

## **From New Value Chains towards Value Added Networks - New Solutions for a Bio-based Industry ?**

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## BIO PRO Baden-Württemberg GmbH



Innovation and public relation agency (started 2003)

Non for profit, state owned organization:

100% ownership by the State of Baden-Württemberg

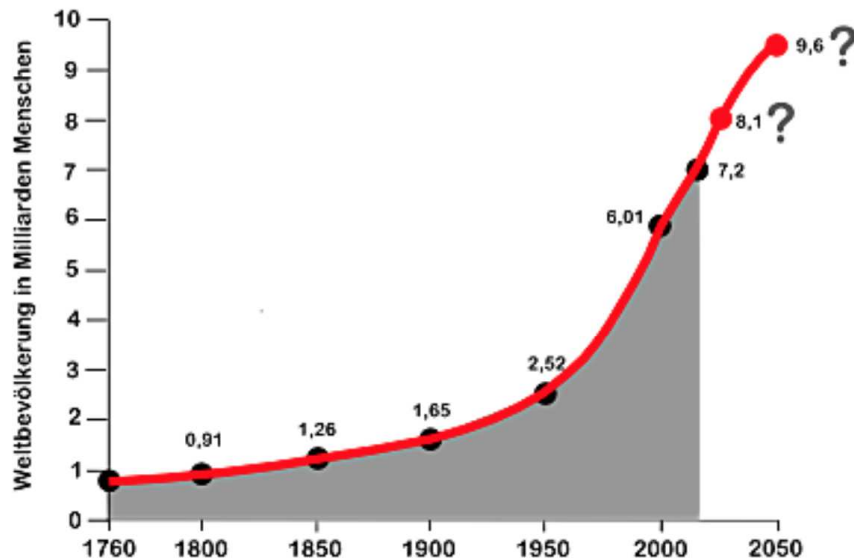
- 15 employees
- Activity fields: Support for healthcare industry (Pharma, Medtech, Biotech)
- Assembly of a biobased economy in Baden-Württemberg



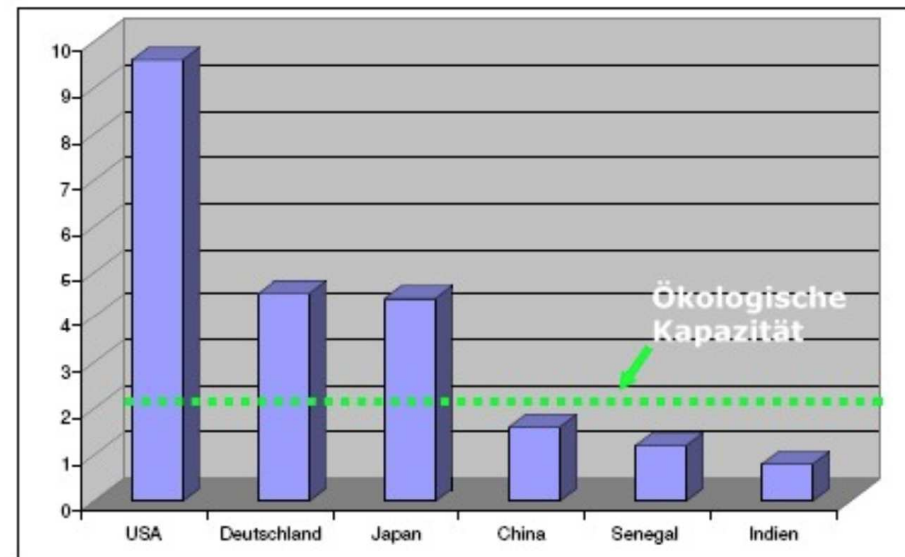
Strong interaction with:

- ✓ State Ministries,
- ✓ Federal Ministries
- ✓ Regional Clusters
- ✓ Universities
- ✓ R&D-organizations
- ✓ Companies

