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Clean Air Policy

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# Sectoral Approaches and Industrial Competitiveness

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# Outline of Presentation

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- Discussion of Comparative Effects of Traditional CDM, Supported Sectoral NAMAs, and Sectoral Crediting on AECs' Competitiveness
- Options for developing country implementation of sectoral trading/crediting – impacts on DC competitiveness and functioning of the carbon market
- Conclusions

# Options to Prevent Carbon Leakage/Protect EITE industries

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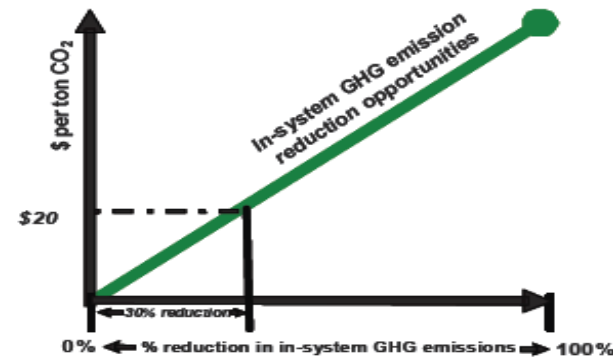
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- Two Basic Approaches:
  1. EITE industries in all countries face the same carbon price
  2. Provide free allowances to EITEs in developed countries until DC EITE industries face comparable carbon prices and
    - Provide incentives to DCs to take action in EITE sectors via supported NAMAs thru 2020,
    - Post-2020 implement targeted border tax measures for recalcitrant developing countries

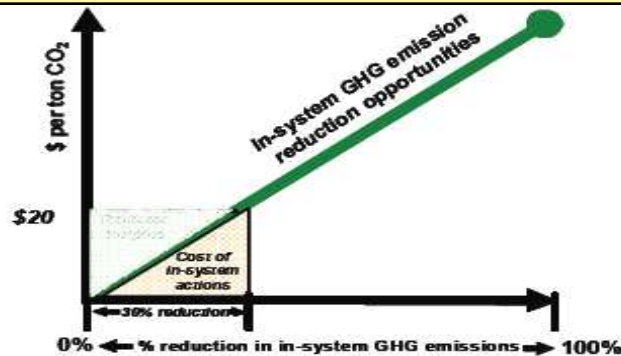
# Under CDM, An Unlevel Playing Field

1. Under CDM, revenues exceed costs. Playing field tipped toward Developing Countries
2. Carbon costs also affect developed countries, & generally more than cost of in-system actions

