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

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Workshop 7 – Sectoral and International Crediting Mechanisms

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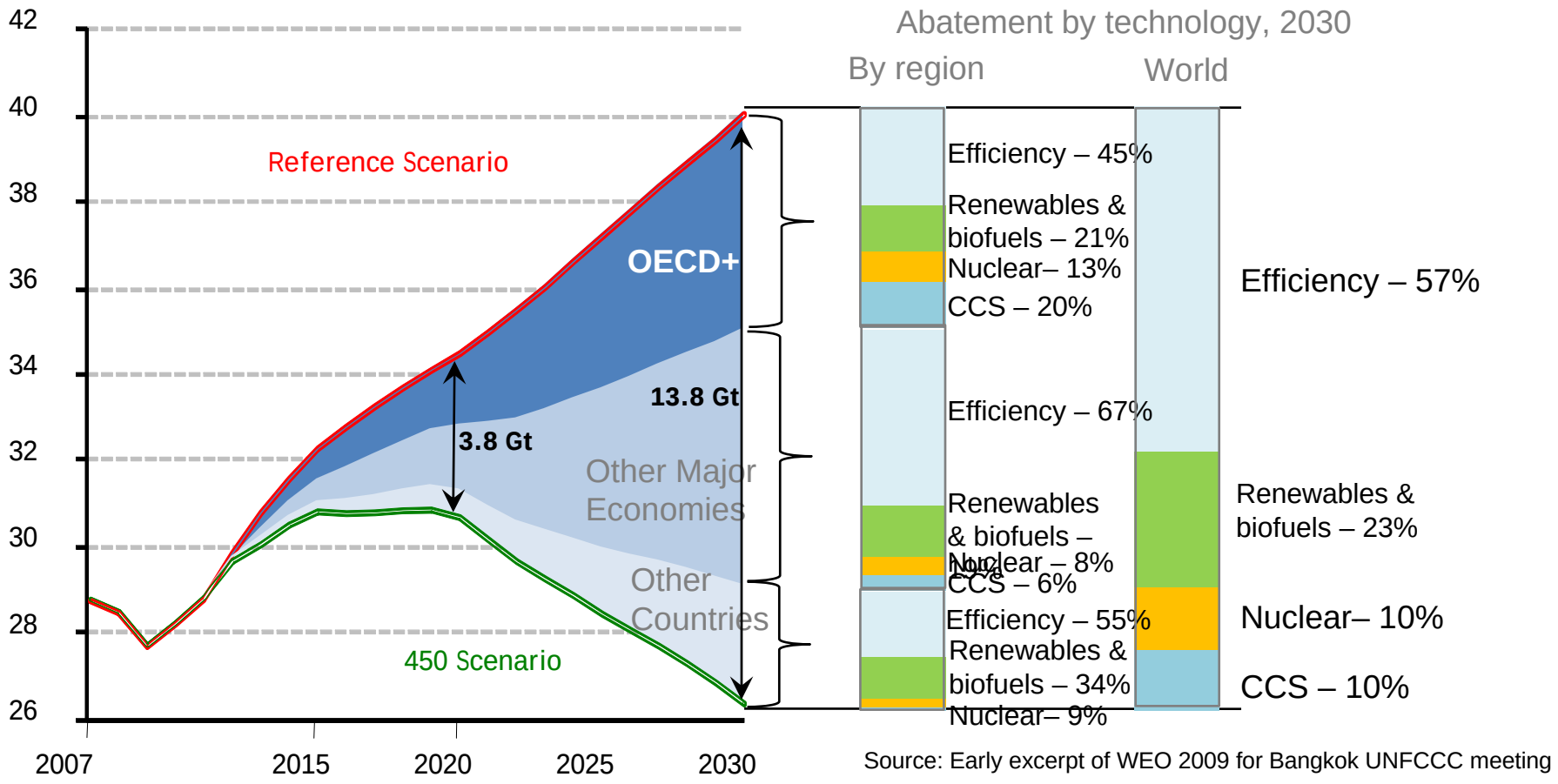
Outline

