

# Industrial Ecology as side effect

## The case of Schkopau, Germany



Established in 1998

Area: 150 ha

14 companies in chemical and plastics industry located around Dow as anchor company

ValuePark® privately owned and organized by Dow Olefinverbund GmbH

### Initial goal: enhance economic competitive advantage

- value-creating network: close cooperation of specialized companies in supply chain
- economies of scale of sharing services and resources

### 'Traditional' benefits

- Common and tailored infrastructure (incl. water, waste, safety installations)
  - Shared R&D (Fraunhofer)
- Joint communication towards community / investors / decision makers
- Joint HR development
  - Close, reliable supply chain

### Achievement of goal & ecological side-effects

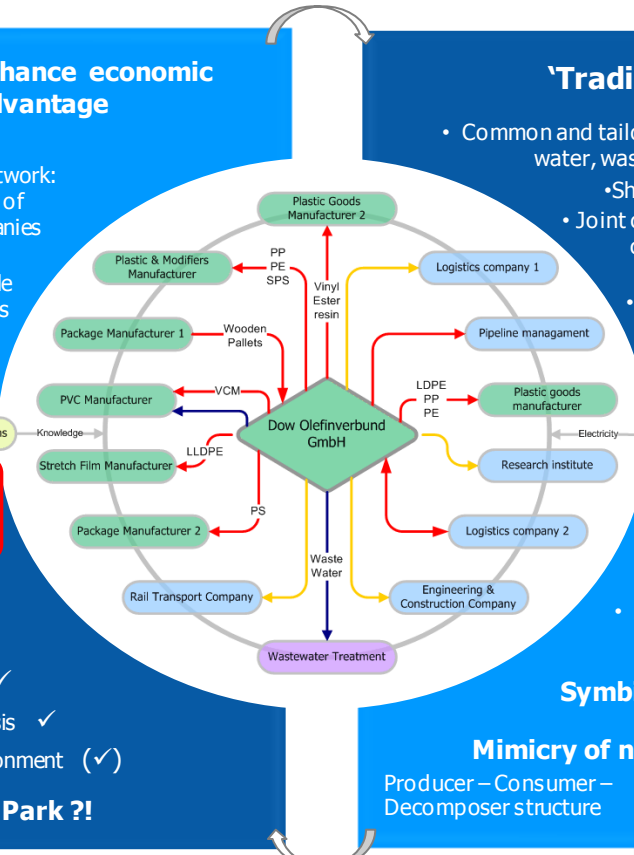
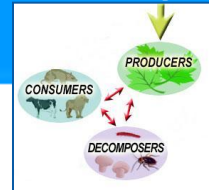
'K.O. - Criteria' (IE-wiki 2010)

- Diversity ✓
- Industrial focus ✓
- Industrial Symbiosis ✓
- Information Environment (✓)

### Eco-Industrial Park ?!

### Symbiotic side-effects

Producer – Consumer – Decomposer structure

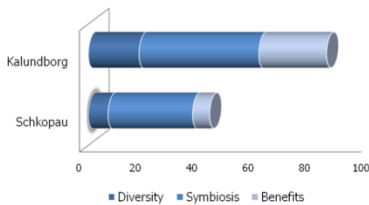


Legend:  
 ↑ Water flow  
 ↑ Energy flow  
 ↑ Mass flow

High pressure polyethylene (HDPE); Linear low density polyethylene (LLDPE); polypropylene (PP); polystyrene (PS); polyethylene terephthalate (PET); Dispersion powder (DPP); Foamable polystyrene (EPS); Extruded polystyrene (XPS); Sodium hydroxide solution (NaOH); emulsion styrene-butadiene rubber (ESBR); BUNA TM polybutadiene rubber (PBR); solution rubber (SSBR, U-PBR)

### Plenty of room for improvement.

- By taking into account :
- the diversity of participating industrial sectors
  - the community involvement
  - the amount of symbiotic exchanges
  - the planned and achieved (reported) gains



the ValuePark® achieves only 50% of best-practice example Kalundborg.

Given the established structure and experience, an increase in symbiosis and sustainable performance can be feasible in the future if the participating companies agree and commit to this new goal.



Sources: ENEA (2010), Dow Olefinverbund GmbH (2007), Liwarska-Bizukojc et al. (2009), UNEP