

# "Kvotesystemet og de fleksible mekanismer - ven eller fjende?"

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Februar 2011  
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# Det Europæiske kvotehandels system

## EU-ETS

- Prøve periode fra 2005-2007
- Forpligtelses periode fra 2008-12
- Tredje periode til -2020 (EU Kvote direktiv)
  
- Opererer i 30 lande (EU + I, L, og N)
- Dækker omkring 40% af EU GHG
- Skal hjælpe til at opfylde reduktionsmål på 20% i EU (8% inden for KP I 2013)

# Det Europæiske kvotehandels system

## EU-ETS

- Der allokeres AAU'er til kvotevirksomheder (tildeling og auktionering)
- Disse skal tilbageleveres svarende til forbrug (udledninger i virksomheden)
- Kan suppleres med carbon kreditter

# Typer af de fleksible mekanismer under Kyoto Protokollen

- **Artikel 6:** Joint Implementation
- **Artikel 12:** Clean Development Mechanism (til at bistå både annex 1 og NA-1 countries)
- **Artikel 17:** Emissions Handel (supplement til hjemlige tiltag)

# CDM koncept

Clean Development Mechanism (CDM) blev etableret med Kyoto Protokollen i 1997

Den tillader industrialiserede lande at dække nogle af deres reduktionsforpligtelser for udledningerne af drivhusgasser med 'carbon kreditter' via projekter i udviklingslande. (=non-annex 1)

1 carbon kredit =

1 ton of CO<sub>2</sub> equivalent =

Certified Emission Reduction (CER)

