



Center for
Clean Air Policy

Sectoral Programs in Developing Countries: Goal-Setting and Lessons Learned

Ned Helme, President
Center for Clean Air Policy

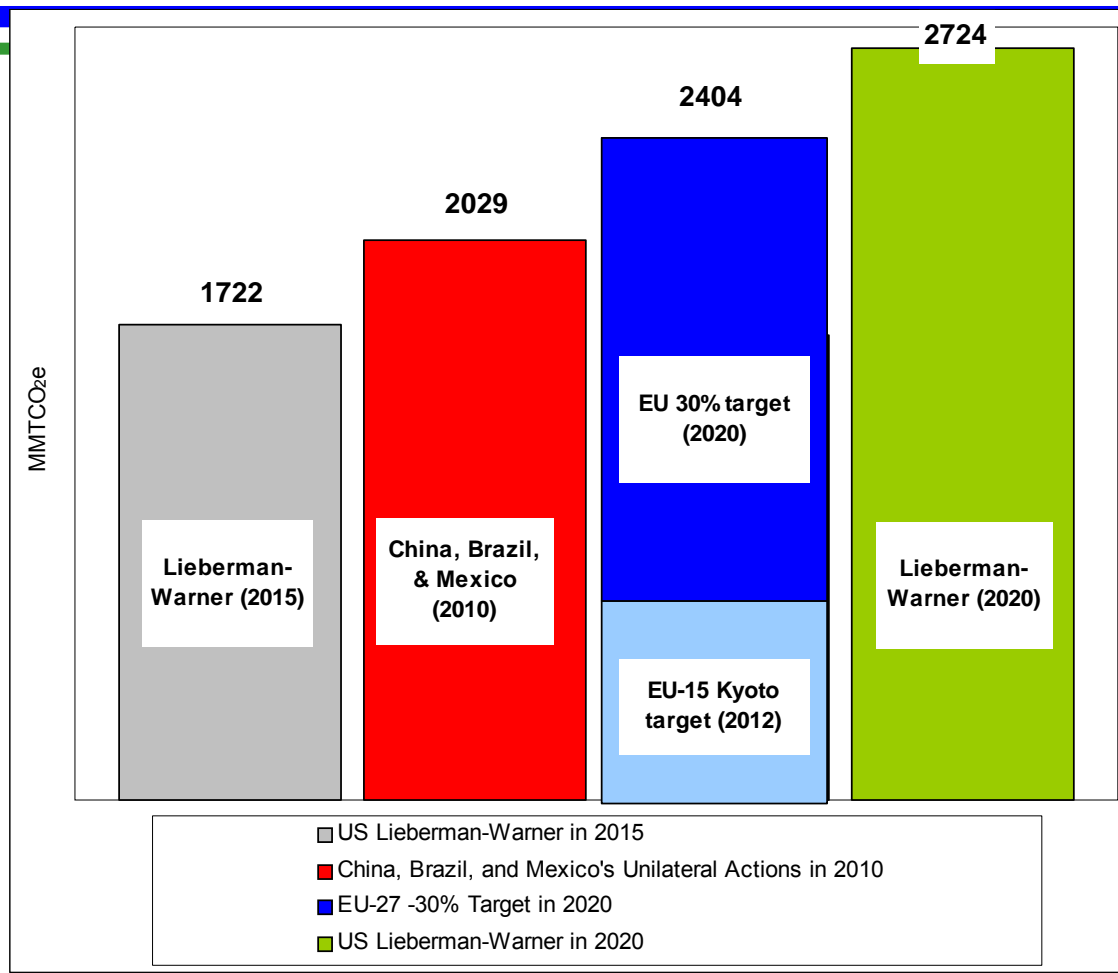
*Workshop on mitigation potentials, comparability of efforts
and sectoral approaches*

Bonn, 25 March 2009

Outline of Presentation

- International Policy Context
- The Sectoral Study
- Sectoral Goal-Setting in Mexico's Cement and Oil Refining Sectors
- Lessons Learned to Date
 - » Goal-Setting Lessons
 - » Broad Lessons
- Governance Issues for Sectoral Approaches
- Advantages of a Sectoral Approach

