

Green Industrial Skills for a Better World

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Green Industrial Skills for Sustainable Development
Risks and Challenges for Least Developed Countries

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OUTLINE

- + The sustainable development challenge and opportunities
- + Green Industries - The market for environmental technologies
- + Industrial green skills - Progress and perspectives
- + Greening - Policy and strategies
- + Concluding remarks



The sustainable development challenge and opportunities

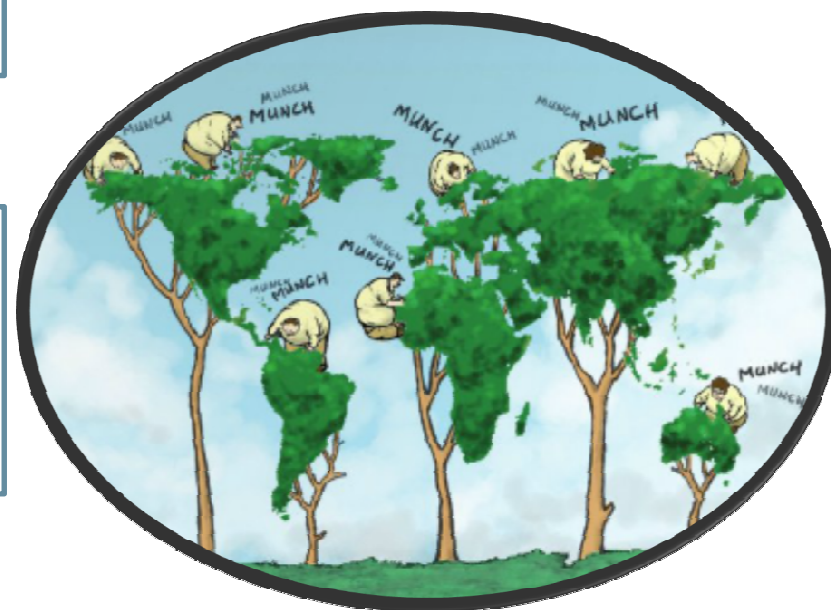
Key message: Current production systems are unsustainable

Most industries use more materials & energy than their production requires

Producers & consumers have adopted patterns of production /consumption with limited consideration to:

- Planet's available resources
- Assimilative capacity for emissions
- Population growth

Today's needs are jeopardizing the ability of future generations to meet theirs.





.....opportunities for **green skills & green economic growth:**

Global competition and best practices are leading enterprises to establish:

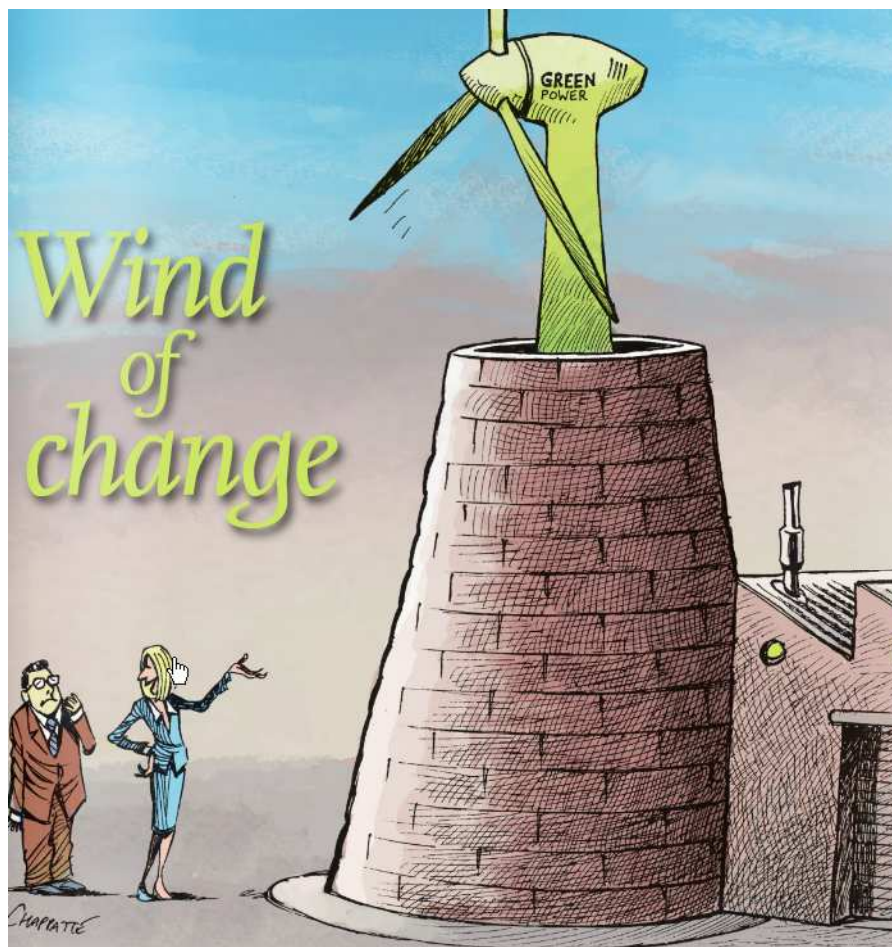
- Good industrial relations
- Improve working conditions
- Develop human resources

