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Eco-Innovation Support through Clusters Strengthening the Regional Profile

12th TCI Annual Global Conference, Jyväskylä / Finland

Speaker: Walter Freudenthaler | Date: 15.10.2009

Lower Austria

Europe

European Union.
27 nations.
490 million residents.

Austria

8 million residents.
EU member since 1995.
Euro introduced 2002.

Lower Austria

1.6 million residents.
Austria's largest province.
Provincial capital St. Pölten

Cluster initiatives developed and implemented by regional business agency:

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Managing Director Helmut Miernicki
100% owned by the province of Lower Austria, 77 employees

companies & technology Claus Zeppelzauer	business locations & services Martin Fassl	projects & initiatives Werner Bauer
networks & clusters	investor services	regional support
internationalization	business parks	financial management and control
technopols		

EU Climate Targets 2020:

- **Cutting greenhouse gases by at least 20% of 1990 levels**
- **Increasing use of renewable energies (wind, solar, biomass, etc) to 20% of total energy production**
- **Cutting energy consumption by 20% of projected 2020 levels – by improving energy efficiency**

How can clusters contribute to these objectives?

Eco-Innovation Support through Clusters in Lower Austria

Green Building Cluster (2003)
www.bauenergieumwelt.at
Focus: energy efficient construction and refurbishment, healthy interior environments

Plastics Cluster (Lower Austria in 2005)
www.kunststoff-cluster.at
Focus: bio-plastics, energy efficiency in production processes

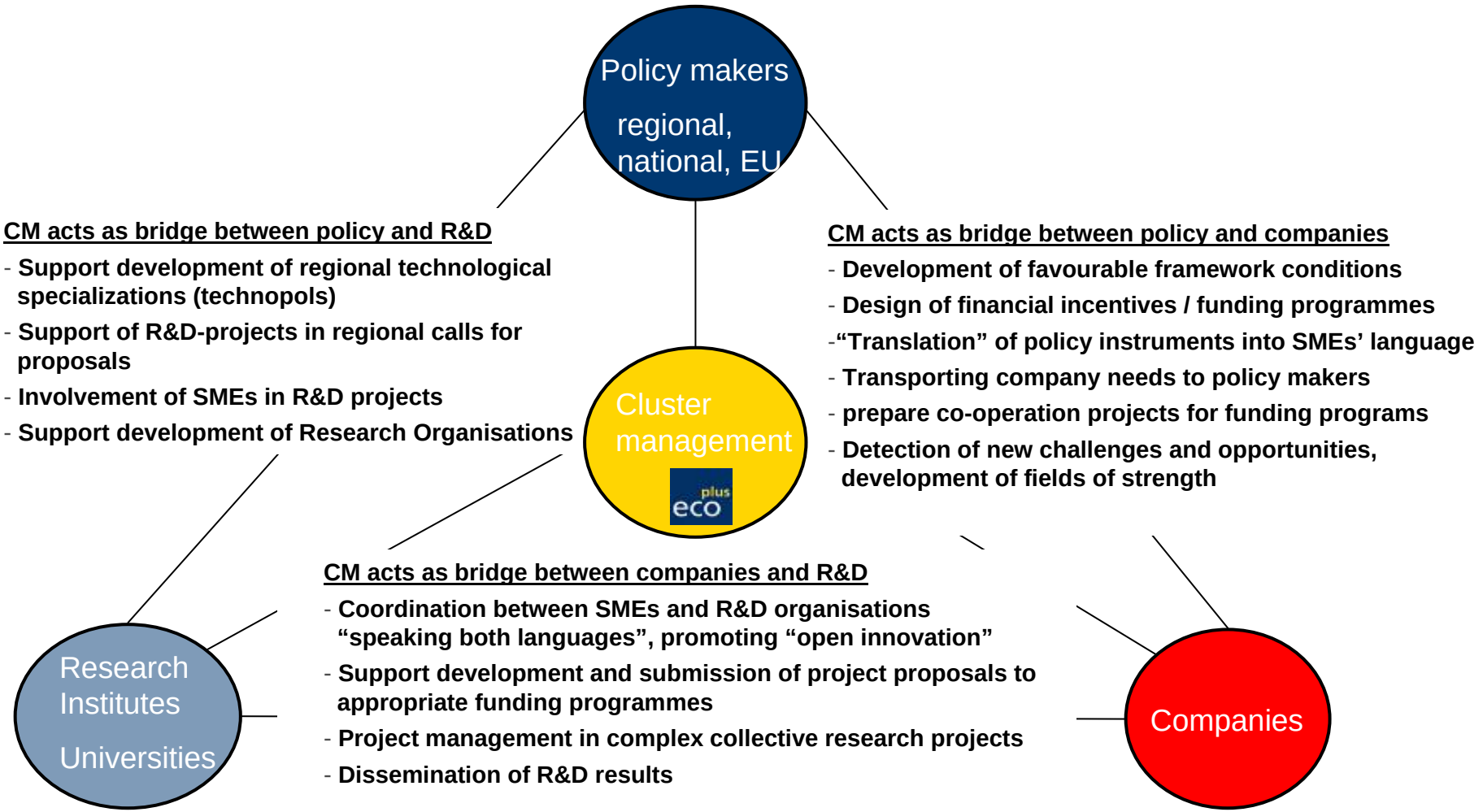
Automotive Cluster Vienna Region (2001)
www.acvr.at
Focus: electric mobility