## How many humans can our planet accomodate? How may earths is the world population going to need?



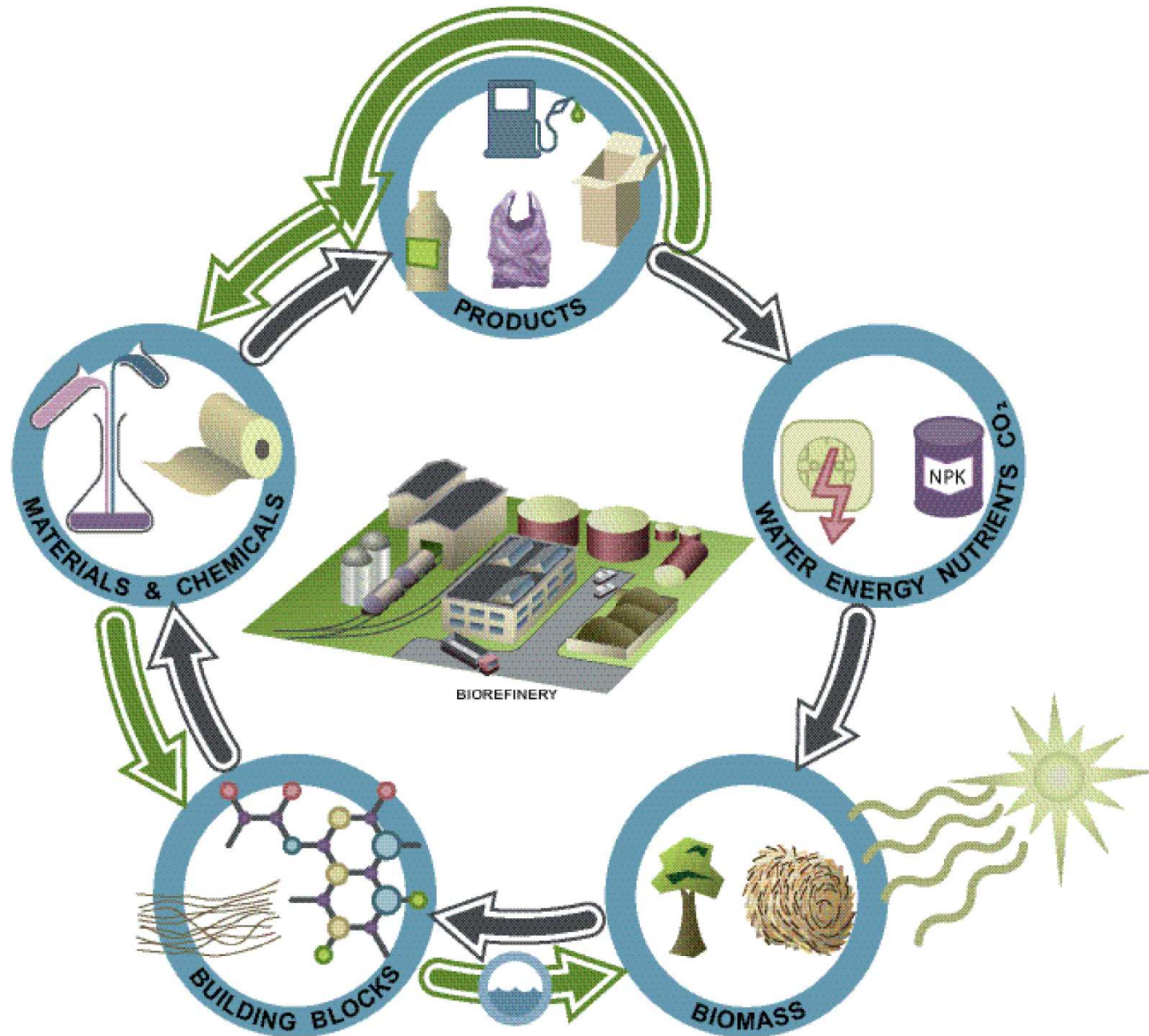
Zunahme der Bevölkerung im Industriezeitalter (>> [hier](#)) und mittlere Variante des UN *World Population Prospects* 2012 zur **Bevölkerungsentwicklung bis 2050**. Eigene Abbildung.



