



Monitoring, reporting and verification for CCS: Basis for CDM requirements

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Carbon Counts

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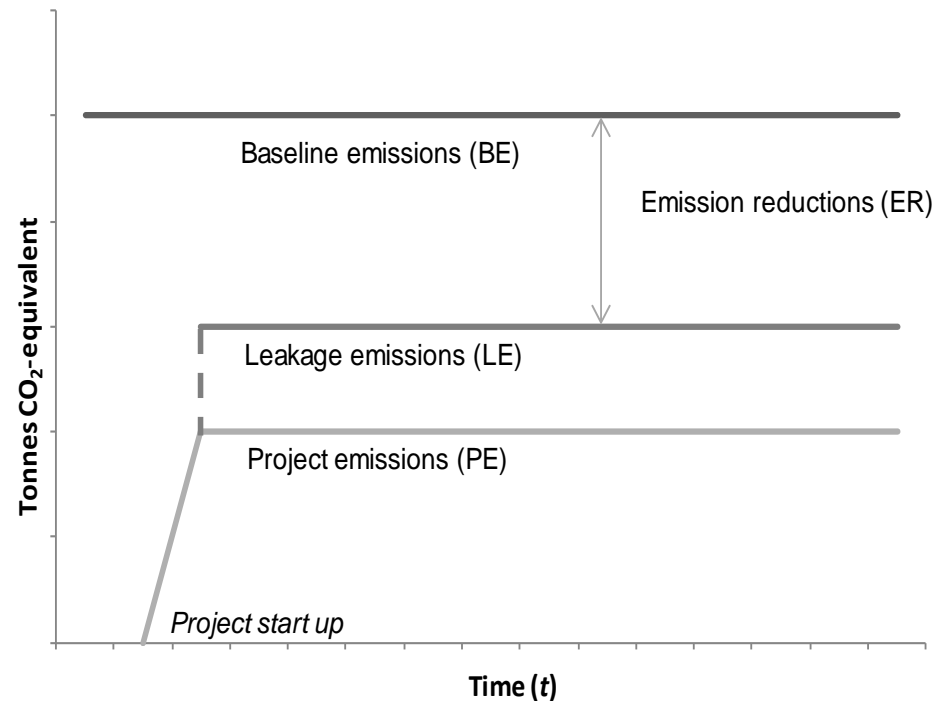
Overview

- Review the issues for monitoring, reporting and verification for CCS as addressed in CDM
 1. Purpose of CDM monitoring
 2. Concerns for including CCS
 3. Approaches to CCS in CDM
 4. Implementation issues
 5. Outlooks for CCS and carbon finance

