  
concentration

3 HYDRO-  
FLEX

4 BIOLEACHING  
BIO SORPTION &  
PRECIPITATION

5 PLASMA-PYRO  
PYRO-FLEX

6 (BIO)ELECTRO  
-WINNING

Matrix conversion

7 SCM

8 GEO-POL

9 CARBONATION

10 UP-SOIL

Metal Recovery

Residue Matrix Valorisation



## Western CLC activities

- High degree of participation in the KIC KAVA proposals for Networks of Infrastructure, Education, and Entrepreneurship Support Services
- Upscaling projects
- Specific activities at CLC level:
  - at least 5 matchmaking events, 3 idea camps, 1 intrapreneurship activity per year
  - ambition to become gateway to the US, VC forum, ...
- Continuous activities at CLC level:
  - business development support
  - entrepreneurship support
  - kick-start funding, SME growth booster



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# Importance for innovation in Flanders

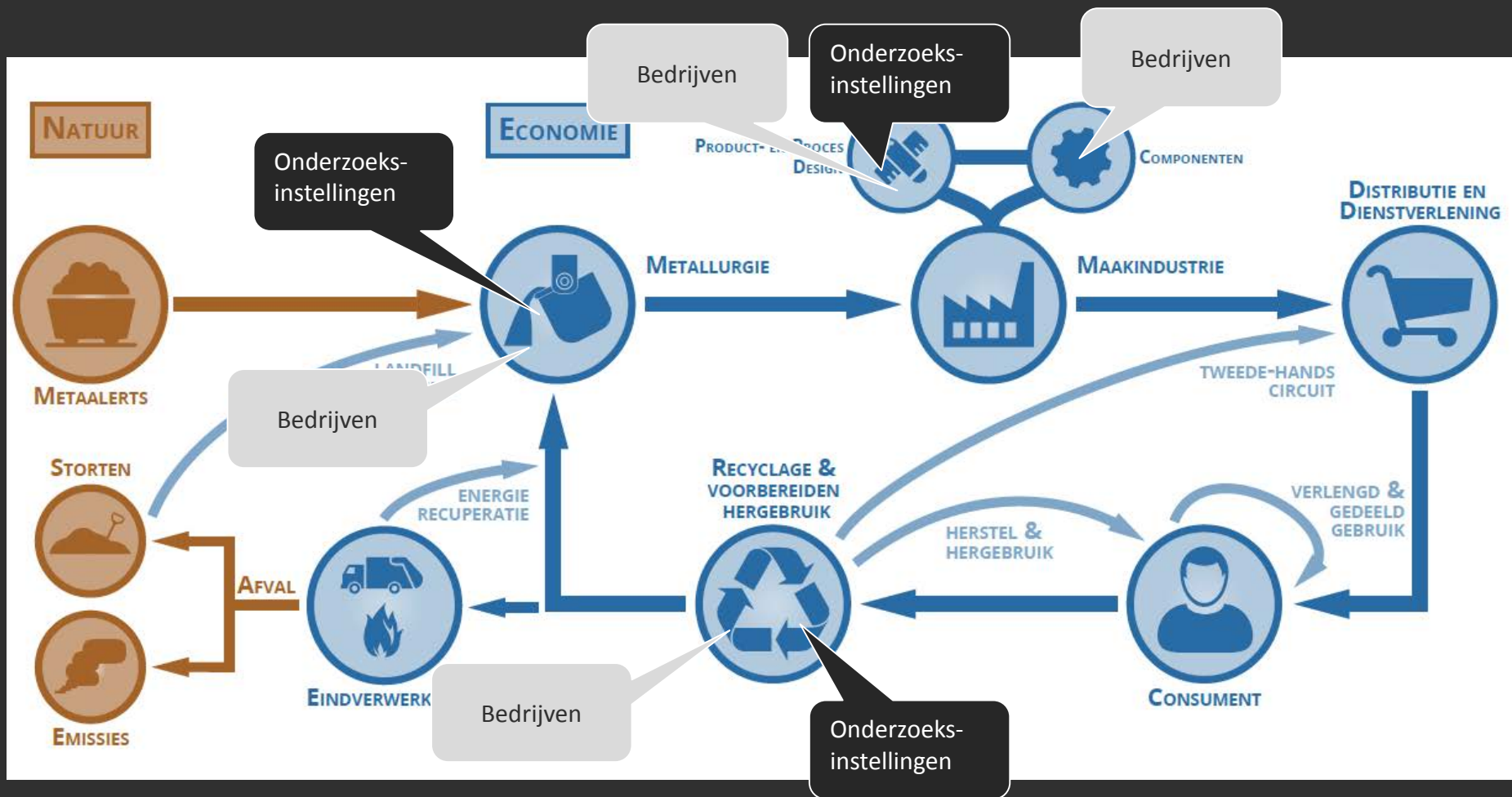
- Addresses important and innovative sector in Flanders: materials industry represents **11,0% of the total industrial turnover in Flanders**, indirect large effect on manufacturing industry
- Complements the Flemish initiatives on Materials R&D, the Flemish Materials Programme, Circular Economy → international dimension and bridge between technological research and innovation and education