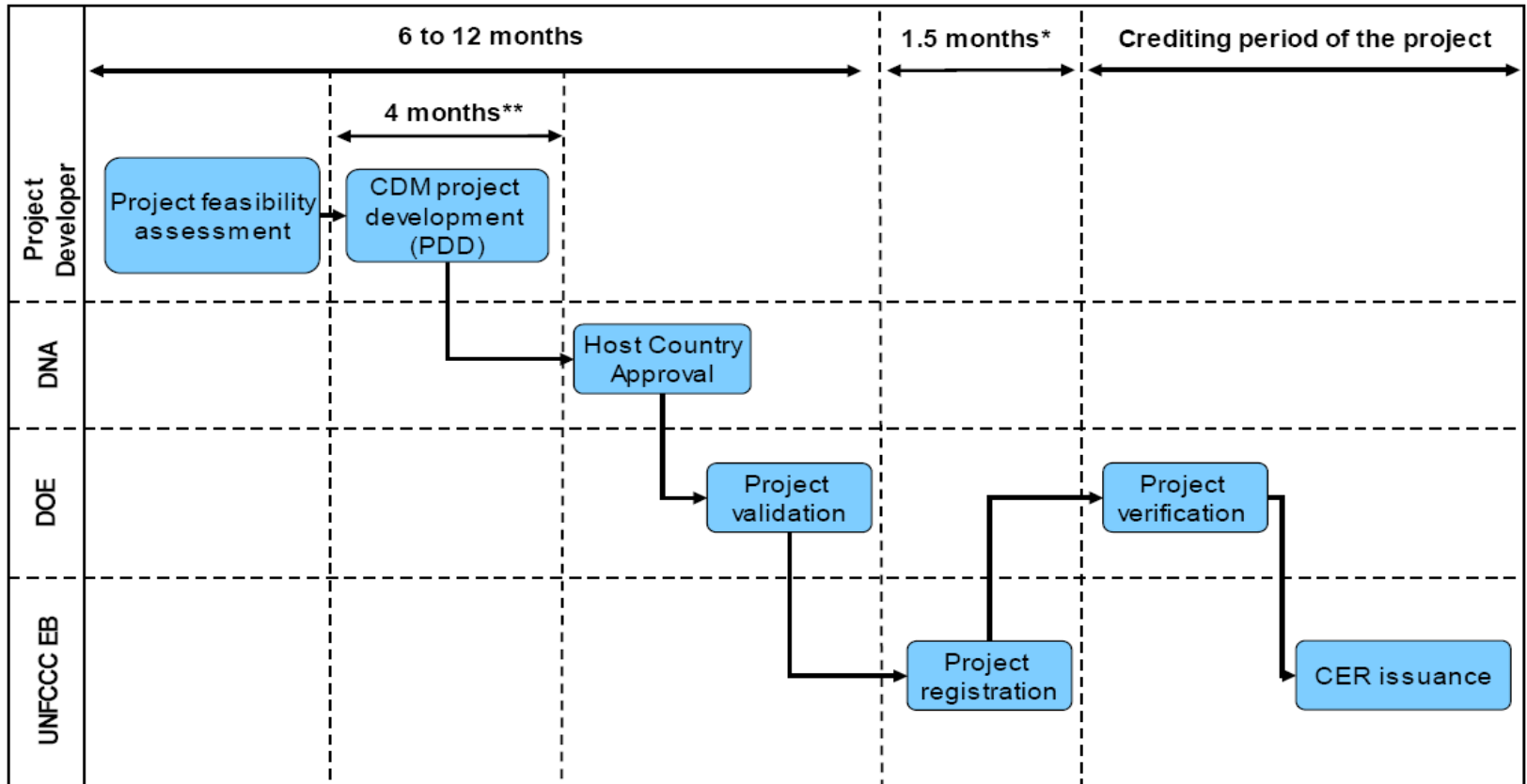
# 6 GHG under Kyoto-protokollen

Gasser	Global Warming Potential* (GWP)	Kilder
CO <sub>2</sub>	1	Fossile brændstoffer
Methane	21	Dyr, forrådnelse , kulminer
N <sub>2</sub> O	310	Landsbrug og kunstgødning
PCF	Ca. 7.850	Aluminium produktion
HFC	11.700	Køleskabsgasser
SF <sub>6</sub>	23.900	Magnesium, elek.