Pressure is coming from major lending institutions and investors to adopt standards on:

- Environmental concerns
- Social issues

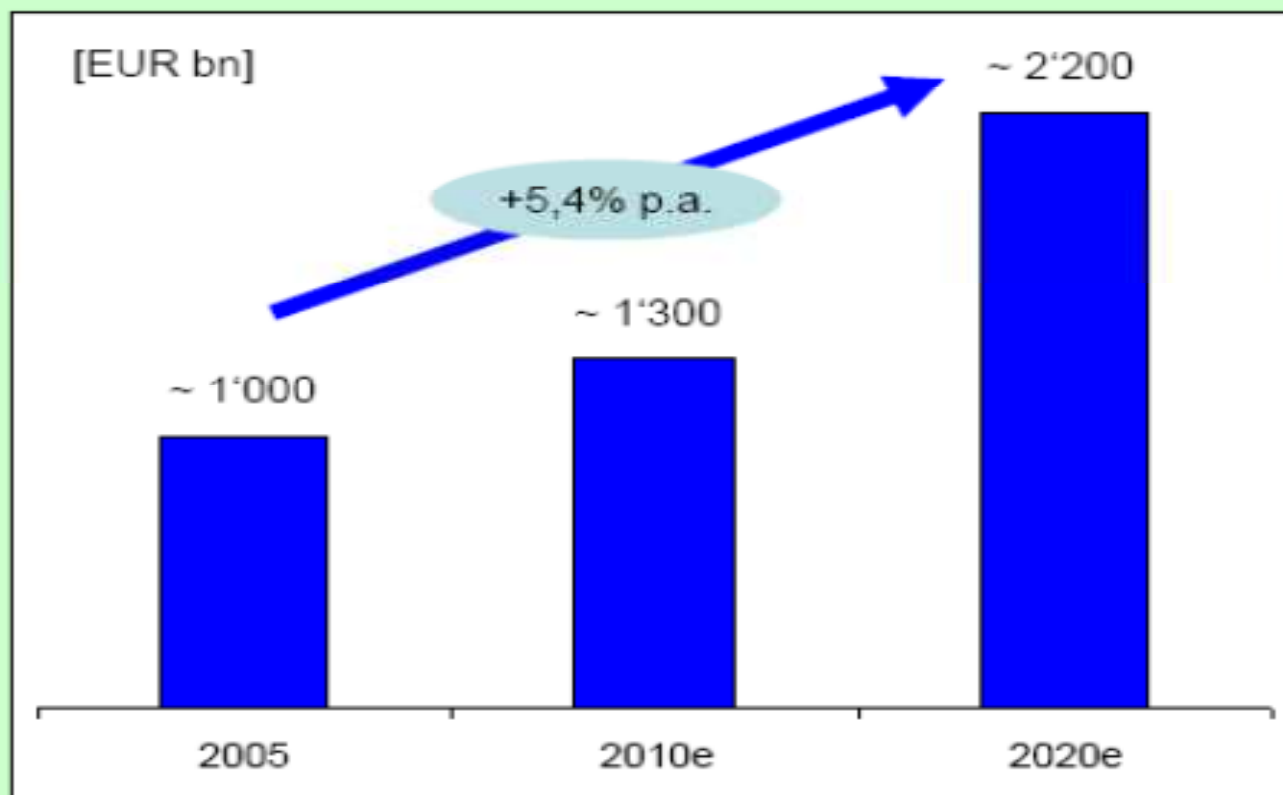
Government procurement specific standards for enterprises:

