Policy Options for Reducing GHGs in China and their relation to International Sectoral Approaches for Post-2012

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China Workshop
15-16 July 2008

Overview

- Workshop Objective
- Status of the Tsinghua – CCAP China Study
- International Policy Context
- EU Sectoral Study Objectives
- Primary Sectoral Approaches
- Study Process
- Timeline
- Study Partners
- Coordination with other projects
- Key Questions

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Workshop Objective

- Review progress on Phase II of Tsinghua – CCAP China Climate Policy Project
- Discuss initial policy recommendations for key sectors in China
- Discuss policy implications of Shandong case study
- Discuss international sectoral approaches
- Discuss relative attractiveness of int'l sectoral incentives offered - how they could help China implement its climate policy

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Tsinghua – CCAP China Project

- Part of 4 country (BZ, Ch, IN, MX) study financed by UK DFID
- designed to build capacity to assess opportunities and costs of policies for GHG reduction in key sectors: electricity, industry and transportation (MX and BZ also include deforestation)
- Phase I – built supply curves for GHG reduction from new and existing facilities in each sector
  - » Assessed impact of existing laws and policies on emissions and costs in each sector
  - » Found major reductions below BAU occurring in key sectors due to major Chinese policies
  - » If fully implemented, would produce reductions comparable to EU-15 under Kyoto and larger than existing US program
  - » Found extensive cost effective opportunities for GHG reduction in each country

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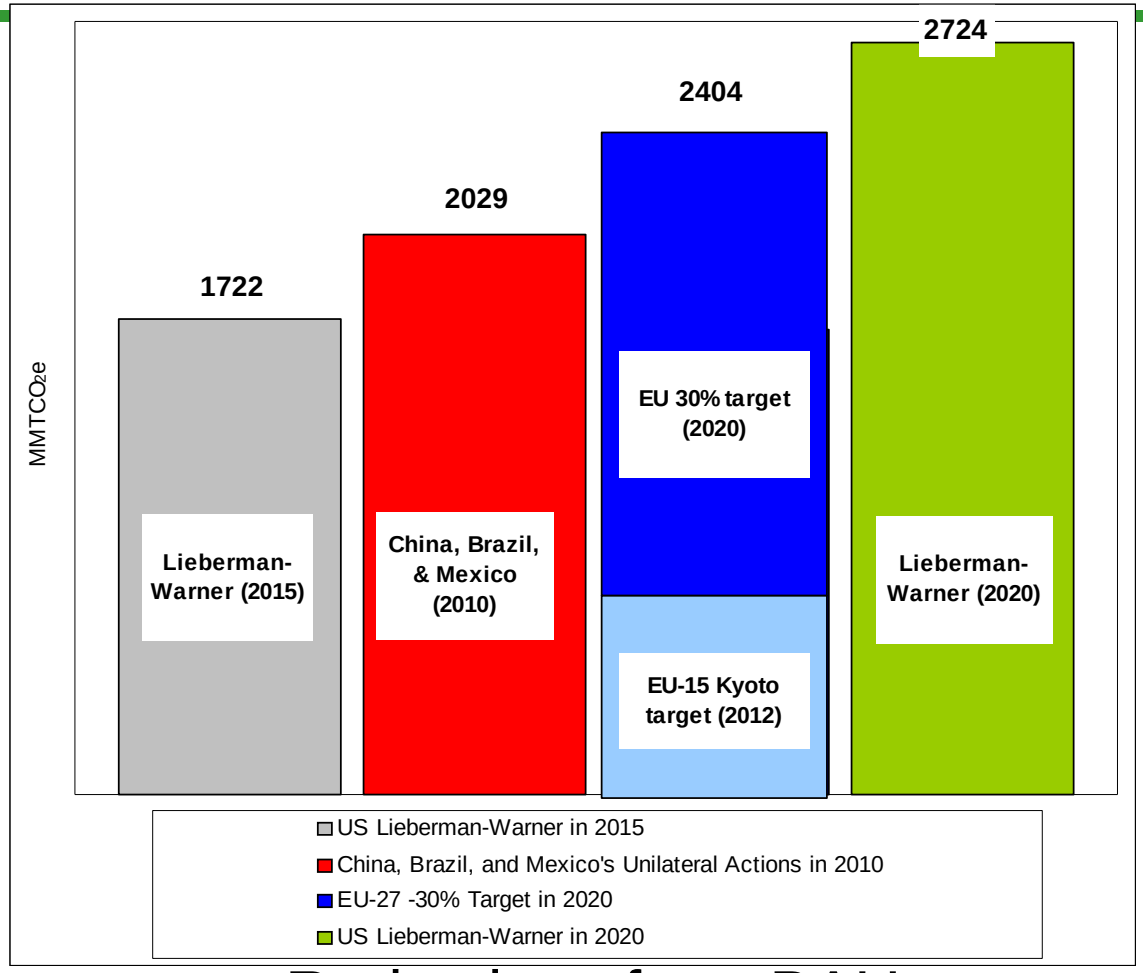
Developing country action compared to the US and EU