Developing countries are already doing more than many believe

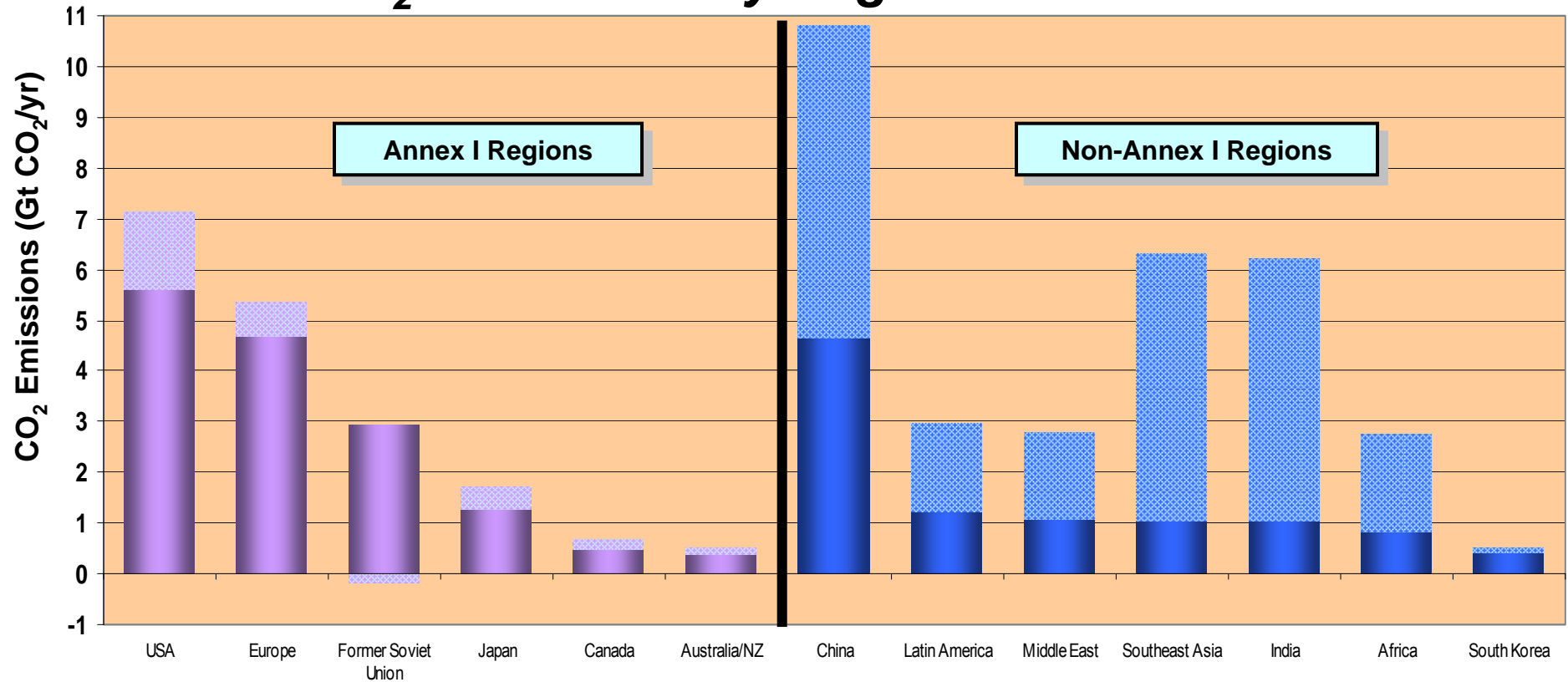


Reductions from BAU

Source: CCAP, updated

... But outlook for Developing Country emissions growth remains substantial

CO₂ Emissions by Region - 2000 & 2050



¹ Includes Fossil and other industrial CO₂.

