



Opportunities in climate change mitigation through North-South technology cooperation

Frank Vöhringer (EPFL)

TOCSIN final conference

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Structure of the talk

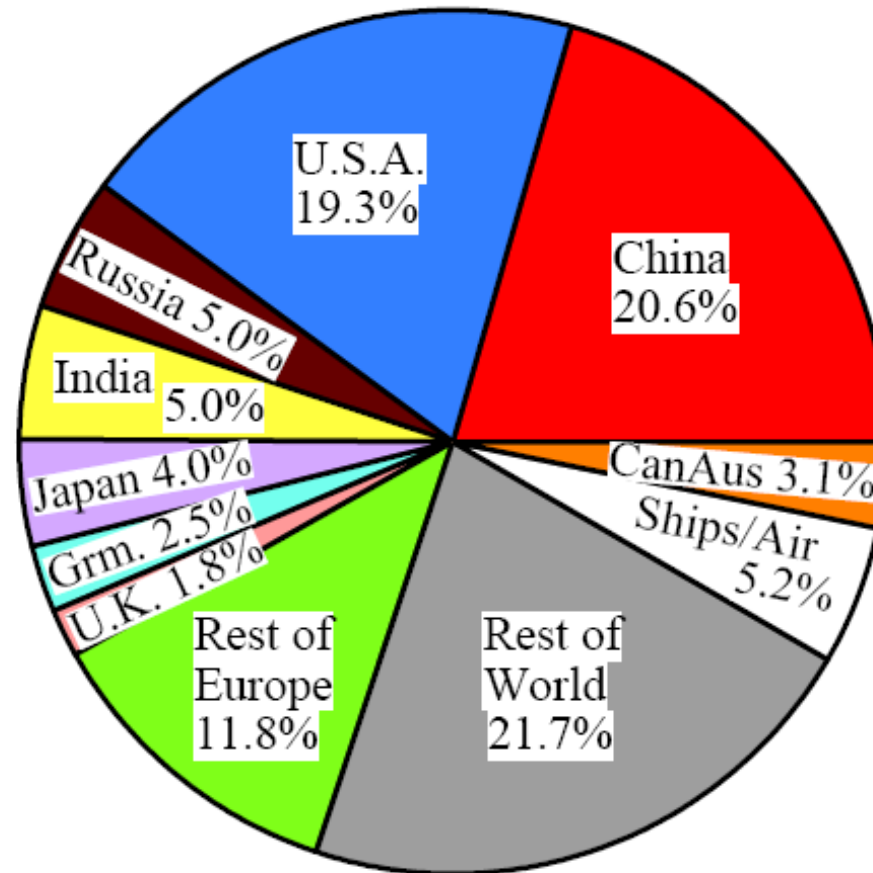
- Kyoto: technology under the CDM
- The quadrature of the circle: make big emitters happy in order to save the climate
- Technology at Copenhagen
- TOAs and what they can contribute
- Examples
 - CCS
 - biofuels
 - geoengineering
- How to link TOAs to the Convention

- CDM is the most important mechanism for North South cooperation under the KP
 - including technology transfer
 - but impact on technology is insufficient
 - ◆ only about half of the projects have a technology transfer component
 - ◆ hardly any projects in end use sectors
 - transport
 - energy efficiency in households
 - ◆ insufficient scale
 - China:
 - India:

Make big emitters happy: Who are they?



Global share of energy-related CO₂ emissions in 2007



Make big emitters happy

- High income big emitters fear that
 - mitigation costs are high
 - “equal level playing field” is given up (did it ever exist?)
 - benefits from mitigation are low, because emerging economies don't restrict emissions
 - benefits accrue mainly to other countries and generations