\* Over 100 år

# The CDM project cycle

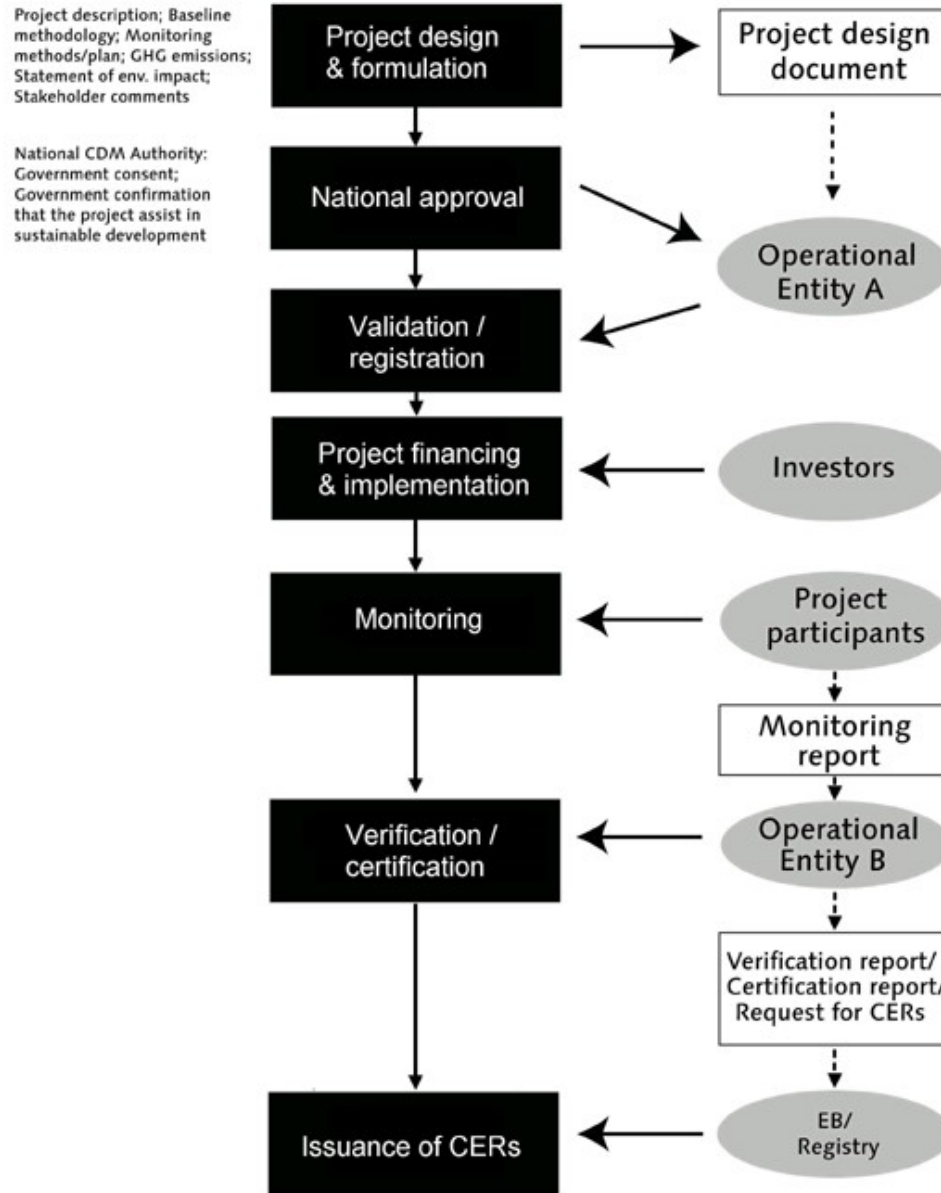
Figure 2: The CDM project cycle



\* can be extended depending on the **EB** decision

\*\* for each submission and additional to normal process

# Project cycle for the CDM



Project description; Baseline methodology; Monitoring methods/plan; GHG emissions; Statement of env. impact; Stakeholder comments

National CDM Authority: Government consent; Government confirmation that the project assist in sustainable development

Legends:



Activity



Report



Institution

# CDM Nøglebegreber

Project Idea Note (PIN)

Project Design Document (PDD)

Letter of Approval - fra Designated  
Operational Authority (DNA)

Designated Operational Entity (DOE)

CDM Executive Board (CDM – EB)

UNFCCC

Kyoto-Protokollen (KP)

Marrakesh Accords

Reducing emission from deforestation and degradation  
(REDD)

<b>Status of CDM projects</b>	<b>Number</b>
<b>At validation</b>	<b>2863</b>
Request for registration	64
Request for review	155
Correction requested	4
Under review	0
<b>Total in the process of registration</b>	<b>223</b>
Withdrawn	52
Rejected by EB	181
Validation negative by DOE	172
Validation terminated by DOE	829
Registered, no issuance of CERs	1844
Registered. CER issued	942
<b>Total registered</b>	<b>2786</b>
Total number of projects (incl. rejected & withdrawn)	7106

# CDM regulering

CDM reguleres af De Forenede Nation (FN)

Dette sker under myndigheden  
'CDM Executive Board'

