



E3G

# Engaging major emerging economies in a 2 degrees strategy :

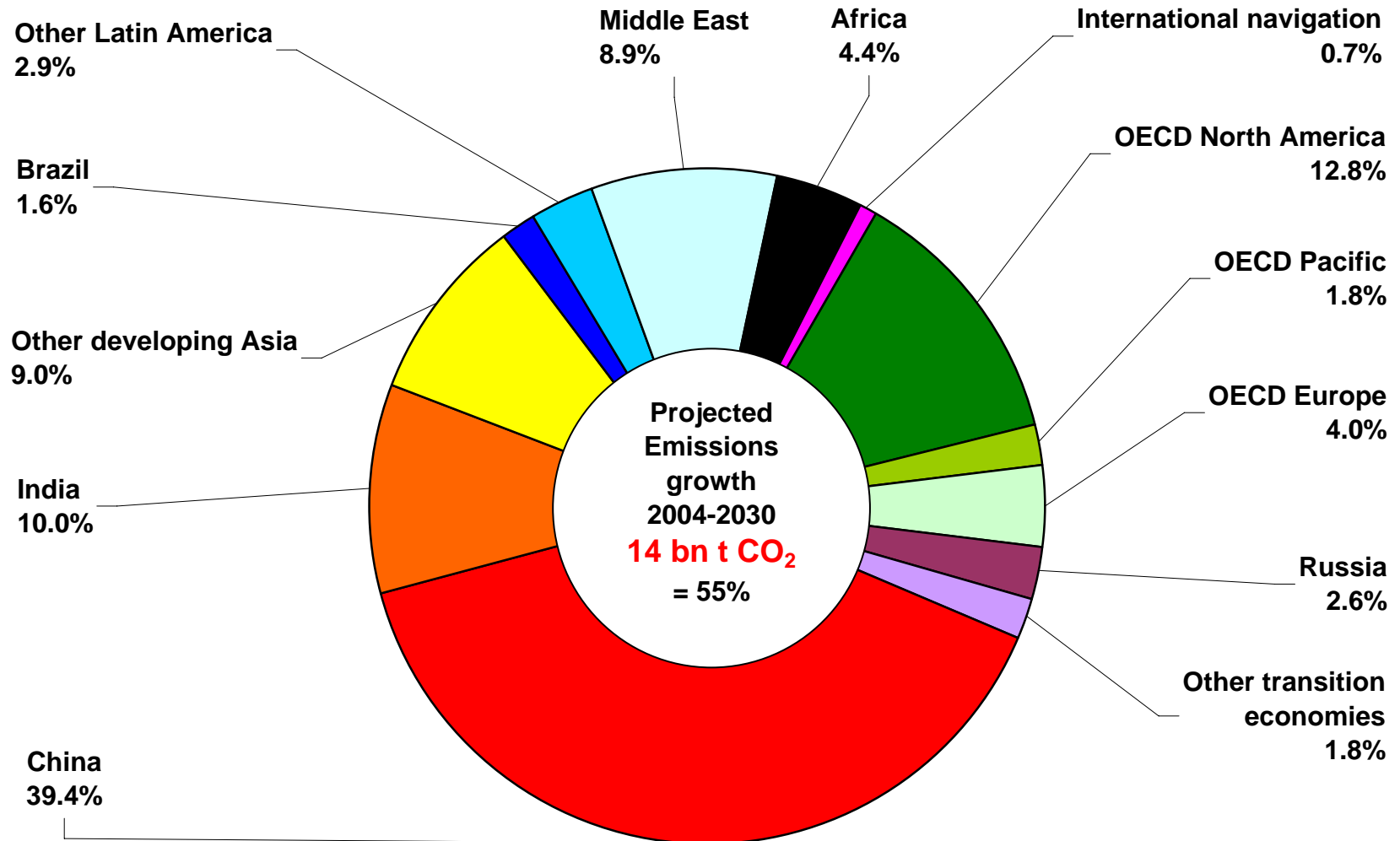
## DGAP

November 2007

Jennifer L. Morgan

Director, Climate and Energy Security, E3G

