

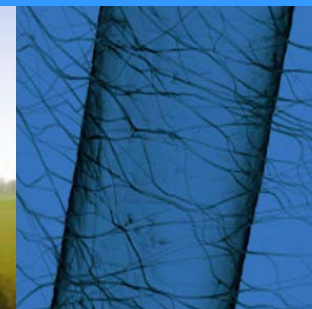
Greening Industrial Processes

Which Evolution Does the Chemical Industry Target

**European Technology Platforms Conference
May 11 & 12 2010 in Brussels**

Dr. P. Nagler
SusChem Board member
Innovation program

A European Technology Platform for Sustainable Chemistry



SusChem History

Kick off : Cefic / Europa Bio / Commission – end 2004
Partnership : Royal Society of Chemistry, Dechema,
Gesellschaft Deutscher Chemiker

Vision



March 2005

Strategic Research Agenda



Nov 2005

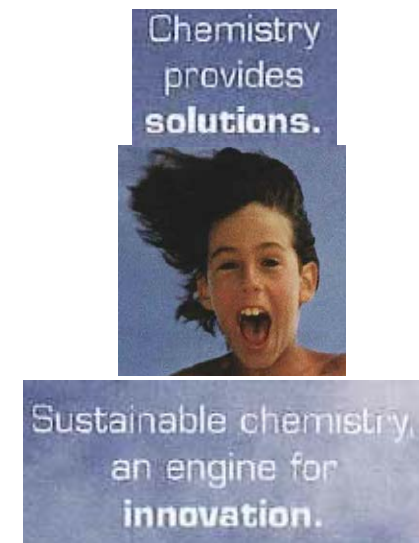
Implementation Action Plan



Dec 2006

+ Annual update

Drive towards Innovation





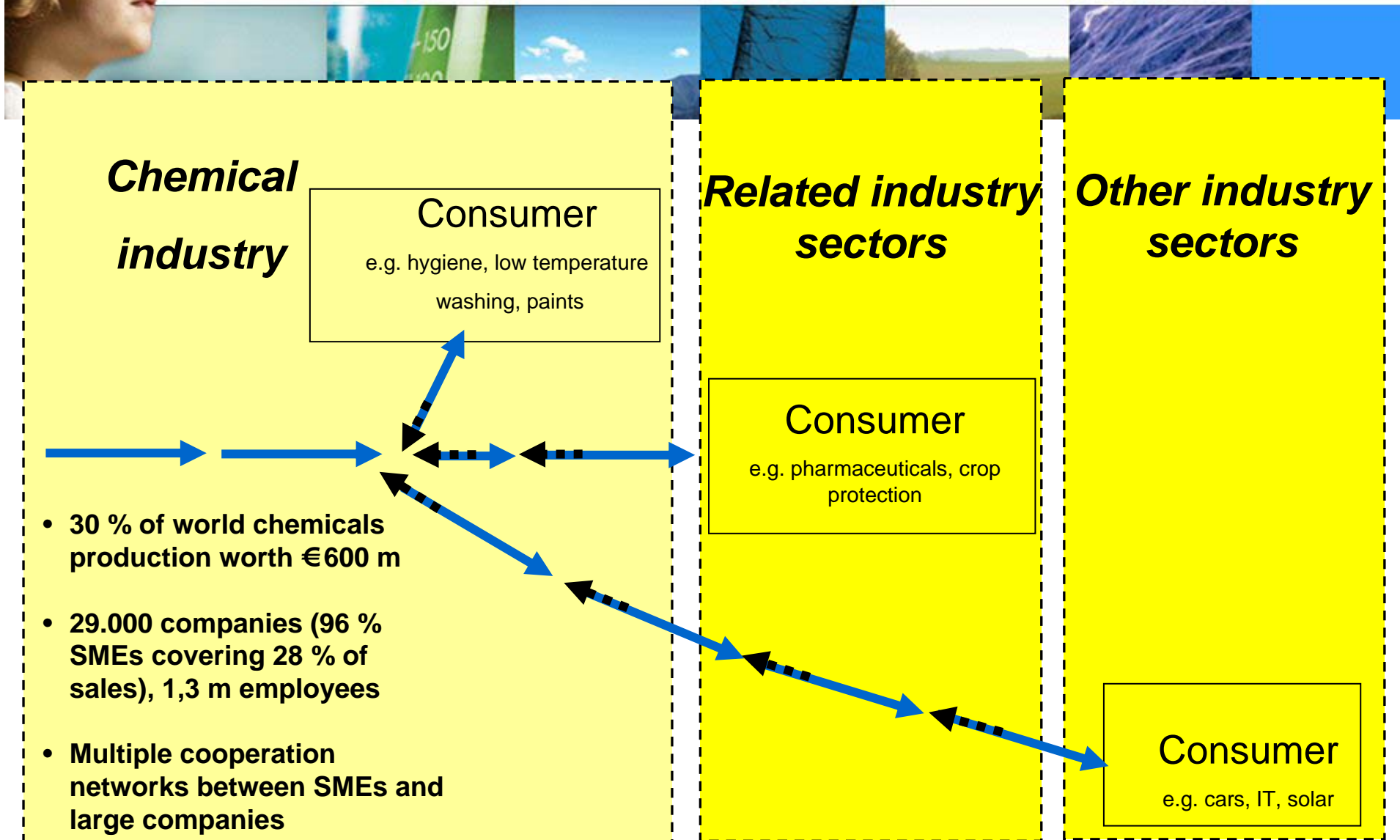
SusChem – from its Mission

SusChem Mission addresses specifically :

- **Cover Research and Innovation, to address Sustainable European Competitiveness**
- **Ensure partnership - Interaction along the Value Chain of Chemistry and Biotechnology**
- **Ensure alignment with societal challenges to underline Sustainability**