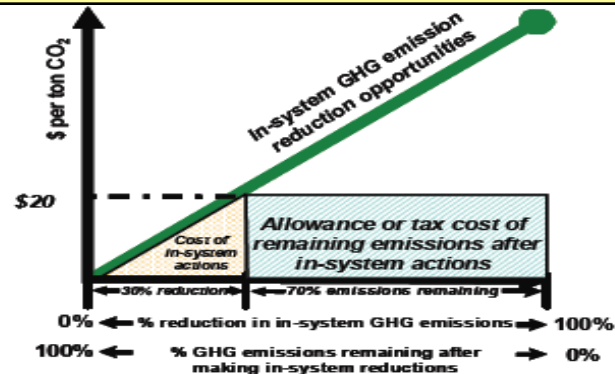
## 1. Illustrative MAC Curve



## 2. CDM project & Prod. Surplus

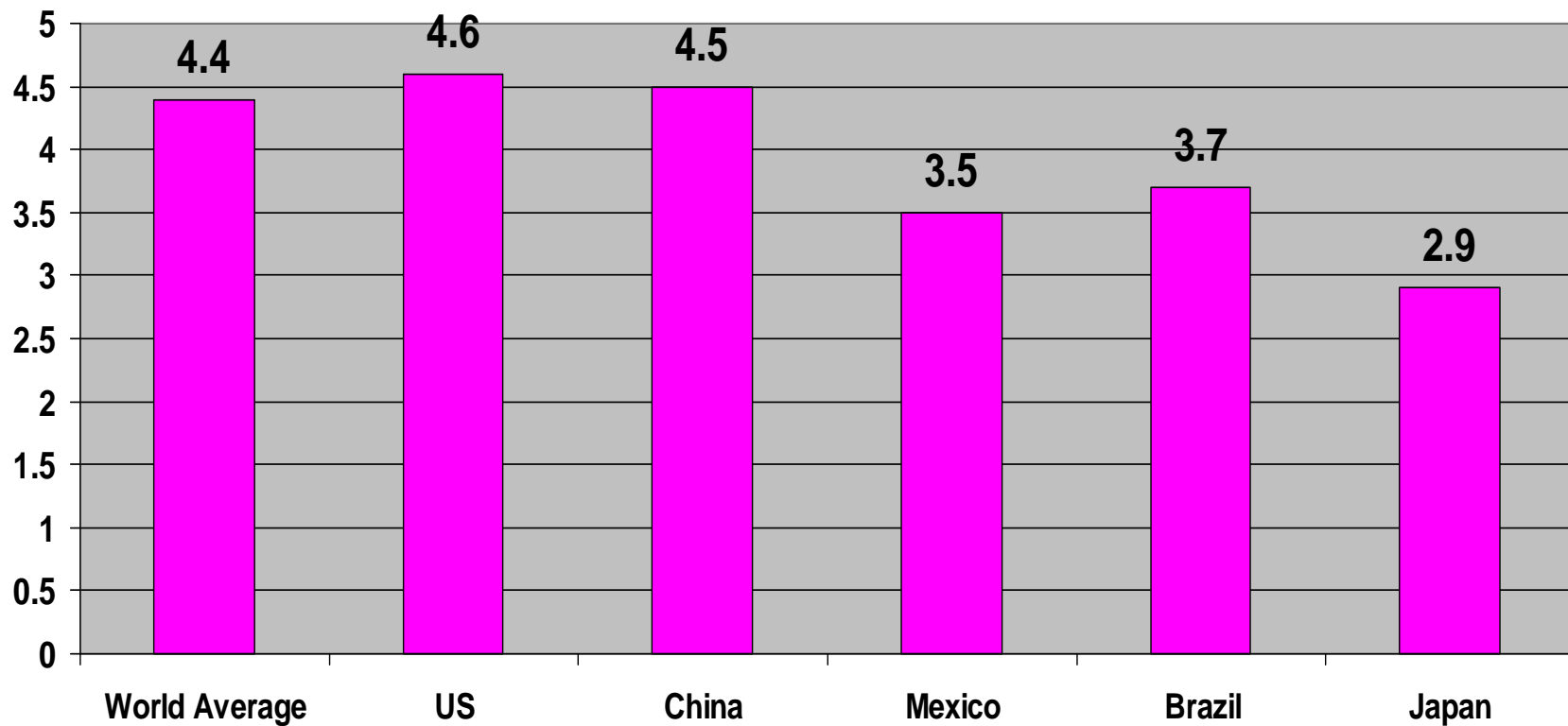


## 3. Developed Country Costs



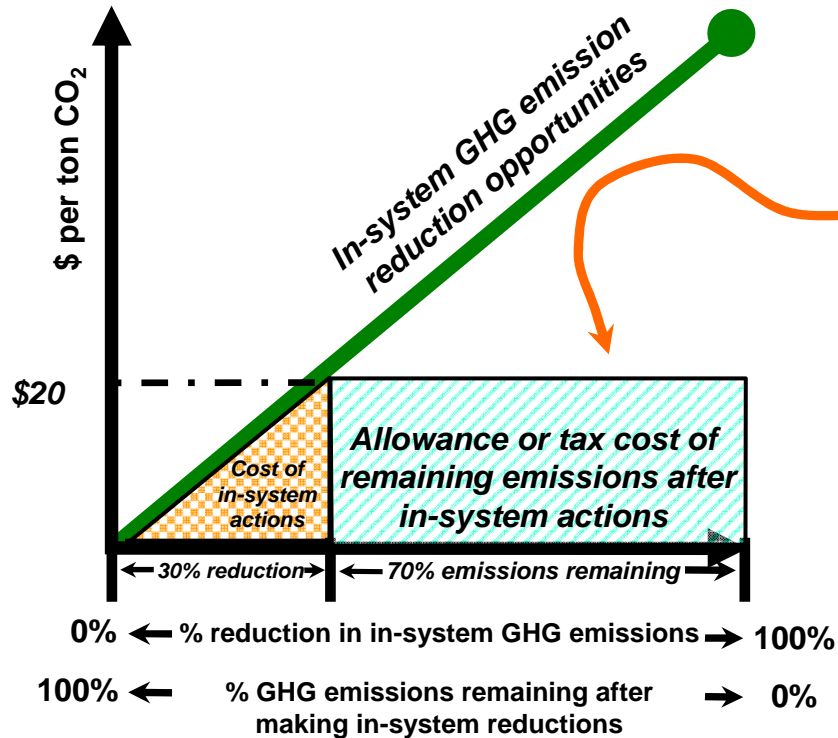
# Global Cement Efficiency Comparison

■ 2004 Energy Consumption per Tonne of Clinker (GJ)



# Uneven Carbon Pricing Matters

## Effects of CO<sub>2</sub> Pricing



When facilities undertake comparable levels of CO<sub>2</sub> reductions, it's the in-system emissions *remaining* that may be treated differently.