The CDM

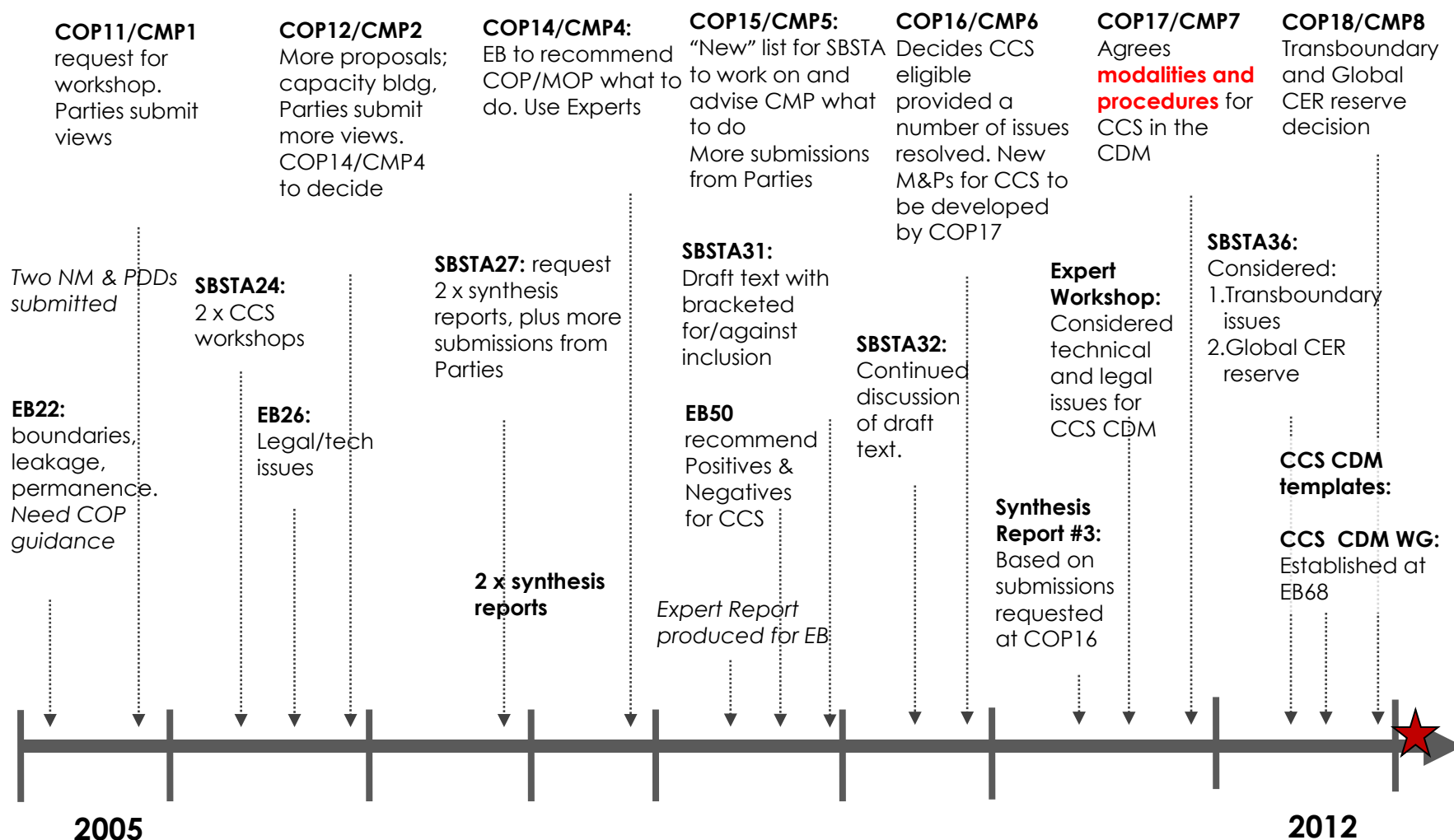
- Est. in Article 12 of Kyoto Protocol
- Modalities and Procedures (M&Ps) – agreed at COP7, 2001
- M&Ps – rulebook for how CDM operates
- Various decisions – by the COP and EB provide additional guidance
- 3 x M&Ps – Standard; Forestry; Small-scale...CCS becomes 4th
- CDM projects generate “certified emission reductions” or **CERs**

- Basic principal for CER generation → tCO₂ emissions of project relative to counterfactual (“baseline”)



$$ERt = BEt - (PEt + LEt)$$

CCS in the CDM



CS CDM – areas of concern

General issues:

- Boundaries, leakage and permanence
- Timescales of benefits vs liability
- Impact on CDM market
- Scale and impacts of leakage
- Continue fossil fuel use
- Sustainable development
- Role of CCS in climate change mitigation

Specific issues - *since Copenhagen COP (CMP 5, 2009)*:

- Non-permanence
- Monitoring and verification
- Environmental impacts - ecosystems, climate
- Project boundaries and transboundary issues
- Liability
- Perverse outcomes
- Safety
- Insurance and compensation for leakage

Equivalency and comparability:

1 tonne GHG reduced by a CDM project should be equivalent to 1 tonne GHG reduced by other activities

Allows for fungibility of CERs with other types of market units

Durban Decision

- **COP17/CMP7** – breakthrough for CCS within UN negotiations
- *Agreement and Adoption of modalities and procedures for CCS*
 - 17 page text at single meeting – could be a record for recent years!
- Lots of new things included (next slide)
- A few matters left outstanding
 - Transboundary projects
 - Global CER Reserve