Alle nødvendige regler og procedurer + guides  
udstedes af denne myndighed

Myndigheden registrerer projekterne og udsteder  
ligeledes carbon kreditterne

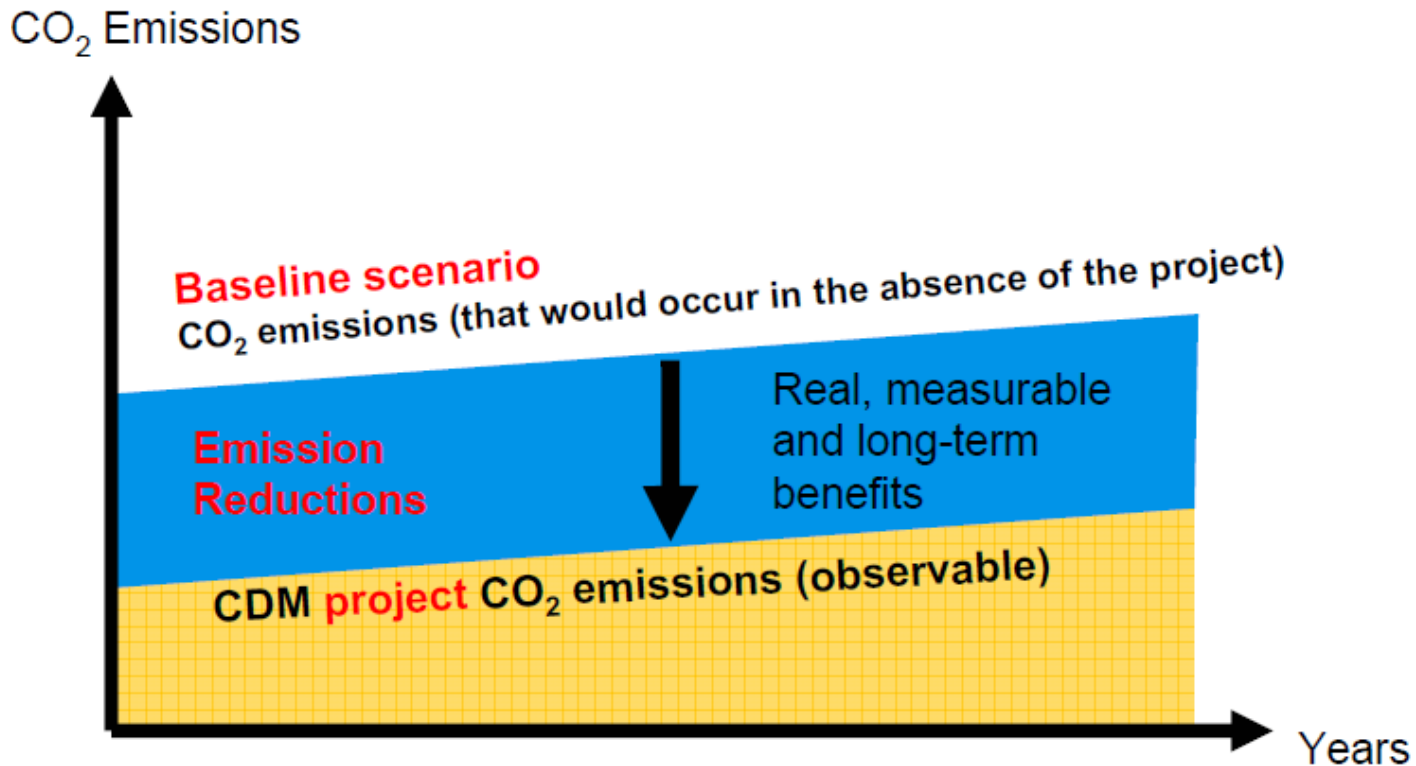
# Institutions of the CDM

- **CDM Executive Board**
  - Accreditation of DOEs (for validation and verification + diff. scopes)
  - review of validation reports and PDDs
  - approval of new baseline and monitoring methodologies
  - registration of projects (and reviews)
  - issuance of CERs
  - (+ develop some methodologies like non-renewable biomass)
  - + support a more fair distribution of CDM projects
  - + create a CDM Bazaar)
  - Consists of 10 + 10 members and meet 6 – 8 times a year.
  - Historical development;
- **Designated Operational Entity (DOE)**
  - Independent third party validation & verification
- **Designated National Authority (DNA)**
  - Approve contribution to national sustainable development + voluntary

# De basale krav for CDM projekter

- Virkelig, målbar + langsigtede fordel
- Projekter skal være 'additionelle'
- Kan foretages i alle non-annex 1 lande underskrivere til Kyoto-Protokollen
- Frivillig deltagelse af non-annex 1
- Må ikke resultere i anderledes brug af bistands midler (diversion of ODA)
- Projekterne skal bidrage til bæredygtig udvikling i værtslandet

# Baseline og additionalitet



# Crediting period

- Project developers can choose between:
- A fixed 10 year period
- A 7 year period with possibility of renewal 2 times in total 21 years.
- Reasons for choosing 1 or 2:
  - National development (baseline)
  - CDM Regulation changes
  - Rather safe than sorry
  - Etc.

# Status for CDM

CDM Projekter i mere end 75 lande

Genererer op til 960 mio. kreditter til 2012

546 mio. carbon kreditter udstedt af CDM  
Bestyrelsen (CDM Executive Board)

Til mere end 942 projekter

# Types of CDM activities I

- Renewable (Electricity or heat)
- RE to grid
- Avoidance (methane or other GHGs)
- Fuel switch (coal => oil => gas)
- Energy efficiency (demands / supply side, households, distribution)
- skov

% atomkraft og CO2 lagring (CCS).