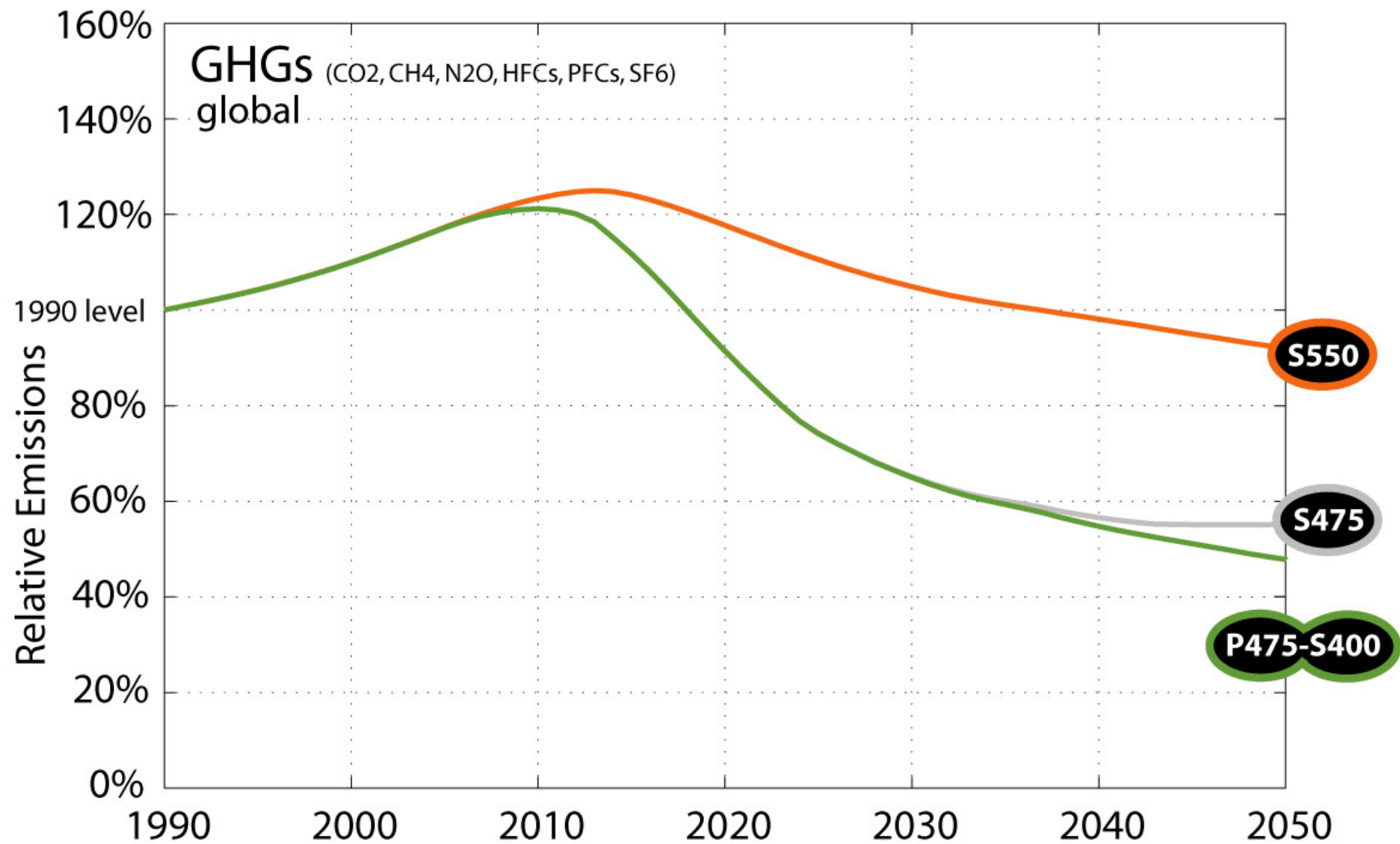
Business as Usual is not an option – Growth in both industrialized and emerging economies brings you far beyond maintaining energy and climate stability (F.Mattes, Oeko Institute)



