

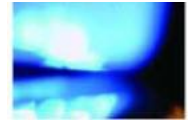


# Linking Domestic ETS and the Post 2012 International Climate Policy

***7<sup>th</sup> Annual Carbon Trading Forum***  
***IEA – IETA - EPRI***  
***23 September 2008***  
***Paris***



## Background



- Allowance markets are the core of the global GHG market, and will grow even stronger in the future
- Offset markets play an important role in cost containment – and in expanding the global effort of reducing emissions to a broader set of countries
- CDM & JI mechanisms are stimulating billions of dollars in GHG reduction investments – but only a start in light of the global warming challenge
- Need to move beyond project-by-project approach, which was beneficial in building experience and confidence in the system
- Simplified rules would improve incentives for major investments needed to transform the global energy and transport infrastructure
- Natsource Advisory and Research conducted analysis for IETA in 2007-08 to explore options and recommend improved design (draft paper in circulation)

# Imperatives & challenges to improve CDM/JI



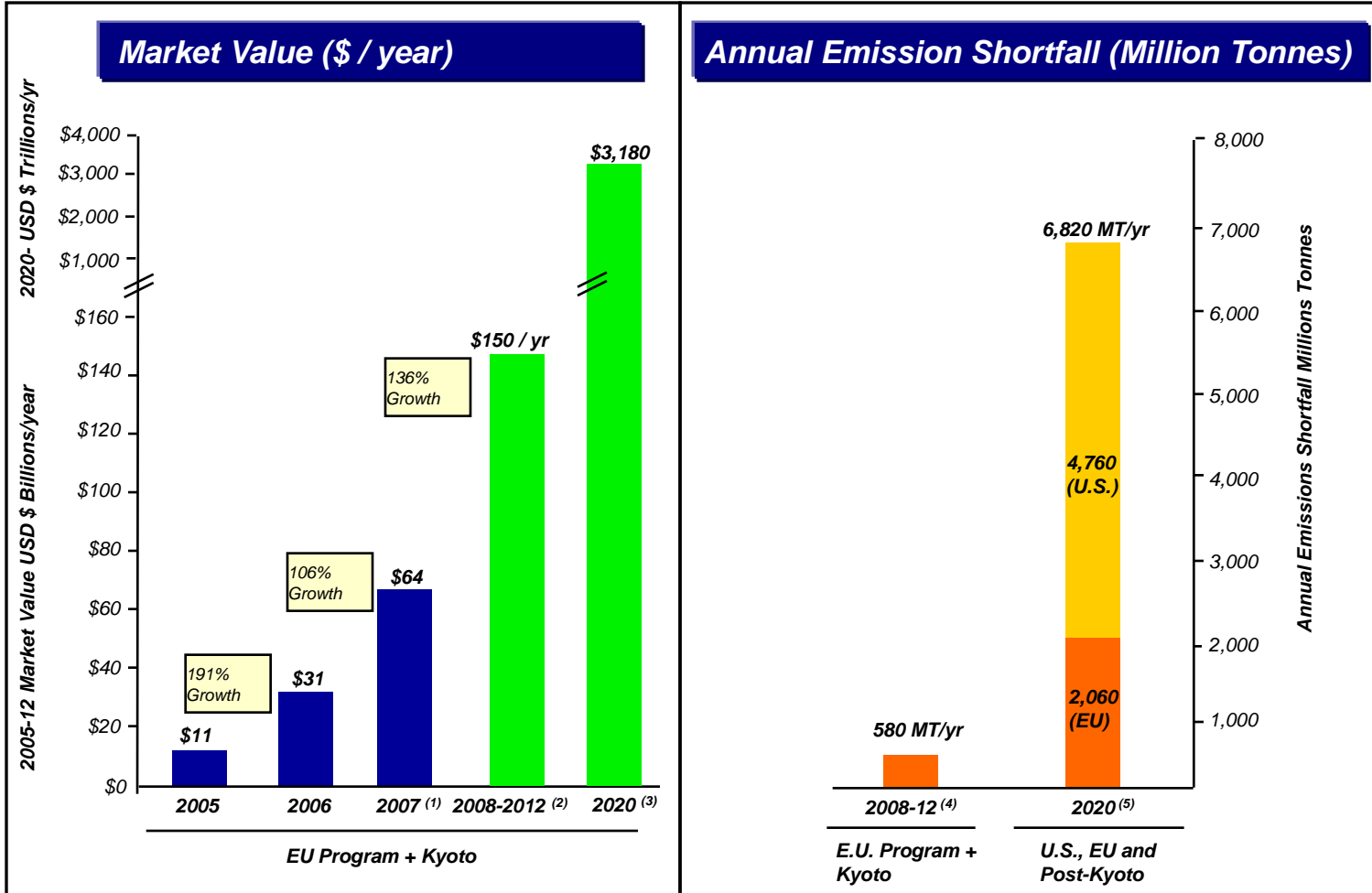
- Global energy demand trends and investment needs
  - Global energy demand projected to be 50% higher in 2030 (IEA World Energy Outlook 2007)
  - Global electricity use will double
  - If all policies currently under consideration are implemented, global CO2 emissions 25% higher in 2030
  - \$22 trillion in supply infrastructure investment needed to meet demand
  