Food Cluster (2006)
http://www.lebensmittelcluster-noe.at/
Focus: food safety, regional und bio-products

Logistics Cluster (2008)
www.logistikcluster.at
Focus: modal split, bundling (empty runs)

Metals & Mechatronics Cluster: launch 01/2010

Cluster management in Lower Austria: Bridge between policy makers, companies and R&D



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Sustainable Clustering in Lower Austria

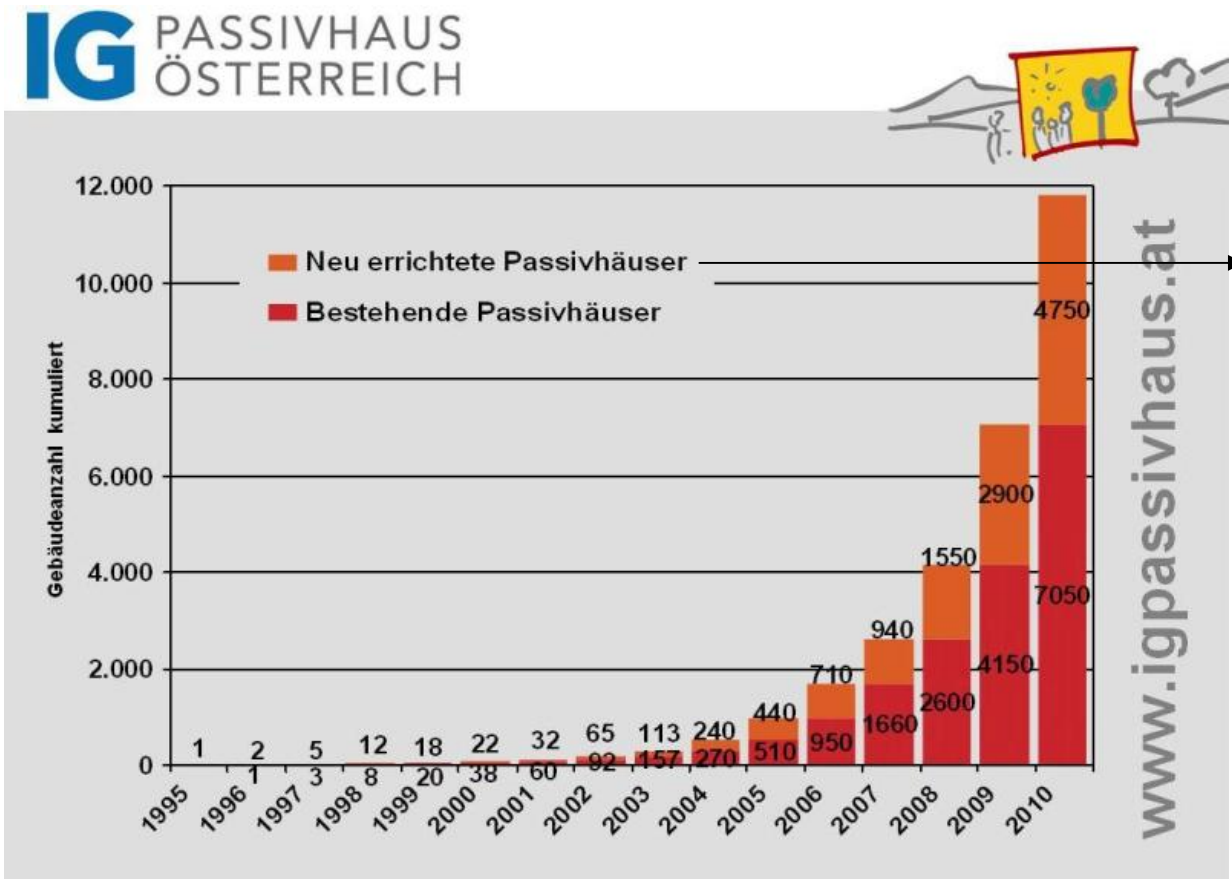
Showcase 1:
Green Building – Transforming the Building and Construction Industry