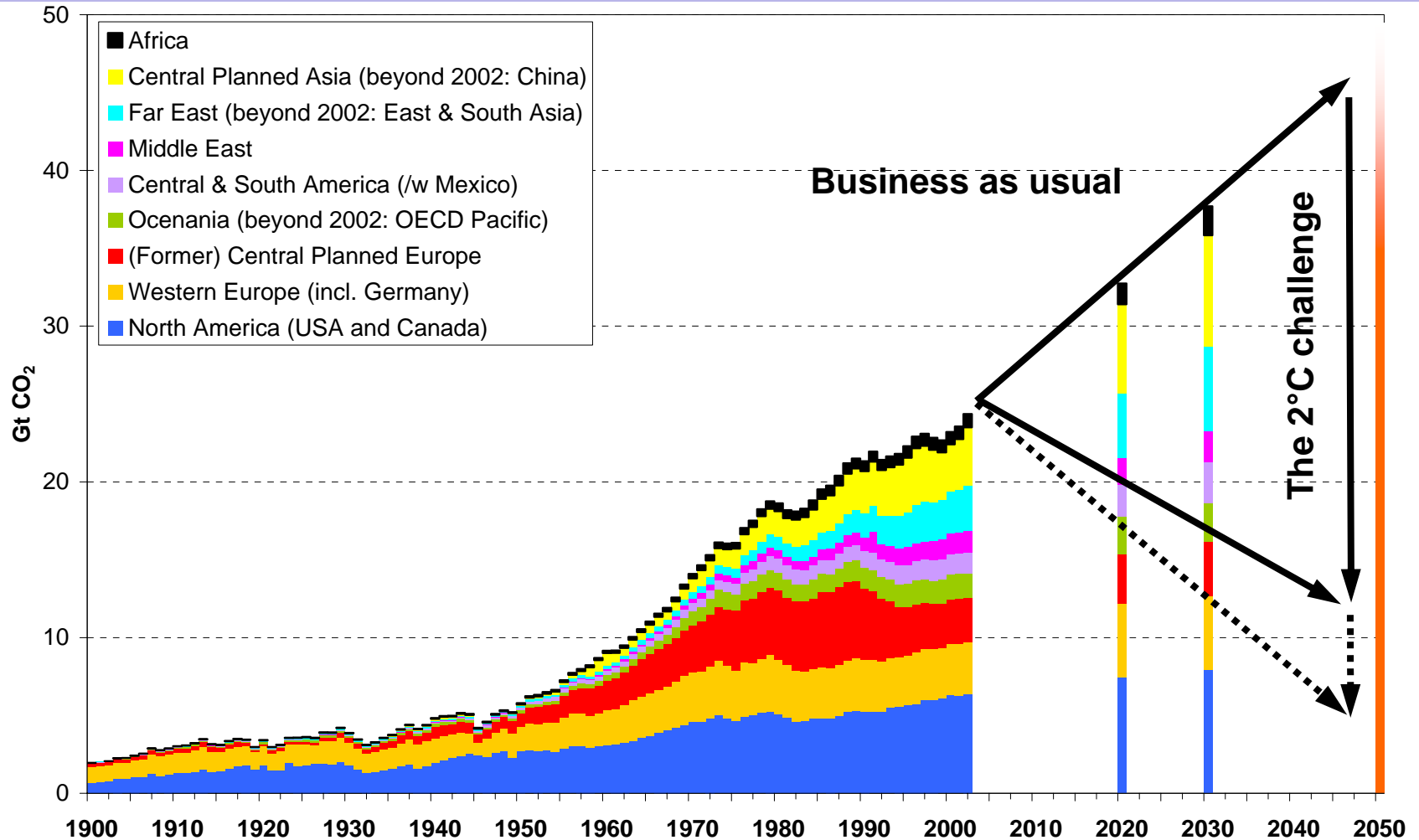
# Emissions relative to 1990



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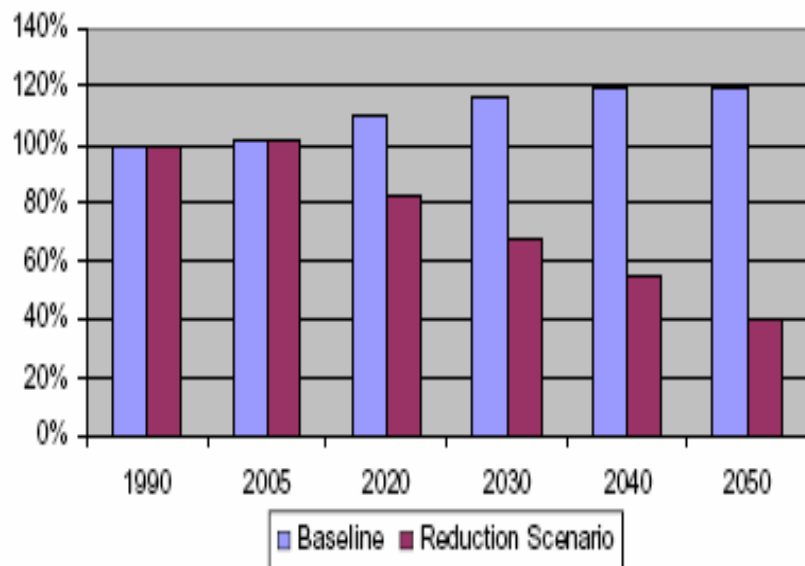
# Significant reductions are required off of BAU from all major economies (F.Mattes, Oeko Institute)