- The Post 2012 mechanisms need to influence this investment
  - Under most scenarios, the post 2012 policy will build on the CDM experience, supporting cooperative approaches
  - How can it be upgraded to influence global energy infrastructure investment?
  
- A variety of instruments may be a "fit" for different Parties
  - Economy wide limits for OECD and other wealthy or high-emitting countries?
  - Sectoral limits for other countries?
  - Project based mechanisms for remaining countries?

## Imperatives / challenges (II)



- Need to ensure that new energy and energy-intensive investments help reduce GHGs in order to meet global environmental objectives
  - Avoid locking-in technologies with marginal emissions improvements
  - Ensure standards are clearly beyond BAU and become more stringent over time as new investments are made and emissions intensity decreases
  
- Need to stimulate investment in key untapped activities
  - Energy efficiency and forest sequestration
  - Economic models project they can be major contributors to total global reductions prior to 2050
  - Forest sequestration important for regions that have not yet benefited from CDM investment (e.g. sub-Saharan Africa)

# Current Carbon Market Value and Future Estimates (1)



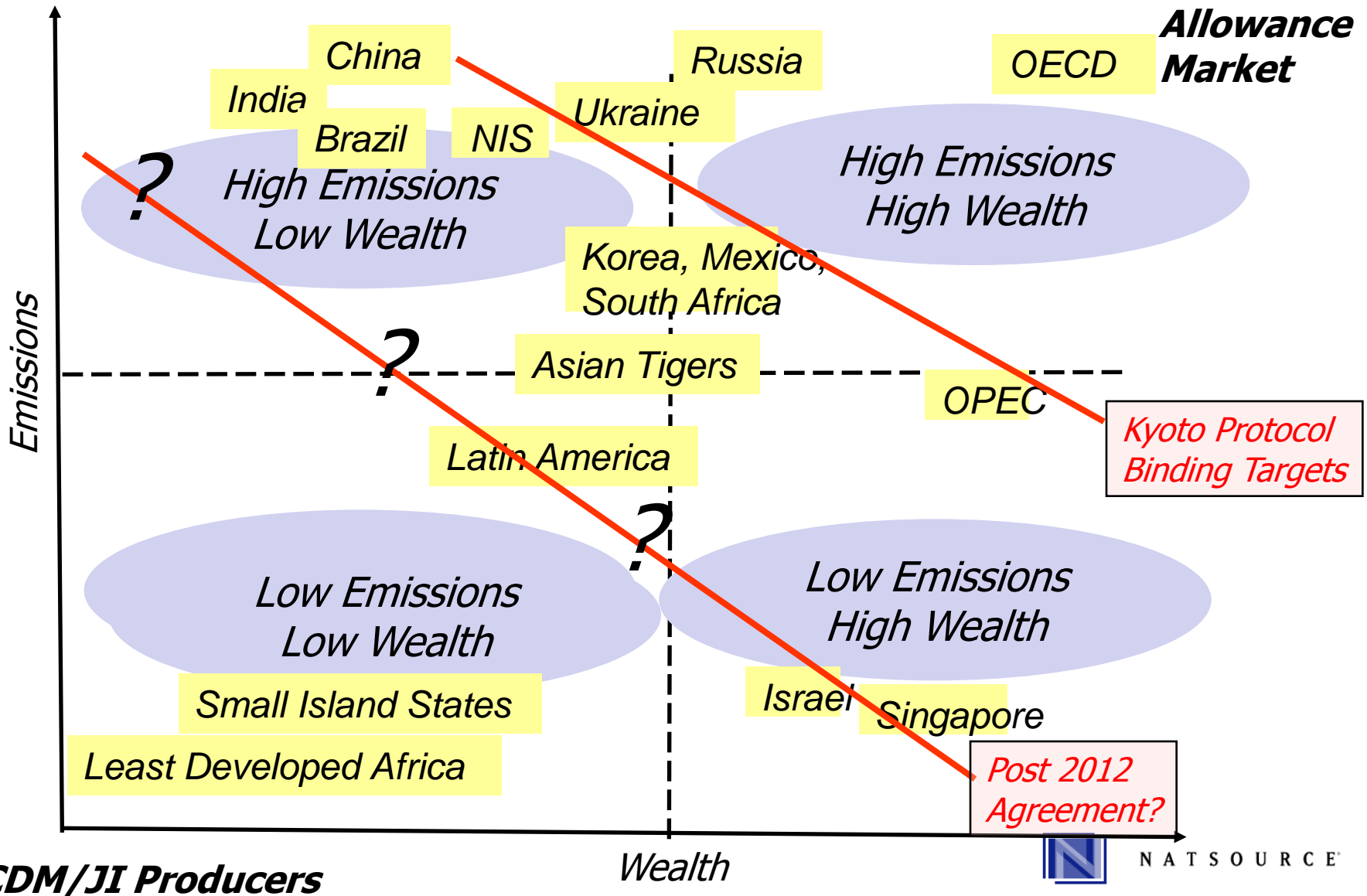
# Current Carbon Market Value and Future Estimate (2)



## References

1. 2005-07 data derived from World Bank's 2006, 2007, and 2008 "State of the Carbon Market" reports.  
<http://siteresources.worldbank.org/NEWS/Resources/State&Trendsformatted06May10pm.pdf>  
[http://carbonfinance.org/docs/Carbon\\_Trends\\_2007-\\_FINAL\\_-\\_May\\_2.pdf](http://carbonfinance.org/docs/Carbon_Trends_2007-_FINAL_-_May_2.pdf)  
<http://carbonfinance.org/docs/StateoftheCarbonMarket2006.pdf>
