



Fighting the global recession and global warming
simultaneously

Towards a global low carbon economy

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Ensuring that national recovery programmes are „green“, low carbon oriented makes sense , because.....



- climate change poses a far more serious threat to the global economy, human development and international security in the medium term than the current global economic crisis (irreversibility)
- global warming is accelerating even faster than predicted in the IPCC 2007 report: fighting climate change is a short term challenge - parallel to the recession!
- The window of opportunity to avoid dangerous climate change is small (five to ten years) - we need to start now; ... if not: stimulus packages will produce high-carbon path dependency and higher mitigation costs in the future
- IEA predicts sharply increasing prices for fossil fuels after the economic crisis (2012: 120 - 200 US \$/barrel): building a low carbon energy system is key to ensure energy security

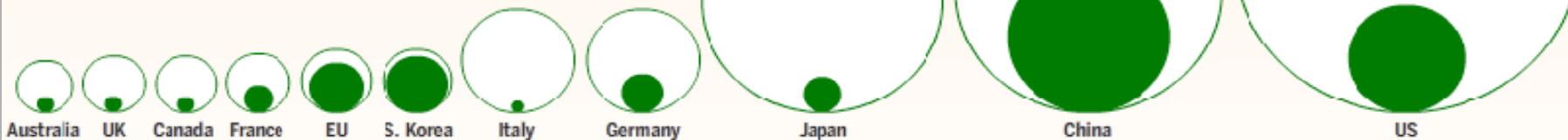
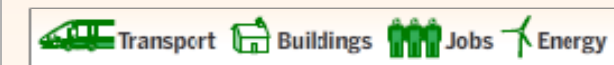
We are investing much more money in old structures than in future oriented sectors ... We are not on track!



Which country has the greenest bail-out?

By volume

By percentage



Germany

Amount spent on fiscal stimulus: **\$104.8bn**

Amount spent on green measures: **\$13.8bn**

Globally: \$ 2,7 trillion

Germany is an established leader in the drive towards creating a low carbon economy. Its two fiscal stimulus packages, with a combined value of €80bn, give energy efficiency a particular boost.

The packages, announced in November 2008 and January 2009, provide €3bn in subsidies for household repairs to increase efficiency and €500m in loans to promote the development of low-carbon engines.

The stimulus deals are not strong on renewable energy, but this is partly because Germany's solar and wind installations are already well developed.

Like Italy and France, Germany will award consumers a "scrappage" bonus to encourage them to replace vehicles that are over nine years old and likely to be less fuel-efficient. €2bn will be invested in public transport.



Table 1: Green elements of economic stimulus plans¹²

Country/Region	Fund \$b	Period	Green Fund \$b	% Green
Asia Pacific				
Australia	26.7	2009–12	2.5	9.3%
China	586.1	2009–10	221.3	37.8%
India	13.7	2009		0%
Japan	485.9	2009–	12.4	2.6%
South Korea	38.1	2009–12	30.7	80.5%
Thailand	3.3	2009		0%
Subtotal Asia Pacific	1,153.8		266.9	23.1%
Europe				
EU	38.8	2009–10	22.8	58.7%
Germany	104.8	2009–10	13.8	13.2%
France	33.7	2009–10	7.1	21.2%
Italy	103.5	2009–	1.3	1.3%
Spain	14.2	2009	0.8	5.8%
UK	30.4	2009–12	2.1	6.9%
Other EU States	308.7	2009	6.2	2.0%
Subtotal Europe	634.2		54.2	16.7%
Americas				
Canada	31.8	2009–13	2.6	8.3%
Chile	4.0	2009		0%
US EESA	185.0	10 years	18.2	9.8%
US ARRA	787.0	10 years	94.1	12.0%
Subtotal Americas	1,007.8		114.9	11.4%
TOTAL	2,796		436	15.6%



Five characteristics of the transformation towards a low carbon economy

To achieve the 2 degree celsius goal we need to mobilize all existing potentials!
... „Changes on a huge scale are needed“

Datas from: Mc Kinsey (2009): Pathways to a global low carbon economy, London 2009