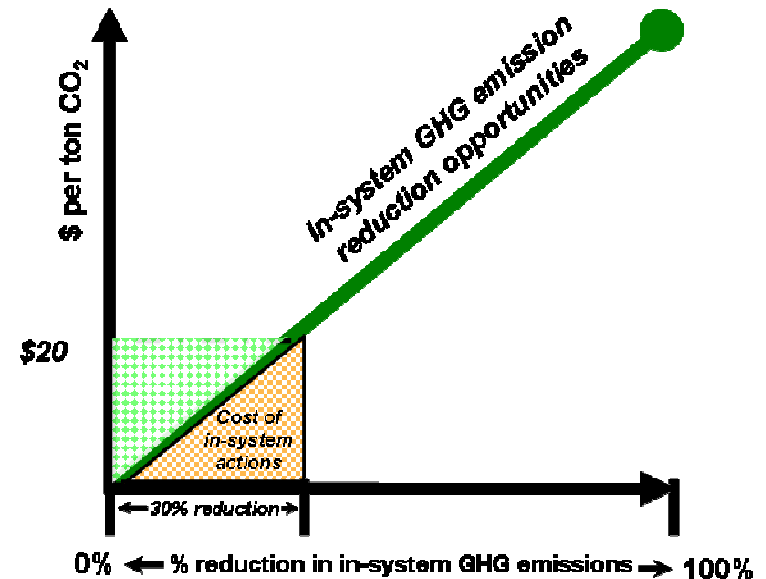
For a facility with a CO<sub>2</sub> price on emissions, the remaining emissions (70% in this example) require allowances at a market-clearing price, or carbon tax rate.

Facilities not facing a CO<sub>2</sub> price on emissions would not be burdened with this extra cost.

*It is the cost of allowances for remaining emissions that creates the biggest cost disparity.*

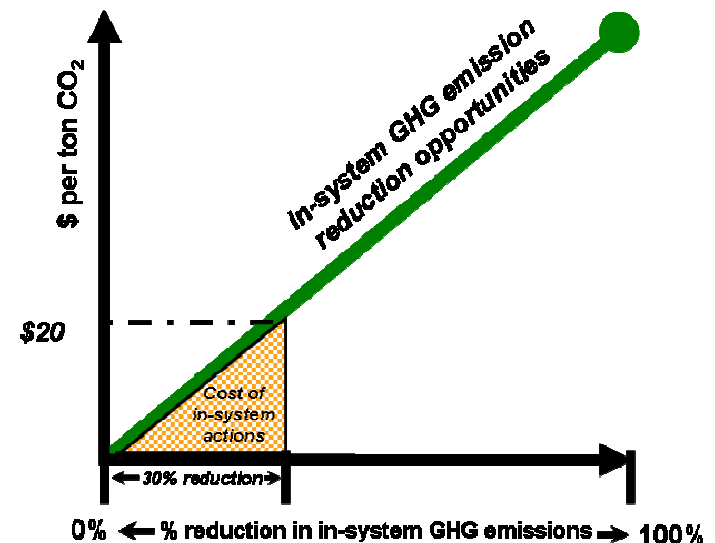
# Competitive Effects of CDM Project Crediting