2. Based on 2 billion EU allowances (EUA), EUA turnover estimate of 1.3, average EUA estimate of €30, a global Kyoto annual compliance shortfall of 580 MT, a turnover estimate of 1.5, and an average price of €20 for Kyoto compliance offsets.
3. The \$3.18 trillion estimate represents Point Carbon's 2020 market value estimate of approximately € 2 trillion (converted to USD based on 7/21/08 exchange rate of 1.59:1)  
(Commodities-Now, Press Release, "Global Carbon Market Worth €2 trillion by 2020 - Point Carbon," May 22, 2008, <http://www.commodities-now.com/content/market-news/market-news-2008052332120.php?PHPSESSID=772e94c468dd460858e889eebd01a79e>).  
Another estimate (not shown in the graph) is New Carbon Finance's \$1 trillion estimate of 2020 market value for the U.S. alone. New Carbon Finance, "Press Release: U.S. Carbon Market valued at 1 trillion dollars by 2020:  
[http://newcarbonfinance.com/download.php?n=New\\_Carbon\\_Finance\\_Press\\_Release\\_US\\_Carbon\\_Market2.pdf&f=fileName&t=NCF\\_downloads](http://newcarbonfinance.com/download.php?n=New_Carbon_Finance_Press_Release_US_Carbon_Market2.pdf&f=fileName&t=NCF_downloads)
4. Natsource Advisory and Research Services estimate of average gap in 2008-12 between emissions and Kyoto targets for the EU, Japan and other industrialized Kyoto signatory countries (excluding Canada) based on various data sources.
5. Based on Natsource Advisory and Research Services estimated emissions shortfall created under U.S. legislation and expansion of EU ETS. This does not include emissions shortfalls from Japan and Canada. Estimates of U.S. demand based on gap between BAU emissions (Annual Energy Outlook 2008) and grandfathered allocations under the Lieberman-Warner bill. Estimates of EU ETS demand based on gap between BAU emissions and grandfathered allocations under the European Commission's draft proposal for Phase 3.