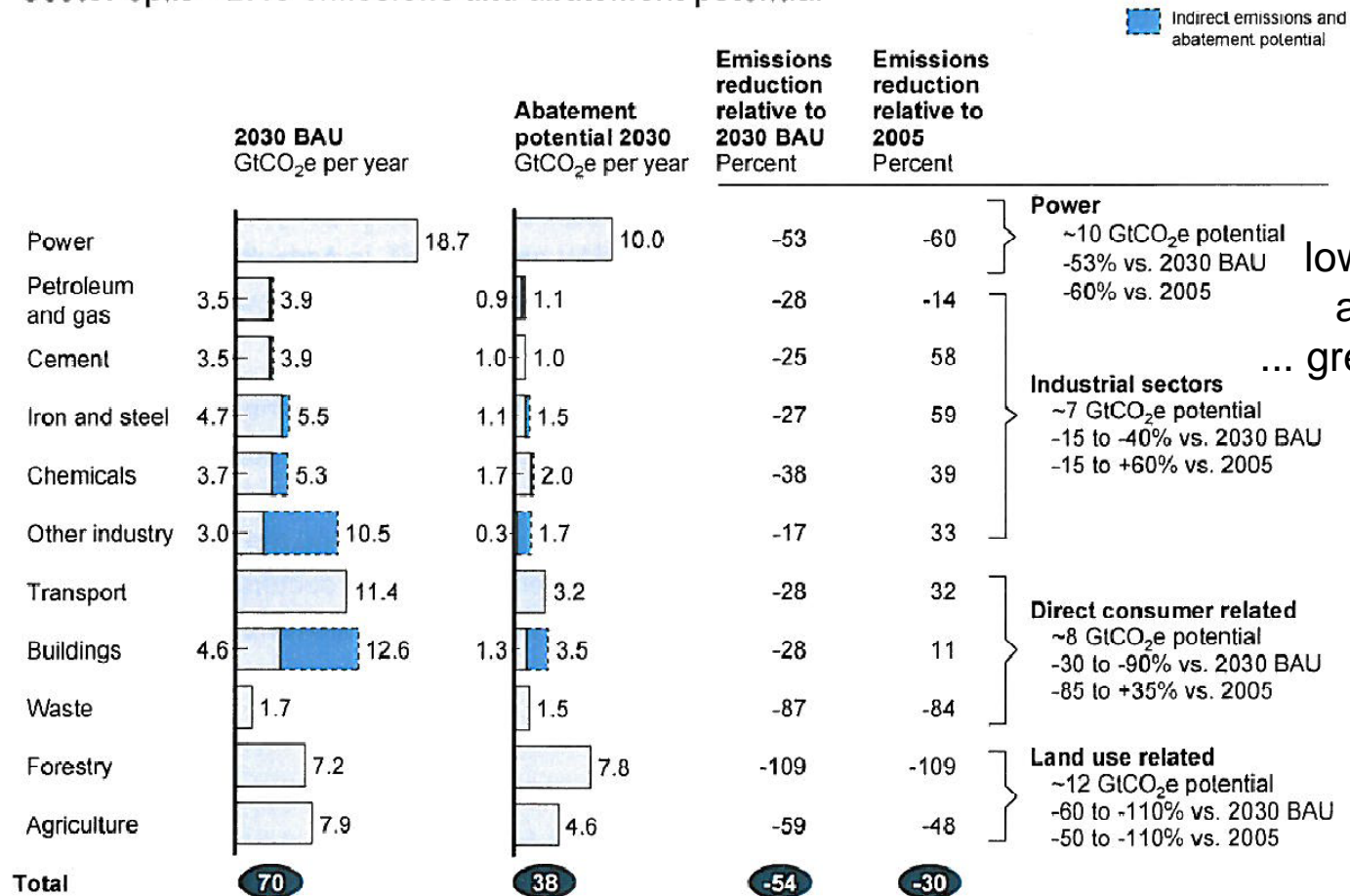
1. We need low carbon strategies across many sectors

„Low carbon is not a sector of an economy . It is an economy.“
(Lord Mandelson)