- CDM project credits sell at roughly the international carbon price
- With additionality baselines at or close to BAU levels, the costs of implementing many of these projects are well below the world price of carbon
- Competitiveness Issues:
  - Revenues > costs for DC firms (“producer surplus”)
  - Extra revenue can have subsidy effects
  - DC firms generally improve competitive positions with CDM



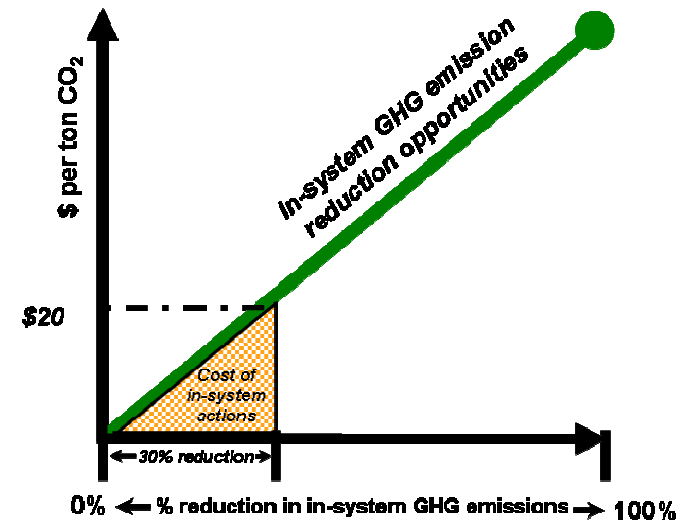
# Unilateral Sectoral NAMAs

- The concept of the Sectoral Bottom-up Approach has been reflected in the idea of unilateral and supported NAMAs.
- With unilateral NAMAs, DCs move emissions below BAU levels through their own voluntary efforts.
- Competitiveness Issues
  - DC costs > revenue
  - DC firms would incur an incremental competitive disadvantage relative to a situation where no abatement activity occurred in the sector



