

Proposals for Sectoral Crediting, Sectoral Trading and National Appropriate Mitigations Actions in International Negotiations

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EPRI Greenhouse Gas Emissions Offset Policy Dialogue
Workshop 7 – Sectoral and International Crediting Mechanisms

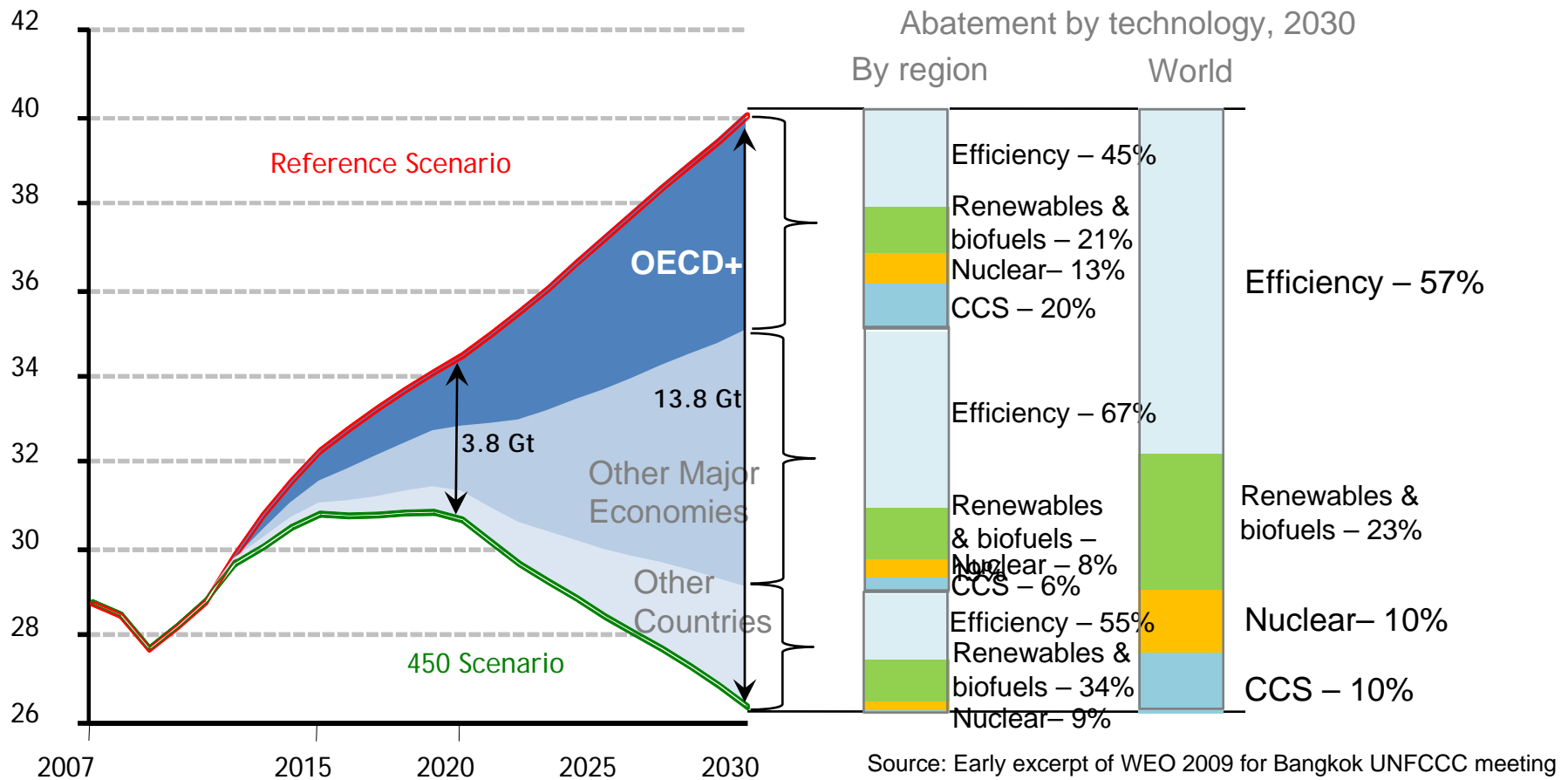
Washington DC, 25 February 2010



Outline

- **Market mechanisms: Why go ‘sectoral’?
An interpretation of developed countries proposals**
- **Definitions**
- **Implementation questions: where are the incentives?**
- **Whereto from here?**