Reductions from BAU

Source: CCAP, updated

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Tsinghua-CCAP China Project

- Phase II (in all 4 countries):
  - » Assess best policy options to achieve cost-effective GHG reductions
  - » Assess policy barriers and obstacles to achieving those reductions
  - » Case study of Shandong province to define incentives to improve performance in meeting national climate goals
  - » Assess alternative international sectoral approaches to determine best design to help each developing country implement its climate policies (expanded EU support for study)

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International Policy Context

- Bali Action Plan calls for verifiable “Nationally appropriate mitigation actions by developing country Parties in the context of sustainable development”,
- Supported and enabled by verifiable technology, financing, and capacity-building support from A1 countries
- Roadmap envisions a menu of options that developing countries can elect to pursue including tech transfer, CDM, sectoral approaches, and reductions from deforestation (REDD)
- Also envisions a range of financing from A1 including expanded carbon market mechanisms (based on tougher A1 targets) and new financing beyond ODA

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EU Study Objectives: Proof of Sectoral Concept

- New round of work in **China, Brazil and Mexico** financed by EU DG Enterprise to test "Proof of Concept"
- Define data and capacities needed to be able to use sectoral approaches in international process
- Assess usefulness of sectoral approaches in assisting specific developing countries to take mitigation actions and to achieve sustainable development
- Assess effectiveness of financial and technology incentives to encourage developing country participation in sectoral approaches
- Focus first on major emitting sectors – **electricity, cement, steel, and aluminum**
- All feeding into the Bali Roadmap and Copenhagen 2009 discussions

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Primary Sectoral Approaches

1. Transnational Sectoral Approach
2. Sectoral Bottom-up Approach
3. Sectoral Carbon Finance Approach

- A hybrid of these approaches could seek to combine the best elements of each – “one size may not fit all”

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Transnational Sectoral Approach

- UNFCCC would certify international industry agreements defining boundaries for sectors, data needs and minimum intensity targets for sectors
- Emerging economies (EEs) would propose national sectoral standards based on national circumstances – EEs would provide evidence to support their choice of target and UNFCCC negotiation process would finalize these
- Capacity building funding would be available to all EEs up-front
- Those EEs who performed better than their national intensity standard could generate CERs for sale in carbon market

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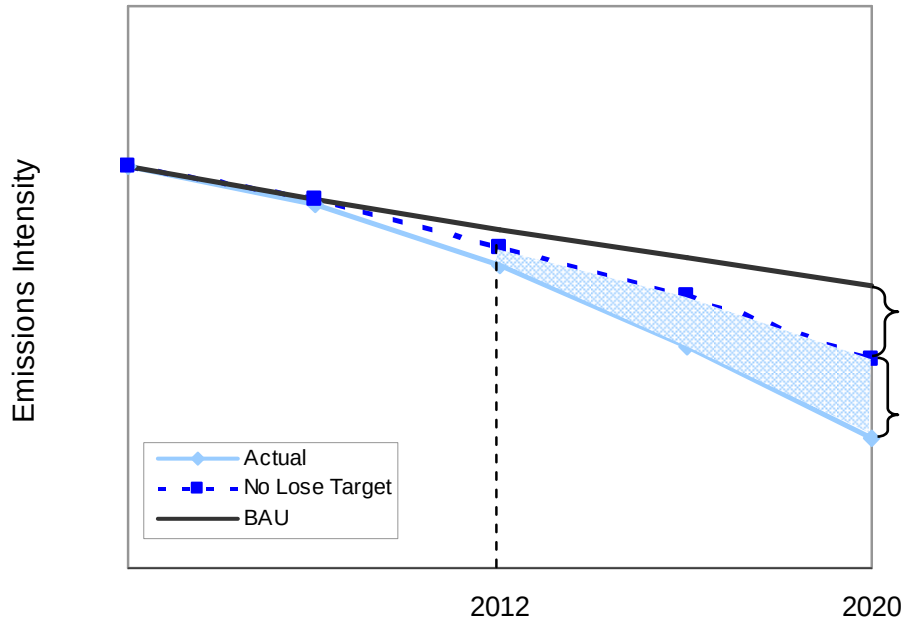
Bottom-up "No-Lose" Sector Target

- A voluntary "no lose" intensity target (e.g., ton CO_2 / ton of steel) is e



- Emissions reductions beyond the "voluntary pledge" are eligible for sale
  - » No penalty for not meeting the pledge

Developing Country's Contribution to Protecting the Atmosphere

Eligible for Sale

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Key Elements of an All-inclusive Sectoral CDM

- All or most facilities in a sector would be covered and would meet a carbon intensity standard collectively
- Reductions achieved below the standard on an aggregate basis would be automatically additional
- Choice of the standard would insure the developing country is making a unilateral contribution to the protection of the atmosphere, (i.e. these reductions would be beyond BAU and would be achieved without Annex I payments)
- Choice of the standard by host country would be based on assessment of benchmarks related to best practices and costs/benefits of meeting these

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Potential Sectoral Incentives for DC Participation