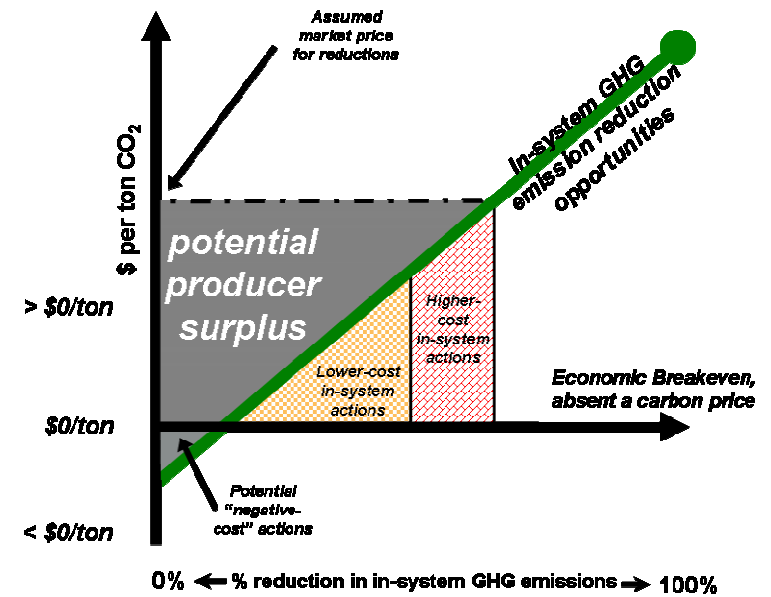
# Sectoral NAMAs with Support

- With supported NAMAs, they move emissions lower still with financial and technology assistance from AECs.
- The supported NAMA concept has proved to be flexible and attractive to participants in international negotiations
- Competitiveness Issues
  - Effect depends upon level of NAMA support vis-à-vis costs
  - If int'l support < incremental cost of NAMAs, DC firms are net payers, and their competitiveness is reduced
  - If support exceeds incremental net cost, DC firms would gain an advantage



# Credit Generating Sectoral NAMAs

- Credit-generating NAMAs would use baselines well below BAU levels, where emission abatement costs are higher than for the typical CDM project.
- Competitiveness Issues:
  - If the NAMA replaced a system of credits for CDM projects in the sector, the incremental effects would include elimination of the competitive advantages of that system for DC firms.
  - DC firms would have an advantage. But less than under the present CDM system



# Competitive Effects of Sector Crediting

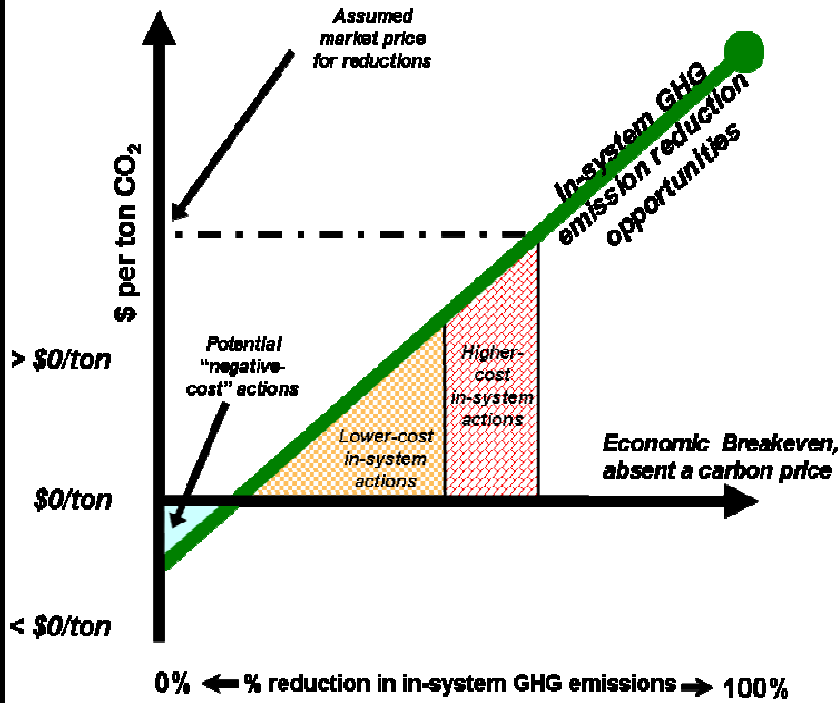
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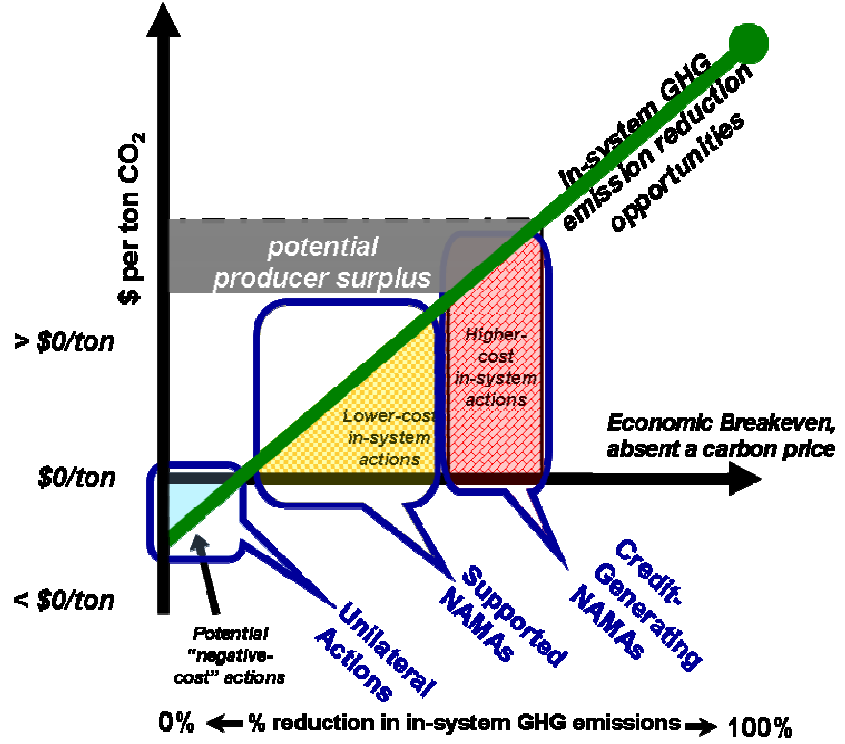
- It is assumed that the DC would itself make some contribution to the environment before credits could be earned.
- The emission baseline for crediting would be more stringent than BAU in part because of unilateral and supported NAMAs in the sector.
- Sector credits would be earned only for higher-cost activities further up the abatement supply curve.
- Thus, the costs of such projects would be much closer to the international carbon price than is the case with project credits.
- The resulting profits for DC firms would thus be lower, implying less impact on competitiveness under sector crediting than under a regime of project credits.