World energy-related CO₂ emissions and reductions per region and activity in 450 scenario



The mitigation challenge is daunting – 3.8 GtCO₂ needed by 2020 in the energy sector alone globally, with much mitigation to take place in emerging economies

Source: World Energy Outlook, IEA 2009

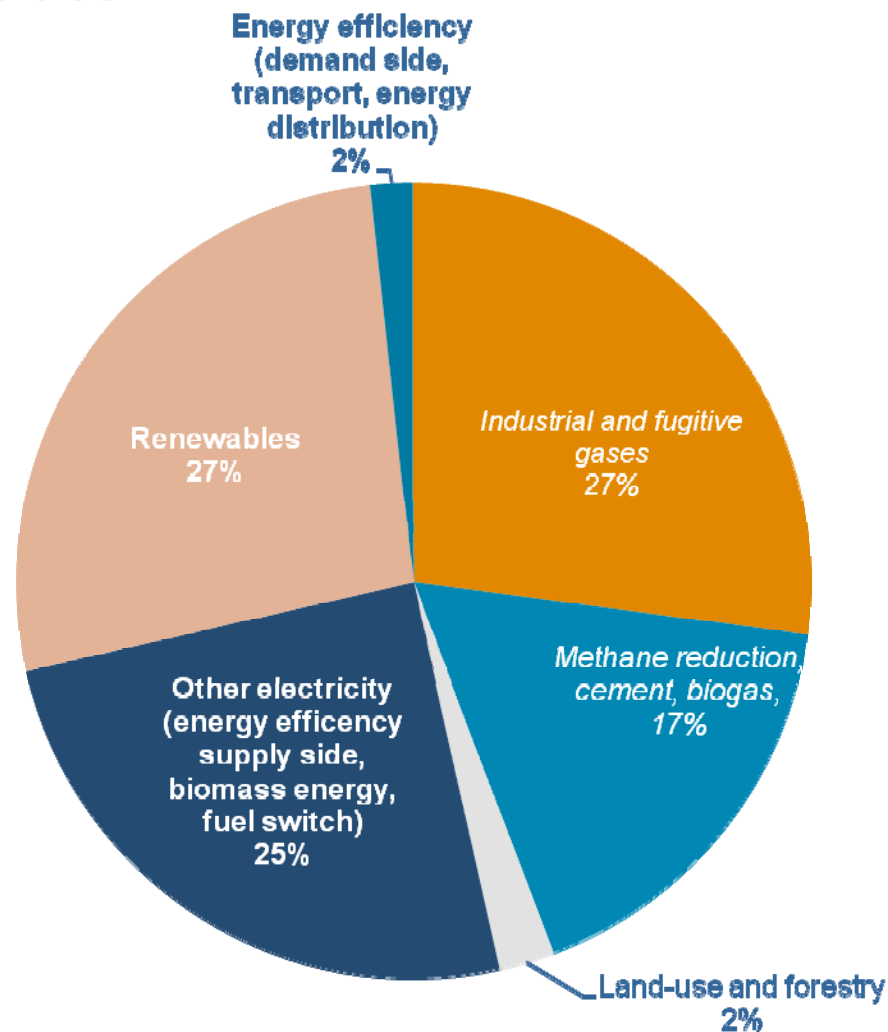
Overview of emission reductions achieved by Clean Development Mechanism projects

CDM pipeline information:
 Less than 1.5 GtCO₂ listed in electricity until 2012 – Likely delivery of reductions:
400 Mt - 600 MtCO₂

