

## Clean technologies in key sectors

# Innovations and markets for resource efficiency

## **Environment - Innovation - Employment**

If we want the global community to survive in a sustainable way, we must start using our resources more efficiently. Increased material efficiency means lower costs and less of a burden on the environment.

All over the world, the environmental technology sector is experiencing strong growth.

Environmental technology makes – and will continue to make – a sizeable contribution to economic growth and employment.

Environmental technology is increasingly becoming an important factor in countries' economies.

There is a need for environmental policy to focus increasingly on eco-innovation.

Key internal success factors for environmental innovation are e.g.

- a skilled workforce;
- corporate investment in research and development;
- good access to financial resources.

Source: Innovative environmental growth markets from a company perspective, Research Project on behalf of the Federal Environment Agency by Roland Berger Strategy Consultants (UFOPLAN 206 14 132/04)

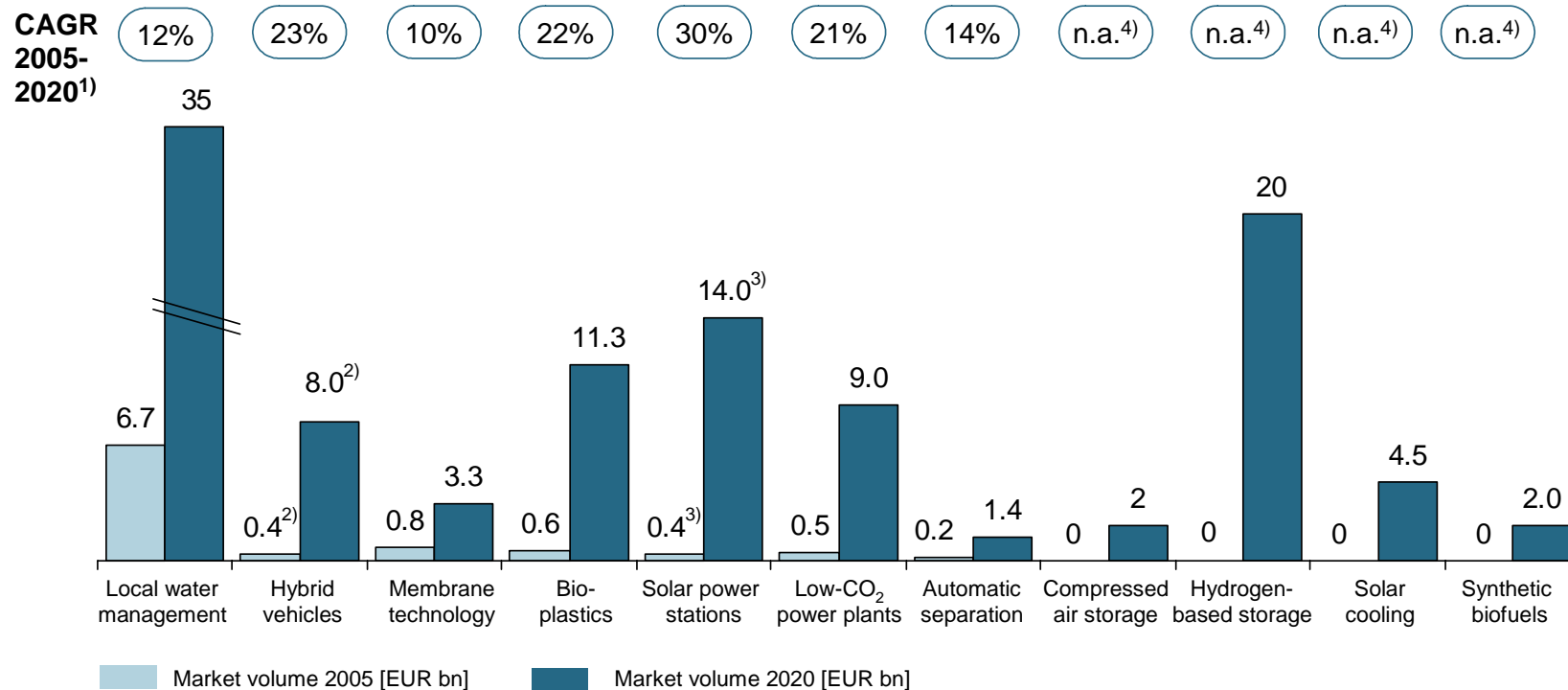
## World market volume of environmental technologies