# Possible Architecture for Limiting Adverse Competitive Impacts

## 1. Recognize different costs within MAC Curve



## 2. Match approaches to different cost actions



# Competitive Effects of Sector Crediting (con't)

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- Sector programs are a feasible way of encouraging DCs to establish
  - Emission monitoring
  - Mandates
  - Enforcement programs
  - Carbon markets
- Sectoral Programs lay the groundwork for the eventual implementation of carbon policies that are comparable to those in AECs.
- Small short-run competitive advantage for DC firms will promote the eventual establishment of a leveled carbon playing field.

# Countervailing Forces in Developed Countries

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- A useful step to help protect competitiveness would be to bar any project-based CDM in EITE sectors **but**
  - *Other non-EITE industries and the CDM industry want inexpensive offsets and don't care about the adverse competitive impact on domestic EITE industries and*
  - *Some multinational EITE companies may prefer having a project-based CDM option for their DC subsidiaries*
- Sectoral crediting can also help protect competitiveness in developed countries **but**
  - *the countervailing desire of industry and politicians to have low cost offsets to hold down compliance cost can undermine support for sectoral crediting and*
  - *CDM industry prefers traditional CDM projects*

# Sectoral Crediting and DC Self-interest

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How do the options for implementing sectoral crediting stack up for developing countries?

# Possible Market Design Options: Sectoral Crediting for Developing Countries

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- Linked multi-sector cap-and-trade programs
  - » Among Annex 1 countries and Developing countries (DCs)
- Sector “trading”: emission cap on a sector
- No-lose sector crediting:
  - » implementation within DCs could vary widely
- Tradable intensity standards

# Linked Cap-and-Trade

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- Ideal of common global carbon price
- “Differentiated responsibilities”: DCs sell domestic allowances to Annex 1
- These sales replace offset credits
- Competitive effects depend on free allowances given in different countries
- May be some time before DCs develop these programs and links can be formed
- Sector trading or crediting can be an interim step toward linked cap-and-trade

# Sector Trading

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- Simple version of cap-and-trade for one or a few sectors in a DC
- Allowances given to DC in advance by international body
- Allowance submission requirement for DC is an internationally enforceable cap
- Competitive effects depend on the DC's sector policies (i.e., grants of free allowances or other subsidies)
- Not many DCs may be ready to make such international commitments as yet