Projected electricity emissions over that decade in non-Annex I: **60 GtCO₂**

Growth trend in CO₂ from electricity in non-Annex I since 2000: **+8% per year**

CDM structurally unlikely to deliver needed mitigation



Total emission reductions expected over 2000-12, est. January 2010: 1.1 GtCO₂

Source: UNEP Risø, CDM pipeline, consulted in January 2010

Sectoral Approaches in Electricity

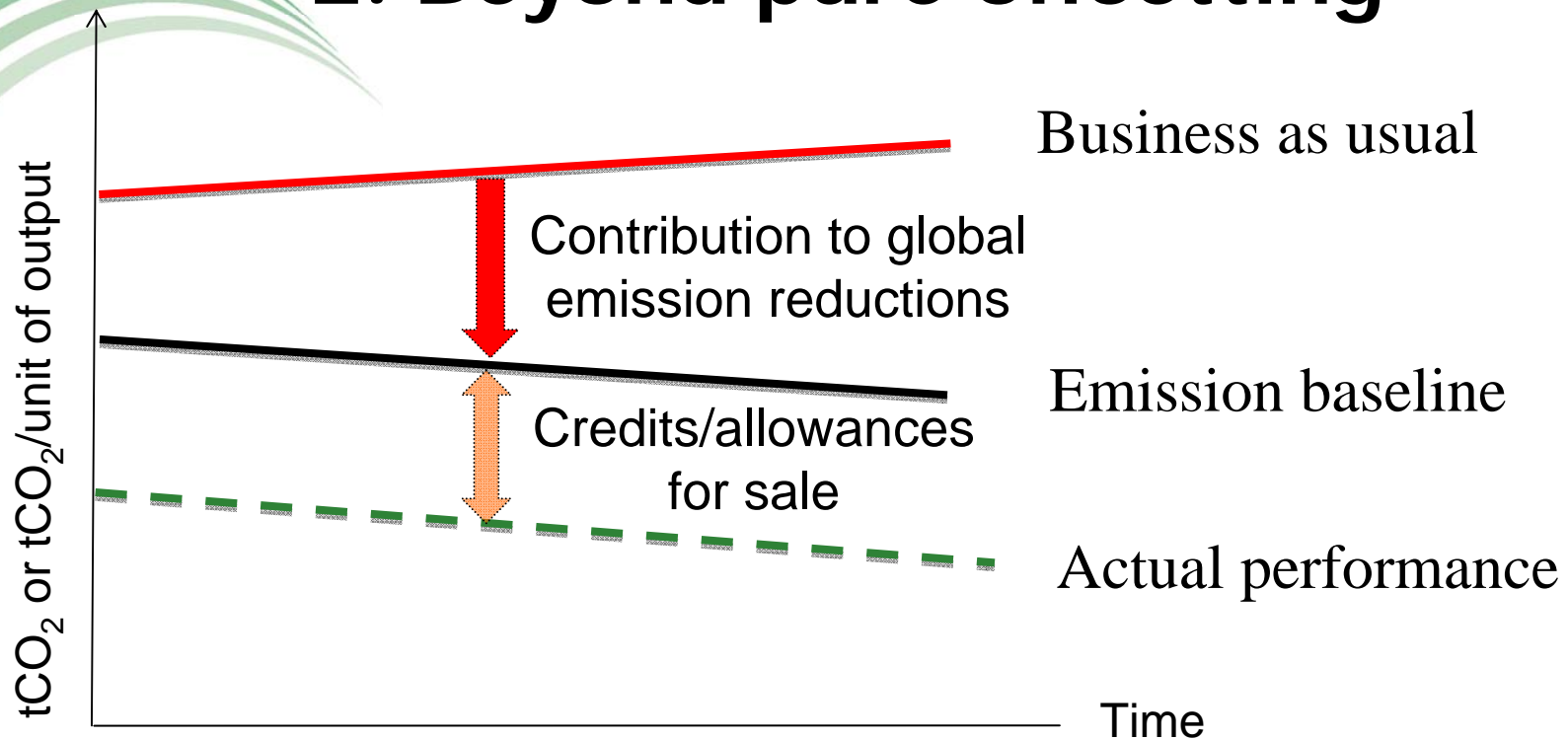
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1. From projects to sector

2. Beyond pure offsetting



CDM: cost-effectiveness, not global emission reduction

beyond Kyoto countries' goals: pure offsetting

Scaled-up market mechanisms *also* aim for enhanced global mitigation

Require environmentally-ambitious baselines

Definitions

- **Coverage: Sector? Nationally appropriate mitigation actions?**
- **Target type: Intensity / absolute**
- **Mechanism: Crediting / trading**
- **Legal nature: Binding / non-binding**

[Not all combinations may work]

- **Possible candidates: large sectors with relatively few sources, within a country**
 - Power generation
 - Heavy industry (cement, steel, aluminium?)
 - Forestry – some discussion of market mechanisms at UNFCCC
 - Consider current practice (EU emissions trading system): decisions needed on what is ‘in’ and ‘out’ the sector.