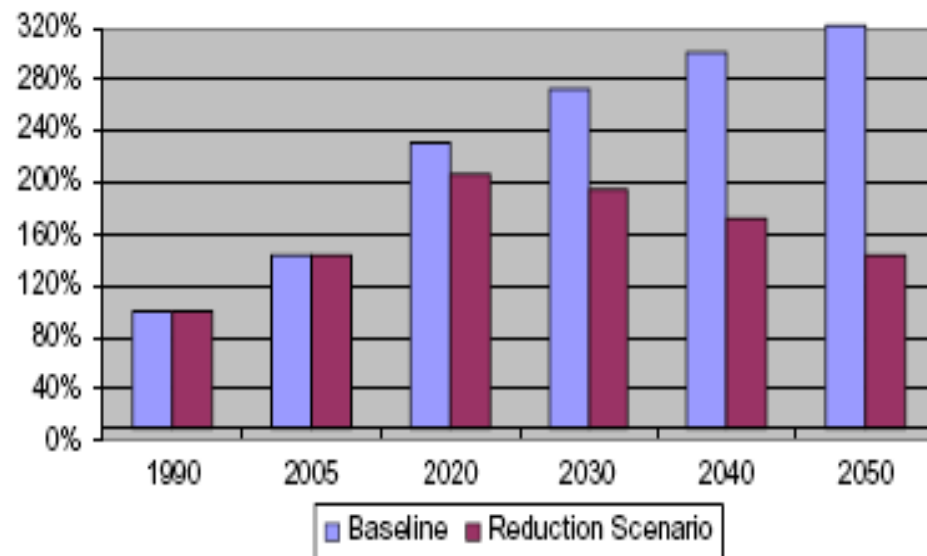
A 2C future means Developed Countries emissions falling 20-30% by 2020 and 60-80% by 2050, with the latest science recommending the higher end of those numbers