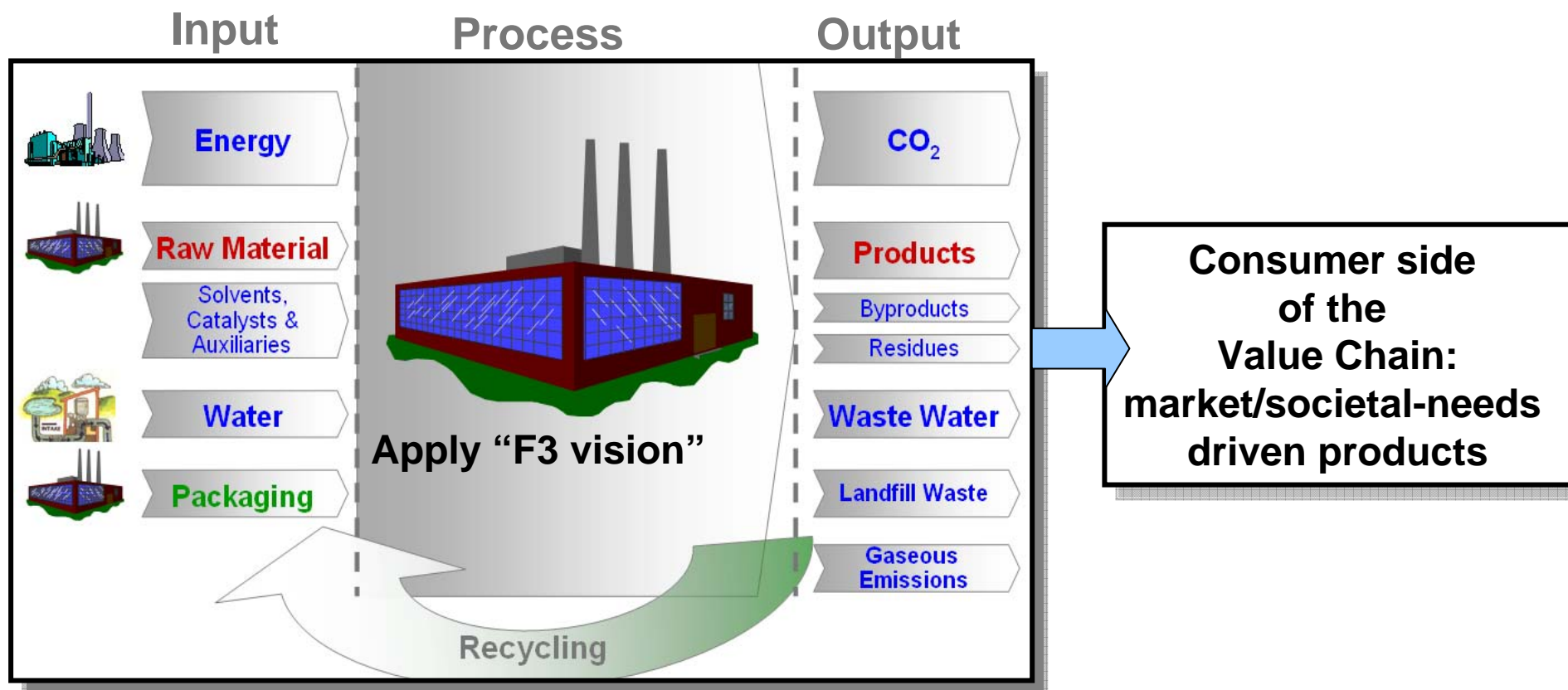
CREATING SUSTAINABLE SOLUTIONS TOGETHER

Who is the Chemical Industry ?



Sustainable Production

- Cover the complete range of resource consumption in production processes
- Position chemical industry process within the full value chain



Sustainable Production

QUALITY OF LIFE
SAFE FOOD SUPPLY
CLEAN ENVIRONMENT
LOW CARBON SOCIETY
ECONOMIC PROSPERITY
SUSTAINABLE MOBILITY
HEALTHY CITIZENS