- **Nationally-appropriate mitigation actions?**
 - Proposal: any policy that performs beyond stated emission reduction objective could be rewarded with credits
 - Can sources be identified at the outset? How to draw a precise policy perimeter? How easy is it to define the baseline?
 - See lack of success with transport in CDM
 - Definition of NAMAs? From feed-in-tariffs for renewables, technology-goals to a country-wide CO₂ intensity goal?

Intensity / absolute targets



■ Intensity target

- Emissions per unit of output
- The practice in many CDM projects
- Attractive as it removes risk from unexpected high production
- Examples: tCO₂/MWh, tCO₂/ton of steel
- Could be measured annually, or averaged over several years (e.g. during a set commitment period)

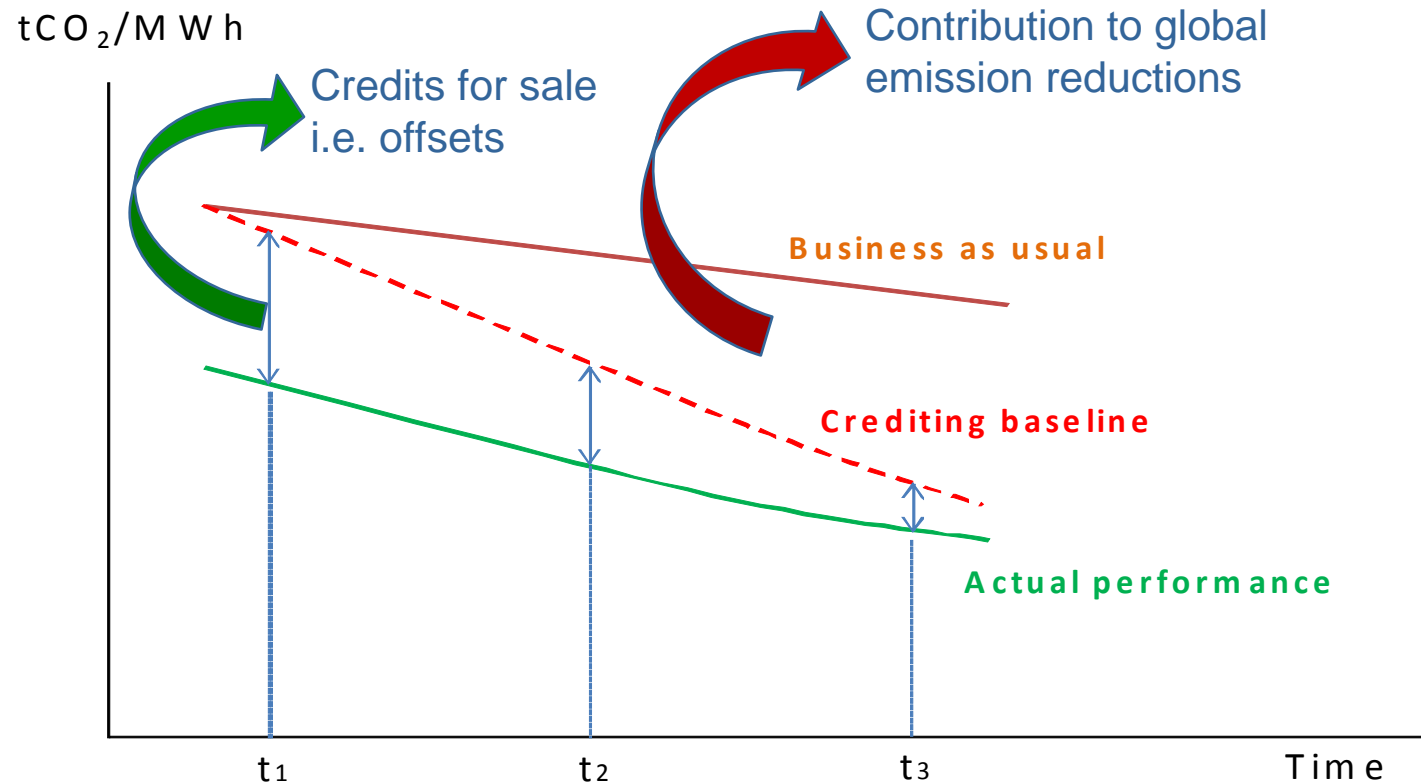
■ Absolute target (a.k.a. hard caps)

- Absolute emissions of the defined sector, or NAMA perimeter
- 'Absolute' could be 'growth' targets

■ Potential design issues

- What is in and out? Direct and indirect emissions?
- What is the proper measurement of output for an intensity target? Does it ensure a good environmental outcome? To be addressed on a case-by-case basis

Sectoral market mechanism: *Dynamic* baselines to encourage early investment



Dynamic baselines are adjusted to reflect improvements of sector's performance and encourage early actions to minimise carbon lock-in.