Developed countries GHG emissions



Developing countries GHG emissions

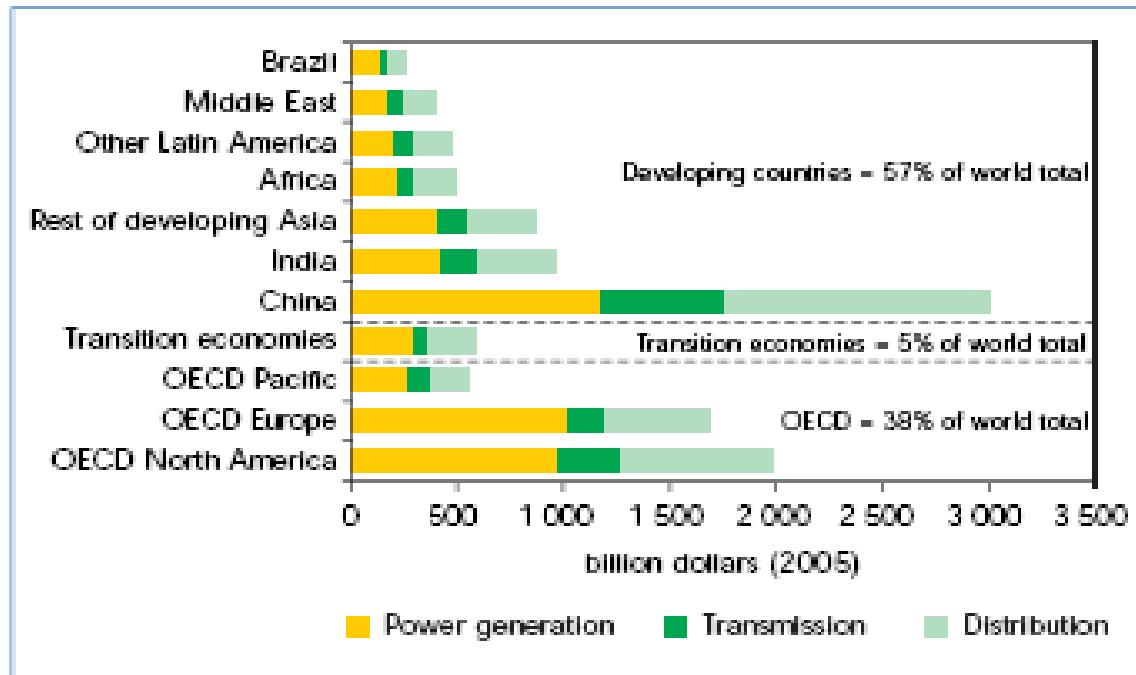


Source: European Commission EPRG January 2007

This scenario gives a 50% chance of avoiding a 2C temperature rise

# Investments shifts need in all developed and industrialising countries

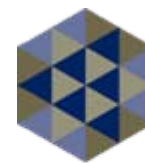
Cumulative Power-Sector Investment by Region in the Reference Scenario, 2005-2030



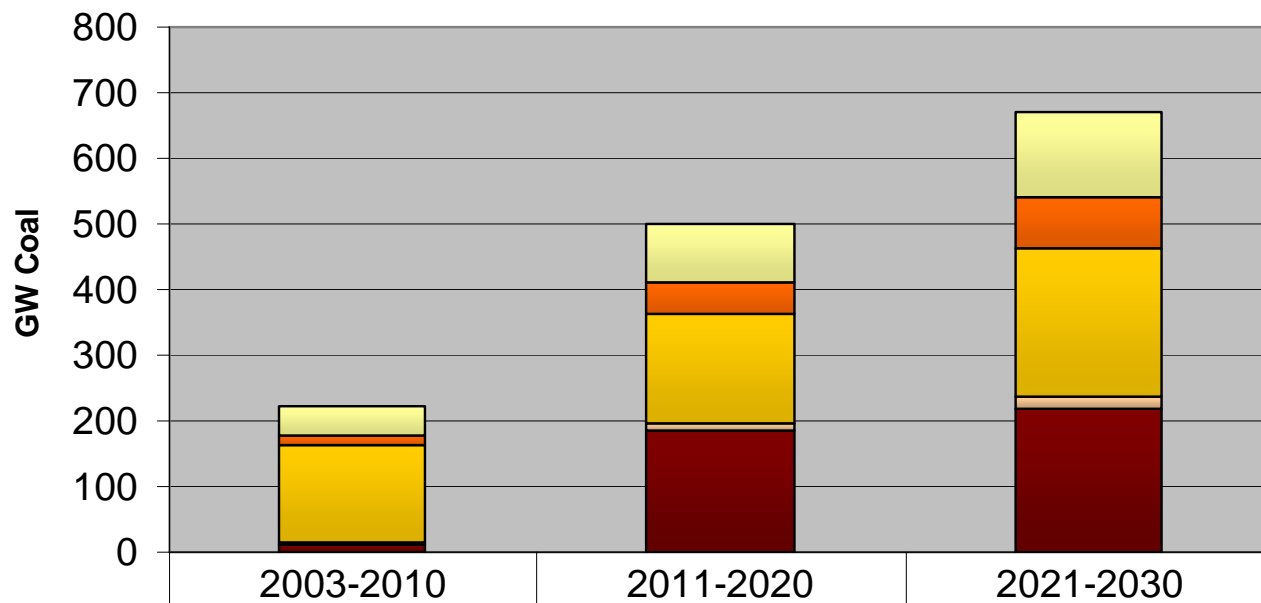
- A large part of all the energy investment needed worldwide is in middle-income countries, where demand and production increase most quickly.
- China alone needs to invest about \$3.7 trillion – 18% of the world total. Russia and other transition economies account for 9% of total world

Source: IEA, WEO 2006

# OECD and developing countries are investing first and fastest in coal capacity; this investment trajectory must be changed