Decision 10/CMP.7

Modalities and procedures for carbon dioxide capture and storage in geological formations as clean development mechanism project activities

The Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol,

Recalling the provisions of Articles 3 and 12 of the Kyoto Protocol,

Also recalling decisions 3/CMP.1, 2/CMP.5 and 7/CMP.6,

1. *Adopts* the modalities and procedures for carbon dioxide capture and storage in geological formations as clean development mechanism project activities contained in the annex to this decision;
2. *Decides* to periodically review the modalities and procedures for carbon dioxide capture and storage in geological formations as clean development mechanism project activities and that the first review shall be carried out no later than five years after the adoption of this decision, on the basis of recommendations made by the Executive Board of the clean development mechanism and by the Subsidiary Body for Implementation, and drawing on technical advice provided by the Subsidiary Body for Scientific and Technological Advice, as needed;
3. *Also decides* that any revision of the modalities and procedures contained in the annex to this decision shall not affect clean development mechanism project activities already registered in accordance with these modalities and procedures or any project activities registered in accordance with the modalities and procedures contained in the annex to decision 3/CMP.1 or the annex to decision 5/CMP.1;
4. *Agrees* to consider, at its eighth session:
 - (a) The eligibility of carbon dioxide capture and storage project activities which involve the transport of carbon dioxide from one country to another or which involve geological storage sites that are located in more than one country;
 - (b) The establishment of a global reserve of certified emission reduction units for carbon dioxide capture and storage project activities, in addition to the reserve referred to in paragraph 21(b) of the annex to this decision;
5. *Requests* the Subsidiary Body for Scientific and Technological Advice to consider, at its thirty-sixth session, provisions for the type of project activities referred to in paragraph 4(a) above, including a possible dispute resolution mechanism, and for the global reserve of certified emission reduction units referred to in paragraph 4(b) above, with a view to forwarding a draft decision on these matters for consideration by the Conference of the Parties serving as the meeting of the Parties to the Kyoto Protocol at its eighth session;
6. *Invites* Parties and admitted observer organizations to submit to the secretariat, by 5 March 2012, their views on the issues referred to in paragraph 4(a) and (b) above and requests the secretariat to compile the submissions into a miscellaneous document.

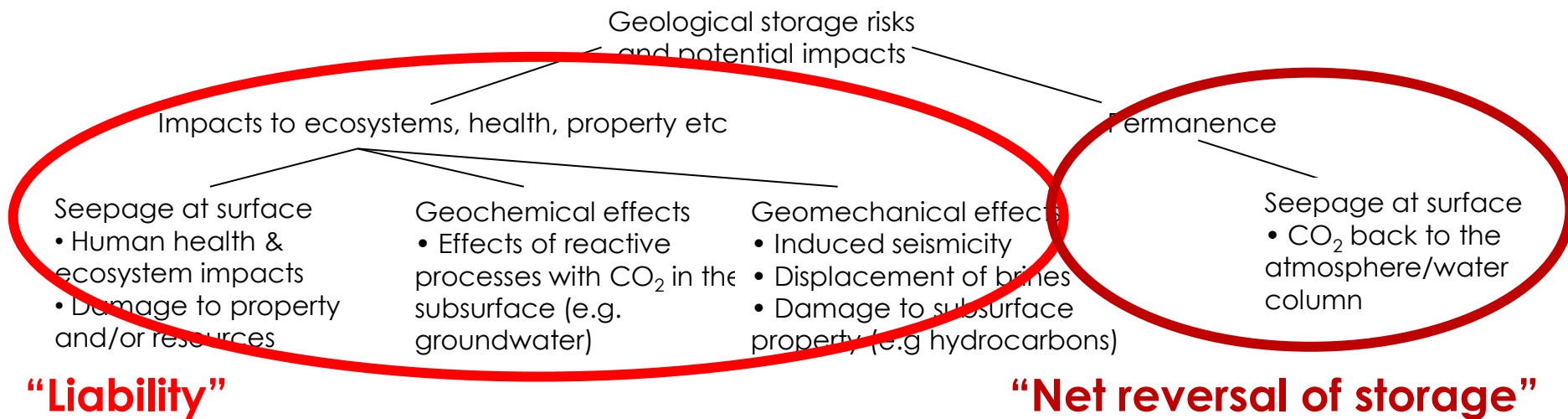
Durban Decision (cont.)