**Ökologischer Fußabdruck ausgewählter Länder** (angegeben ist der Fußabdruck in Hektar / Person; Daten aus dem Living Planet Report 2006 [siehe [unten](#)])



## Integrated bio-based value chains



Kerosene  
Industrial fuels  
Waxes  
Lubricants  
Greases



Stage 1. Reinforce innovation and extend current infrastructure across the economy



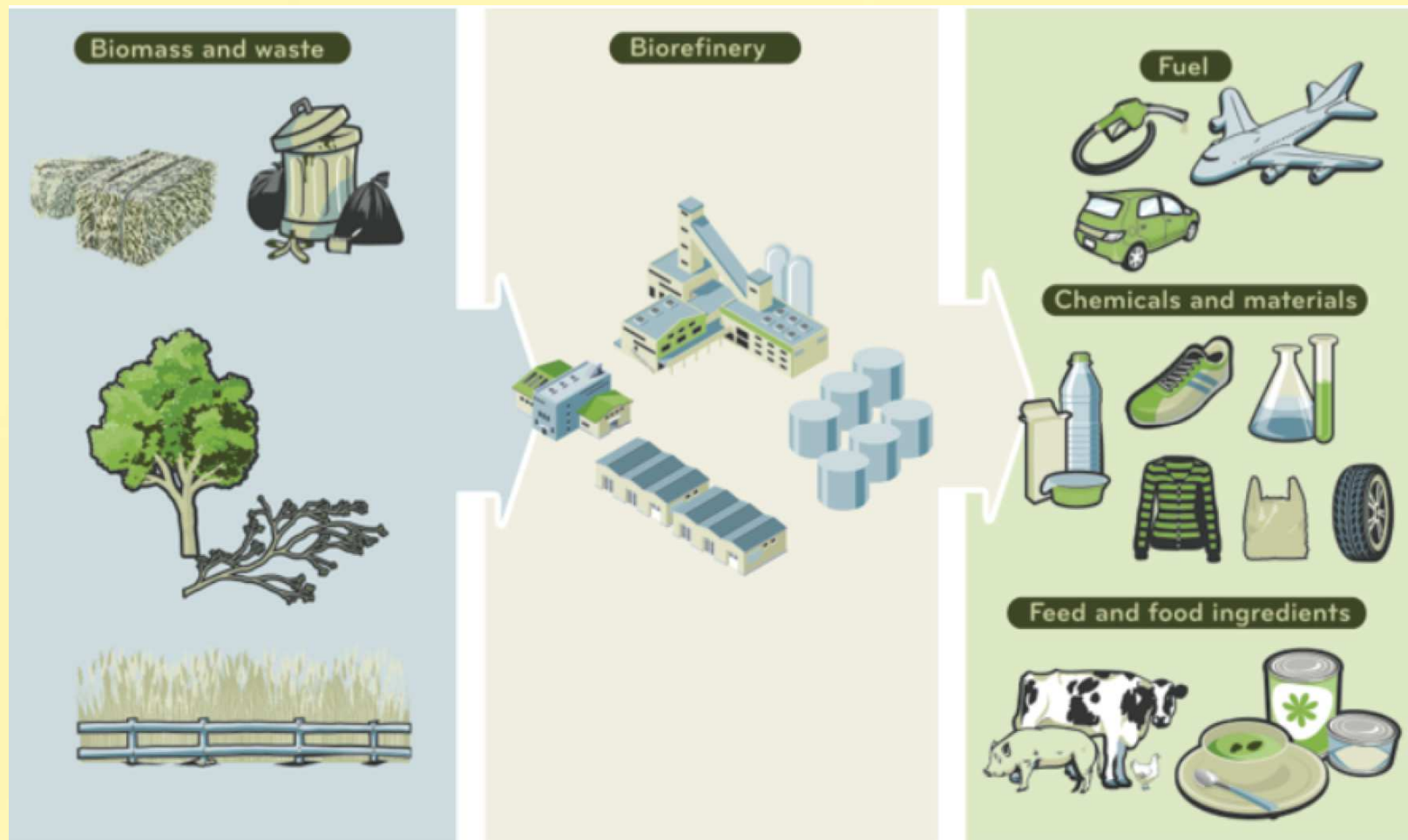
Stage 2. Build and strengthen value chains across industry sectors



Stage 3. Realise a connected biobased economy from research to end consumer



## Final stage: fully integrated economic system



# Bioeconomy won't work without a circular economy.....

## PRINCIPLE 1

1

Preserve and enhance natural capital by controlling finite stocks and balancing renewable resource flows