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	2003-2010	2011-2020	2021-2030
Other Developing	43	90	128
India	16	48	79
China	150	168	226
Transition	1	11	19
OECD	12	184	218

# Energy and Climate Security must be delivered together



- Recent fossil fuel price increases dwarf equilibrium carbon price in Stern Review but are not leading to carbon-free economy
- Price rises and energy security are driving investment in climate instability:
  - rapid rise in coal power investment
  - coal to liquids investment in US and China
  - Large increase in carbon inefficient biofuels
- Impact on energy efficiency of high energy prices has been very slow, even in transport sector

**Current policies mean that neither energy and climate security objectives will be met**

# Three areas needed for Energy and Climate Policy coherence



- **Clear investment signals:** Both energy and climate security depend on changing energy sector investment patterns, which are mainly delivered through the private sector. This requires coherent, effective and long term investment signals to be sent from the public to the private sector.
- **New Institutional Structures:** few countries have truly integrated strategies for delivering energy and climate security; this results in policy and regulatory incoherence and failure to deliver on strategic outcomes.
- **Political Coherence:** it will not be possible for countries to cooperate at the level needed to deliver climate security, if they still see each other as strategic competitors over energy resources.

# Elements of the Global Deal: Targets consistent with staying below 2 degrees C



- Targets and Timetables – Industrialized countries

Halt the growth in global emissions in the period 2013-2017 and reduce global emissions to 10% above 1990 levels by 2018-2022 and hence progress to wards the goal of reducing global emissions to at least 50% below 1990 levels by 2050

Annex I Group reduce emissions by ca 15% by 2015 and 30% by 2020 and to adopt additional measures that involving all Parties that would cause global emissions to peak by 2015 and to reduce global emission to no higher than ca.10% above 1990 levels in 2020.

- Developing countries also do their “fair share” – differentiation amongst non-annex I

# Elements of the Global Deal: Investment, Technology, Adaptation Support



- Expanded Carbon markets
- Technology and Investment Mechanisms
- Scaled-up Adaptation

# Approaches for Developing Country engagement for the second commitment period

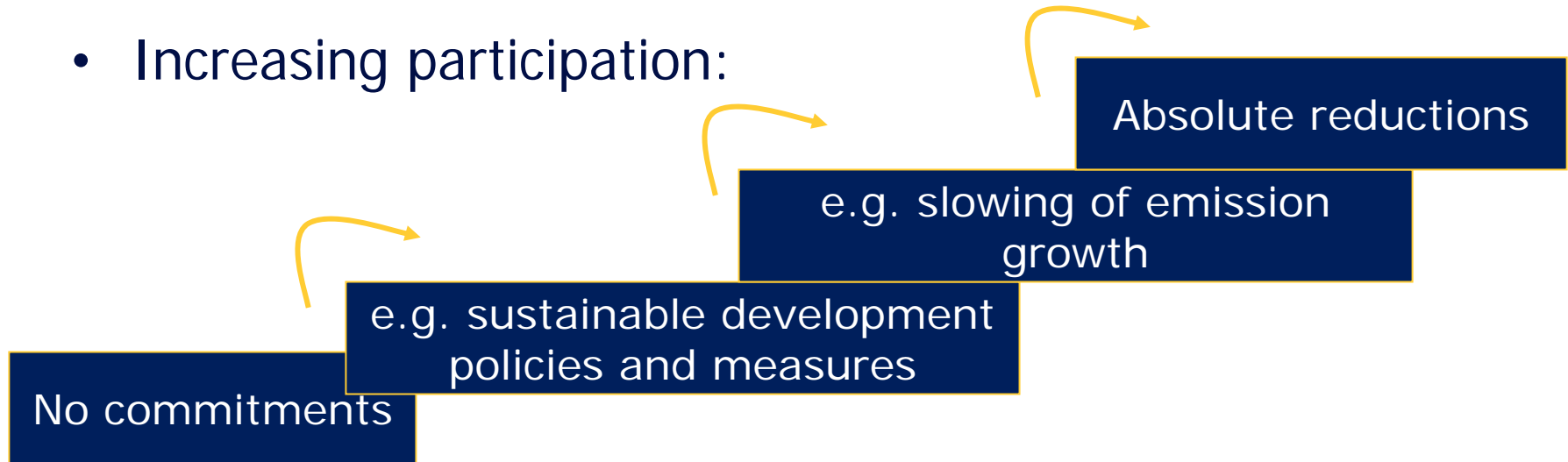


- Sustainable development policies and measures (binding vs non-binding)
- CO2 intensity caps
- Energy intensity caps (30% by 2020, 4%/yr)
- Sectoral commitments based on benchmarks for key sectors (cement, power, steel, aluminum) function of their respective output (e.g. t of steel, kWh produced, etc.).
- Absolute reduction caps with later start date
- Greenhouse Development Rights
- Per Capita