- Broad building blocks of approach:
 1. *Apply* existing M&Ps (*mutatis mutandis* approach)
 2. *Modify* existing elements to address CCS issues:
 - Additional *Definitions*
 - Additional *Participation Requirements*
 - Additional requirements for *Validation/Verification* (“DOEs”)
 3. *Develop* new technical elements to address CCS specific concerns:
 - Site selection and characterisation
 - Risk & safety assessment
 - Monitoring
 - Financial provision
 - Environmental and socio-economic impacts
 - Permanence & Liability
 4. *Establish* a CCS Working Group to support EB in implementation
 - Established and operational since mid-2012
- Permanence & liability agreement major achievement
- The specific requirements have all been translated into template documents for CCS CDM applications

Participation requirements

- Host country must establish laws or regulations which cover the following aspects:
 - a) Site selection, characterization and development procedures;
 - b) Legal right to store CO₂ for the developer;
 - c) Redress for affected entities, individuals and communities for damages (e.g. environmental, material, or personal injury);
 - d) Remedial measures to stop or control any unintended seepage, restore the integrity of storage site, and to restore long-term environmental quality;
 - e) Addressing *liability* arrangements for storage sites;
 - f) For a host Party that accepts the obligation to address a *net reversal of storage*, establish measures to fulfil such an obligation
- Technical guidance on these is provided in Appendix B
- National laws must be consistent with Appendix B

Liability & Permanence (scope)



Supporting elements for liability & net reversal

Host country laws established

Transfer of liability

Obligation to submit *Verification Report* every 5 years

CER reserve (5%, released after 20 years)

Obligation for the PPs to cancel compliance units to address non-permanence

Obligation for either host or buyer country to cancel compliance units to address non-permanence

Financial Provision

Approach to “Liability”

Short

Medium

Long

*Start
closure*

*Closure
completed*

*Transfer of
liability*

Project participant is liable until closure is completed

Host country laws established

Host country Party laws “backstop” liability for redress and remedial measures

Financial provision

Project participant holds financial provision to:

- *Ensure funds are available for redress and compensation in the event of damages (e.g. ecosystems, communities)*
- *Ensure funds available to close site in event of insolvency*

Financial provisions are transferable to host country Party

Transfer of liability

Liability transferred under bilaterally agreed conditions

Host country Party holds liability for monitoring, remedial measures and compensation for damages

Host country Party receives financial provision from project participant

Approach to “Net reversal of storage”

Net reversal of storage

Transfer of CERs to cancellation account from:

1. CER reserve (5% of CERs generated)
2. Pending account (to be issued)
3. PP holding account

Where these do not cover the level of net reversal, the balance of CERs...

...must be compensated by the project participant by cancelling the respective number of Compliance Units

And, where the project participant does not fulfil the obligation above, it must be met by....

- ...the host Party, where it agreed to take on this obligation in LoA*
- ...the AI Party which holds the CERs in its registry, where this obligation has not been agreed by the host Party*

Failure to submit Verification Report within 5 years after the last report

Cancel all CERs:

1. Held in the CDM Registry

And, within 1 year, all CERs issued to the project proponent ...