- Environment
- Occupational health/safety



Green Industries...The market for environmental technologies

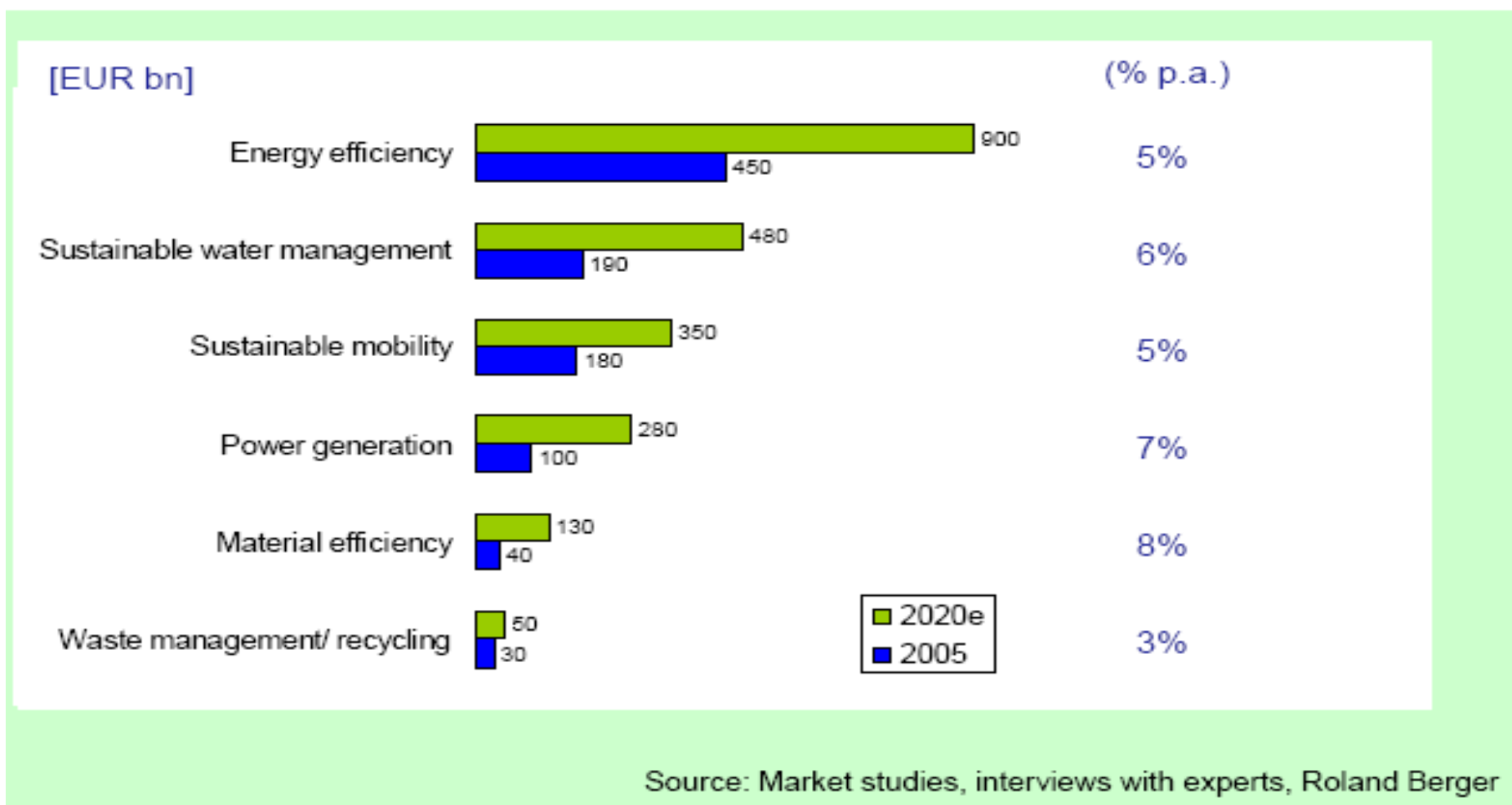
Global market volume for environmental technologies will more than double (2005 – 2020)