Make big emitters happy

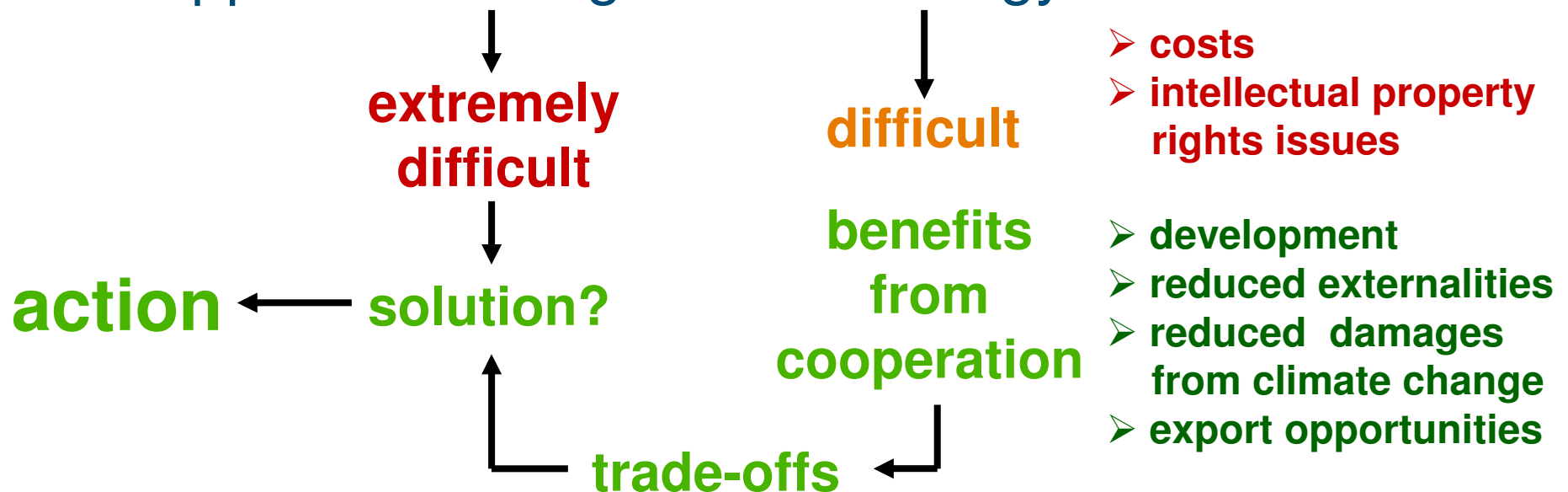
■ Middle income big emitters

- development priorities
 - ◆ poverty reduction
 - ◆ growth
 - ◆ reduction of environmental externalities
- “common, but differentiated responsibilities”
 - ◆ low per capita emissions
 - ◆ low ability to pay
 - ◆ low historical responsibility

=> high income countries have to act and pay
- benefits accrue mainly to other countries and generations

Technology at Copenhagen

- negotiation track under the Bali Plan of Action
- developing countries: negotiate support first, then actions
- Support: financing and technology



Contribution of TOAs



■ Possible elements of TOAs

- knowledge sharing
- joint research programs
- collaborative programs for large-scale demonstration
- technology transfer
- capacity building
- arrangements on intellectual property rights
- technology standards
- incentive mechanisms

Contribution of TOAs

- Benefits accrue mainly to other countries and generations public goods problem
solution: climate deal + TOAs?

- High income big emitters fear that
 - benefits from mitigation are low, because emerging economies don't restrict emissions
 - mitigation costs are high
 - "equal level playing field" is given up

TOAs to involve DCs in mitigation

↓
lower costs

to be negotiated – IP rights

compensate domestic losers

- Middle income big emitters

- development priorities
- high income countries have to act and **pay**

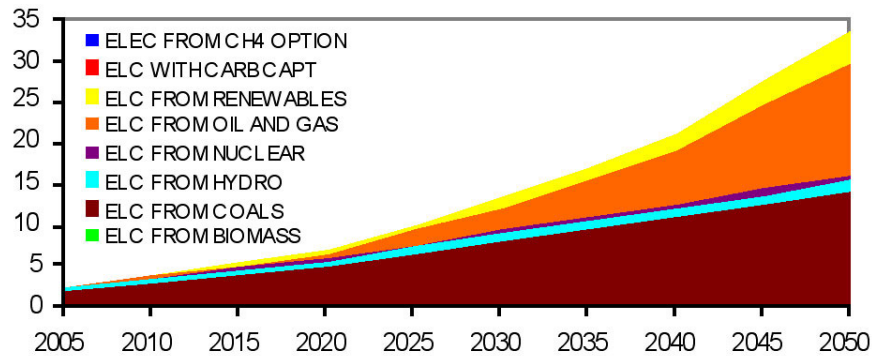
Pay less!

capital accumulation
technology transfer
capacity building
environmental improvement