Renewables   Finite materials

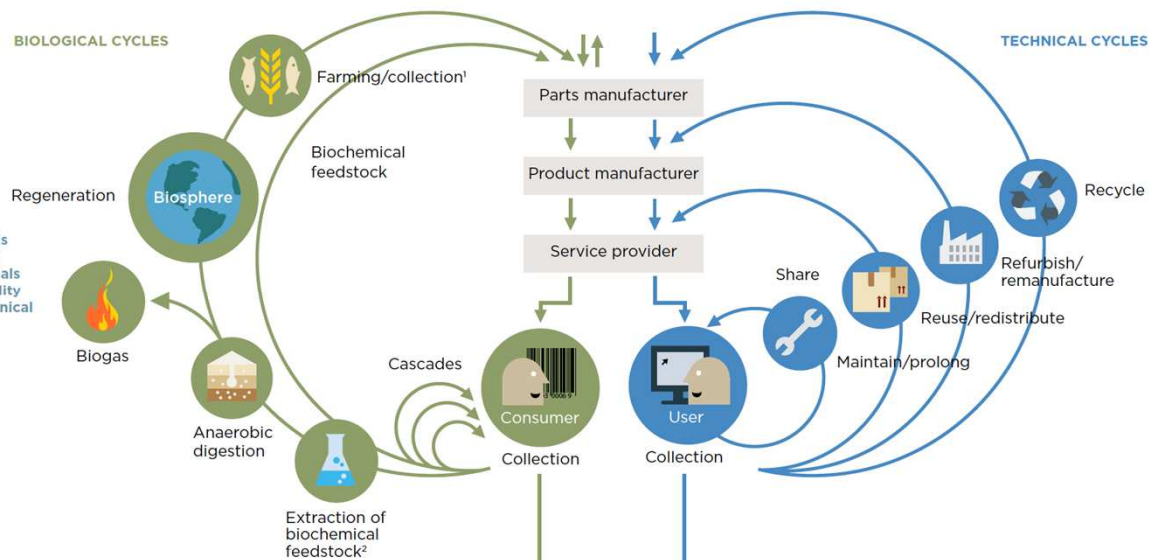
Regenerate Substitute materials Virtualise Restore

Renewables flow management

Stock management

## PRINCIPLE 2

Optimise resource yields by circulating products, components and materials in use at the highest utility at all times in both technical and biological cycles



## PRINCIPLE 3

Foster system effectiveness by revealing and designing out negative externalities

Minimise systematic leakage and negative externalities

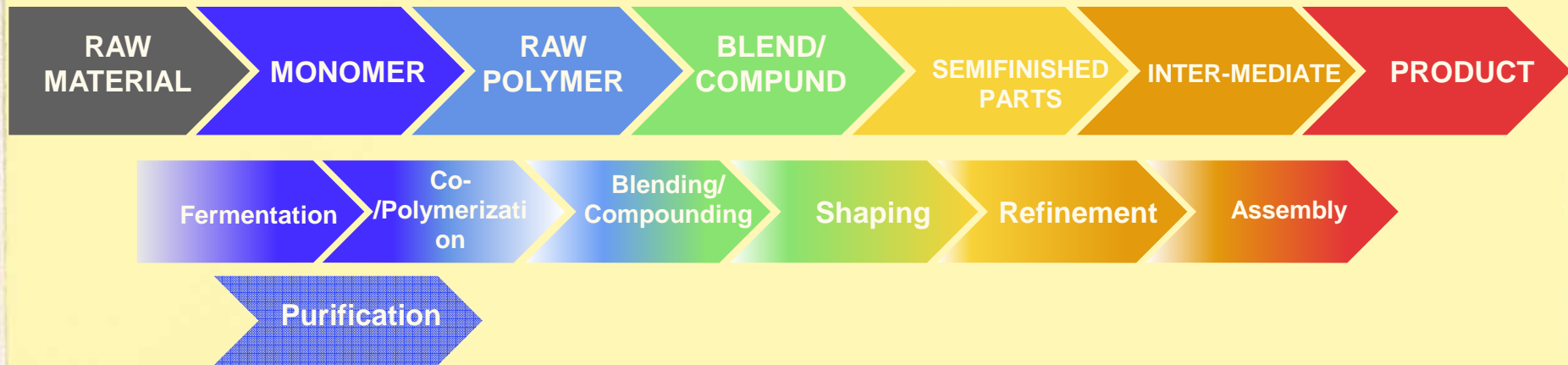
1. Hunting and fishing  
2. Can take both post-harvest and post-consumer waste as an input

Source: Ellen MacArthur Foundation and McKinsey Center for Business and Environment; Adapted from Braungart & McDonough, Cradle to Cradle (C2C).