# An evolving framework for project-based mechanisms



## Environmental & investor risks in offset programs



- CDM & JI will continue to play a supply role for ETS programs in the Post Kyoto era
- The mechanisms have not realized their full potential to date
- Design elements to minimize environmental risks led to an approach to additionality that appears unpredictable and arbitrary to investors
  - Certainty in rules governing asset creation is necessary to attract investment
- GHG offset programs incorporate elements to address environmental risks
  - **Additionality:** Risk that “business-as-usual” projects receive credits
  - **Over-crediting:** Risk that projects get more credits than they actually achieve due to measurement uncertainties
  - **Impermanence:** Risk that offsets already credited are lost due to unexpected events (e.g. fires, flooding, disease)



## Environmental and investor risks (II)



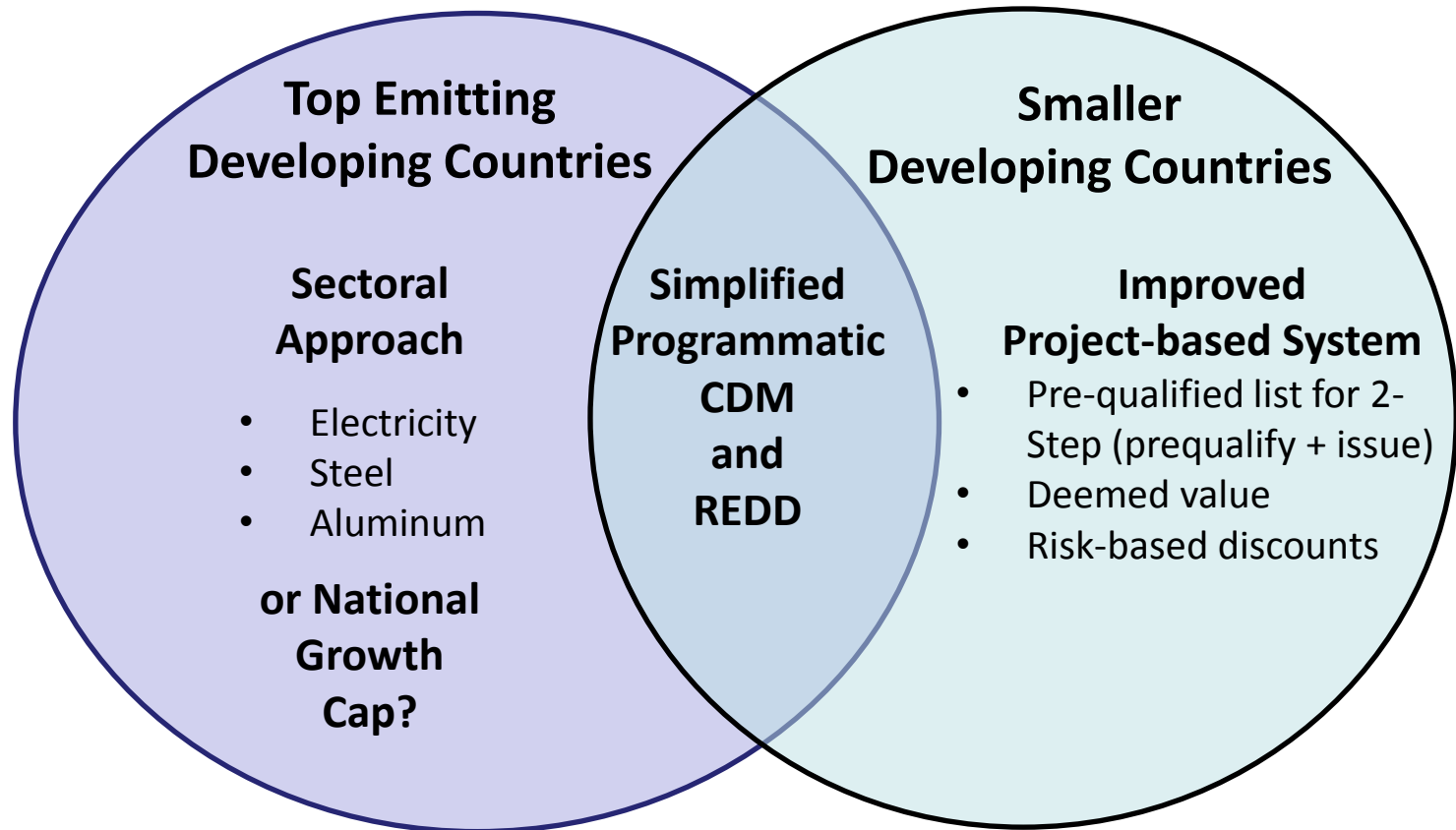
- In attempting to address environmental risks, offset programs impose the following investor risks
  - *Project eligibility.* Risk that project will be deemed ineligible to create offsets
  - *Offset eligibility/value.* Risk that offsets will be ineligible for compliance, or have less compliance value than expected, due to restrictions on their use
  - *Offset quantity.* Risk that an eligible project will receive less credits than it produces due to overly-conservative crediting procedures (i.e. emissions factors, inflexible monitoring requirements, etc.)

## Design options



- Natsource has analyzed a range of options for GHG credit creation that:
  - Address environmental risks
