

# Harnessing the carbon markets for financing CCS

Carbon Capture and Storage Opportunities in the GCC region



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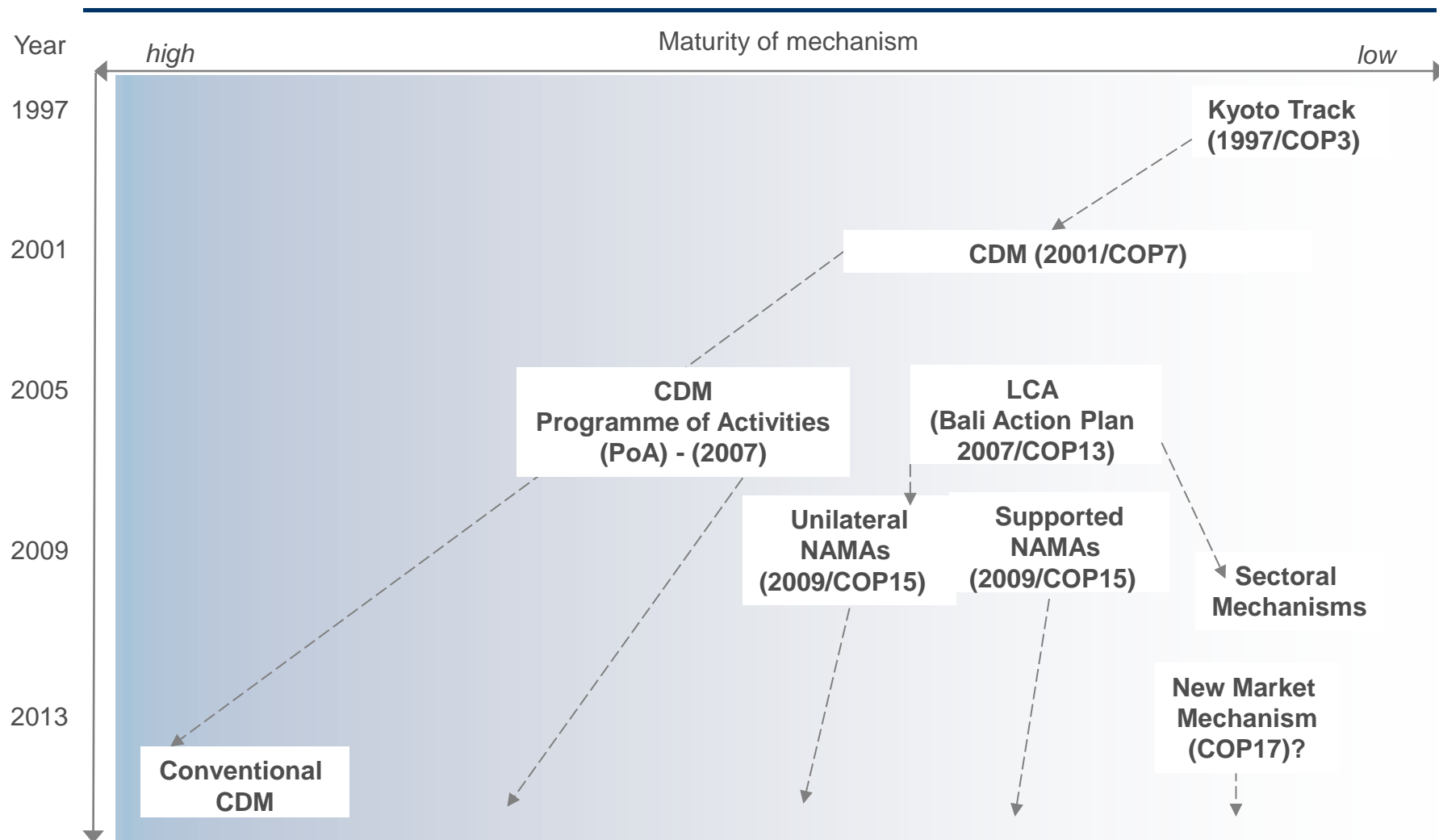