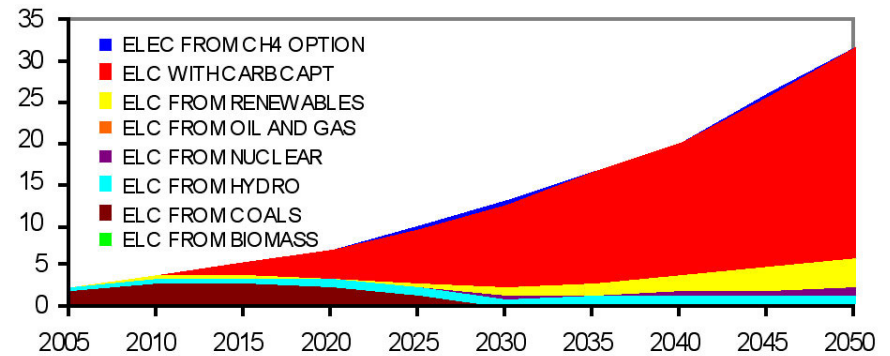
Carbon capture and storage



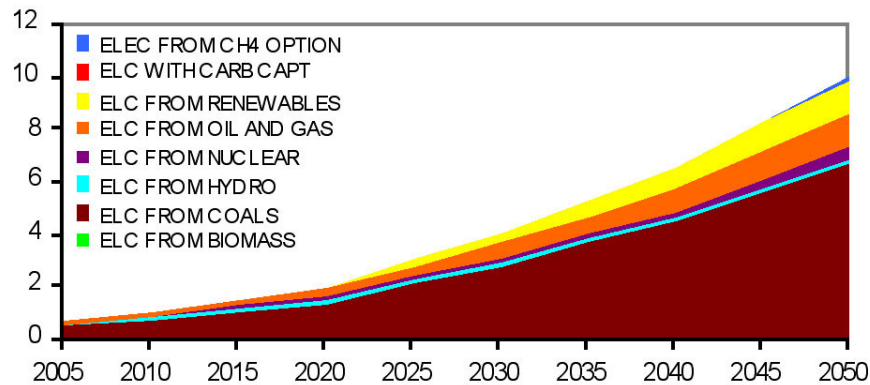
Electricity production in China - Base (GWh)



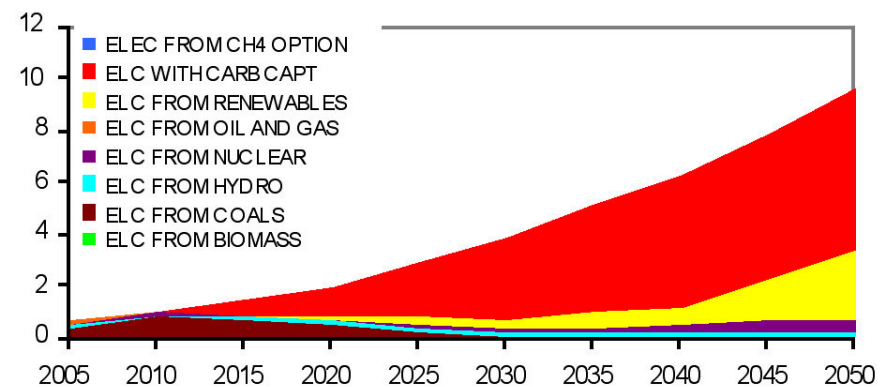
Electricity production in China - 3.5W/m2 (GWh)



Electricity production in India - Base (GWh)



Electricity production in India - 3.5W/m2 (GWh)



Carbon capture and storage



- diffusion through carbon prices unlikely
- large-scale demonstration program
- technology standard + cost sharing
- address storage risks

- EU, Brazil, Mozambique: opportunities
- (International) external effects
 - food markets: farmers/consumers
 - deforestation (leakage)
 - climate (positive/negative)

Geoengineering



- Risk that individual countries go forward
- Engineering belief in technical feasibility
- Cybernetic ability of mankind?
- Rules on testing
- Decision rules on application
- Risk “insurance”
- Talk about it!

Linking TOAs to the Convention



- prevent fragmentation
- more complicated when inserted into UN framework
- stakes for all affected Parties (process equity)
- accountability under the Convention
- NAMAs



Thank you for your attention!

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