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

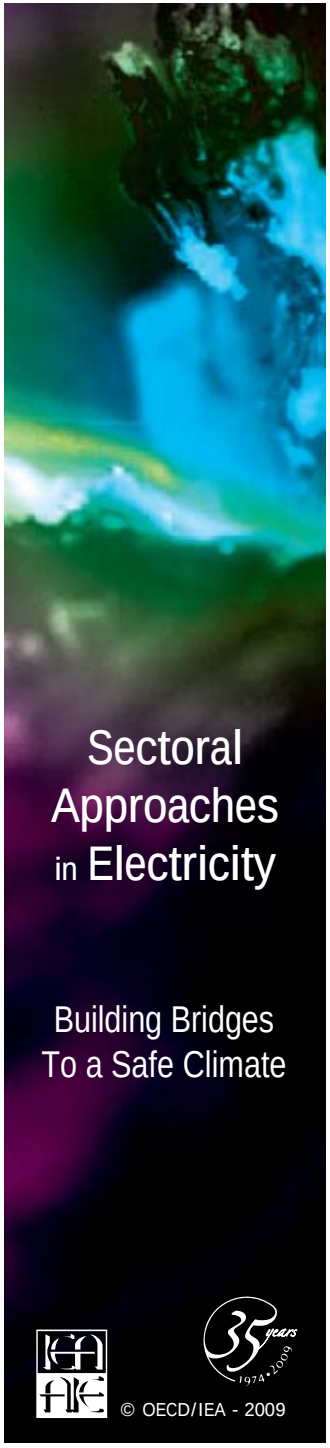
World energy-related CO_2 emissions and reductions per region and activity in 450 scenario



Source: Early excerpt of WEO 2009 for Bangkok UNFCCC meeting

The mitigation challenge is daunting – 3.8 $GtCO_2$ needed by 2020 in the energy sector alone globally, with much mitigation to take place in emerging economies

Source: World Energy Outlook, IEA 2009



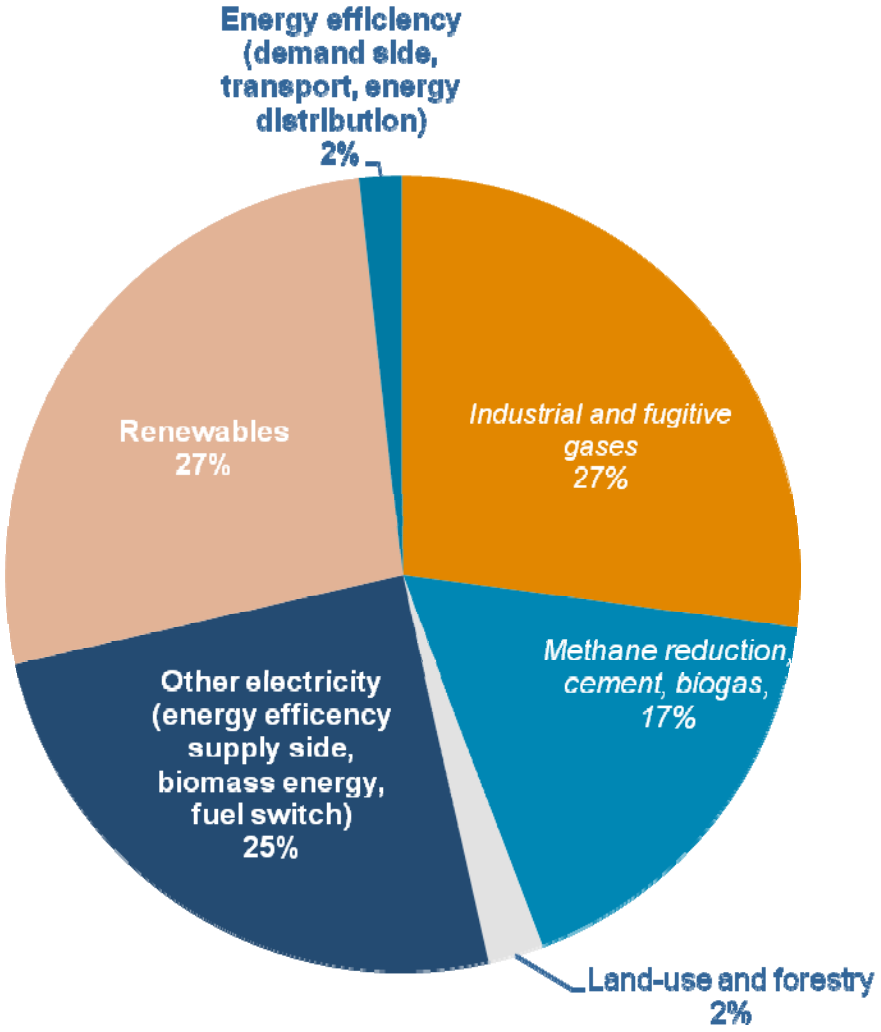
Overview of emission reductions achieved by Clean Development Mechanism projects