# Sector Crediting

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- Reflects EU idea of incentives for DCs to make transition from project credits
- No lose, ex post, based on:
  - Absolute emissions,
  - Emission intensity, or
  - Technology penetration level (translated into tons)
- Implementation options in DCs could include:
  - Package of NAMAs and mandates in a sector
  - Domestic cap-and-trade (prior to full linkage)
  - Tradable intensity standard

# Sector Crediting Issues Re: Pass-through to Private Firms

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- Pro-rata sharing of credits among DC firms:
  - » Winning firms get less than one credit per ton
  - » Price signal below international carbon price
- Difficult to get finance by selling future credits when results depends on performance of other firms
- Would DC governments agree to pay for firms with excess emissions?
- Some suggest fines on failing firms;  
one version of this is a tradable intensity standard

# Tradable Intensity Standard with International Link

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- DC sets intensity standard at baseline for international crediting
- International credits used as compliance instrument for firms
- DC government gets credits from international body if sector beats baseline
- Firms with excess intensity buy credits to submit to government
- Government gives credits from both sources to firms that beat intensity baseline (one credit per ton)

# Effects of Tradable Intensity Standards

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- No lose for DC government
- Firms face the full international carbon price to motivate emission abatement
- Firms exceeding intensity baseline:
  - » pay only for emissions above baseline
  - » Less effect on marginal cost of output than cap-and-trade without free allowances
- Firms that beat the baseline:
  - » Earn a credit for each ton below
  - » Can finance projects with forward sales of credits
- Production incentive favors firms beating the baseline

# Likely Bottom Line for DCs

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- DC governments likely prefer an implementation strategy that :
  1. Maximizes revenue to government
  2. Protects low hanging fruit for DC action and sells higher cost reductions as offsets to AECs
  3. Provides certainty to carbon market to increase attractiveness
  4. May fear that financing for supported NAMAs will not come
- DC industry likely prefers:
  1. Project-based CDM to maximize revenue
  2. Market certainty

# Conclusions – competitiveness impacts of CDM, sectoral NAMAs and crediting

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- The Copenhagen Accord advances unilateral and supported NAMAs and thereby enhances potential for sectoral approaches
- Sectoral crediting can advance outside the UNFCCC through agreement between “buyer countries” on what is acceptable
- In evaluating competitive impacts of DC policies, must consider **both** carbon efficiency of direct production and whether electricity supply carries a carbon price

# Competitiveness Conclusions (2)

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The effects on competitiveness can vary:

- Depends on abatement opportunities and costs
- Depends on carbon prices
- Depends on level of assistance vis-à-vis costs
- Effects on “level playing field” can be positive, negative, or neutral

Adverse impacts on competitiveness of AEC facilities:

- Greatest impact with traditional CDM
- Least impact with supported NAMAs
- Varies for sectoral crediting

# Competitiveness (3)

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- ▶ Straight competitiveness analysis of CDM and NAMA options overlooks countervailing forces in every developed country who may oppose move to sectoral crediting:
  - ▶ Non-EITE industries who desire inexpensive offsets
  - ▶ CDM industry interests (greater in EU than US)
  - ▶ Politicians who see cheap offsets as best cost containment

# Conclusions – Implementation of Sectoral Crediting

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- How sectoral crediting is implemented determines whether it will be attractive to carbon buyers and what its impacts are on developing country industry
- While linked cap and trade systems with hard caps in key sectors are most attractive to AECs and to the carbon market, they face considerable challenges in DCs:
  - Imposes full carbon price on DC industry on **all** emissions
  - Hard caps provide little flexibility for growth

# Conclusions on Implementation (2)

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- Ex post sectoral crediting has limited incentive for investors due to uncertainty of CERs
- DC governments may prefer models that send finance through them rather than to private industry
- Tradable intensity standard offers great promise as compromise because:
  - It provides certainty of CERs for good performers
  - It delivers full carbon price , but only on amount that company falls short of intensity target
  - It allows DCs to phase in gradually to full global carbon market, without limiting (greener) growth

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# Thank You!

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