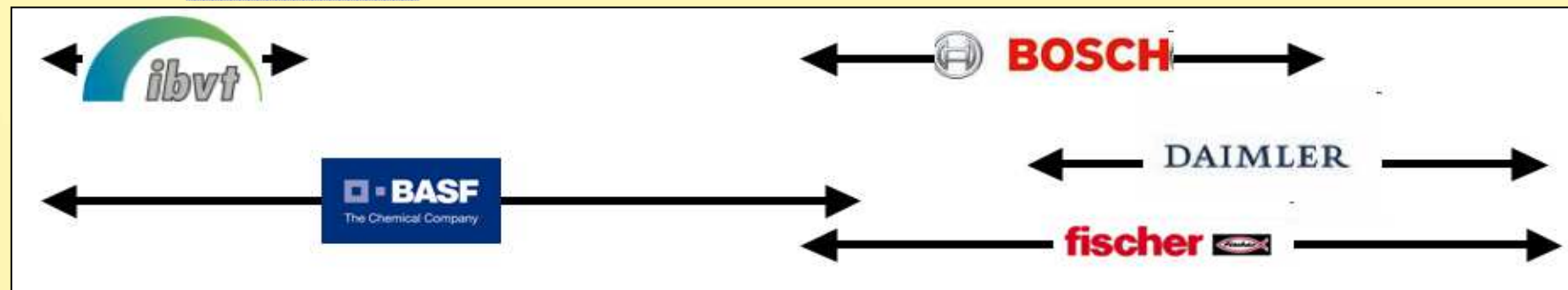
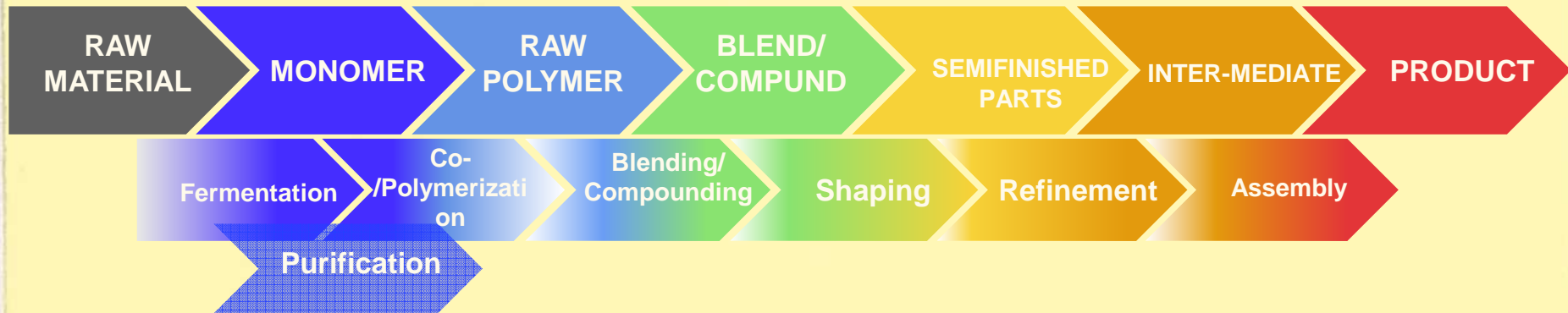


Janez Potocnik, International Resource Panel & former EU Commissioner  
auf dem 1. Global Bioeconomy Summit, Berlin, 2015