Liability & Permanence (in practice)

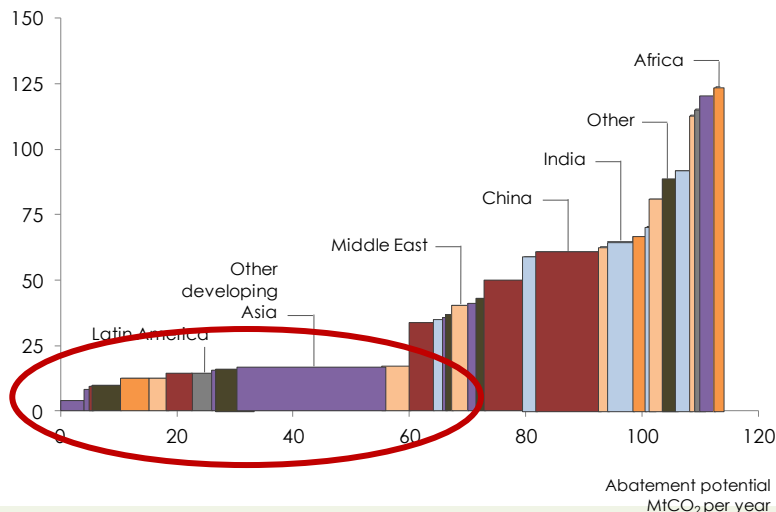
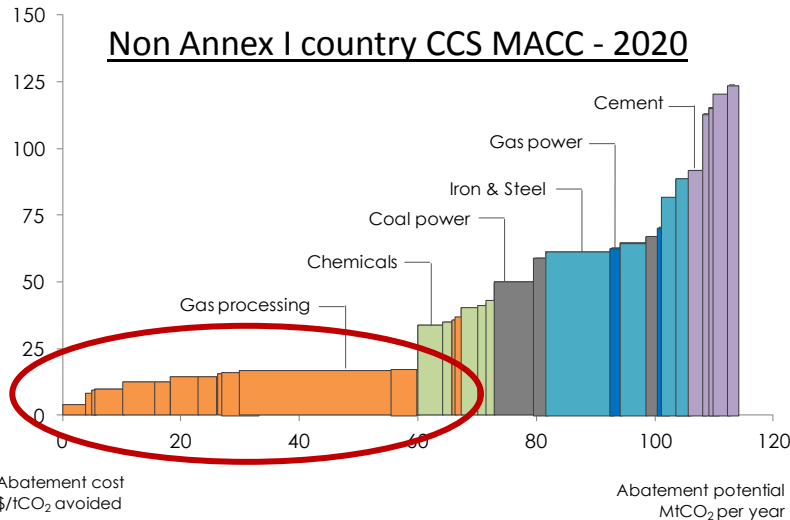
- Provisions
 - *CER Reserve Account* – 5% of all CERs generated withheld
 - *Financial provision* – established by Project Proponent; transferable to host country
- Monitoring termination & closure
 - Minimum 20 years monitoring after closure
 - Must have been no seepage for 10 years
 - All available evidence from observations and modelling indicates CO₂ will be completely isolated from the atmosphere in the long-term
 - History matching of modelling and monitoring
 - Modelling confirms no future seepage expected
- *Liability* to be transferred to host country Party
 - *Financial provision* also transferred to host country Party
- *Net reversal* risk allocated to host country or Annex I Party
 - *CER Reserve Account* released to project proponent

Implementation issues

- Participation requirements set interesting precedent in UNFCCC and International law:
 - International law prescribing what sovereign states law must say!
- Also a big challenge for non-Annex I countries to fulfil:
 - Questionable whether appropriate laws in place today
 - Complex procedure to design legal system for CCS
 - EU/UK experiences challenging enough! Even tougher in countries with weaker governance and limited government resources (not a problem for GCC countries)
- Ongoing capacity building in this area:
 - World Bank: North Africa, Jordan, South Africa
 - Asian Development Bank: China and SE Asia
- Transboundary project eligibility unresolved – ongoing discussion:
 - Could be a barrier to CCS CDM in ESCWA countries
- Key questions for UN-ESCWA countries:
 - Can the *Participation Requirements* can be met?
 - Does the capacity/competencies for implementation exist?