# CDM project types

<u>Type</u>	<u>Projects</u>	<u>1000 CERs</u>
Afforestation + reforest.	49	4517
Biomass energy	662	41458
Cement	29	5725
CO2 capture	3	29
Coal bed/mine methane	67	29983
Energy distribution	9	2453
Energy efficiency	697	1010
Fossil fuel switch	108	40524
Fugitive	23	11225
Geothermal	15	3433
HFCs	22	81715
Hydro	1249	135437
Landfill gas	275	42285
Methane avoidance	525	24816
N2O	67	47823
PFCs and SF6	14	3967
Solar	36	727
Transport	12	1059
Wind	767	69130
Total	4629	547316

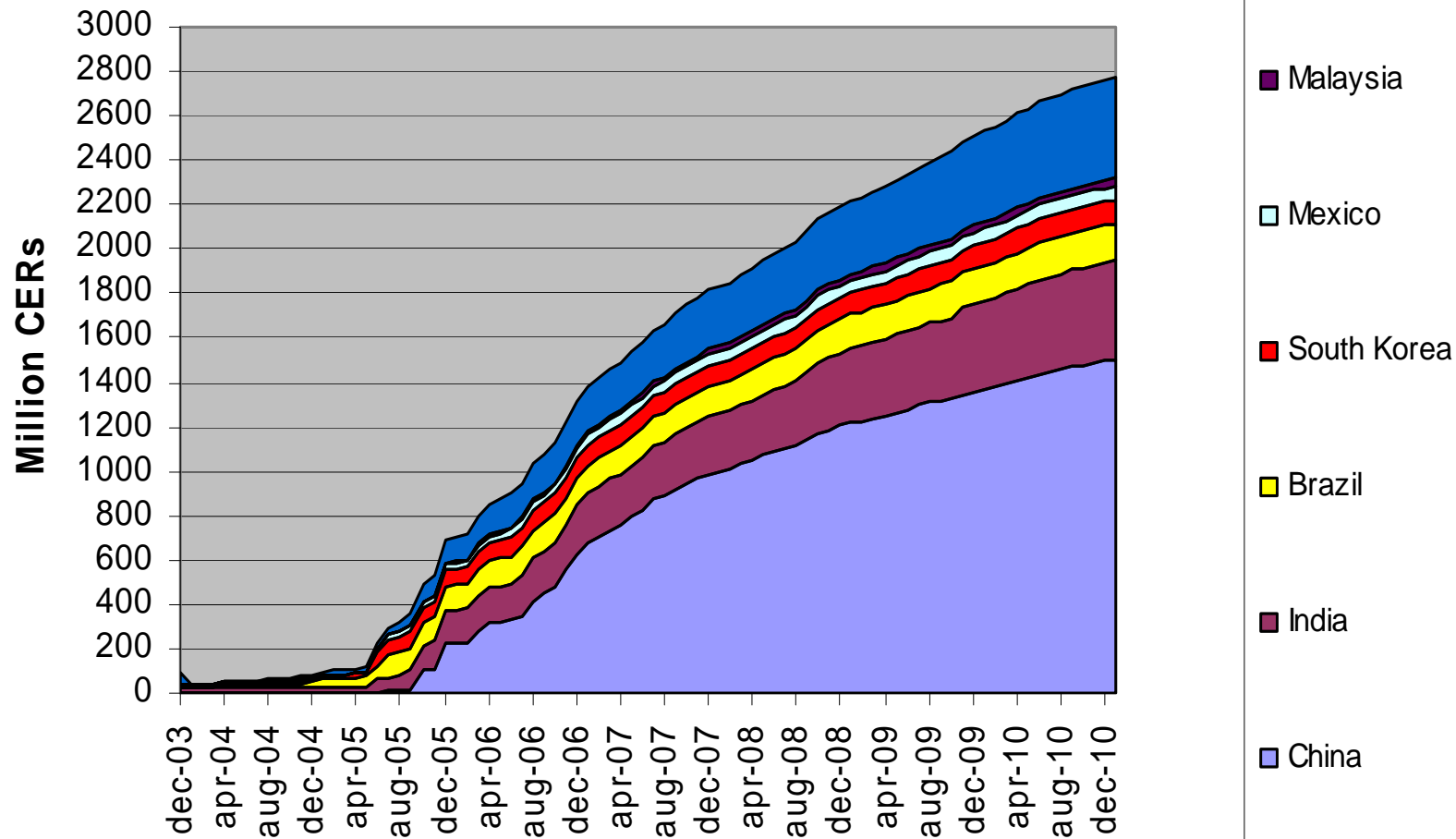
Source: UNEP Risoe CDM Pipeline Sep09

# Types of CDM activities II

- **Small scale:** threshold on
  - max 15 MW installed electricity (45 MW thermal)
  - max 60 GWh reductions
  - Max 60.000 tons of CO<sub>2</sub>e reduction(Easier and faster procedures. But more open and hence more risky.)
- **Large scale**
- **Programmatic CDM (until now 8 projects)**
  - A framework for many smaller and dispersed activities often in multiple sites. Open ended so more can be added a long the way (typical EE and renewable projects – or transport?)
- **Aforestation / reforestation**

# Regional fordeling af CDM projekter

## Growth of total expected accumulated 2012 CERs



# Regional distribution af CDM projekter

Total in the CDM Pipeline	Number		kCERs	2012 kCERs	