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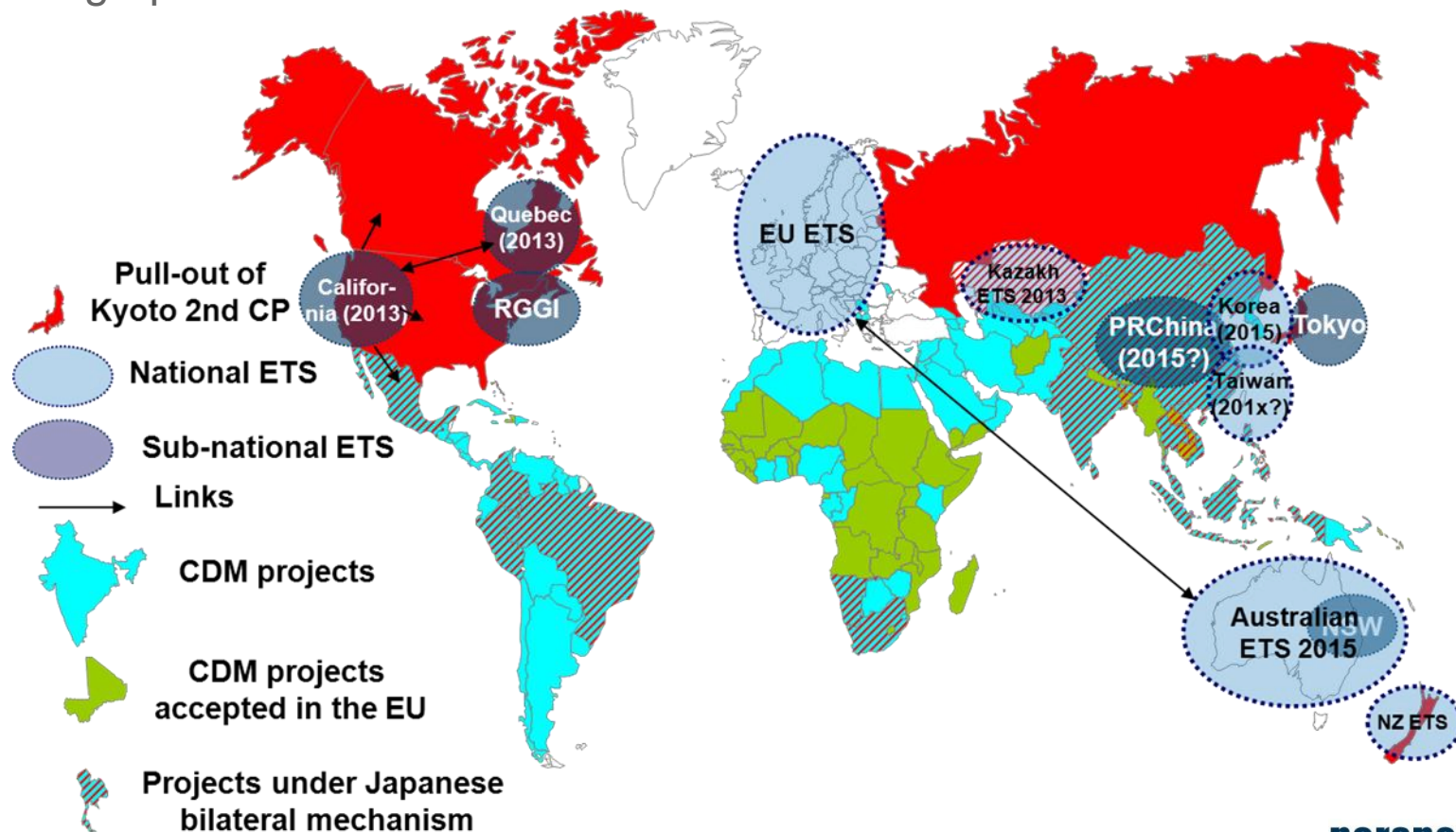
## Brief background on carbon markets

# History of market mechanisms



# The global carbon markets

## Geographic overview of international and domestic carbon markets



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## Evolution of CCS in the UNFCCC context





## Recap: CCS in the CDM

- Industry interest in submitting CCS projects under the CDM **since 2003/2004**
  - **Several methodologies** submitted (2 large, one small)
  - EB refers issue to COP
- COP 16 made a decision in 2010
  - Asking SBSTA to elaborate *modalities and procedures for the inclusion of CCS in geological formations* as CDM projects .... under special consideration of crucial factors
- COP 17 finally made **first decision on substance**, reflecting crucial issues and enabling application of CCS under the CDM...

# What are the most crucial factors?

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1. Risks/uncertainty on long-term physical CO<sub>2</sub> leakage ([seepage](#))
2. [Project boundary](#) issues (such as reservoirs in international waters, several projects using one reservoir) and projects involving [more than one country](#) (across national boundaries)
3. Long-term responsibility for [monitoring](#) and [remediation](#) measures that may be necessary after the end of the crediting period
4. Long-term [liability](#) for storage sites
5. [Accounting](#) options for any long-term seepage from reservoirs
6. Criteria and steps for the [selection of suitable storage sites](#)
7. [Operation of reservoirs](#) (for example, well-sealing and abandonment procedures), dynamics of carbon dioxide distribution within the reservoir and remediation issues
8. [Environmental impacts](#): EU submission 2012 requires broader liability taking into account damage to ecosystems, material or injuries.



## Regulatory decisions of COP 17 regarding crucial issues

- DNAs need to **generally authorize** CCS projects through a letter to UNFCCC which explains CCS legislation
- **Liability** during the **crediting period** and **at least 20 years thereafter** is to be taken either by the host or buyer country
- **Verification** is to be done **at least every 5 years** after the initial verification, whose time can be chosen freely
- **5%** of issued CERs on **reserve account** to cover seepage liability
  - Released to the project developers at the end of the crediting period + 20 years if no seepage has occurred
- **Host** countries **have to take liability** after the end of the 20 year period, but only if it was **proven during 10 years that no seepage has occurred**
- Project developers have to prove in the PDD that they have **sufficient financial cover** for their liability



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## Business opportunities



## Current business potential

- Registration of a CCS opportunity as a CDM project
  - Remaining crucial issues have to be resolved
    - Data requirements
  - **Methodology** (e.g. NM0167, NM0168, SSC049) needs approval by CDM
  - Submission of CDM project
    - No **cross-border** issues
    - No **EOR** component
  - Capture of **vented gas** e.g. from LNG operation easier than from power plant
  - Typically **sizeable CER volumes** & revenue (even with currently low market prices?)



## Outlook and possible next steps

- **CCS under **sectoral** approaches (New Market Mechanism)**
  - NMM standards & requirements not clearly defined by COP
  - Innovative, not yet largely discussed
- **CCS under **Nationally Appropriate Mitigation Actions** (NAMAs)**
  - NAMA concept allows support for CCS feasibility studies, capacity building, regulatory and governance framework development on national level
    - > **preparation of concrete CCS application**
  - No CCS NAMA submission yet
  - Initial brainstorming with CCS Institute

**Thanks for your attention!**

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