Outlook: CDM

Abatement cost
\$/tCO₂ avoided



CER supply

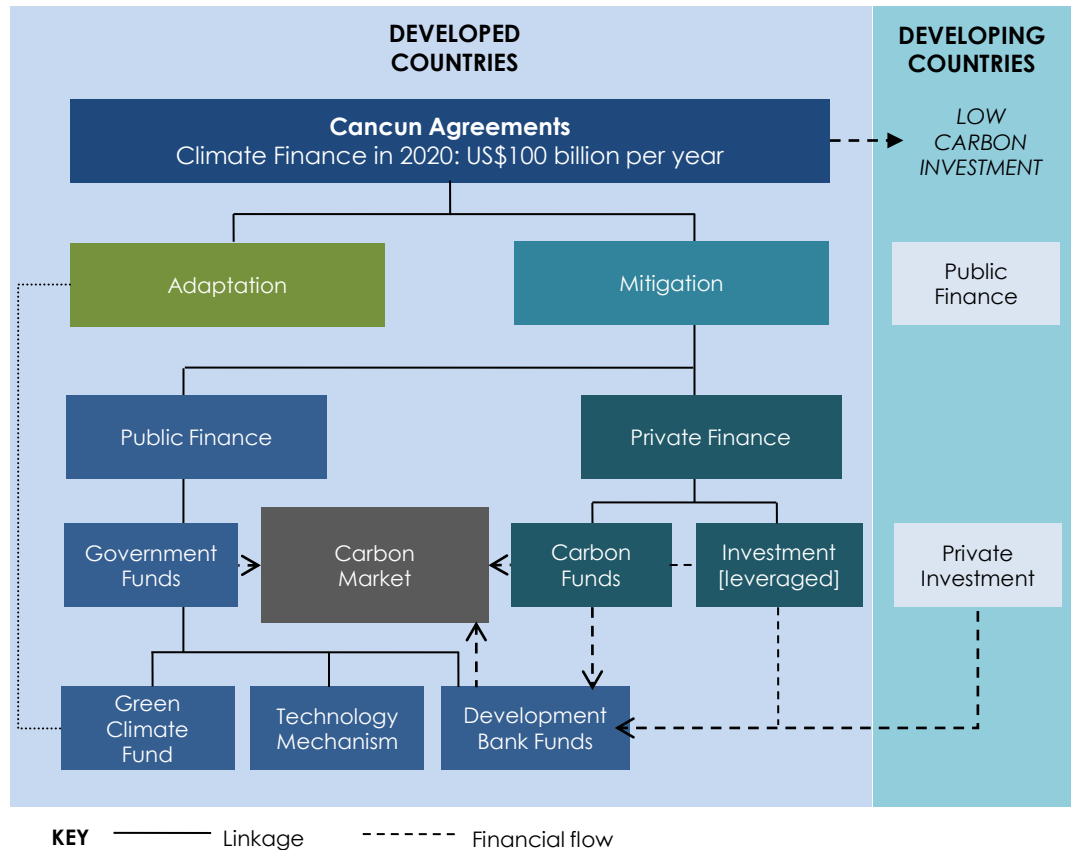
- **EU ETS Ph 3** – qualitative restrictions will apply by both country *and* activity
- Only LDCs *and* countries with bilateral agreement with EU allowed to land CERs in EU ETS (“ADP” is not “international agreement”)
- Some project activity types barred (e.g. HFCs)

Very uncertain market outlook

CER demand

- **KP CP1** – ends 31/12/12
- **KP CP2** – ‘agreed’ at Durban COP. Only EU so far; no agreed QELRO (-20% for EU?)
- **20:20 EU QELRO** – likely to met through domestic measures *plus* CERs from existing pipeline of CDM

Outlook: new forms of climate finance



- Wide range of discussions ongoing:
 - Continuation of CDM
 - Green Climate Fund
 - Technology Mechanism
 - New market mechanisms (“NMMs”; under the convention?)

- Discussions at a “structural” stage rather than implementation (although *Tech Exec Committee* and new *GCF Secretariat* decided)
- CCS CDM rules will very likely determine the way in which CCS included under future mechanisms



Further info in
these reports
Available at our
website

Thank you

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