Latin America	800	<b>17,3%</b>	77119	389368	<b>14,0%</b>
Asia & Pacific	3628	<b>78,3%</b>	522884	2263323	<b>81,2%</b>
Europe and Central Asia	46	<b>1,0%</b>	4605	18483	<b>0,7%</b>
Africa	111	<b>2,4%</b>	20504	82759	<b>3,0%</b>
Middle-East	46	<b>1,0%</b>	7224	32858	<b>1,2%</b>
<b>Total</b>	<b>4631</b>	<b>100%</b>	<b>632335</b>	<b>2786791</b>	<b>100%</b>

Source: UNEP Risoe CDM Pipeline Sep09

# Diskussion

- Grundlæggende kritik, vi bryder os ikke om tanken, om systemet og det den er udtryk for (kapitalisme, i- og u-landes handel, off-setting mm.)
- Kritik af effekterne (manglende tiltag i ilande, skrævvridning i ulande)
- Kritik af opbygningen af systemet (manglende fokus på små projekter, manglende fokus på fattige lande)
- Kritik af bureaukratiet og langsomheden og transactions omkostninger
- Kritik af interesse konflikt (mellem DOE og projekter mm.)
- For lidt og for langsomt
- Forslag om en CO2 skat

# Hvad sker der med de fleksible mekanismer?

- CDM reform (mindre transactions costs)
- Sektor CDM (no loose targets)
- Opdeling mellem forskellige ulande
- Flere regionale markeder (med egne standarder)
- Udbud – efterspørgsel?