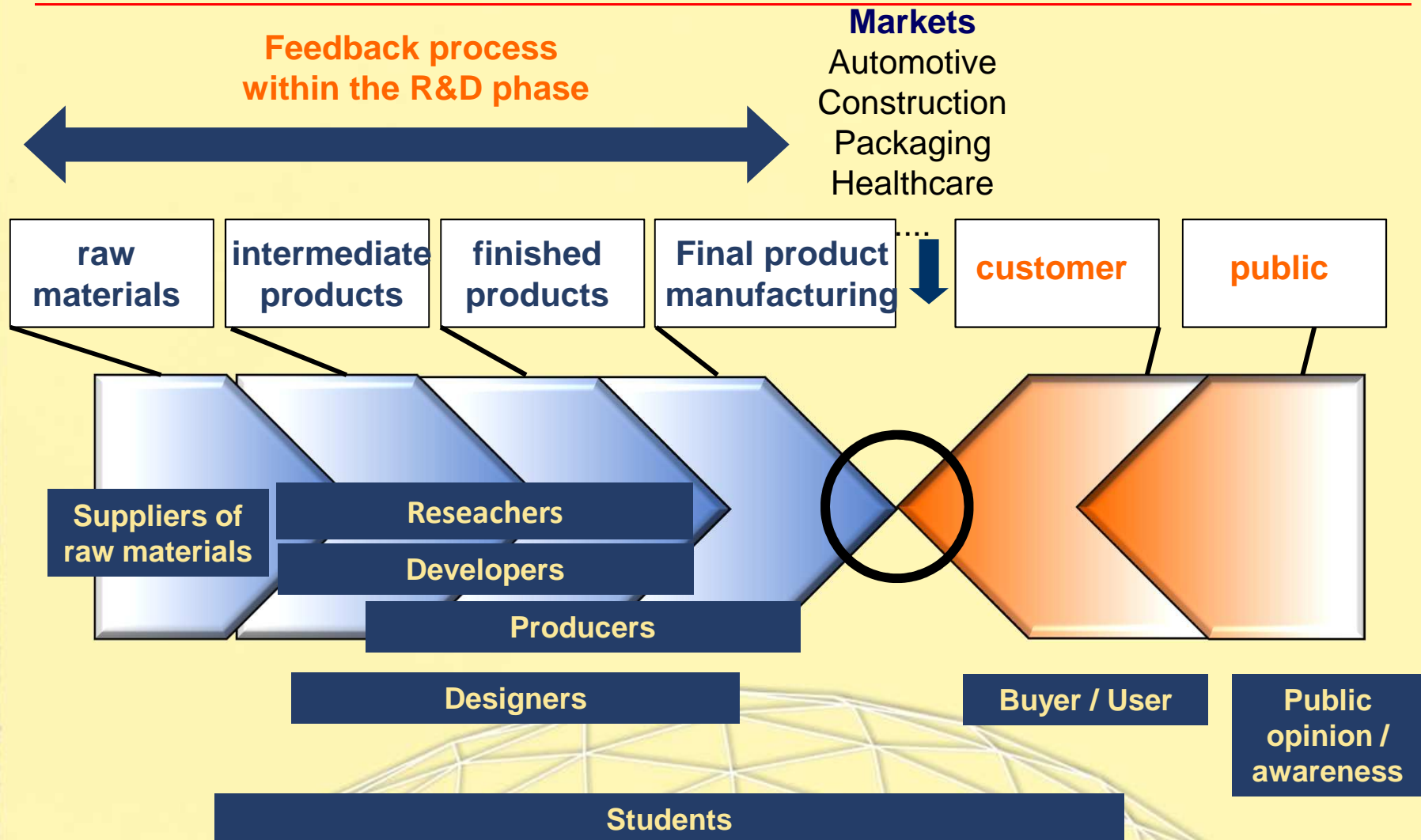
## Working in value added chains: replacing fossile against renewable ressources