# Multistage Countries “graduate” into the next steps based on thresholds (emissions/cap, GDP/cap, human development index)



- Increasing participation:



Hoehne, N. Ecofys. 2007

See also EU (EGFA), scientific community (RIVM, Wuppertal Institut), NGOs (CAN proposal)

# Possible multistage setting



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Who?	What?	How much?
All Annex I countries and most advanced developing countries (e.g. South Korea)	Binding absolute emission reduction targets (Kyoto style)	-30% below 1990 in 2020 (burden sharing based on sectoral considerations)
Advanced developing countries (e.g. Brazil, China, Mexico, South Africa)	"No lose" sectoral targets (only selling target), quantifiable SDPAMS	Roughly 20% below reference in 2020, half is credited
Medium developing countries (e.g. India)	Registry SDPAMS	Roughly 10% below reference in 2020
Least developed countries	No commitments	-

Hoehne, N. Ecofys. 2007 with edits from J. Morgan



Issues of most importance to  
developing countries include...

# Adaptation



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1. An international adaptation fund to cover a significant part of the expenditures which developing countries need to adapt to the impacts of climate change.
2. A compensation mechanism for disasters and other extreme weather events, especially in the poorest developing countries, e.g. through insurance mechanisms.
3. A commitment by industrialised countries to make their investments in developing countries climate-proof without using funds from existing development aid programmes.

- Must move beyond the CDM (beyond offsets, beyond projects for large emerging economies)
  - Sectoral
  - Policies and Measures
- Must invest in measurement and monitoring now or will be impossible to have a credible, non-“junk bond” carbon market in the future

# Carbon markets alone will not deliver a low carbon economy

- The estimates below show the scale of additional costs that will need to be made in developing countries by 2015 and 2025 (at 550 stabilisation)

	<b>Costs in non OECD countries, per year 2015</b>	<b>Costs in non OECD countries, per year 2025</b>
<b>Mitigation</b>	\$69 billion	\$294 billion
<b>Carbon market funding</b>	\$24 billion	\$173 billion
<b>Emerging technologies where further funding needed</b>	\$45 billion	\$121 billion