A STURDY INNOVATION TREE
NEEDS STRONG

ROOTS

**SPEEDING UP INNOVATION
THROUGH PARTNERSHIPS**

The European Chemical Industry:
enabler of a sustainable future



www.cefic.be

The efficient use
societal challenge
Chemical industry
across the value

is one of the major
source efficiency

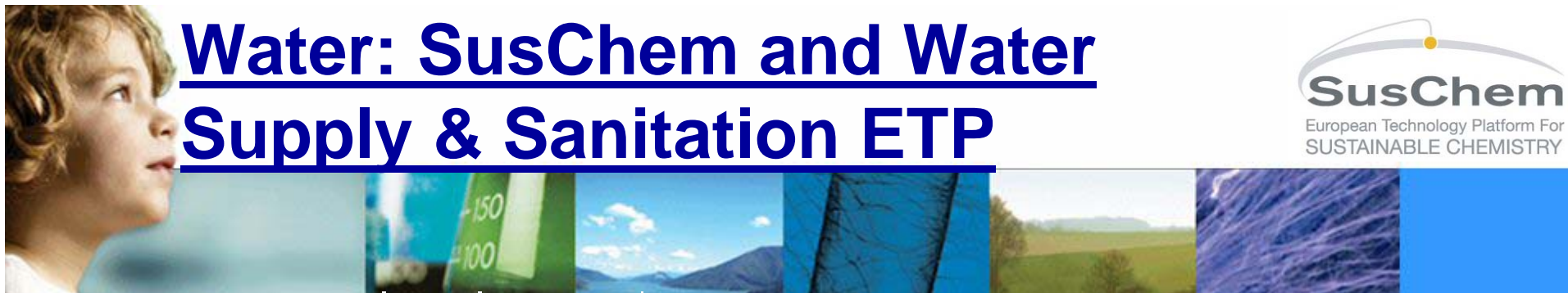
Resource	Pr
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Water :	>9
Renewable feedstock	~ re