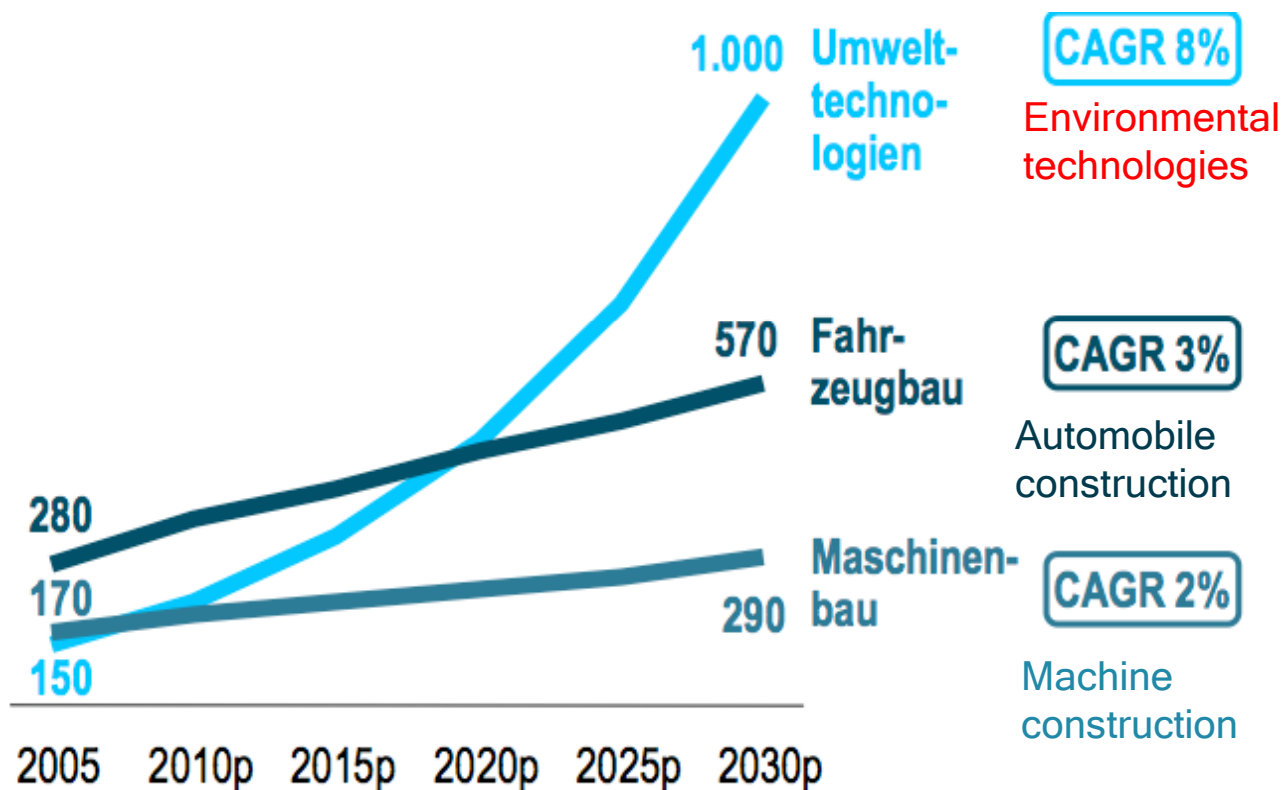
New projection based on actual estimated figures: EUR 3'100 bn by 2020 (Roland Berger 2009)

Source: Roland Berger (2005)

Estimated growth of the global market volume for environmental technologies (2005 – 2020)



Predicted turnover for German environmental technologies (in € 1000m)



Quelle: Prognos 2006, BMU Unternehmensbefragung 2006, durchgeführt von Roland Berger Strategy Consultants



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Industrial green skills...Progress and Perspectives



Green energy



Electrical cars



Wind energy



Smart water



Solar energy



Smart grid



**Green Jobs are in all sectors:
Contribute directly to
preserving or enhancing
environmental quality.**

.....



Machines building



Eco-cities/
eco-construction





Some perspectives of green jobs in industry:

Sector	Greening potential	Green job progress to-date	Long-term job potential
Steel	Good	Fair	Fair
Aluminum	Good	Fair	Fair
Cement	Fair	Fair	Fair
Pulp and paper	Good	Fair	Good
Recycling	Excellent	Good	Excellent

Source: Green Jobs – Towards decent work in a sustainable, low-carbon world, UNEP/ILO/IOE/ITUC (2008)