CDM pipeline information: Less than 1.5 $GtCO_2$ listed in electricity until 2012 – Likely delivery of reductions: 400 Mt - 600 $MtCO_2$

Projected electricity emissions over that decade in non-Annex I: 60 $GtCO_2$

Growth trend in CO_2 from electricity in non-Annex I since 2000: +8% per year

CDM structurally unlikely to deliver needed mitigation

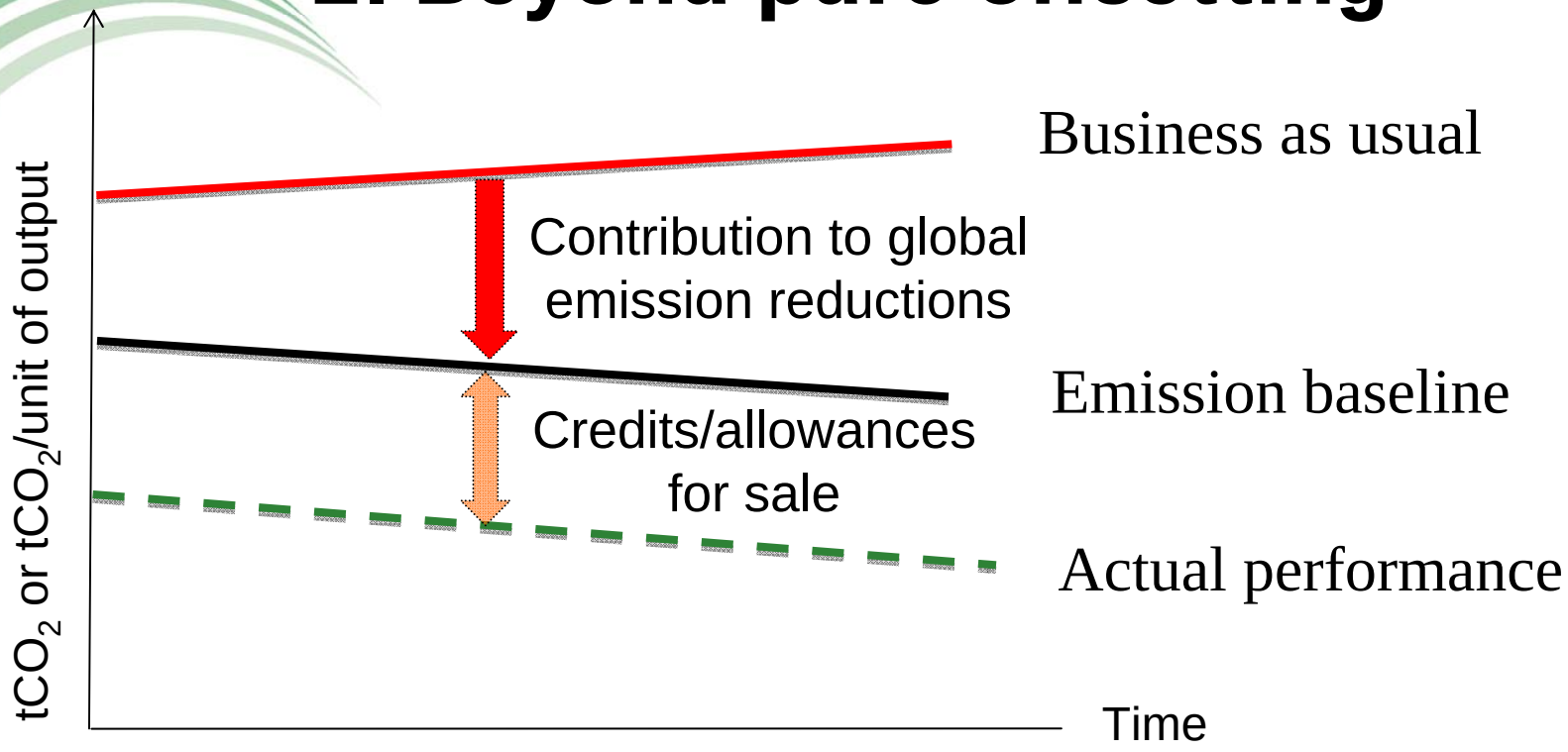


Total emission reductions expected over 2000-12, est. January 2010: 1.1 $GtCO_2$

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

1. From projects to sector

2. Beyond pure offsetting



CDM: cost-effectiveness, not global emission reduction
beyond Kyoto countries' goals: <u>pure offsetting</u>
Scaled-up market mechanisms *also* aim for <u>enhanced global mitigation</u>
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]