Green Building Cluster of Lower Austria

- Transformation of traditionally strong construction sector towards energy efficiency – green building experts
- Core topics:
  - Energy efficiency construction and refurbishment/renovation
  - Healthy interior environments
- ~ 200 partners: companies, R&D and qualification facilities
- 209 projects since 2001
- Team: 5 persons
  (employees of ecoplus)

Business Center on Passive House Standard

Development of passive house market in Austria



New passive houses

Existing passive houses

Energy performance of timber constructions in single-family houses 1997 – 2007 in Lower Austria

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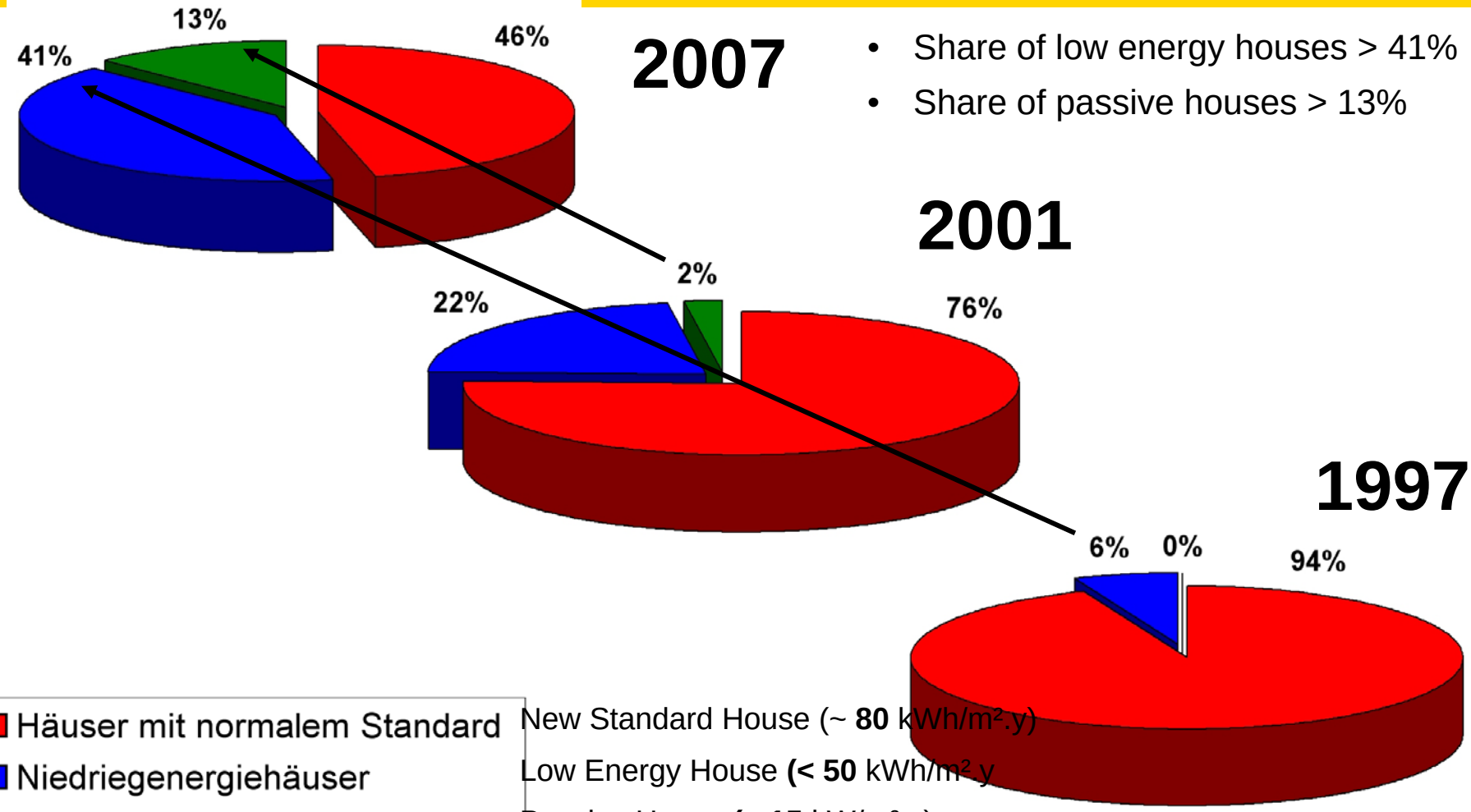