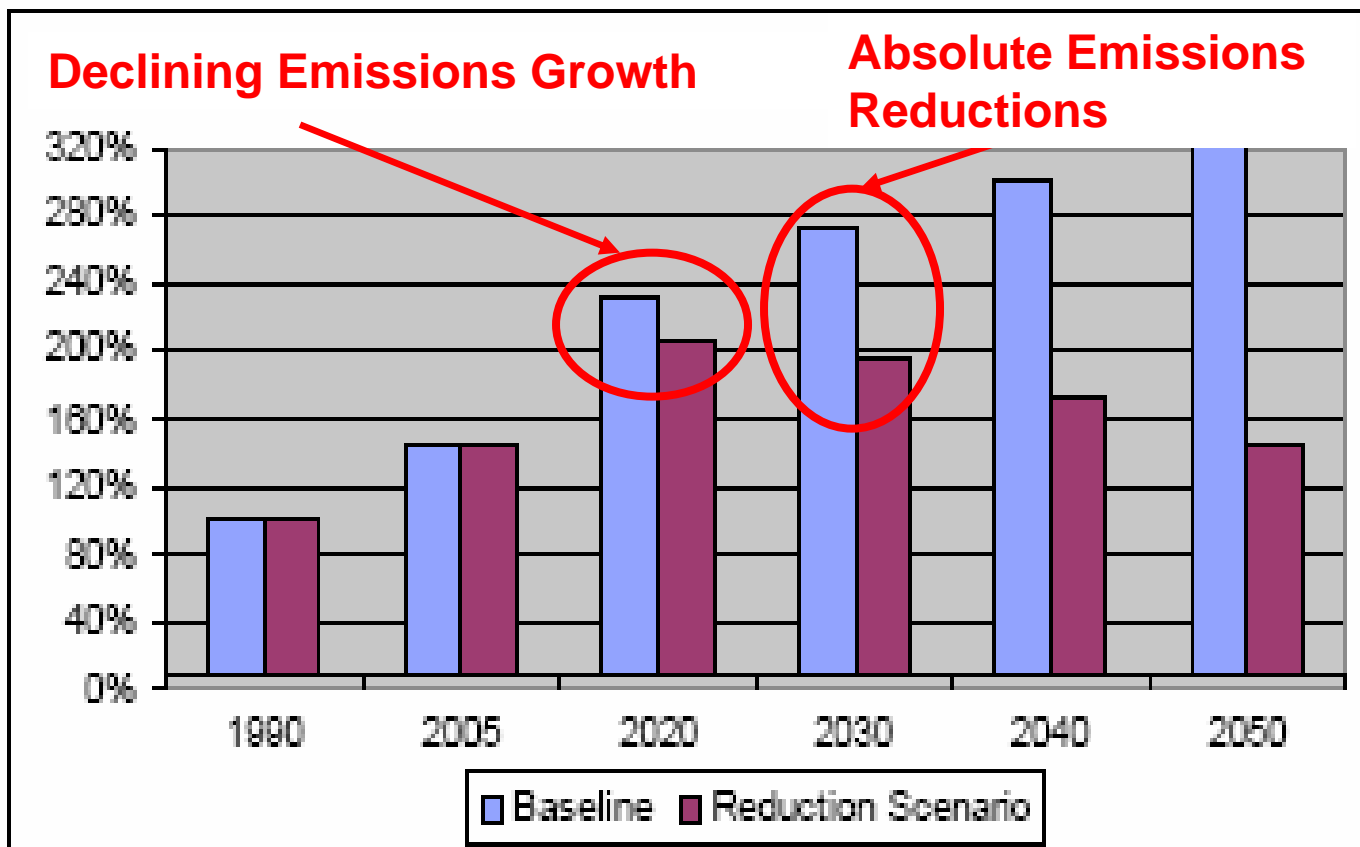
Source: U.S. Climate Change Science Program. 2007. *Scenarios of Greenhouse Gas Emissions and Atmospheric Concentrations* (MINICAM Results).

International Policy Context

- Bali Action Plan calls for verifiable nationally appropriate mitigation actions (NAMAs) by developing country Parties in the context of sustainable development
- NAMAs are supported and enabled by verifiable technology, financing, and capacity-building support from Annex 1 countries
- Developing countries would submit climate plans (e.g., low-carbon growth strategies) that list their intended NAMAs and associated requests for support
- NAMAs could be grouped to achieve broader objectives, such as sectoral program goals and reductions from deforestation and degradation (REDD)

Scenario for Developing Country Emissions

- EU analysis of 50% chance of staying below 2°C
 - » Developed countries 32% reduction below 1990 by 2030; 60% below 1990 in 2050