Coverage

- **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 CO_2 intensity goal?**

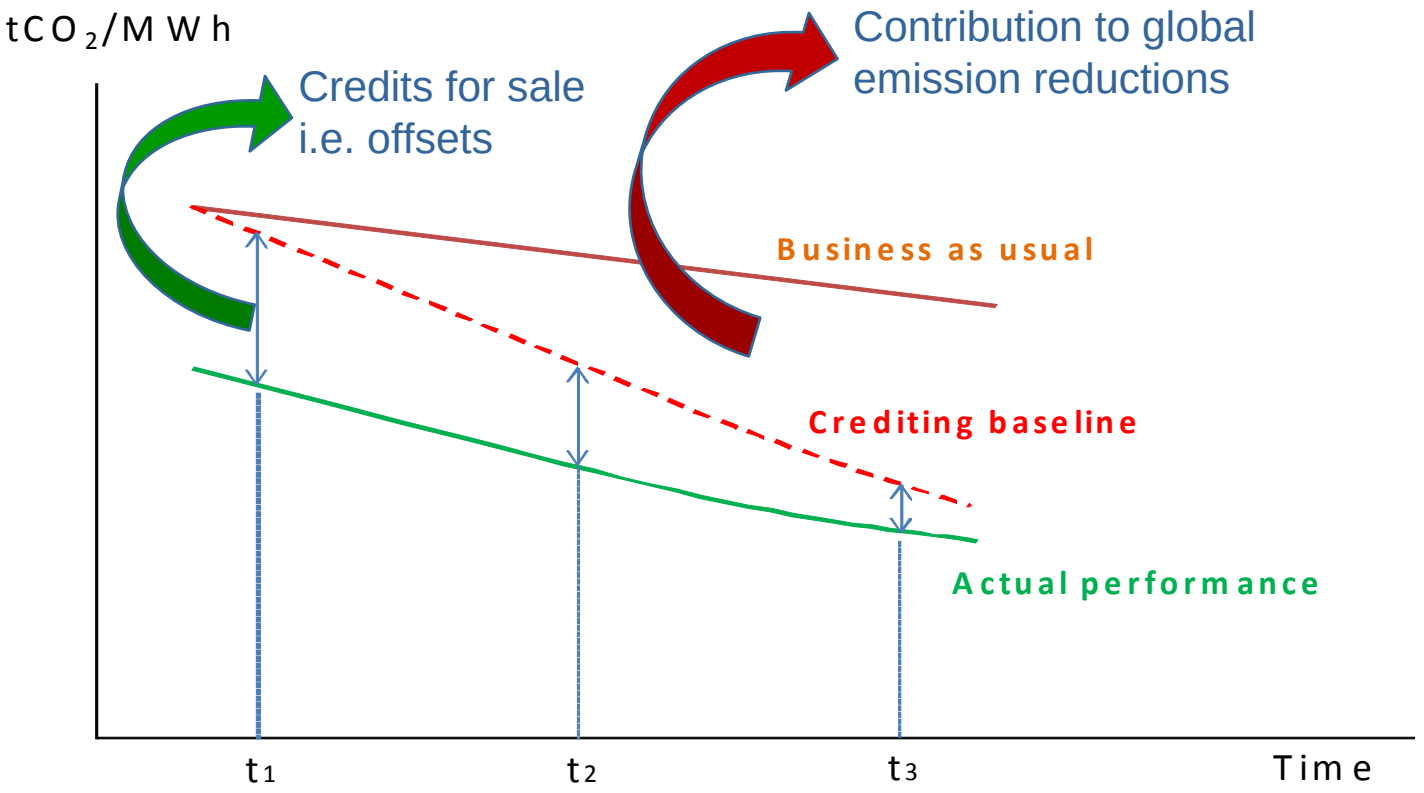
Intensity / absolute targets

- **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 Approaches in Electricity

Building Bridges To a Safe Climate

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.