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Mechanism: Crediting vs. Trading



■ Crediting: follows CDM logic

- Evaluate performance against the emissions baseline
- Deliver credits corresponding to *observed* emission reductions from baselines
- An ex-post issuance of emission units – credits

■ Trading: follows cap-and-trade logic

- Allocate trading units at the beginning of the period
- Compliance assessed at the end of the commitment period
- Facilitates devolution of units to individual entities
- Facilitates financing of mitigation – units can be traded before reductions have occurred
- An ex-ante issuance of emission units – allowances

■ Design issues

- How often is compliance measured?

Binding or non-binding?

■ Binding target

- A country/sector/NAMA that emits above its target – or oversells allowances – must “make good” on its commitment or face a penalty (see Kyoto Protocol)
- Note: assumes ‘*seller beware*’ liability rule

■ Non-binding (or ‘no-lose’*) targets

- A country/sector/NAMA gets credited when emissions are below the baseline
- Emissions above the baseline trigger no penalty, no obligation to buy
- Rationale: create clear incentives for emerging countries to join. Can encourage more ambitious goals.

* See CCAP, and Philibert, 1999.

International options for scaled-up market mechanisms



	Crediting	Trading	Monitoring variables
Intensity-based target	<i>Ex-post</i> issuance of credits based on GHG performance per unit of output (tons of product, megawatt-hour or other indicator of GHG intensity)	Intensity-based trading is difficult as the <i>ex-ante</i> allocation requires a forecast of output levels and <i>ex-post</i> adjustments of total allocation once actual output is observed	Emissions plus output level or other indicator
Absolute target	<i>Ex-post</i> issuance of credits based on an absolute quantity of GHG emissions	<i>Ex-ante</i> allocation of allowances to the sector/country	Emissions
Binding nature of target	Could be a no-lose/non-binding target	Binding target needed (if <i>ex-ante</i> allowance allocation is pursued)	--

- Intensity or absolute-based crediting (binding or non)
- Absolute-based trading (binding, to facilitate transactions)
- Limited interest in intensity-based trading – how to allocate *ex ante* trading units for performance expressed as tCO₂/unit of output?