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-30 % in coming
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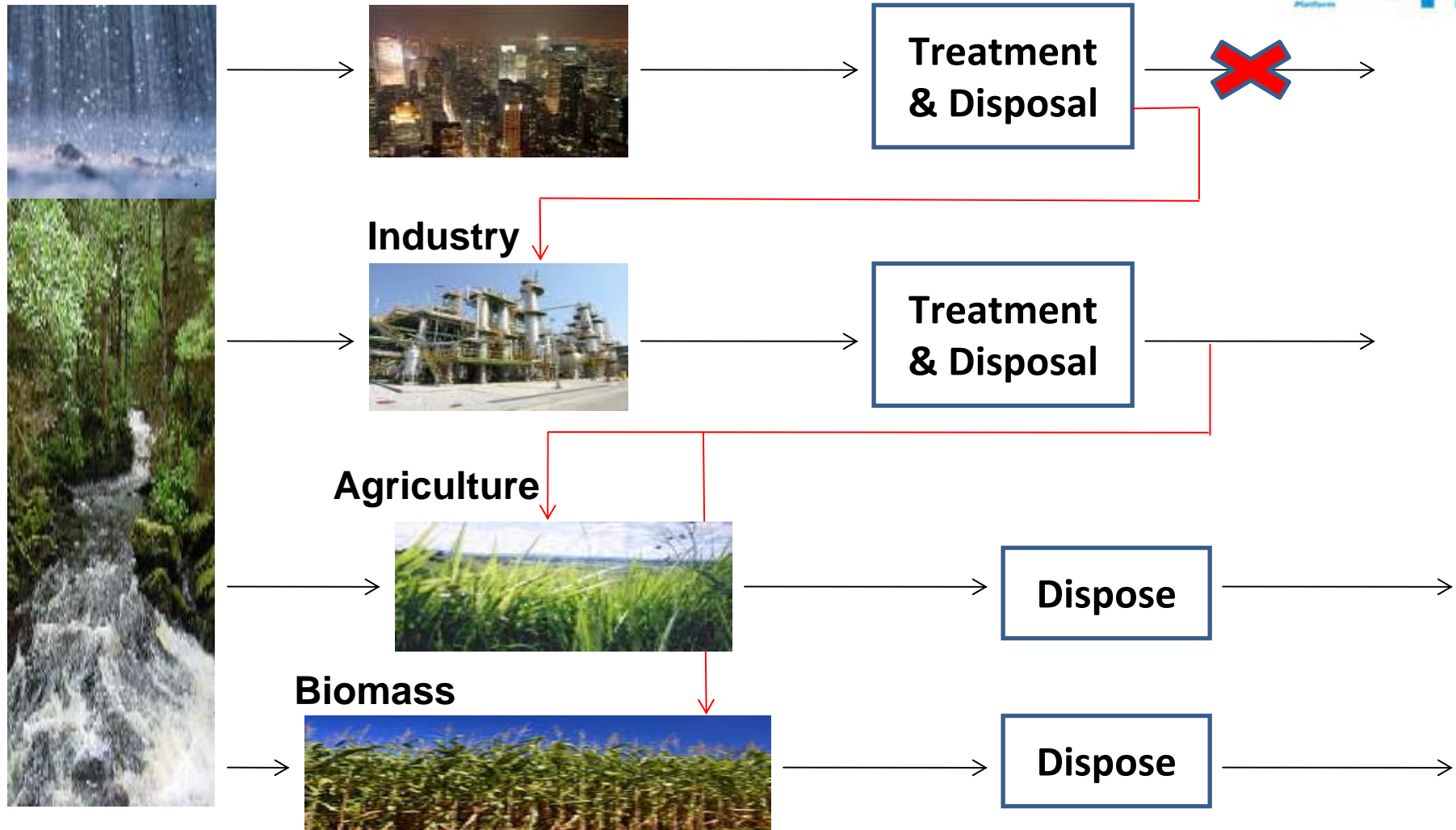
Water: SusChem and Water Supply & Sanitation ETP