- Share of low energy houses > 41%
- Share of passive houses > 13%

New Standard House (~ **80** kWh/m².y)

Low Energy House **(< 50** kWh/m².y

Passive House **(< 15** kW/m².y)

Universität für Bodenkultur Wien

Alfred Teischinger und Robert Stingl
Institut für Holzforschung an der Universität für Bodenkultur Wien

bau.energie.umwelt cluster niederösterreich

Transforming the Construction Industry Towards Energy Efficiency

Top Challenge: Refurbishment of old buildings

- Increasing annual **refurbishment** rate from 1.5% (2008) to 3% (2010), ~ 2% at the moment
- Cutting CO_2 emissions 1990 to 2030 by 50% in Lower Austria (Climate Alliance partner)

Steps taken by the Green Building Cluster:

- Development of **unified strategy and procedures for all stakeholders**
- Involvement in creation of favorable **framework conditions** (building laws, economic stimulus package, funding programs, etc.)
- Enhancement of **professional skills** of over 200 specialists in refurbishment of old buildings
- Formation of **bidding consortia** (all-in-one older building refurbishment packages)
- **Collaborative development of new products and systems** within the Cluster
- Establishment of **Competence Center "Future Building"**
- Initiation of **sector-wide solutions**, e.g. food industry ("Achieving Zero Energy Retail Outlets")
- **Dissemination**: events, newsletters, website
- Linkages with **partners abroad** (international trade fairs, study trips, matchmaking activities…)

Project example 1:

Competence Center „Future Building“

funded by the Austrian Research Promotion Agency (FFG)

- **aims** to create innovative building components and systems that will address the fundamental changes of building industry in the next decade
- **Partners: 19 companies** (construction materials, components, equipment industry) + **7 research institutions**.
  Lead: Department for Building and Environment at Danube University Krems
- **Contribution of Green Building Cluster:**
  Initiator, establishing the consortium, supporting the proposal development, monitoring of progress, dissemination of results

Project example 2:

„Sonnenplatz Großschönau“

- **First Passive House Village** allowing customers to **test the house of choice** by living in it for several days.
- Initiative combines technology and tourism promotion in a less developed region
- Ongoing **joint research project** of 17 companies to enhance the quality of the indoor environment through **controlled indoor ventilation:**
  - Visitors keep a log of their perceptions and experiences in regard to living quality
  - These subjective impressions are compared with a wide array of measurable technical data
  - combined data will form a solid fact base which can be used by architects, builders, mechanical engineers and other professionals **to design and build user-friendly ventilation systems**



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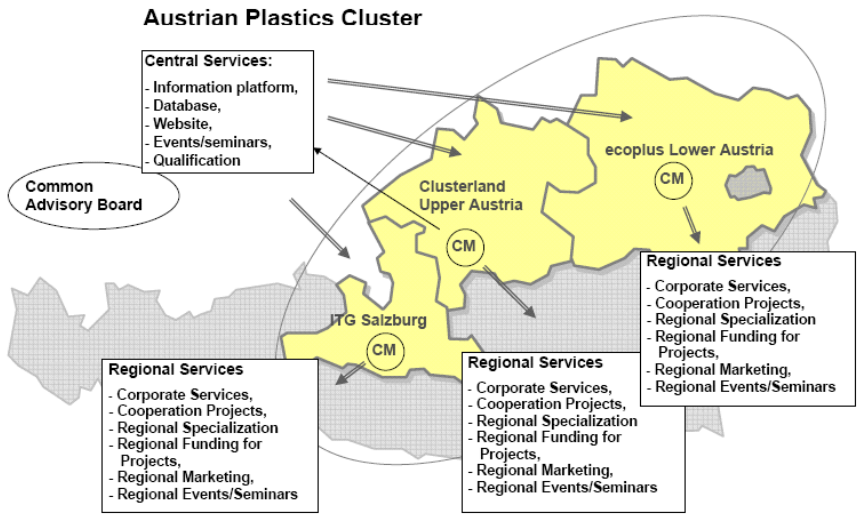
Sustainable Clustering in Lower Austria