Source: European Commission, 2007

The Sectoral Study

- CCAP is leading a “proof of concept” study of sectoral programs in China, Mexico and Brazil
 - » Funded by EC
 - » Partners are CEPS, ZEW, CCC, IDDRI
 - » Sectors: electricity, cement, iron and steel, aluminum, oil (Mexico only)
- Key questions/issues:
 - » What data is available (technologies, costs, emissions, fuel use, etc.)?
 - » Can potential sectoral goals and support needs be determined from the available data? If so, how?
 - » How big an impact can sectoral programs have on global emissions?
- First attempt at developing potential sectoral goals: Mexico’s cement and oil refining sectors

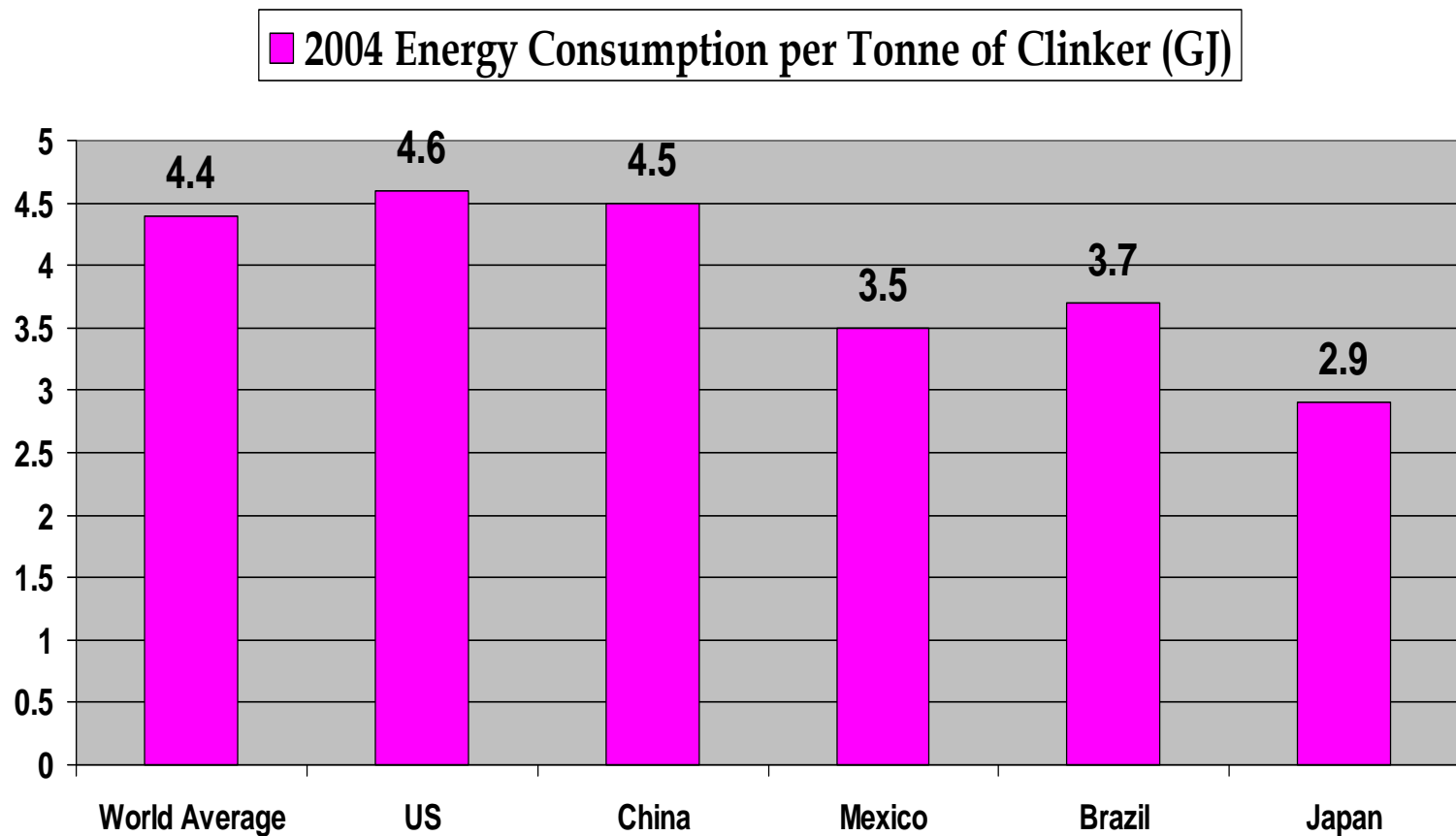
Proposing Sectoral Goals for Mexico: Cement and Oil Refining