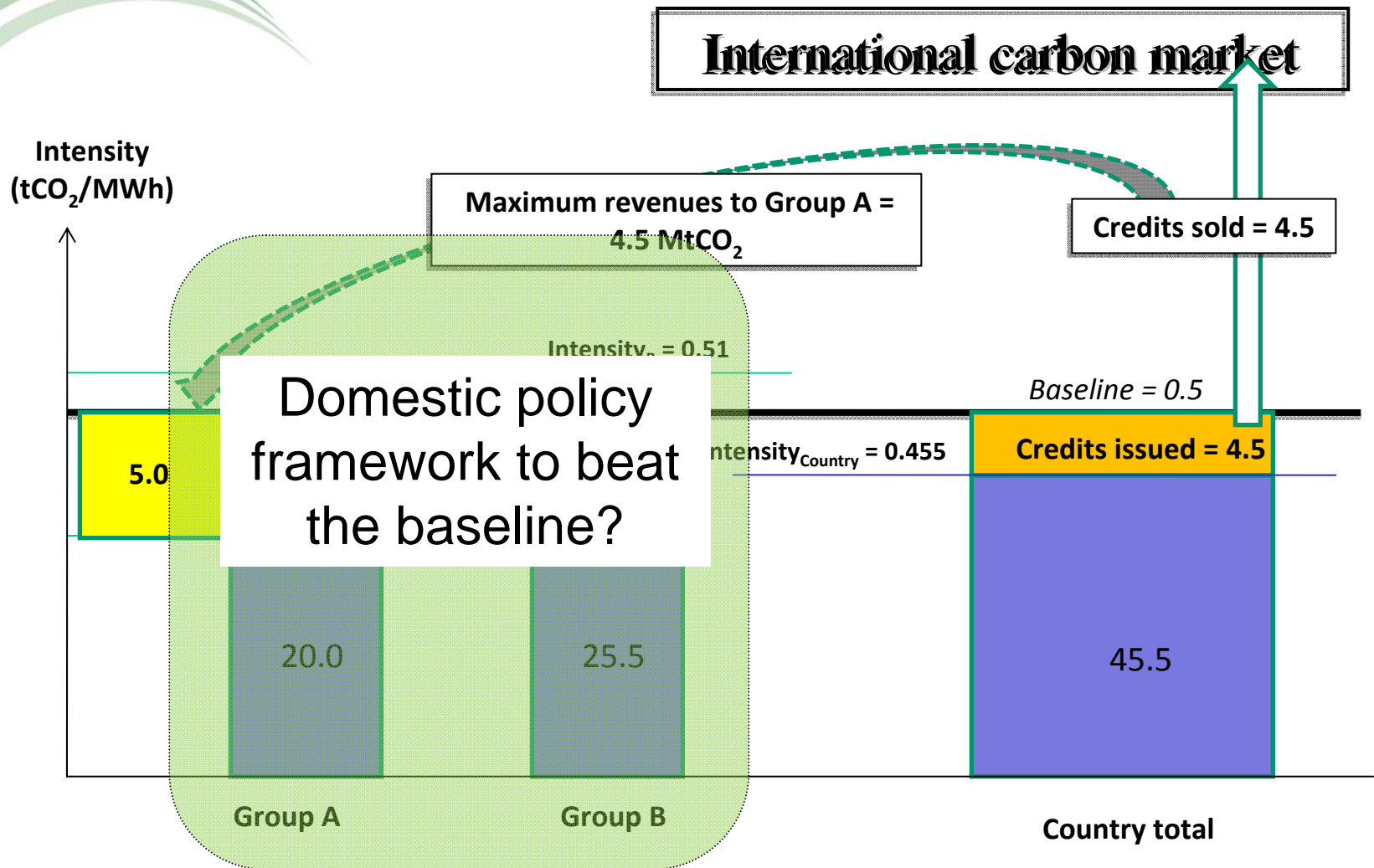
Implementation questions

- **Are these international options conducive to effective *domestic* market mechanisms?**

- **Example: no-lose intensity-based crediting**
 - **Baseline: tCO₂/unit of output – here tCO₂/MWh of grid electricity**
 - **Performance evaluated for the whole electricity sector in a given country**
 - **Credits issued once performance has been measured, reported and verified to be better than the baseline**
 - **How does this work for individual entities?**

Not quite like project-based CDM

Sectoral crediting: who gets what?



Implementation questions (2)



■ Example: no-lose intensity-based crediting

- Cannot just agree on a national baseline and let domestic sources 'run with it':
 1. Credits hinge on overall performance
 2. Credits are issued to government, not entities
- In most cases, the country baseline cannot be applied uniformly to all entities in a sector
 - 0.5tCO₂/MWh immediately penalises coal and rewards existing renewables and other non-carbon technologies
- Other domestic policies can deliver the environmental outcome (support to renewables, mandated performance, etc.)
- Or: entity-by-entity baseline setting with some government guarantee on environmental outcome: binding intensity target

■ Sectoral trading

- Facilitates implementation of domestic cap-and trade

Whereto from here?