  - Stimulate investment in technology deployment at the scale required to meet energy, development and environmental objectives
  
- Options include:
  - Project-based reforms (where additionality is defined by the protocol)
    - deemed value
    - two-step approval
    - risk-based discounting
  - System-wide approaches to leverage large scale reductions (where sectoral achievements are awarded and distributed to sectoral participants)
    - simplified "program of activities" approach
    - sectoral approaches
  
- How would these options expand range and depth of reduction activities and influence large-scale investments?

# Combining approaches can increase participation



# Comparison of design options



Approach	Description	Examples
<b><i>Project-based Approaches with Additionality by Policy</i></b>		
<i>Deemed Value</i>	Pre-set crediting by activity where performance is known	Compact fluorescent bulbs (kg/year)
<i>Two-step Approval</i>	Pre-qualification of activity; Post-installation measurement & crediting (for capital intensive projects)	Renewables; Landfill gas capture; CMM capture; CHP;
<i>Risk-based discounting</i>	Pre-established risk discounts to address measurement uncertainties (high benefit measures, yet difficult to quantify)	Soil carbon sequestration; transportation.
<b><i>System Wide Approaches with Standardized Baselines</i></b>		
<i>Simplified programmatic approach</i>	Credits for a program of activities	Demand side management; weatherization; building standards.
<i>Sectoral approach</i>	National/regional sector-wide benchmark for sector (baseline & credit)	Electric power; refineries; cement; steel; glass; aluminum.