Setting Goals for Mexico's Cement and Oil Refining Sectors

- CCAP performed a preliminary analysis of Mexico's cement and oil refining industries to estimate their GHG emissions reduction potentials in 2020
- The analysis involved estimating the:
 - » BAU emissions through 2025, based upon expected growth in production and projected changes in production capacity, energy intensity, electricity intensity, fuel mix, industry practices
 - » Current penetration of different technologies in the sectors
 - » Impacts of projects currently in the pipeline (CDM, other)
 - » Emissions reduction options and implementation costs
 - » Maximum deployment of mitigation options, both individually and as packages of options
- CCAP then suggested unilateral and no-lose sectoral goals for the Mexican cement and oil refining sectors

Mexico's Cement Sector — Energy Efficiency

Mexico's cement sector is one of the most energy efficient in the world



Sectoral Programs in Mexico – Cement

- The most promising mitigation options for cement are:
 - » Cement blending (low to modest cost; may be supply barriers)
 - » Replacement of fossil-fuel based electricity generated by CFE with electricity produced by renewable sources built by the cement industry (expanded cement sector boundary; may be profitable or may require loans to overcome domestic barriers)
 - » Improvements in kiln energy efficiency (relatively expensive)
- Proposed sectoral goals:
 - » **Unilateral:** based upon deployment of blending or renewable energy options (or some combination of the two)
 - » **No-lose (with EE financing assistance):** based upon full deployment of all three options → incorporates a greater unilateral commitment than unilateral goal above

Sectoral Programs in Mexico – Oil Refining

- Unlike the cement industry Mexico's oil refineries are not among the world's most energy efficient
- The most promising mitigation options for oil refining are:
 - » Specific energy efficiency improvements (low cost)
 - » Energy Integration (very expensive)
 - » 3100 MW Co-generation (may be profitable; domestic barriers exist)
- Proposed sectoral goals:
 - » **Intensity-based goals:**
 - **Unilateral:** Reduce Solomon Energy Intensity Index (EII) by 17% from the 2007 level by 2020
 - **No-lose (with energy integration financing assistance):** Reduce Solomon EII by 25% from the 2007 level by 2020
 - » **Technology-based goals:**
 - **Unilateral:** 1500? MW of cogeneration by 2020
 - **No-lose (with loans):** 3100 MW of cogeneration by 2020

Sectoral Programs in Mexico — Implementation

- In Poznan, Mexico announced that it will pursue a trans-sector cap-and-trade program to include the electricity, oil, cement, and iron and steel sectors
 - » Initiation slated for 2011 (iron and steel may be later)
- Hard caps for the 2011-2020 period could be derived from the emissions intensity goals and expected production levels and be adjusted in subsequent periods
- Mexico has also put some complementary policy reforms in place:
 - » Energy Reform – provides more budgetary flexibility for PEMEX and permits some degree of private investment
 - » New law that allows CFE to consider externalities in its pricing decisions and gives CRE more control over contracting terms with independent power producers

Lessons Learned to Date

Sectoral Goal-Setting Lessons

- Significant data gaps exist – lack of plant-specific and cost data, and concerns about confidentiality → we cannot create “objective” intensity goals
 - » EU followed similar process in pilot phase of ETS when data on industry emissions and costs was lacking
- There is no substitute for in-depth bottom-up analysis and consistent data – capacity building for developing countries needs to begin immediately
- Flexibility is important
 - » National circumstances and data availability
 - » Sector boundaries (e.g., Mexico cement and oil refining)
- Goals should not be rigidly limited to sector-wide carbon-per-ton-of-production goals
 - » Technology-based goals can be more effective in some settings and more easily implemented (e.g. China; Mexico co-generation)
 - » Can also serve as transitional goals while data capacity is built

Sectoral Goal-Setting Lessons (II)

- Bottom-up analysis of barriers to cost-effective options can uncover need for tailored incentives (e.g. Mexico barriers to co-generation) and links to policy reform
 - » Not a part of McKinsey cost curves
 - » Support can be contingent on policy reform
- Key is implementation – what policies and measures will country adopt to achieve the sectoral goals?
 - » Mexico chose trans-sector cap-and-trade system + policy reform
 - » Cap-and-trade to include oil, electricity, cement and iron and steel sectors – goal is to have system operational by 2011
 - » New Energy Reform and electricity pricing laws
- Setting goals in developing countries will be like that in Annex I – a policy and political negotiation process