Green jobs intensity for selected activities and products

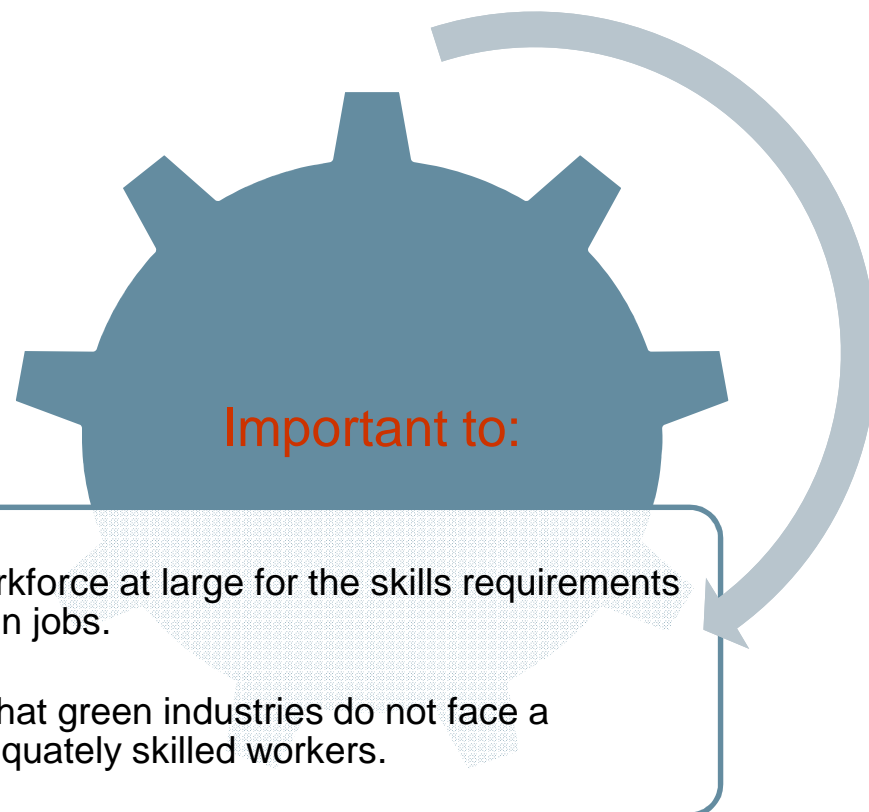
	Job intensity
Building refurbishment	High
Switch to cleaner cars	Moderate
Wind and solar energy	High
Smart metering	High
Battery development	Moderate
Clean energy R&D	Moderate
Carbon capture and storage	Low

*IEA, 2009



Key message: Shortages of skilled labour could put the brakes on green expansion...(UNEP, 2008)

- **USA:** The green economy faces labour shortages in sectors such as manufacturing, construction and installation.
- **Germany's** renewable industry is suffering from a lack of qualified employees.






Greening – Policies and strategies



Key message: Industry and Governments need to work together to **research, develop, demonstrate and deploy** enabling policies to promote green skills and green economical growth.

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Green economical growth: Clear policy signals are essential

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Green skills response strategies have to be incorporated into large policy programmes:



1. Green economical growth: Clear policy signals are essential

- ✓ Changing price signals e.g. environmental taxes, emissions trading
- ✓ Green stimulus packages
- ✓ Standards and regulation
- ✓ Deployment of cleaner technologies along value chains with incentives to facilitate the participation of SMEs
- ✓ Broadening and deepening Innovation Partnerships....



Sample **Green stimulus** packages

- United States - Green Jobs Act (2007):

Offers grants from the Federal Government to entities to carry out training leading to the development of an energy efficiency and renewable energy industries workforce.



2. Green skills response strategies have to be incorporated into large policy programmes:

- ✓ Educational policies
- ✓ Research and innovation
- ✓ Environmental strategies
- ✓ Green restructuring of traditional industries....



Concluding remarks

- Current production systems are unsustainable – Need for a transition to resource efficient and low carbon industries.
- Opportunities for green skills & green economic growth.
- Important to prepare the workforce at large for the skills requirements inherent in green jobs.
- Green skills response strategies have to be incorporated into large policy programmes.

Statements about Green Economy: Triple Crisis Management

„Invest in a clean energy economy and help create 5 million new green jobs“.

„We need a green New Deal to meet our carbon emissions targets and create jobs in renewable energy and green technology.

The world was in extraordinary times, in the midst of a major financial crisis, on the cusp of a serious energy crisis and at the same time, stoking the fire of a potentially catastrophic climate crisis“



Barack Obama, President of the United States, 2008



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Thank you for your attention