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	*Ex-post* issuance of credits based on GHG performance per unit of output (tons of product, mega-watt-hour or other indicator of GHG intensity)	~~Intensity-based trading is difficult as the *ex-ante* allocation requires a forecast of output levels and *ex-post* adjustments of total allocation once actual output is observed~~	Emissions plus output level or other indicator
Absolute target	*Ex-post* issuance of credits based on an absolute quantity of GHG emissions	*Ex-ante* allocation of allowances to the sector/country	Emissions
Binding nature of target	Could be a no-lose/non-binding target	Binding target needed (if *ex-ante* 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 tCO_2/unit of output?

Source: OECD/IEA, 2009

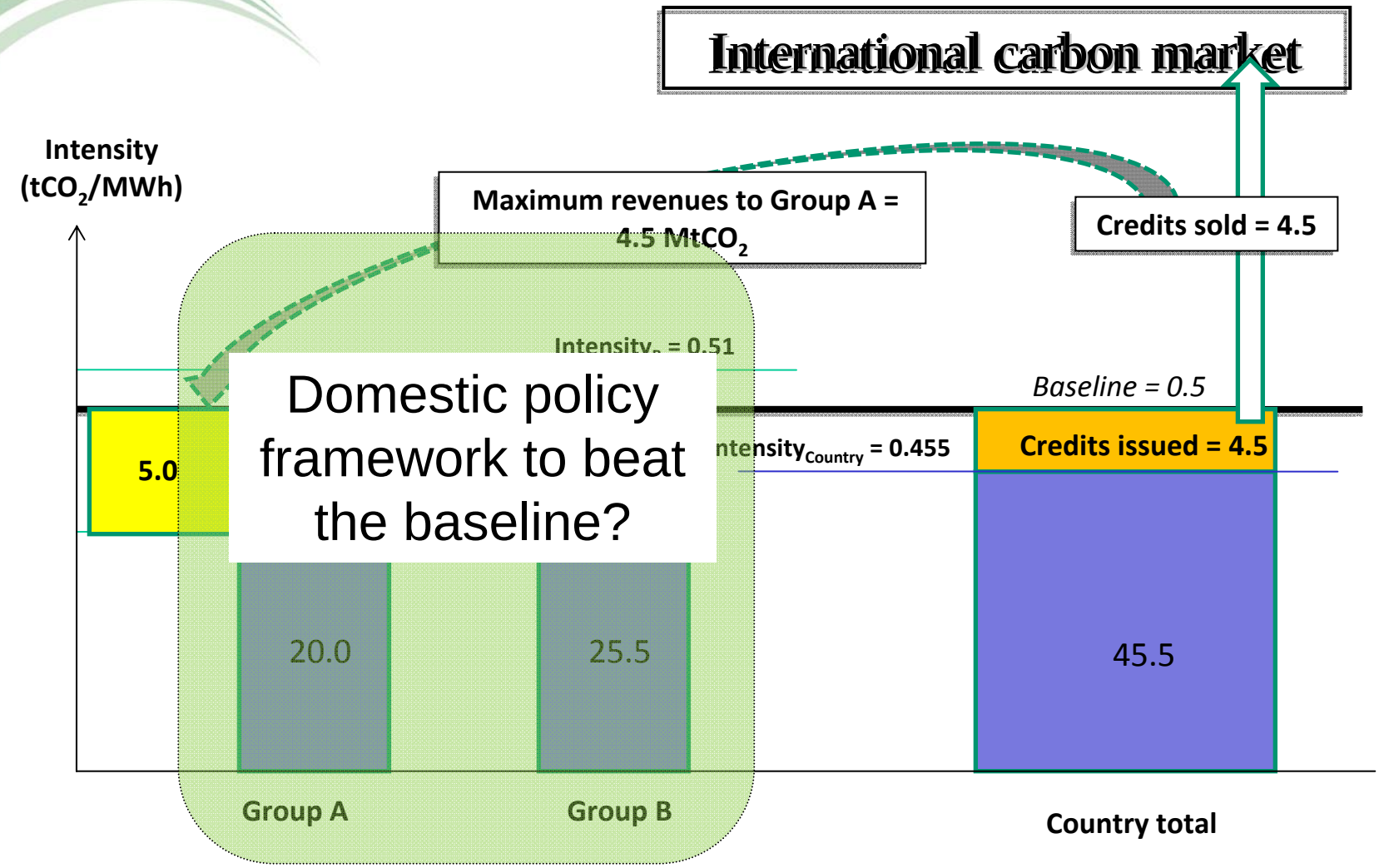
Implementation questions

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

- **Example: no-lose intensity-based crediting**
  - **Baseline: tCO2/unit of output – here tCO_2/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?