Two options for future development of scaled-up market mechanisms

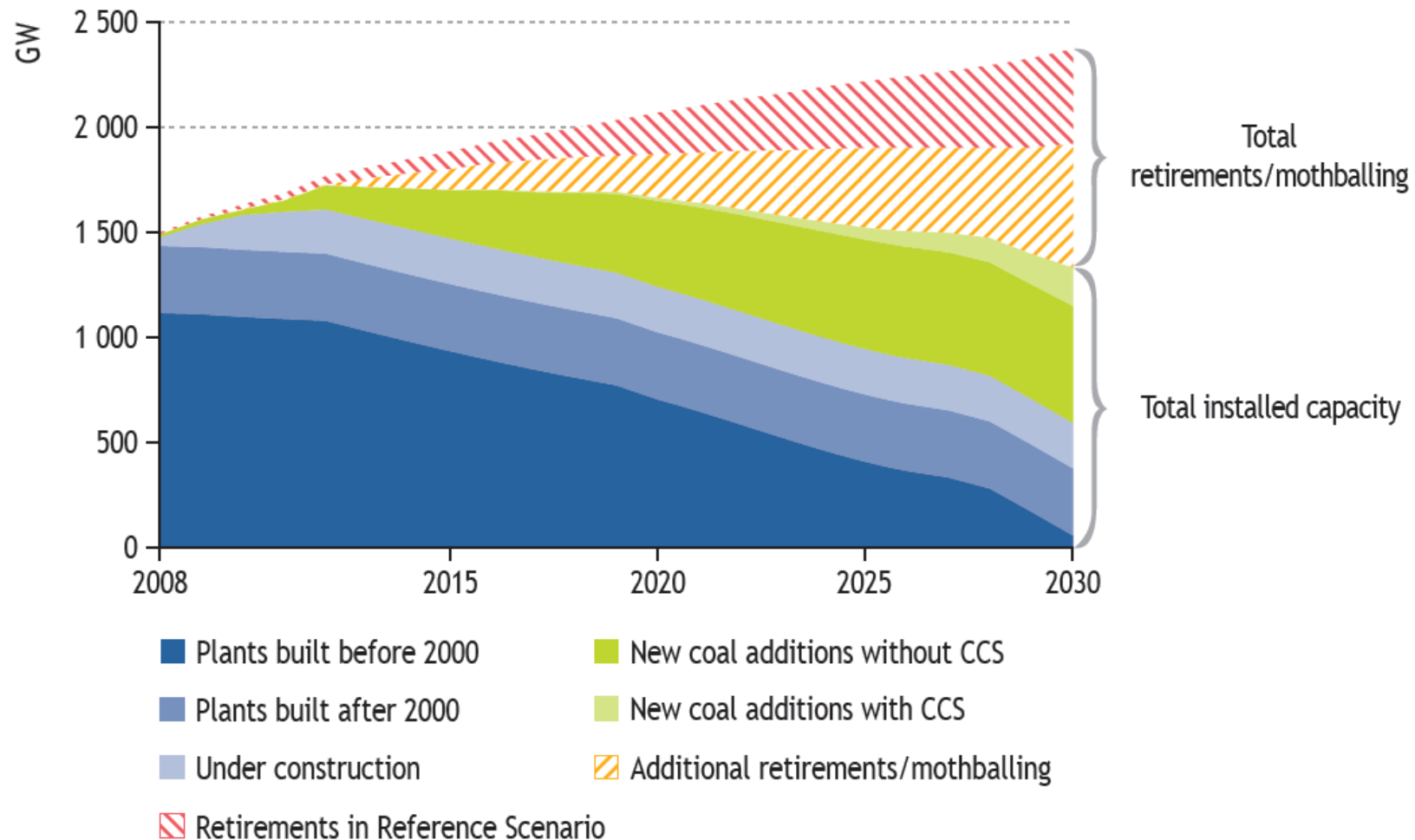
■ Under UNFCCC

- Market mechanisms mentioned in Bali Action Plan, and in the Copenhagen Accord – some Parties showed interest
- Some push-back on “sectoral” interpreted as “global benchmark”, going against “common but differentiated responsibility...”
- Common methodologies could be developed for given sectors – environmental ambition up for negotiation
- Or: simply agree to create a trading unit for scaled-up market mechanisms in non-Annex I countries

■ Bottom-up

- Regional emission trading systems negotiate with countries interested in scaled-up mechanisms.
- Rules likely to differ – some may prioritise large supply of offsets, others may insist on environmental ambition ...

Decommissioning of existing plants: Coal-based capacity in Reference and 450 Scenarios



Source: World Energy Outlook, IEA 2009

450 GW decommissioned "naturally" by 2030
585 GW needed as early retirement/mothballing to meet 450 ppmv
What policy instruments can best deliver this?

Concluding remarks



- **Sectoral, NAMAs? Scaling-up from CDM is the key. This evolution should come with environmentally-ambitious baselines to deliver global mitigation, not just enhanced cost-effectiveness**
- **Pragmatism is essential: find solutions that work for action on the ground – a market approach may not fit all sectors and countries, but how can carbon market revenues help to deliver change?**
- **Scaled-up market mechanisms could help forging a global carbon market – when linking domestic ETS is not a top priority**

The Copenhagen Accord recognises the use of market approaches

- **Will national pledges become a basis for the establishment of broad, sector or policy-based international mechanisms?**
- **Future of CDM? In the buyers' hands: limited eligibility, as incentive for host countries to scale-up?**

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