Exhibit 3.1.1

Sector split – BAU emissions and abatement potential



„pilots“,
low carbon islands
are not enough
... great transformation

Source: Global GHG Abatement Cost Curve v2.0

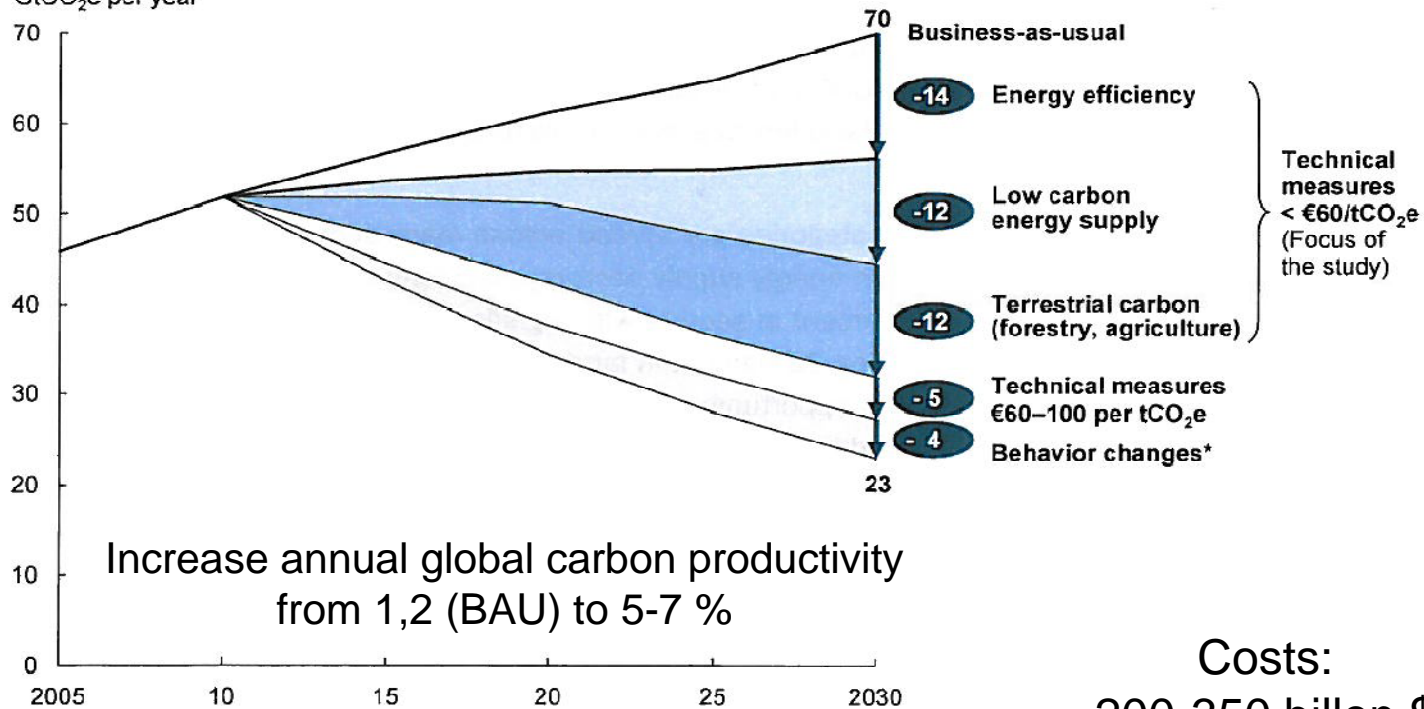
How to reduce? Five dimensions



Exhibit 3

Major categories of abatement opportunities

Global GHG emissions
GtCO₂e per year



Costs:
200-350 billion \$
annually by 2030

* The estimate of behavioral change abatement potential was made after implementation of all technical levels, the potential would be higher if modeled before implementation of the technical levels
Source: Global GHG Abatement Cost Curve v2.0; Houghton, IEA; US EPA