Showcase 2:
Bioplastics – A Vision Becomes Reality

Plastics Cluster

- Trans-regional cluster initiative:
  - larger network, only 1 membership fee, central basic services (database, newsletter,...)
  - Regional teams provide consulting for collaborative projects and initiatives to develop regional areas of strength
- Core topics of Plastics Cluster in Lower Austria
  - Bioplastics
  - Energy efficiency in production processes
- 85 partners in Lower Austria (> 400 in Austria): companies, R&D and qualification facilities
- Team: 2 persons in Lower Austria (employees of ecoplus)

Example for trans-regional cluster development:



Bioplastics – A Vision Becomes Reality

Challenge

- Plastics industry faced with intense global competition, criticism of environment and health experts, shortage raw materials / increasing prices

Steps taken by the Plastics Cluster:

- In-depth **analysis** of available resources and technology in Lower Austria in 2006
- Introduction and promotion of the topic of bioplastics to firms -> **cluster focus**
- Foundation of platform of all relevant economic and political **stakeholders**
- Gathering a **critical mass of firms along the entire value chain** + bringing together Austrian and international research institutions
- Set-up and management of an **international collective research** project on packaging made of bioplastics (“Bio-Packing”):
- Consulting for collaborative **product development** projects within the cluster -> **first products available**

Next steps:

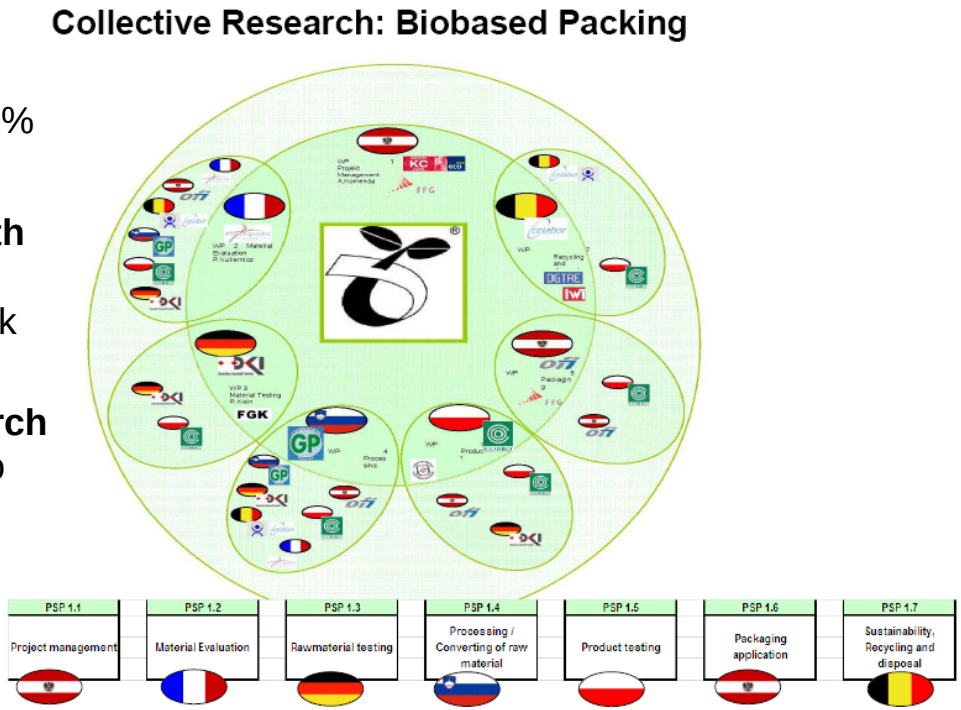
- Get more products; further research on bioplastics waste

Project example:

International collective research project „Bio-Packing“

www.bio-packing.at

- **Funding**:
  - CORNET (www.cornet-era.net) = coordinated national funds, in Austria: 60%
  - Companies 40% (cash and in-kind)
- Special benefit is the **linkage of companies with international research partners**, making it possible for individual project participants to work on their specific issues collectively.
- Teams from six countries are engaged in **research all along the value chain** from raw materials, to processing, to recycling and even to exploitation as energy source.
- Cluster management acts as **initiator**, **project coordinator / manager.**



Example for Product Development:

Bioplastics for Fresher Food - NAKU bags

- First “result” in the market
- Bags made of renewable resources (PLA polylactic acid)
- Breathable material to allow bread and vegetables to stay fresh longer
- Developed and manufactured in the region

Next steps:

- PLA bottle for mineral water
- PLA yoghurt cups
- PLA packaging films for food

Conclusions

- Also smaller Regions can contribute to overcome climate change
- Clusterinitiatives can play an important role
- Transformation of traditional in sustainable industry and region
- Fostering regional and international profile
- Initiating development of new strength in the region
- Regional excellence is foundation on which world-class cluster are built

Further Information

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