Collaborated Research & Innovation towards
Societal Water Challenges

→ **Urban and Chemical Industry Water usage :**
a complementary view

Cascade



Materials – Value chain

SusChem Initiative: Hybrid Workshop, in collaboration with Dutch Polymer Institute and European Commission – NMP

March 2010, Luxembourg

- Value chain approach on 5 themes
 - automotive, solid state lighting, civil engineering, aeronautics/aerospace, solar energy
- Very successful event, with outcomes that can be used to define future PPP proposals. Formal EC report to be published in May.
- Example :
 - Mobility : define future concepts, based upon societal and sustainability criteria, and bring together the materials (new and existing) and processing requirements together.
 - Similar with new generations for Solid State Lighting and Solar Energy



Sustainability and Education

- To ensure the required skill needs, Sustainability and Value chain Innovation thinking needs stronger emphasis in the education program. E.g. targeted at higher education and training of workforce.
- Innovation management
- Interdisciplinary/intercultural skills
- Sustainability (e.g. water as “feedstock”)

Towards a knowledge-based economy



Needs for Successful PPPs

Value chain

- Supported by public sector at various stages of the innovation chain simultaneously
- Leadership and sustainability based incentives
- Focus on deliverables, not on process

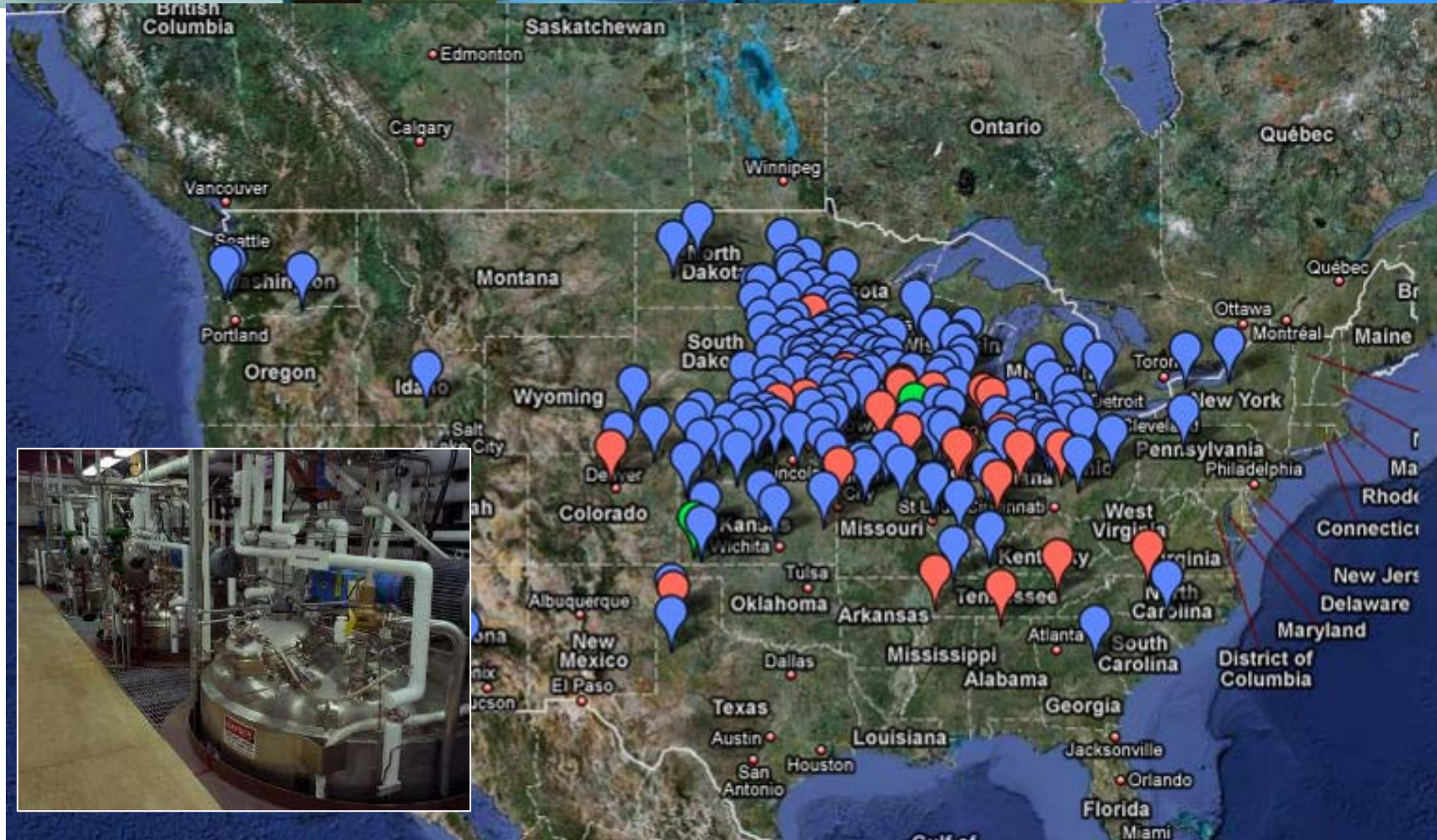
Speed

- EC can do (see recovery package)
- Long term vision and open innovation approach
- Technology transfer in EU
- Complementarity and simultaneity of policies (at EU and between EU and national)

Demonstration/proof of concept

- Access to risk capital
- Incentives needed for rejuvenation of existing to sustainable processes
- Innovation supportive state aid rules
- 30% funding on innovation of FP8

US EtOH plants (starch and cellulose)





www.suschem.org

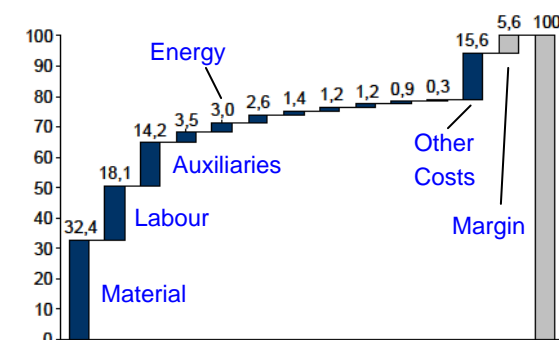
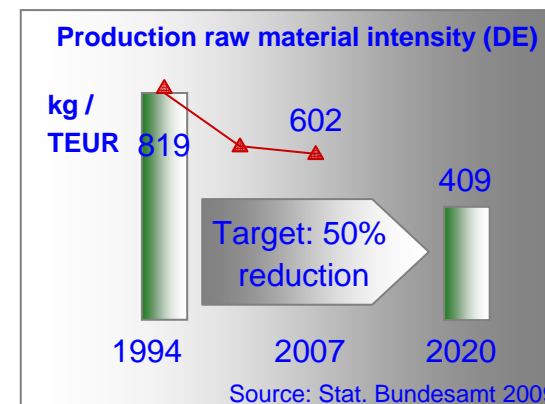


Back up

Resource efficiency improvement

→ key success factor for the chemical industry

- Decreasing raw material availability and increasing prices will require decoupling of economic growth from resource consumption
- Ambitious political targets have been set for the raw material intensity of industrial productions e.g. sustainability plan in Germany (1994 → 2020: - 50%)
- In the chemical industry raw material is the largest share of manufacturing costs (32% raw material cost vs. 3% energy costs)*



Manufacturing costs distribution in the chemical industry*

*Source: „Zukunft des Chemiestandorts Deutschland“ TCW München, 2009

Vision for Sustainable Production in light of Societal challenges

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