4 Key abatement data for 2020 can be found in the appendix.

2. From changing sectors to transforming systems



High GHG efficiency gains,
synergies, systemic efficiency

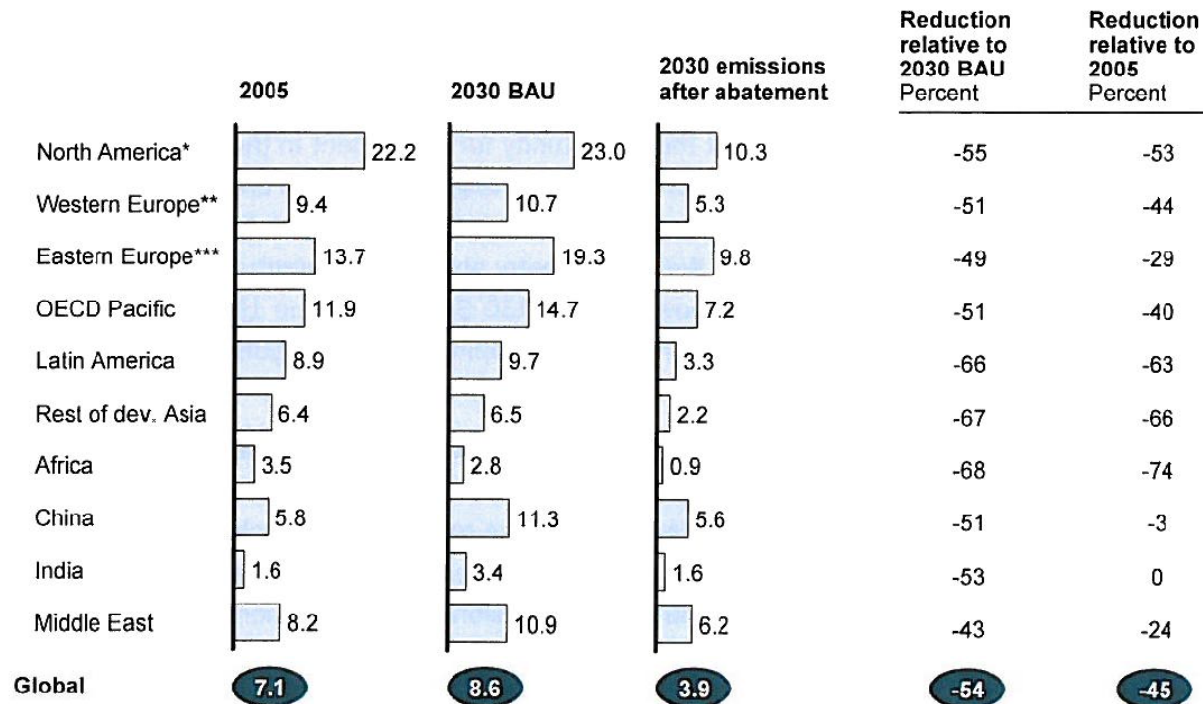
- low carbon cities (architecture, energy, new materials, transport, waste management, e-automobiles, education ...)
- transnational energy systems (EU)
- biomass systems: food, energy, forest management, waste management