## Example of one of our projects (2007 to 2012)



## Integration of all stakeholders within value added chains



## Expamples of biobased plastic products in bioeconomy



**Another value added chain in bioeconomy:  
biogas / biomethane mobility**

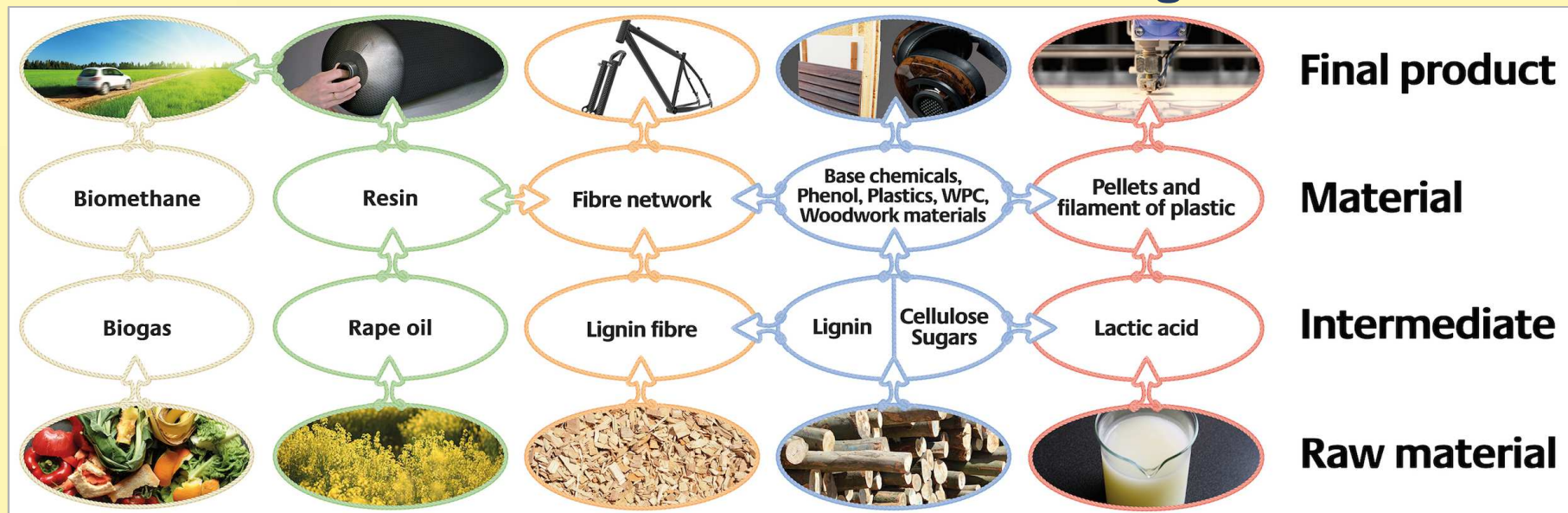


As long as biobased products are touching markets in a singular setup, the real benefit in comparison towards fossile based products can only hardly be reached



## The solution: Combining value added chains to a value added network:

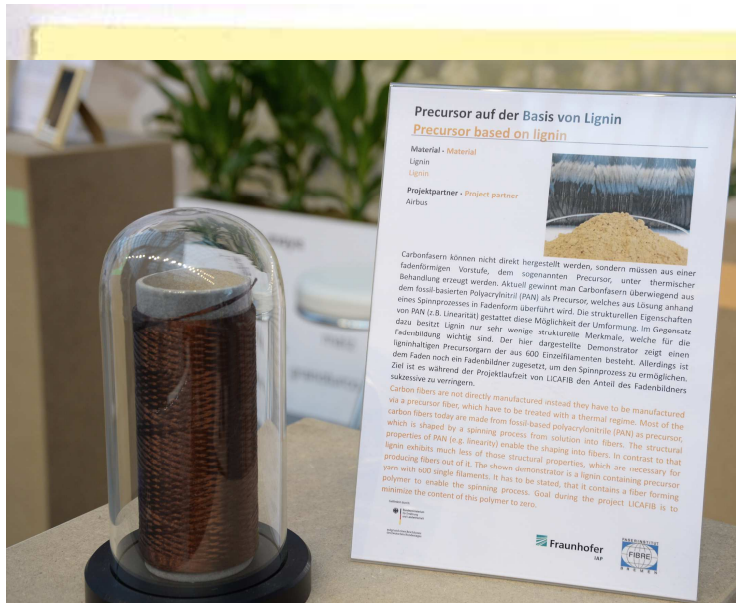
### Sustainable fuel and materials concept for future car manufacturing



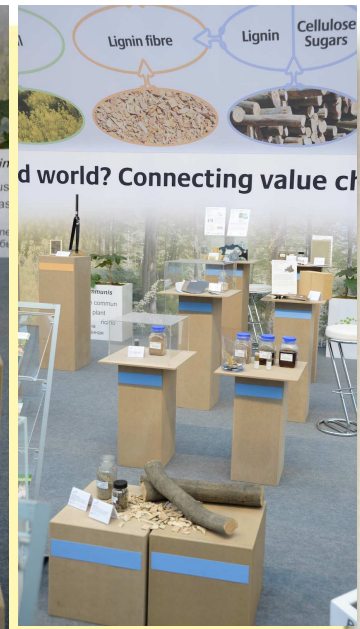
## A first attempt to achieve this: the bioconcept car



Source: FNR, Four Motors



# Display of such chain and components at Achema 2015





**Thank you for your attention !!!**

**For more information please see:**

**[www.bio-pro.de](http://www.bio-pro.de)**

**and**

**[www.biooekonomie-bw.de](http://www.biooekonomie-bw.de)**