Overall market volume is estimated at around EUR 1 trillion worldwide (2006)

By 2020, total market volumes are expected to reach a value of EUR 2.8 trillion

## Innovative environmental growth markets 2005 - 2020



1) Compound annual growth rate 2) Number of vehicles, as forecast for cost not feasible 3) Megawatts of installed capacity, as forecast for installation cost per megawatt not feasible 4) Not applicable, as basis = 0

Source: Survey of companies, 2007

Source: Innovative environmental growth markets from a company perspective, Research Project on behalf of the Federal Environment Agency by Roland Berger Strategy Consultants (UFOPLAN 206 14 132/04)

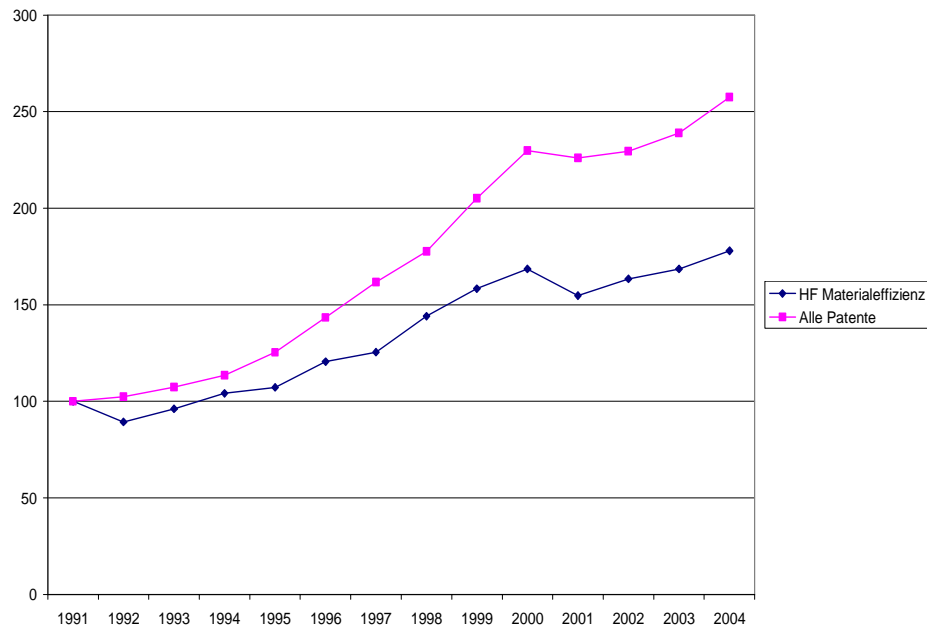
## Environmental Technologies in Germany

The Green Tech Environmental Technology Innovation Atlas was published in 2007.

Six “lead markets” for environmental technology form the focus of “GreenTech made in Germany”:

- Environmentally friendly power generation and storage (23 %)
- Energy efficiency (15 %)
- **Material efficiency (4 %)**
- Waste management and recycling (41 %)
- Sustainable mobility (2 %)
- Sustainable water management (15 %)