3. We need low carbon strategies in many countries

Exhibit 3.2.2

Emissions per capita development tCO₂e per capita per year



* United States and Canada

** Includes EU27, Andorra, Iceland, Lichtenstein, Monaco, Norway, San Marino, Switzerland

*** Russia and non-OECD Eastern Europe

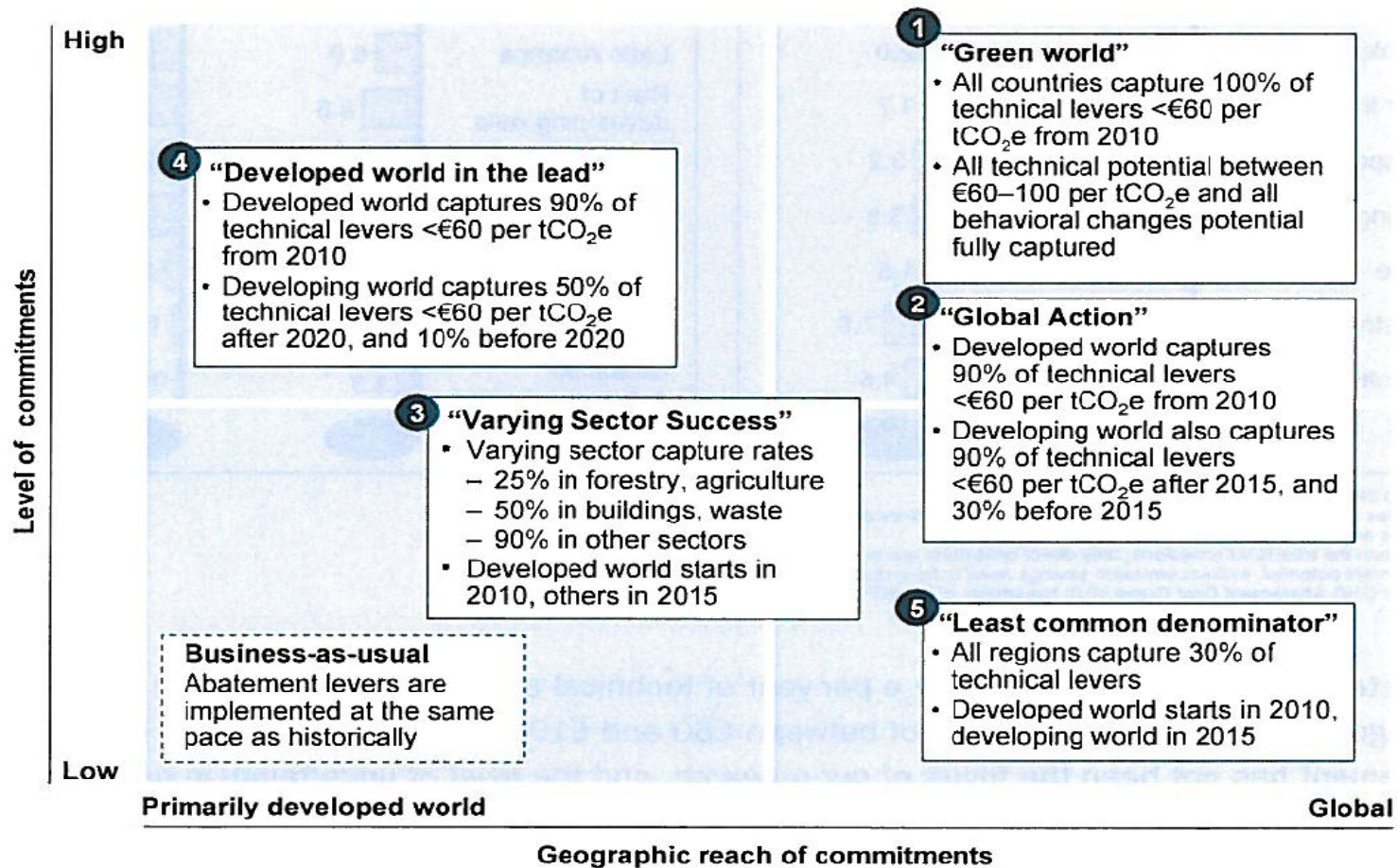
Source: Global GHG Abatement Cost Curve v2.0, Houghton, IEA, UNFCCC, US EPA