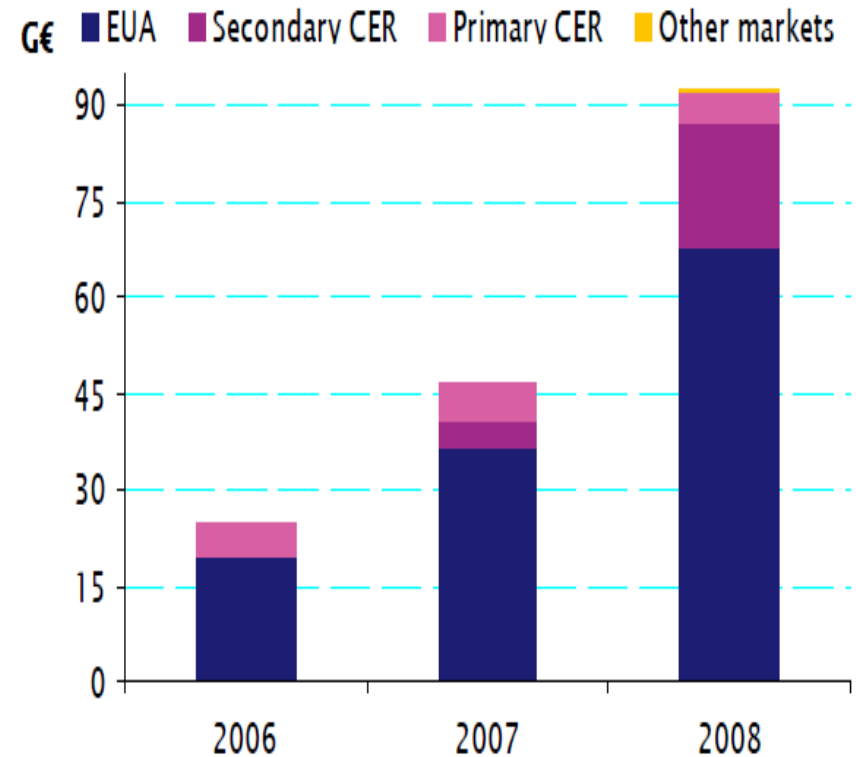
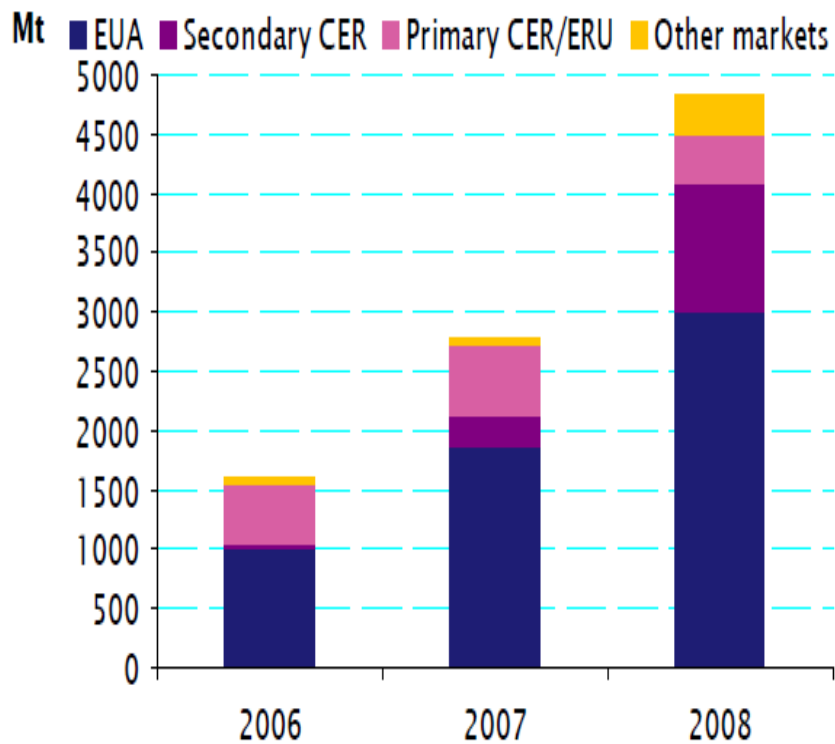
# Politik

- CDM reform
- Sektor CDM (no loose targets)
- Opdeling mellem forskellige ulande
- Flere regionale markeder (med egne standarder)

	2008		2009	
	Volume (MtCO <sub>2</sub> e)	Value (US\$ million)	Volume (MtCO <sub>2</sub> e)	Value (US\$ million)
<b>Allowances Markets</b>				
EU ETS	3,093	100,526	6,326	118,474
NSW	31	183	34	117
CCX	69	309	41	50
RCGI	62	198	805	2,179
AAUs	23	276	155	2,003
Subtotal	3,278	101,492	7,362	122,822
<b>Spot &amp; Secondary Kyoto offsets</b>				
Subtotal	1,072	26,277	1,055	17,543
<b>Project-based Transactions</b>				
Primary CDM	404	6,511	211	2,678
J1	25	367	26	354
Voluntary market	57	419	46	338
Subtotal	486	7,297	283	3,370
<b>Total</b>	<b>4,836</b>	<b>135,066</b>	<b>8,700</b>	<b>143,735</b>

Subtotals and totals may not exactly add up because of rounding.

# Historical trade of carbon credits



# Voluntary carbon Market

- 'Voluntary' is when the carbon credits which are not certified by United Nations  
(Not for compliance)
- Voluntary carbon credits can have much lower transactions cost due to less requirements
- Are there buyers for such credits?
  - Yes around 42 mill. ton co2 in 2007 (265 mill USD)
- At what price?
  - Anything between 1 and 50 USD (most 2-10 USD)

Some standards are about to be developed like Gold Standard (WWF)