## Closing thoughts



- CDM & JI can be a great integrator of the global market – and help pave the way for linked ETS systems
- However, in light of the greater emission reduction needs in Post 2012, we need for CDM to be even stronger
  - "upgrade" to a simple and effective approval system that is capable of handling large projects
  - Better approach to additionality
  - More transparent and fair governance
  - Professional board
- The CDM may not be the best forum for sectoral and REDD mechanisms – it may require a new institution?
- If some CDM eligible countries "graduate" to ETS in post 2012, there should be clear transition rules for projects with delivery periods that extend beyond 2012



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## Additionality at policy vs. project level



- Parties can establish additionality of key approaches in policy at the outset
  - Positive list of proven "winners" applicable in many countries (like landfill or coal-mine methane, N<sub>2</sub>O abatement, renewables and cogeneration)
  - Deemed values for specific implementation (efficient lighting, etc)
  - Presumed discounts for hard-to-measure actions (forestry or agricultural sequestration)
  - Re-opener upon demonstration that new methodology will improve emissions
  
- Programmatic CDM -- submission of "program of activities" (public/private sector measure) as single project activity
  - If program is concrete, directly achieves measurable reductions
  - Could expand to allow reductions from imposition of non-BAU policies to be submitted as single project
    - Credits issued ex post to projects meeting requirements of new policies
    - Baseline is emissions under existing and planned policies
    - Eligible policies potentially wide-ranging
    - May be better suited for transportation, residential and commercial sectors than sector-based approach – less homogeneous, less risk of leakage
  - Useful in countries with little CDM investment to date – flexibility and larger reduction potential

## Policy-based approaches – implementation issues



- Expect arguments on deemed values, the 2-step "positive" list and appropriate discounts – but worth the effort
- Lists are usually bad because they are difficult to update – so clear direction to the EB to continually update is essential
- With this approach, additionality tests are handled at policy level – so tests at project level can be avoided
  - Additionality should be determined at policy level, not project level, to avoid eligibility risk for investors
  - Discount factors could be applied when additionality difficult to determine
  - Eligibility could initially be limited to positive list of policies preauthorized as additional
- On programmatic CDM, funding could be delayed or diverted if government acts as seller of CERs – so government may need to allocate CERs promptly to private entities carrying out the program



## Sectoral approaches



- Several possible approaches and differing terminologies
- Focus on voluntary absolute or intensity targets for key sectors
  - Sometimes called “Sectoral CDM” or “no lose” sectoral approach
  - Market-based, facilitates large-scale reductions
- Countries decide whether to have their sectors participate
  - Electricity, iron & steel, aluminum, oil refining, cement, lime, pulp & paper; or steel, aluminum, motor vehicles, aviation?
- Baseline set for defined sector in a country or region
  - Credits issued ex post for sector’s overall reductions below baseline
  - Investor risks (especially eligibility) and transaction costs greatly reduced
  - Additionality, overcrediting addressed through baseline setting, ex post crediting only for intensity improvements at sector level
  - Periodic updating will progressively lower baselines/carbon intensity, provide incentives to develop and deploy lower-emitting technology

## Sectoral approaches – implementation issues



- CERs should be issued or allocated directly to project developers/owners to ensure funding is timely and goes where needed
- Clear rules on allocation of CERs credited at sector level
  - If participation is low, participants' credits are diluted by non-actors → mandatory or voluntary participation?
  - Should allocation be proportional to % reduction below target?
    - Entities starting with lower intensity under BAU gain more credits
    - Entities starting from higher intensity may have higher marginal costs
    - Possible to consider level of effort without punishing early actors?
- Additionality tests should be avoided at project level
  - Would undermine simplicity, re-introduce investor risks and uncertainty
  - Target addresses additionality from top down – CER issuance limited to sector's overperformance
  - If target set carefully, actions that are truly additional will be required for sector to overachieve target