- Each of the 3 options would offer:
  - » some form of sectoral crediting mechanism like CDM CERs
  - » capacity building, data and MRV assistance
  - » knowledge sharing on advanced technologies, industry best practices, win-win opportunities
- Bottom-up no-lose approach would offer additional advanced technology finance based on:
  - » new financing such as A1 allowance auction revenues, fees on bunker fuels, extension of CDM fee to ET & JI
  - » Financing could be flexible – tailored to nature of financial markets in a particular developing country
- Technology assistance could be included in sectoral CDM by offering bonus CERs for facilities using advanced techs

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Study Process

- Quantitative analysis
- Modelling benefits of sectoral approaches
- Identify financial incentives that would encourage countries to take additional sectoral actions.
- Better definition and articulation of each option as they would apply in each country

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Timeline: Broad Objective

- Interim results will be available prior to COP 14 in Poznan
- Final results will be available prior to COP 15 in Copenhagen

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Study Partners

- Center for Clean Air Policy – Europe (CCAP)
- Centre for European Policy Studies (CEPS)
- Climate Change Capital (CCC)
- Institut du développement durable et des relations internationales (IDDRI)
- Zentrum für Europäische Wirtschaftsforschung GmbH (ZEW)

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In-Country Partners

- Tsingua University (China)
- Yunchuan Jing (China)
- Centro Mario Molina (Mexico)
- ICF International (Brazil)
- Giovanni Barotini (Brazil)

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Coordination with other projects

- There are several other related projects:
  - » Cement Sustainability Initiative
  - » International Iron and Steel Institute
  - » IAI's Aluminium for Future Generations initiative
  - » Asia Pacific Partnership (APP) – Multisector
    - – Aluminium Task Force
    - – Cement Task Force
    - – Power Sector Task Forces
    - – Steel Task Force

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Overview of analytical work

- Acquisition of plant-specific data (location, capacity, annual production, annual fuel consumption by type, technologies and production processes, etc.)
- Development of annual BAU estimates of key parameters through 2025 in each sector
  - » Production and demand
  - » Fuel consumption by type
  - » CO_2 emissions
  - » Energy and emissions intensity
  - » Construction of new plants, expansion of existing plants, and retirements to meet production projections

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Overview of analytical work

- Identification and analysis of potential mitigation options
  - » Technologies required, availability, emission reduction potential, development of marginal abatement cost curves
  - » Technical, financial or other barriers to implementation
- Development of alternative lower-emission scenarios under each sectoral approach, with changes in key parameters
- Estimation of funding levels required and potential financing options
- Global modeling analysis to estimate impact on international trade in one sector
- Identification of gaps in data, development of country-specific options to address them
- Development of potential government and private sector policies to implement mitigation options, sectoral programs

Criteria for Evaluating Sectoral Options

- GHG environmental effectiveness
- Contribution to sustainable development
- Cost effectiveness
- Equity
- Operational feasibility
- Political feasibility
- Impact on international competitiveness

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Key Questions: Design and Institutional Issues

- How can the design create maximum incentives for action?
- What level and incentive structure would encourage additional emission reductions?
- What barriers/issues are associated with the various types of sectoral approaches?
- What capacity building and expertise improvements in monitoring and reporting greenhouse gas emissions will be needed in developing countries?

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Industry Suitability to Sectoral Approaches

- No “one size fits all” for sectoral approaches
  - » Variations within industries
  - » Variations across different industries
- Some characteristics suitable for sectoral approaches
  - » Relatively uniform product
  - » Limited number of co-products
  - » Production processes that can be compared
  - » Abilities to measure, report, & verify data
- Some industries may ultimately be deemed as too complicated for sectoral approaches

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Different characteristics may favor or disfavor different sectoral approaches

- Variations in production capacity
  - » Age
  - » Types of processes
- Importance of raw material supply & geology
  - » Fuels: coal, natural gas, hydro
  - » Quality of fuels and raw materials
  - » Availability of water and other supplies
- Effects of local climate on production
  - » Air temperature
  - » Water temperature

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Benchmarking

- Benchmarking used in three different ways:
  1. measurement protocols performance
  2. indicators and standards
  3. standards differentiation
- Primary goal for this study is the enumeration of performance indicators and standards.
  - » However, much more work has been done on measurement protocols than on performance metrics.
  - » In using existing work, recognize limits in the scope of performance indicators and standards that can be developed.
- Issue: Finding the “right level” for benchmarks
  - » Not too detailed for industry-wide agreements
  - » Not too simplified for plant-level operations

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Boundary Issues

- Where we draw the boundary, or “fence” has important implications for sectoral agreements
  - » What we choose to measure (or not measure)
  - » Energy use vs. emissions
  - » Direct use, indirect use, & process emissions
  - » How far to go “upstream”?
  - » How far to go “downstream”?
- Poor choices for boundaries and metrics can limit the potential benefits
  - » Attractive opportunities may be overlooked
  - » Good actions may be taken but not counted
  - » Unproductive activities may be rewarded

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Measurement Issues

- Multiple processes for making the product
- Multiple products from a facility
- Downstream opportunities for energy & GHG savings
- How to account for indirect GHG emissions

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Questions?

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