# Investment and Technology Mechanisms

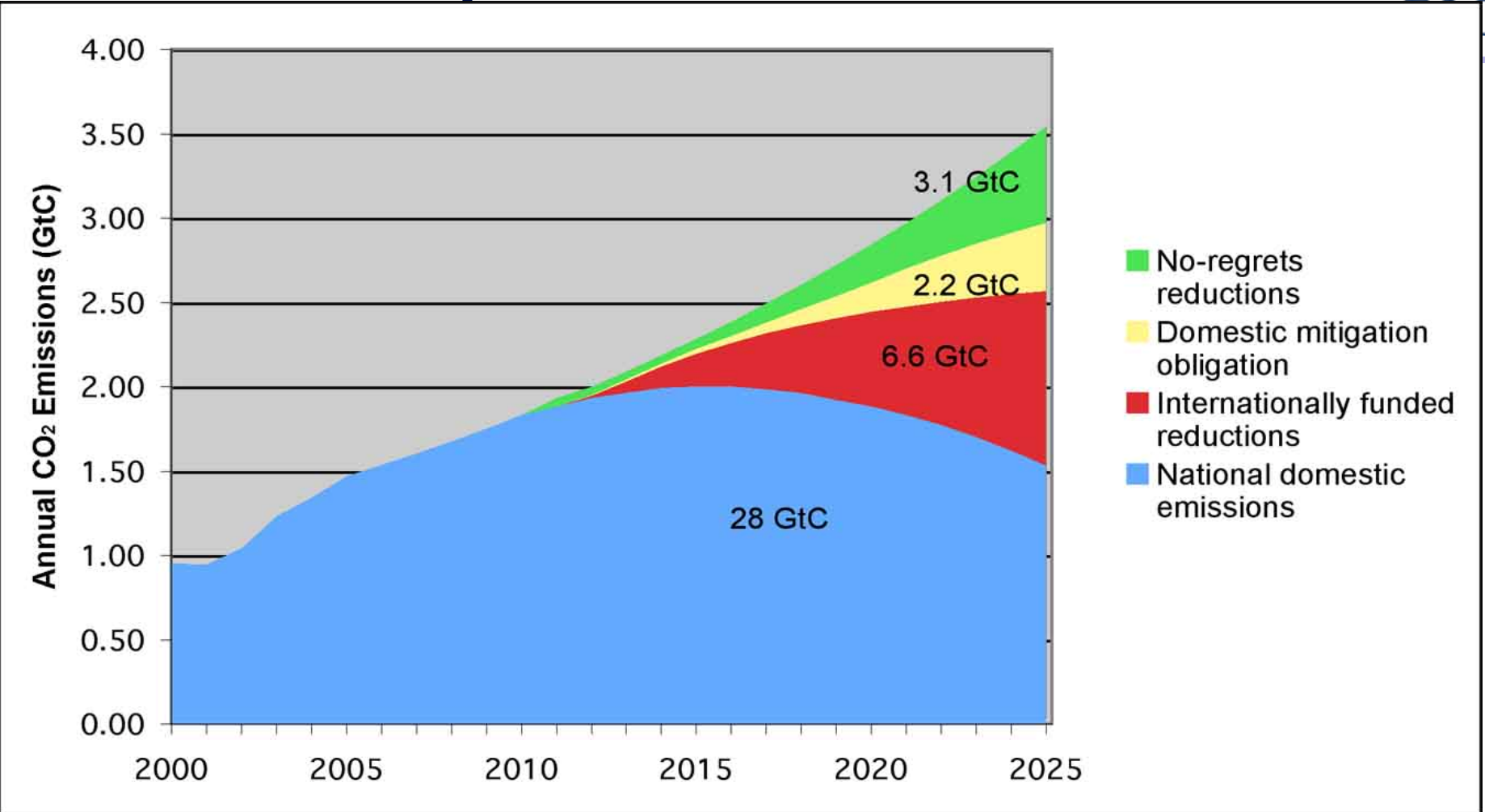


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- Technology Development and Deployment Mechanism that does joint RD&D, leverages private sector finance and developing country finance based on technology roadmaps per country and per sector
- Sectoral agreements linked potentially with removing trade barriers
- Bi-lateral technology cooperation deals which sort through the technology sharing, financing and schedule
- Exploration of trade agreements



# Example: Who does what in the future, new N/S cooperation mechs needed



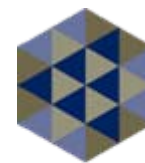
**Tom Athanasiou, EcoEquity, USA**

# Some key issues are yet to be discussed properly in the climate/energy debate



- How to finance adaptation, technology cooperation, deforestation
  - Role of auctioning revenue
  - Portion of assigned amounts monetized
  - ODA
  - CCS example
- The interaction between technical standards, intellectual property rights and legal enforcement capacity needs to be addressed forthrightly as part of the necessary framework for low carbon innovation and diffusion. The EU could agree on practical steps, with China or other countries, to address structural issues in low carbon technology cooperation around intellectual property rights – with a focus on practical mechanisms such as conditional or compulsory licensing, fair use rights, and guidelines for standardisation, to enhance the diffusion of key technologies.
- Role of trade

# Although the UNFCCC is at the core of the effort, we must utilize other fora and mechanisms to bring about the investment shifts needed



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- Example: Bi-lateral with China
  1. Building 'Low-carbon Economic Zones' or 'Bilateral Efficient and Clean Economy Transformation Zones'
  2. Setting world-class standards for energy-efficient goods:
  3. Making coal more sustainable:
  4. An EU–China Ultra Efficiency Building Research Platform:
  5. Exploring an EU–China low-carbon free trade agreement:
  6. Pioneer sectoral approaches to climate change
  7. Tackling global supply constraints on renewable energy:
  8. Reducing dependency on imported oil:
  9. Develop a low-carbon investment regime:
  10. Increase efficient and low-carbon technology cooperation: