

The Clean Development Mechanism

An Indonesian perspective

Andrew Petersen
Partner
Australia





Agenda

1. CDM Basics
2. The World Bank's Role
3. CDM Projects in Indonesia
4. REDD: The Next Frontier



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International Climate Change Policy UNFCCC and the Kyoto Protocol

Kyoto Protocol Key Points

- On 11 December 1997 the Kyoto protocol to the UNFCCC was signed
- It contains legally binding emissions targets for Annex 1(developed) countries on six anthropogenic greenhouse gases (GHGs) These countries are to reduce the collective emissions of six key greenhouse gases by an average of 5.2% from 1990 levels within the first commitment period (2008-2012)
- The six gases, carbon dioxide (CO₂), methane (CH₄), nitrous oxide(N₂O), hydrofluorocarbons (HFCs), perflourocarbons (PFCs) and sulphur hexafluoride (SF₆) are to be combined in a basket with reductions in individual gases translated into CO₂ equivalents that are then added up to produce a single figure
- Indonesia
 - ratified Kyoto in [date]
 - has no emissions target



“Market-mechanisms” used for delivering reductions at the lowest possible cost:

- Emissions trading
- Clean Development Mechanism
- Joint Implementation

Delivering “flexibility” with regard to:

- Time aspect: 5 year period (2008-2012) + banking
- GHG reductions: CO₂, CH₄, N₂O and/or the F-gases
- Reduction instruments:
 - Domestic emissions reductions
 - Project based mechanisms and emissions trading



What is the CDM ?

The [flexibility] mechanism provided by Article 12 of the Kyoto Protocol, designed to assist developing countries in achieving sustainable development by permitting industrialized countries to finance projects for reducing greenhouse gas emission in developing countries and receive credit for doing so.

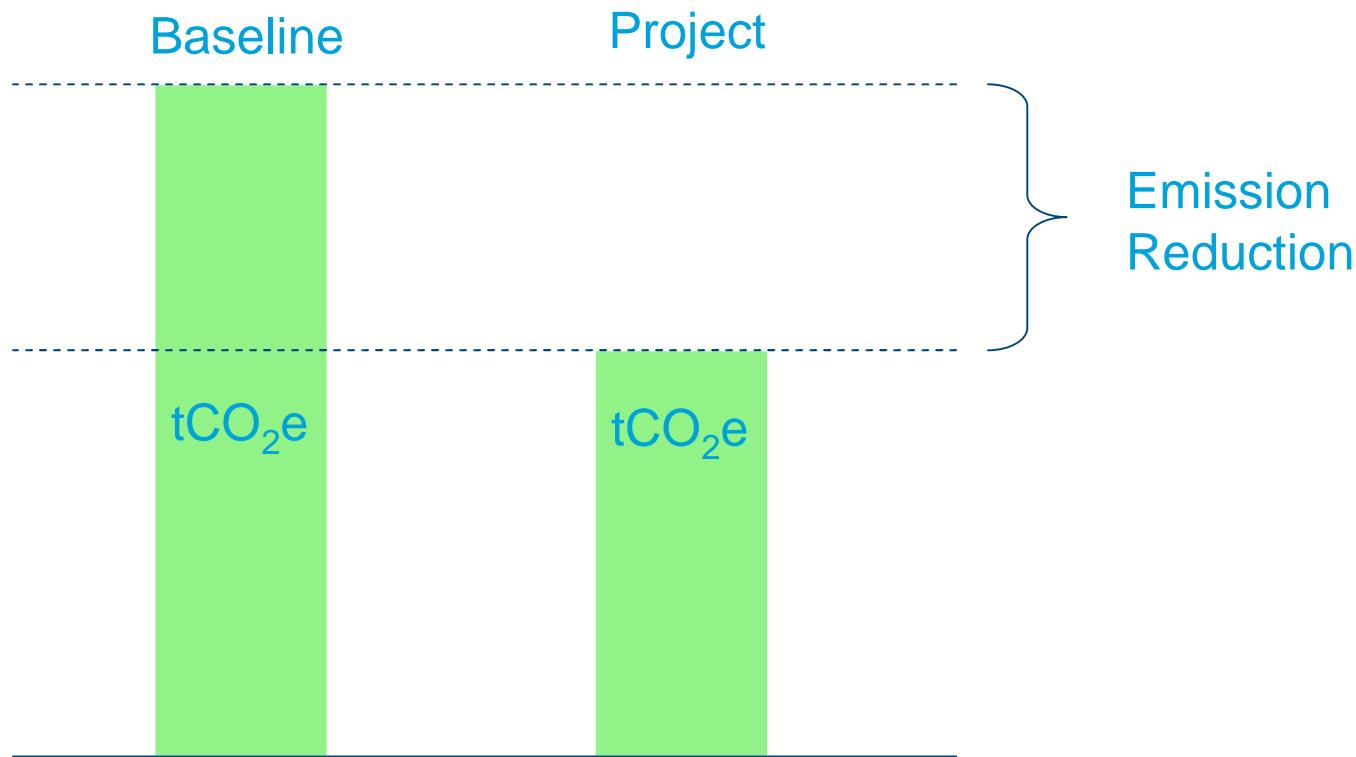


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Clean Development Mechanism

Monetising reduced emissions

The Clean Development Mechanism (CDM) provides an effective vehicle for developing countries to participate in ongoing efforts to reduce carbon emissions and rewards those projects with reduced emissions footprints (compared to business as usual) through the monetisation / commoditisation of the net emission reduction.

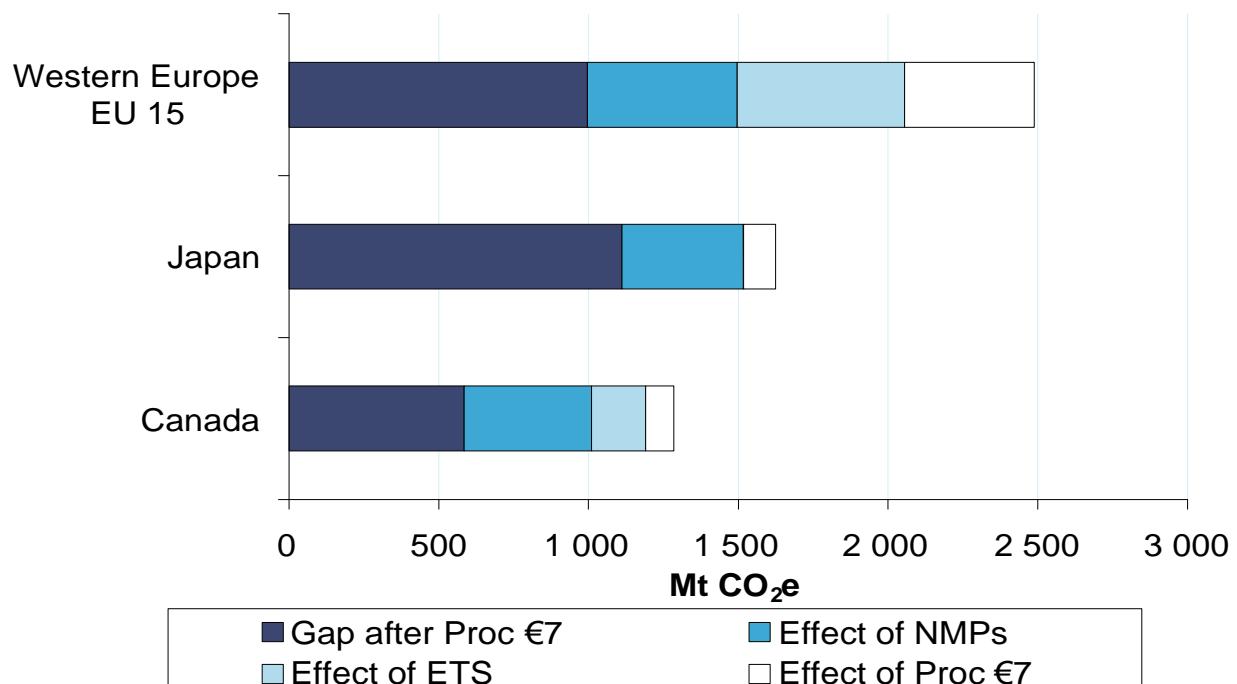




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Clean Development Mechanism Market Drivers

- Compliance gap estimated at 2.7 billion t.
- CDM demand also driven by existing government procurement programs, and willingness of ETS participants to acquire CERs.
- If gap, ETS and procurement were all met by the CDM, this would give a total of 4.4 billion t to 2012.



NMP = non-market policies

ETS = emission trading schemes

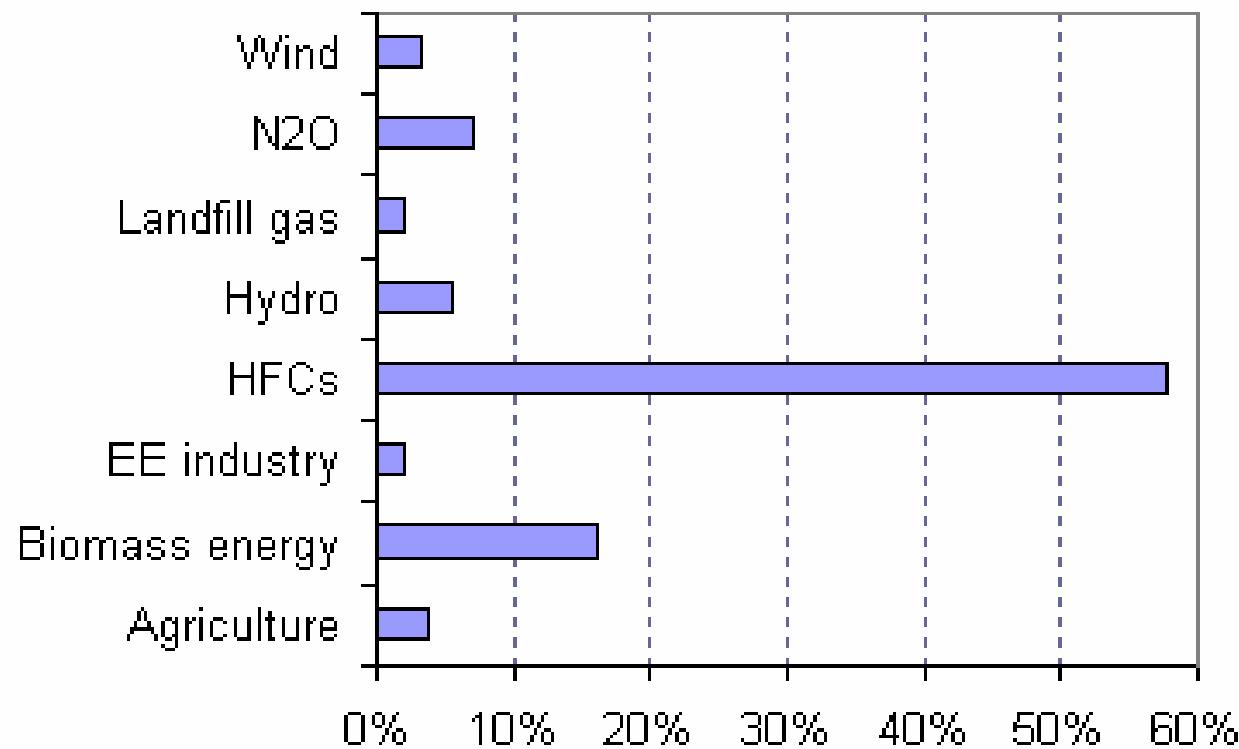
Proc = emissions reduction procurement programs and budgets assuming a carbon price of €7

Source: *Eco-Securities; Point Carbon*



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Clean Development Mechanism Approved projects to date - globally

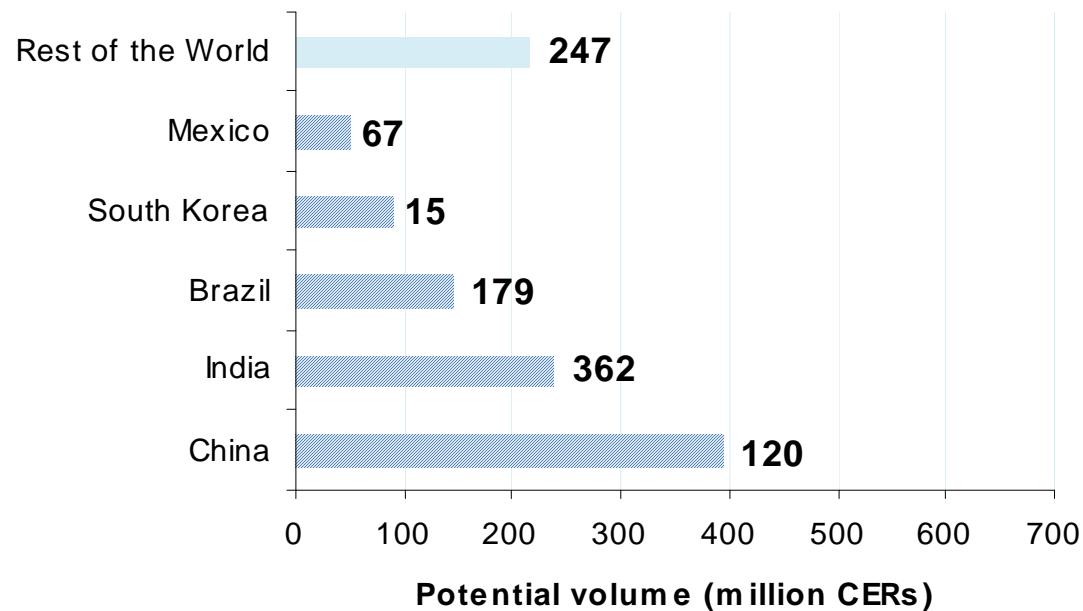


Source: UneP Risø 2007



Clean Development Mechanism

Where are the projects coming from?



Key countries: China, India, Brazil

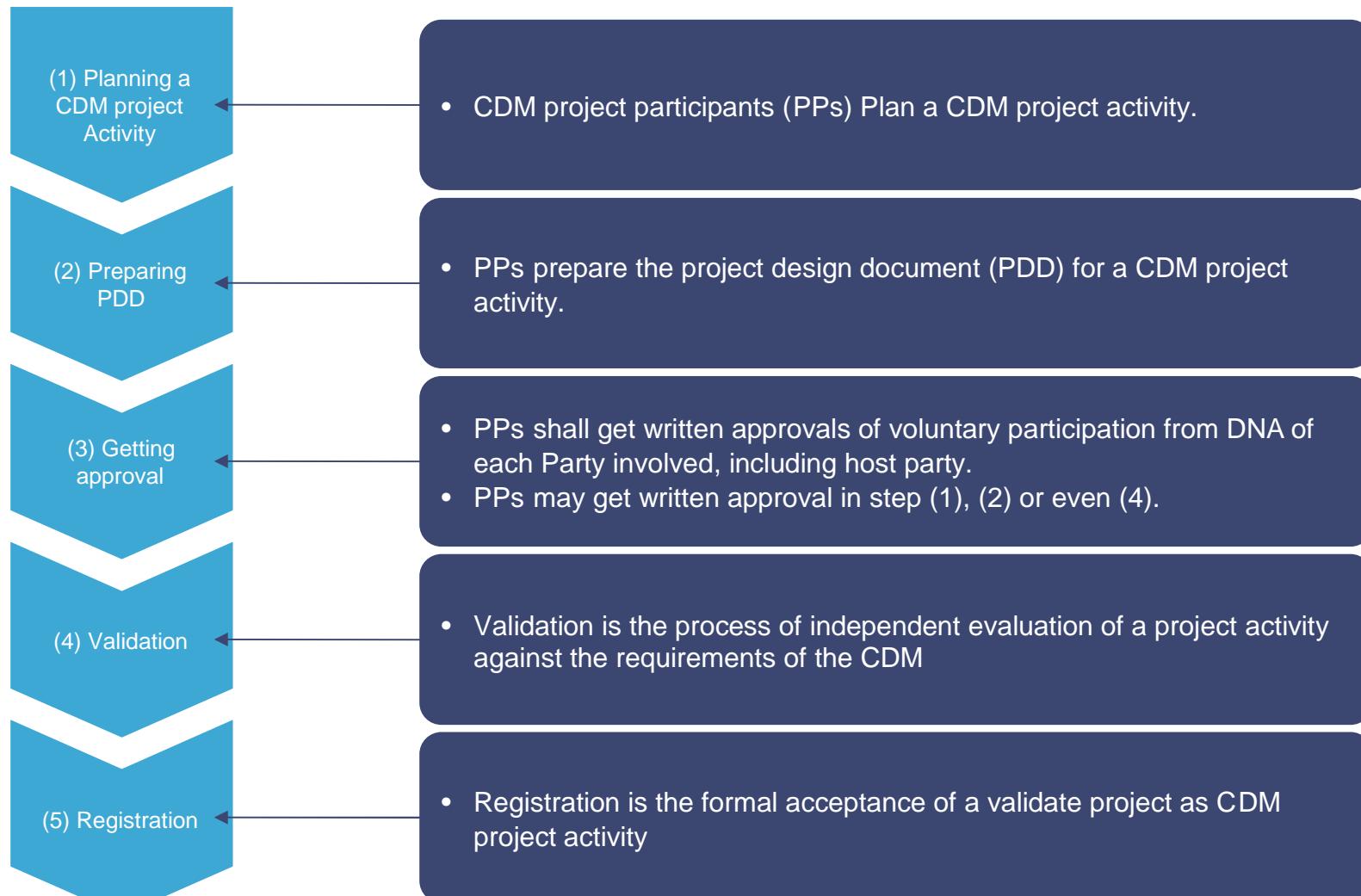
Figures denote number
of projects

Sources: UNEP-RISOE, 09/08/2006 and Eco-Securities



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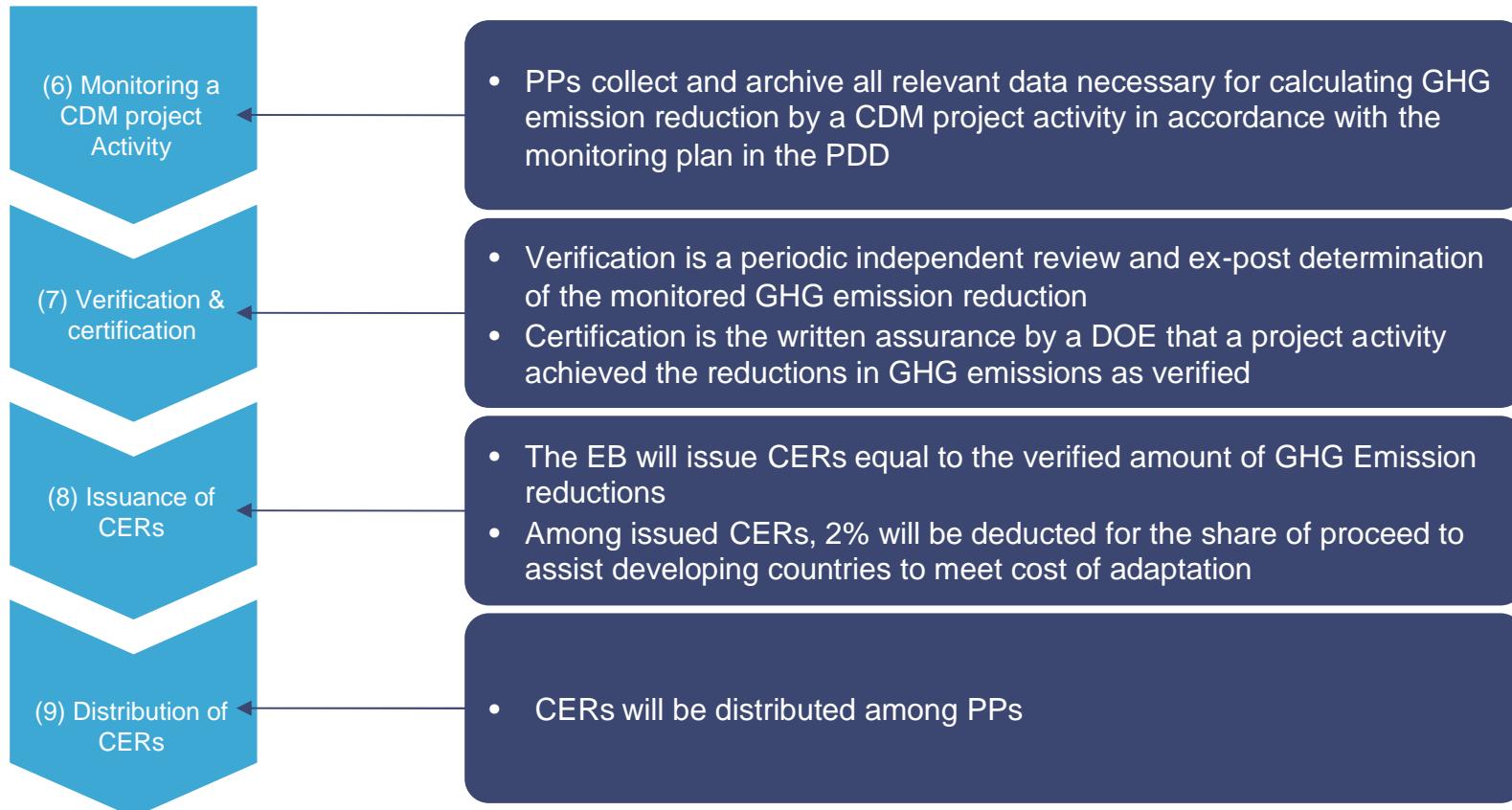
Clean Development Mechanism Project Cycle





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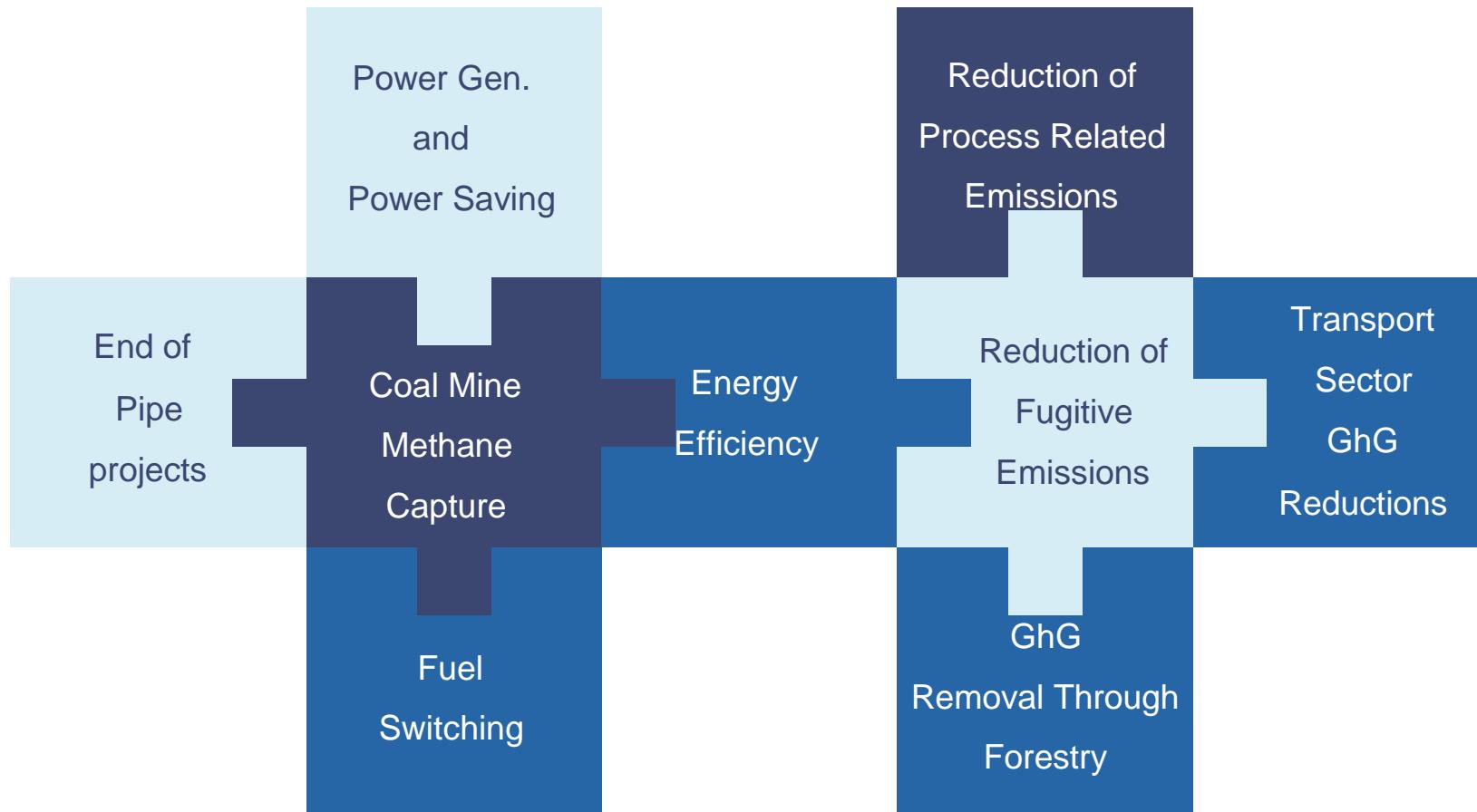
Clean Development Mechanism Project Cycle





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Clean Development Mechanism Approved Methodologies





Obtaining Carbon Finance Key Decision Points

The CDM Executive Board (EB) oversees the CDM project activity cycle:

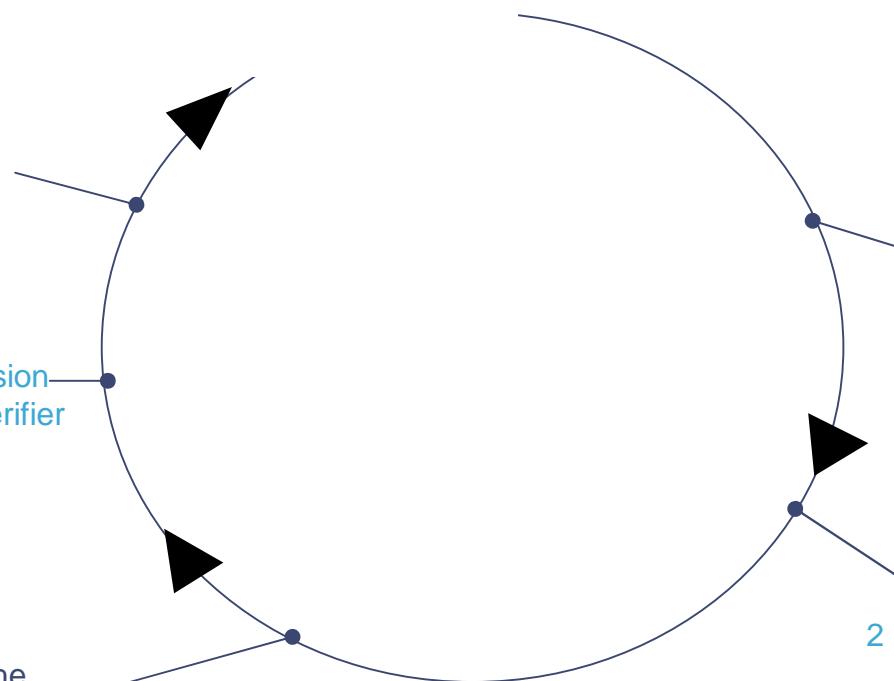
5 Acceptance of verified emission reductions and issuance of CERs by CDM EB (*Certification and Issuance*)

4 *Verification* of generated emission reductions by an accredited verifier

3 Acceptance of project by the CDM EB (*Registration*)

1 Preparation of project documentation applying an approved methodology for calculating emission reductions (*Project Design Document*)

2 *Validation* of project documentation by environmental auditor accredited by CDM EB



Project sponsor

Accredited auditor

CDM Executive Board



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The World Bank Role and Responsibility

Developing countries, particularly the poorest among them, are bypassed by the carbon market and the potential development benefits it would bring. The World Bank's carbon finance products help grow the market by extending the frontiers of carbon finance to new sectors or countries that have yet to benefit, and to reduce market entry risks for other buyers.

- Uses money contributed by governments and companies in OECD countries to purchase project-based greenhouse gas emission reductions in developing countries
- \$1.9 billion+ mobilized to date
- Specialized funds for bio-carbon and community development projects
- Deepest experience as market innovator, beginning with the Prototype Carbon Fund.

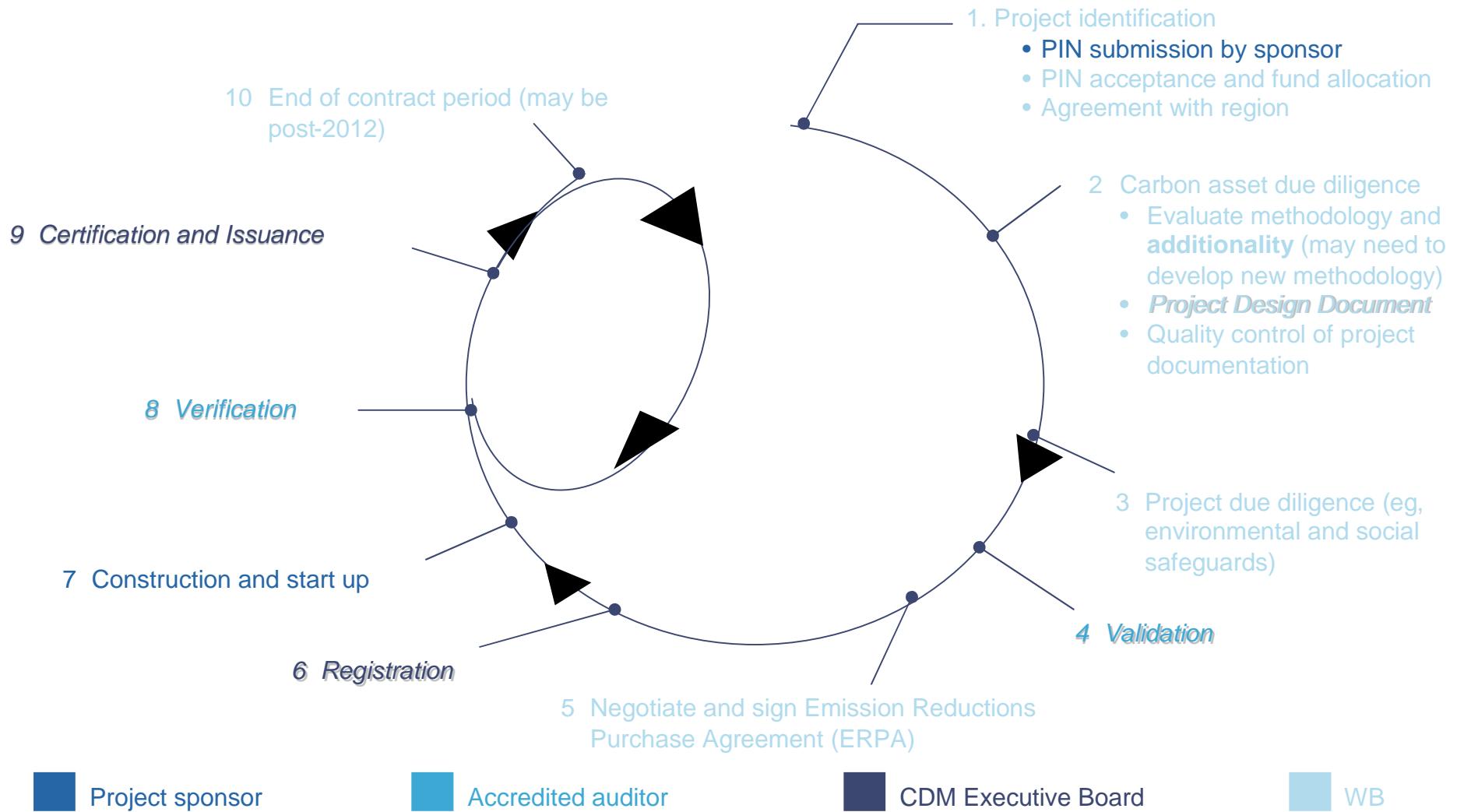


**The World Bank
Carbon Finance Unit**
www.carbonfinance.org



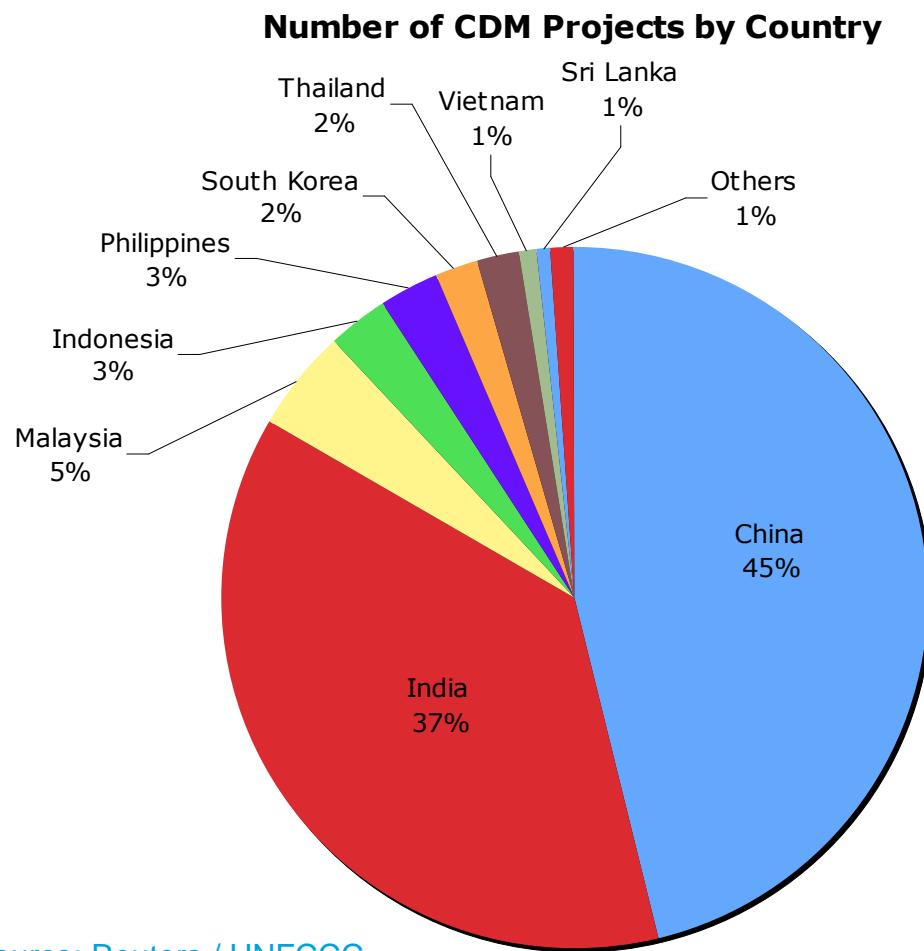
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The World Bank's Role Project Cycle





CDM Projects in Indonesia



Indonesian CDM Projects:

- Majority involve power generation (biomass and gas)
- Projects financing from Germany, Japan, Netherlands, Finland, Switzerland, and UK
- No forestry-based projects to date



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CDM Projects in Indonesia Where ? How many ?





3

CDM Projects in Indonesia (cont'd)

Nationally approved projects (as at 9/03/2008):

| Project | Estimated emission reduction in tCO ₂ e per annum |
|--|--|
| CDM Solar Cooker Project Aceh 1 | 3500 |
| MSS Biomass 9.7Mwe Condensing Steam Turbine Project | 56116 |
| MNA Biomass 9.7 Mwe Condensing Steam Turbine Project | 46322 |
| Methane Capture and Combustion from Swine Manure Treatment Project at PT Indotirta Suaka Bulan Farm in Indonesia | 166666 |
| Indocement Alternative Fuels Project | 144413 |
| Lampung Bekri Biogas Project | 18826 |
| Darajat Unit III Geothermal Project | 652173 |
| Pt Navigat Organic Energy Indonesia Integrated Solid Waste management (GALFAD) Project in Bali, Indonesia | 123423 |
| PT, BUDI ACID JAYA Tapioca Starch Production Facilities Methane Extraction and on-site Power Generation Project in Lampung Province, Indonesia | 271436 |
| Nagamas Biomass Cogeneration Project | 77471 |
| Amurang Biomass Cogeneration Project | 30263 |
| MEN-Tangerang 13.6MW Natural Gas Co-generation Project | 42622 |
| Tambun LPG Associated Gas Recovery and Utilisation Project | 390893 |
| Gas Turbine Cogeneration project* | 22796 |

*Requesting Registration

Source: UNFCCC



REDD: The Next Frontier

Reduced Emissions from Deforestation in Developing Nations

- Rapidly diminishing tropical forests could be saved if farmers and loggers were paid not to cut the trees
- WB recommends using the world's carbon market (worth \$22 billion) to reduce rainforests loss
- Proposal: extend the current system of carbon trading to benefit the 800 million tropical forest-dependent people
- Supply-side scenarios of future REDD markets:

| Reduction in deforestation rates compared to 1990-2005 baseline | Amount of emission reduction | Monetary value @ US\$5/tCO ₂ e | Monetary value @ US\$10/tCO ₂ e | Monetary value @ US\$15/tCO ₂ e | Monetary value @ US\$20/tCO ₂ e | Monetary value @ US\$30/tCO ₂ e |
|---|-------------------------------------|---|--|--|--|--|
| Percent | Million tCO ₂ e per year | Million US\$ per year | Million US\$ per year | Million US\$ per year | Million US\$ per year | Million US\$ per year |
| 5 | 153 | 765 | 1530 | 2295 | 3059 | 4589 |
| 10 | 306 | 1530 | 3059 | 4589 | 6119 | 9178 |
| 20 | 612 | 3059 | 6119 | 9178 | 12237 | 18356 |
| 30 | 918 | 4589 | 9178 | 13767 | 18356 | 27534 |
| 40 | 1224 | 6119 | 12237 | 18356 | 24475 | 36712 |
| 50 | 1530 | 7648 | 15297 | 22945 | 30594 | 45891 |

Source: EcoSecurities 2007



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REDD: The Next Frontier International Policy Developments

Significant discussion has centred on the future provision of financial incentives for projects REDD focussed projects - deforestation long being acknowledged as a major contributor to global GHG emissions.

Inherent Technical Difficulties:

- Monitoring and verification (identification of trees deemed to be under threat, historical rates of deforestation, difficulty in surveillance)
- No clear standard for the measurements of carbon 'sequestered' in 'saved trees'
- The potential for encouragement of logging is not presently catered for
- Perception that REDD projects are the 'easy' way out for developing nations to claim reduced emissions

Bali CoP13

- UNFCCC's subsidiary body for Scientific and Technological Advice to undertake a programme of work to identify policy approaches supportive of the recognition of REDD projects.
- Calls for member parties to submit remedies to identified REDD methodology issues
- Encouragement for the instigation of pilot REDD projects that help advance knowledge monitoring and verification requirements
 - World Bank US\$ 30 million Fund

Concern as to the dilutionary impact that the introduction of REDD generated carbon credits could have on global carbon markets - Indonesia alone could have the potential to generate some 2 billion carbon credits annually from REDD projects.

Andrew Petersen
Partner
PricewaterhouseCoopers
+61 2 8266 6681

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