We need a global approach: G 20 coordination is key



Exhibit 5

Integrated implementation scenarios 2010–2030

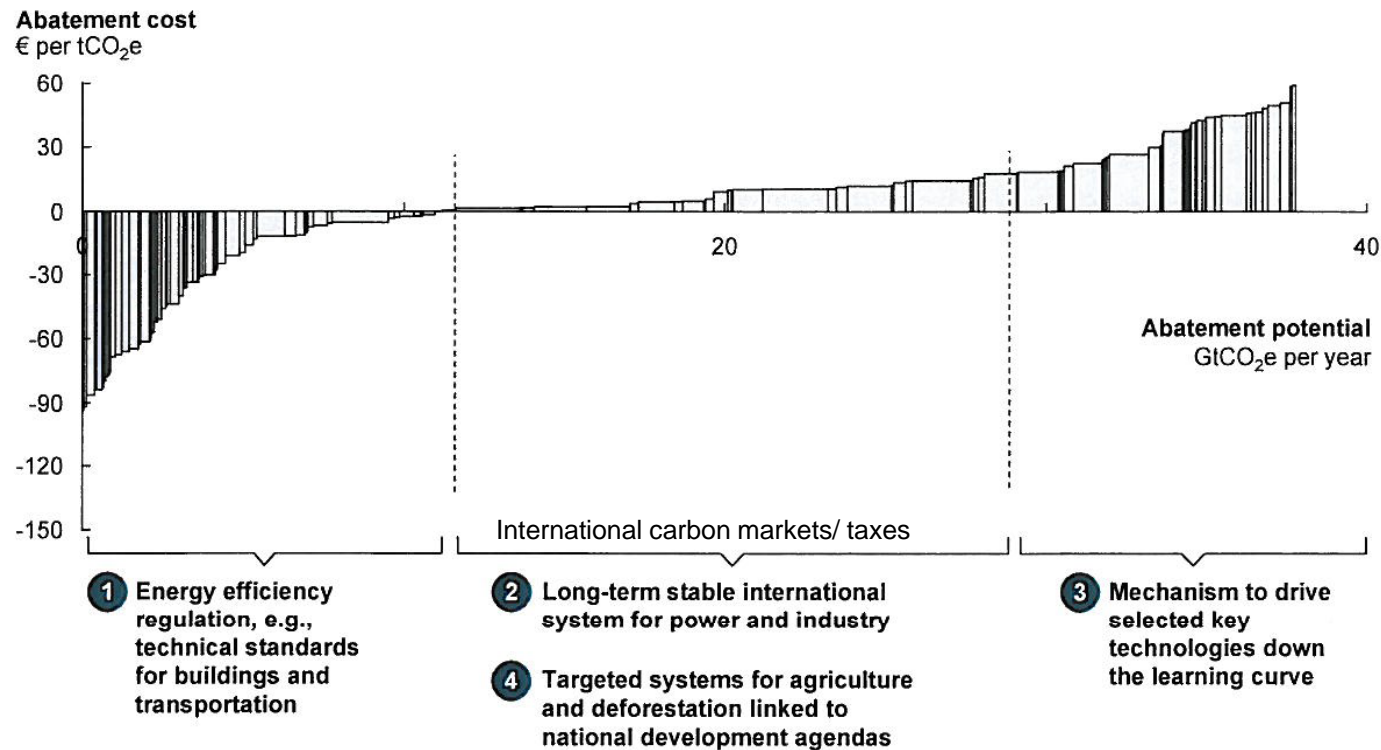


Source: Global GHG Abatement Cost Curve v2.0

4. We need green economic policies - worldwide



Exhibit 10
Key areas of regulation



Source: Global GHG Abatement Cost Curve v2.0

5) International efforts:
R&D, efficiency standards, road maps,
technology transfer

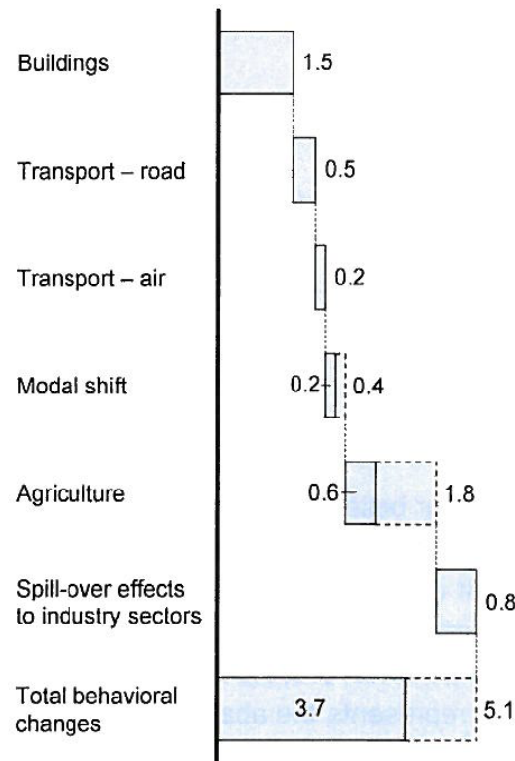
5. Life style changes, new consumption patterns, behavioral changes: The low carbon society



Exhibit 3.0.2

Examples of behavioral changes beyond technical abatement measures

GtCO₂e per year; 2030



Illustrative calculation assumptions

- 2°C change in HVAC, i.e., -12% energy use
- 20% for residential water heating; lighting; appliances
- 20% floor space for new builds
- Consumers: smaller cars, driving more efficiently, driving less
- Commercial transport: increased vehicle capacity or utilization, improved route planning, etc.
- 20% air travel
- 5-10% road transport by switching to rail, bus, walk or cycle
- Meat consumption for developed world -20%; ROW -10% (after 40% consumption increase towards 2030)
- Replace 0-50% consumption of ruminants** with other meat
- Cement: -15% (buildings)
- Iron & Steel: -10% (buildings); -5% (transport)
- Chemicals: -5% (buildings); -5% (transport)

* Behavioral effects accounted for after implementation of all other levers

** Beef/cattle, sheep, goats

Source: Global GHG Abatement Cost Curve v2.0

China is doing a good job ... could become a low carbon pioneer ... global governance leader in the climate policy arena



Prof. Hu Angang, economist, Chinese Academy of Sciences, Director „Centre for China Studies “:

China should be more ambitious in regions characterized by high HDI - levels (Jingsu, Liaoning, Guandong)

- aiming for carbon emissions to peak in 2012
- until 2020 reducing emissions to 1990 levels
- by 2030 reducing carbon emissions to half of 1990 levels

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- South Korea: spending 30 bill. \$ in „green“ areas: protecting 700.000 workers from unemployment
- US (Center for American Progress): 100 bill \$ in green investments, saving 2 million jobs (petroleum industry: 600.000 jobs)
- HSBC: money invested in clean energy is estimated to create twice as many jobs per \$ compared with fossil fuel-based energy investments ... and: this is sustained employment