## Patent analysis: Material efficiency

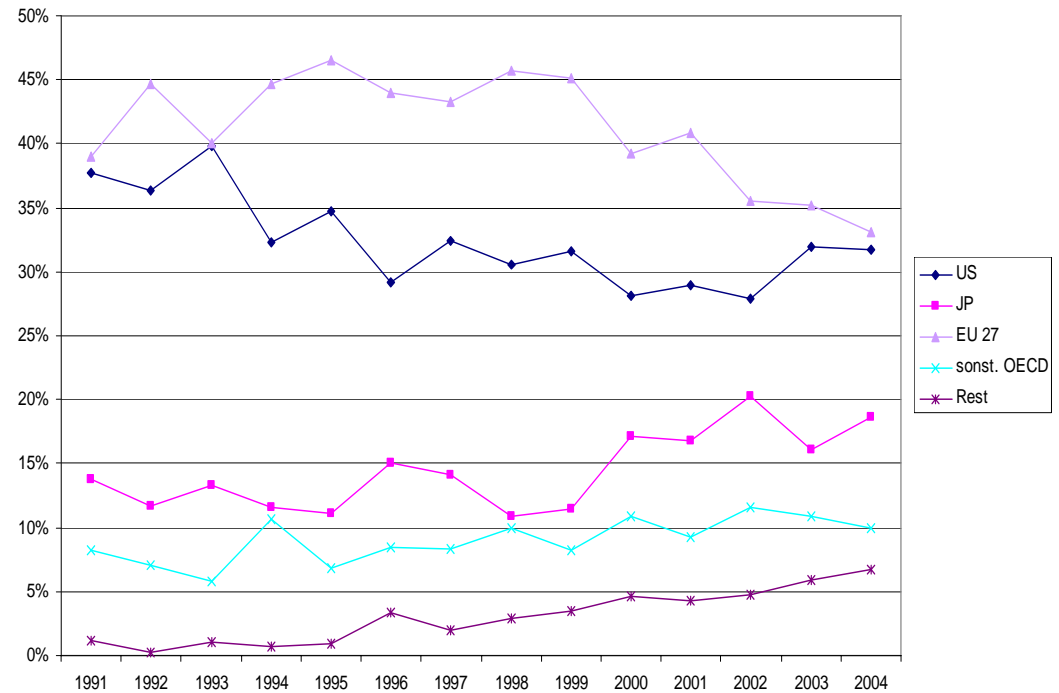
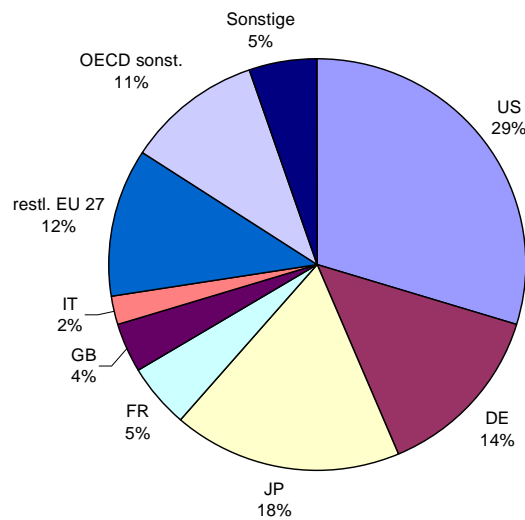


**Patent analysis is one indicator for innovative activity which allows**

- identification of innovative markets/ technologies
- comparison of innovative activity between different technologies
- comparison of innovative activity in different countries

Source: Fraunhofer ISI (forthcoming)

## Patent analysis: Material efficiency



## Strategies to increase resource efficiency

All lifecycle stages of materials, products and services need to be considered, i.e.

- research and development;
- raw material extraction and processing;
- the production and use phases;
- the reintroduction of the materials into the material cycle.

Substitution of raw material only if consequences are examined and evaluated

- especially if renewable raw materials are to be substituted for non-renewable

Waste and recycling sectors in developed countries as well as exporters of goods should be encouraged to become active in developing countries

- to support infrastructures for improved global production of secondary raw materials

The informal sector should be included in efforts to improve environmental standard in developing countries

- especially small craft and “backyard” businesses



Thank you  
for your attention!

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