- Embedded in solid long-term European partnership, with recognized position and high visibility

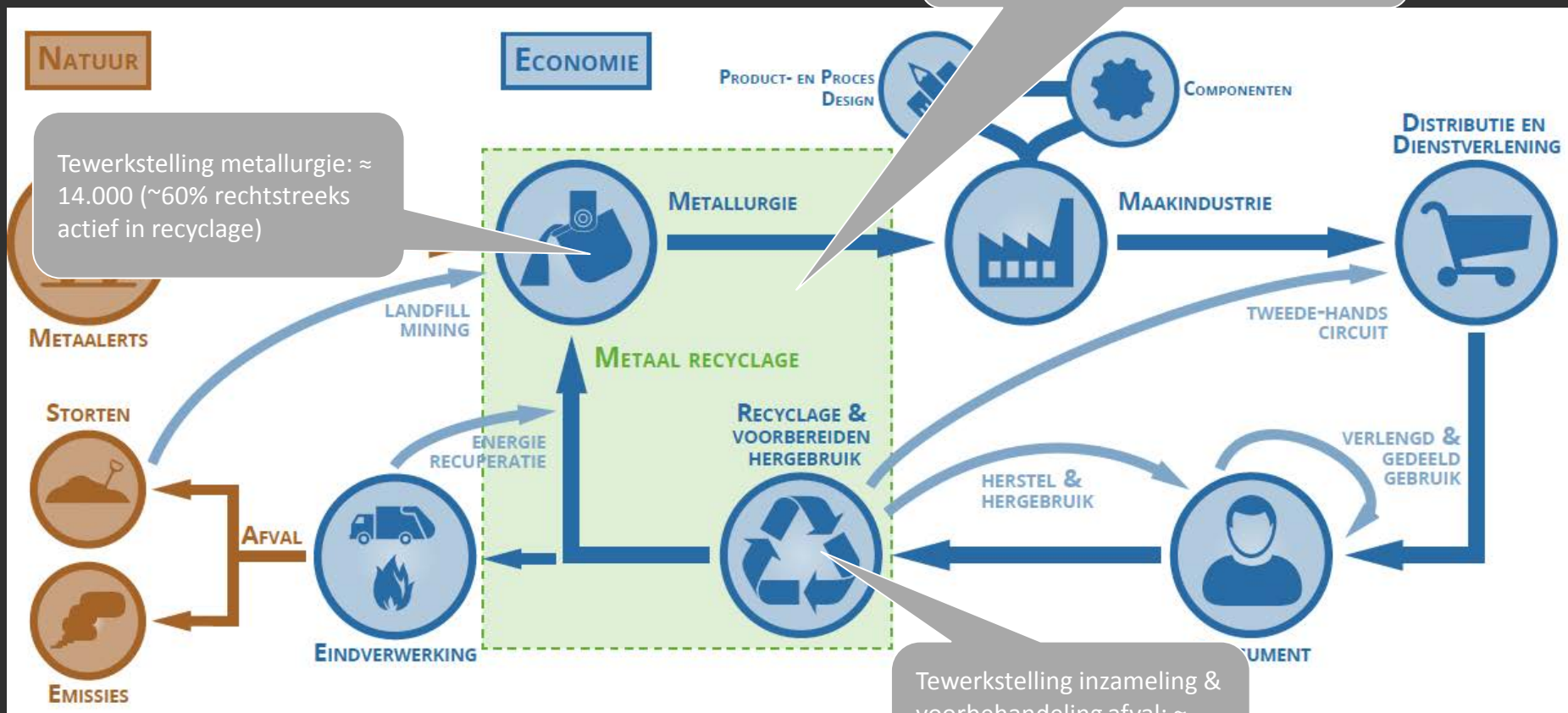


# Importance for Flanders – focus on metals recycling cluster

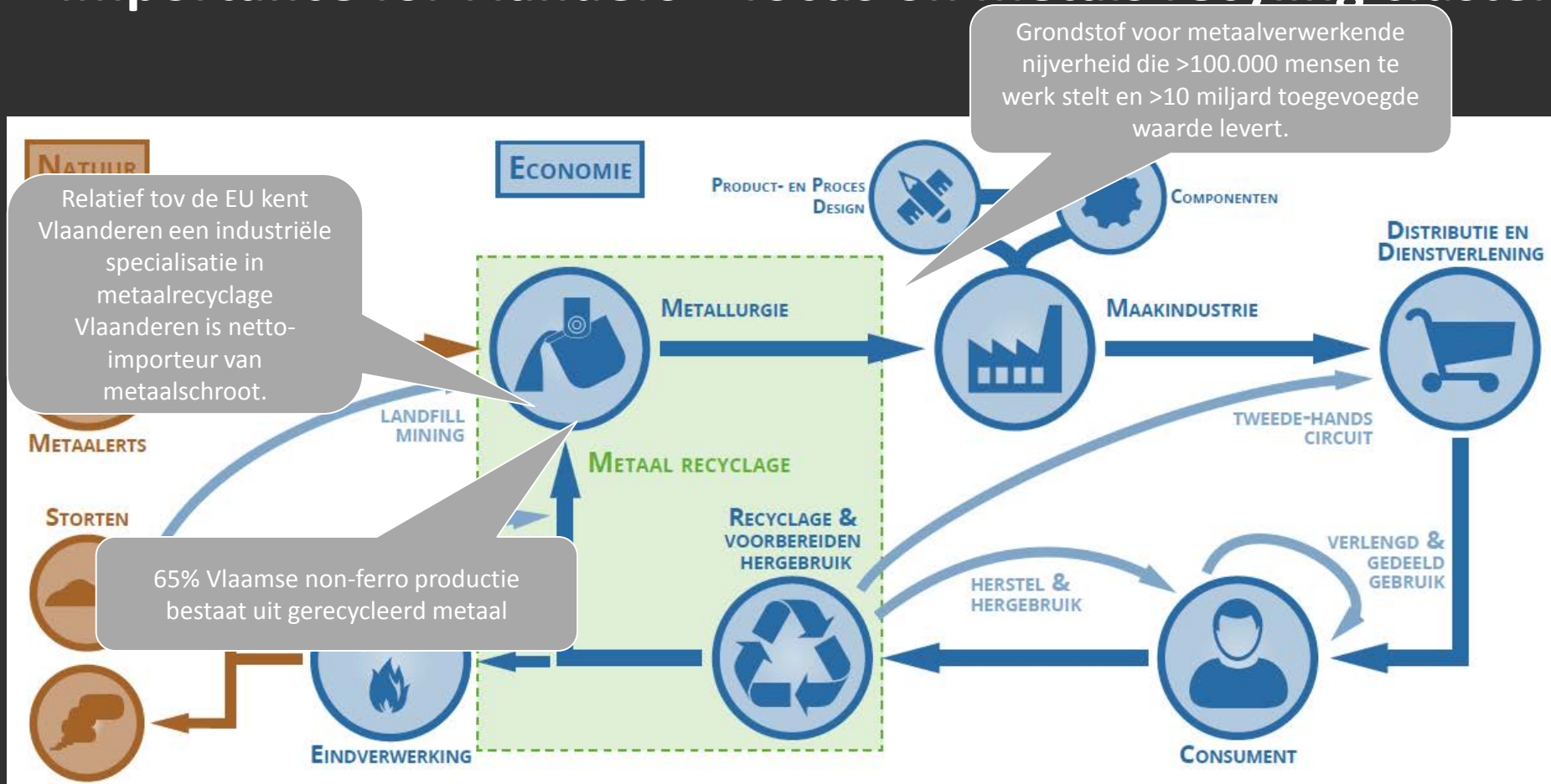


# Importance for Flanders – focus on metals recycling cluster

Toegevoegde waarde > 1 miljard €  
Arbeidsproductiviteit: top 3 EU



# Importance for Flanders – focus on metals recycling cluster



**Circulaire economie: Potentieel 1,5 miljard € extra toegevoegde waarde in metaalsector**



# Importance for Flanders – focus on metals recycling cluster

- **Flanders has crucial assets in metals recycling**
  - *Knowledge & capacity to recover valuable/critical metals out of complex waste streams*
  - *Knowledge in the development of (product)technologies containing valuable/critical metals*
  - *Stimulating policy environment*
  - *Extended and high quality recycling industry and advanced logistics*
  - *Good collaboration between the different actors and levels*
- **We are ready to realise further opportunities and to contribute to the creation of sustainable jobs and extra added value in Flanders**



# Importance for Flanders - conclusions

- Flanders is considered as world leading in the exploitation of the urban mine, recognized position as the European hot spot in (innovations in) recycling, making the difference
- Attract new actors in the value chain of critical materials, and partnerships for the manufacturing industry, create new economic activities
- Strong partnership within Flanders, complemented by this initiative  
→ further consolidation in the new cluster policy
- Initiatives w.r.t. research and innovation have to strengthen each other at all levels (cumulative funding)
  - smart specialisation
  - EFSI and other European initiatives



# OUR VISION

To develop raw materials into a  
major strength for Europe