Source: Baron, Buchner, Ellis, 2009

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
    - 0.5tCO_2/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

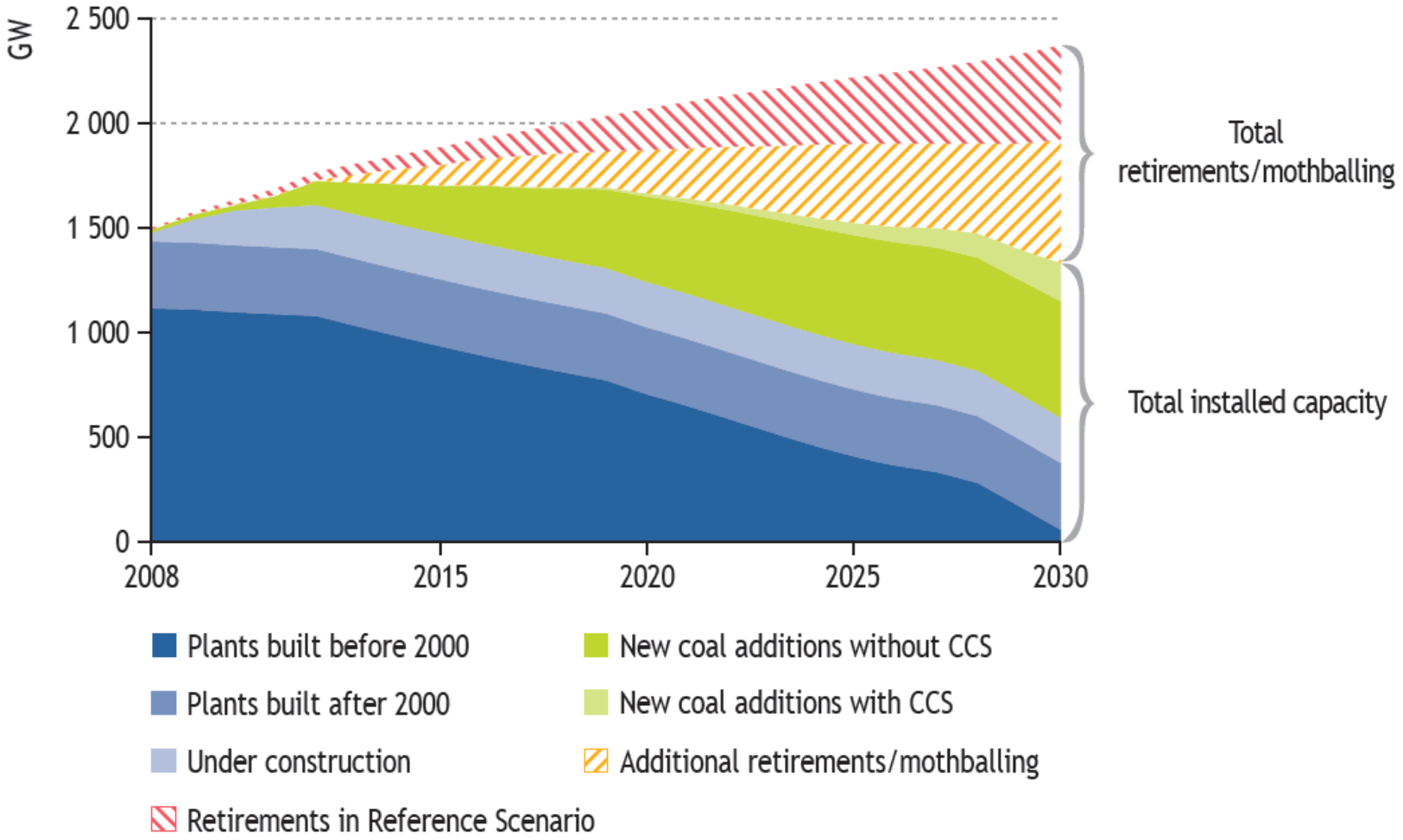
- **Sectoral trading**
  - Facilitates implementation of domestic cap-and trade

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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(IEA, 2009)

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