Broad Sectoral Approach Lessons

Sectoral approaches should:

- » have clearly defined objectives
- » build on ongoing unilateral mitigation actions
- » Produce material participation and material emission reductions across sectors and countries
- » Support national sustainable development strategies

Broad Sectoral Approach Lessons (II)

Sectoral approaches should:

- » Be flexible and take national and local circumstances into account (e.g., with respect to sector boundaries)
- » Produce technological innovation and transfer
- » Offer sufficient incentives to both governments and industry in both developing and developed countries

Nationally Appropriate Mitigation Actions (NAMAs)

- Internatl debate centers on three types of NAMAs: unilateral, conditional, and credit-generating
- Goal of this approach is to produce reductions by DCs that are not offsets – their contribution to climate protection
- 6-10 large developing countries are responsible for 80-90% of DC emissions in key sectors

Technology Finance Assistance to Encourage Stronger Actions

- Technology & finance assistance could be provided:
 - » To build first-of-a-kind advanced technologies which are not cost effective
 - » To accelerate deployment by bringing down the cost of advanced technologies
 - » As incentive for participating developing countries to establish more aggressive “performance goals”
- To receive incentives, developing countries would have to meet “performance metrics”, such as adopting binding national emission reduction programs

Sources for Technology Finance

- Countries could provide financing by setting aside a portion of allowances or auction revenues in domestic trading systems, e.g.,
 - » German Parliament has earmarked 30% of auction revenues
 - » European Commission has proposed that at least 50% of auction proceeds should be used for CCS deployment, int'l EE/RE, adaptation, and measures to avoid deforestation.
 - » Norwegian Finance Minister has proposed use for international programs including adaptation, technology, and reducing deforestation
 - » Lieberman-Warner bill used such an approach for int'l forestry

Governance of NAMA Finance/Support

- Structure of governance is critical – who decides what NAMAs get support and who distributes the support?
- Some options:
 - » Indirect – World Bank or similar institution decides how the funding is distributed
 - » Direct access – similar to Adaptation Fund
 - » New UNFCCC matchmaking body aligns requests and pledges
 - » Multi-Step – Facilitative Mechanism for Mitigation Support determines eligibility for funding, which is negotiated separately
- Nature of support:
 - » Finance for advanced technologies
 - » Finance for policy implementation (e.g., to write down the costs of a feed-in tariff for renewables)
 - » Finance to help overcome domestic barriers (e.g., capacity building; creation of Special Purpose Entities by IFIs like the IADB)

How financing could work

Developing Country conditional NAMAs

- with specific \$ requests
- with MRV provisions

Facilitative Mechanism under the UNFCCC

Available funds:

- Auction revenues
- New funds (UNFCCC or Mexican fund)

Bilateral assistance

- World Bank
- Regional Development Banks
- Multilateral Partnerships

Key Questions

1. ***How do we insure that NAMA finance negotiations in 2010 produce material reductions if many countries submit climate plans/strategies?***
 - » Prioritize NAMAs/countries? – concentrate first on a specific list of key sectors/NAMAs that produce significant emissions reductions (e.g., electricity, C&T) and on specific developing countries
 - » May be the only way to get a ratifiable treaty by 2010/2011 because this will require large emissions reductions from BAU by developing countries

Key Questions

- Who will decide whether a no-lose target or sectoral baseline is sufficiently stringent to receive credits for exceeding it?
 - » CDM Exec Bd
 - » COP
 - » New body like TEAP in Montreal Protocol?

Advantages of a Sectoral Approach

- A bridge strategy for the next commitment period (2012–2020) to encourage further developing country actions
- Creates strong technology finance incentives in key internationally competitive sectors (e.g. steel, cement, electricity) to:
 - » deploy advanced low carbon technologies (such as CCS that are not market ready and cost effective) in developing countries
- Fits into the Registry of Nationally Appropriate Mitigation Actions (NAMAs) concept that is at the center of debate in the UNFCCC process now
- Fits into recent EU proposal for achieving a comprehensive climate agreement in Copenhagen

Thank you!

For more information:

sectoral@ccap.org