

# Status and structure of carbon markets

Andrew Howard  
Climate Change Secretariat

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[www.unfccc.int](http://www.unfccc.int)  
[ahoward@unfccc.int](mailto:ahoward@unfccc.int)

ICAO workshop  
Aviation and carbon markets



# Overview

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- Carbon market framework under the Kyoto Protocol
- Recent developments in cap-and-trade schemes
- Place of crediting systems within trading markets
- Market growth
- Looking ahead - isolated initiatives or a global market?

# Convention and its Protocol

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## UN Framework Convention on Climate Change

- General commitments to modify longer-term trends in emissions and stabilize atmospheric concentrations at safe levels
- Industrialized countries (Annex I Parties) to take the lead

## Kyoto Protocol

- Innovative market-based approach to reducing emissions
  - binding emission targets for Annex I Parties
  - robust reporting and review of emissions information
  - penalties for non-compliance with targets
- Flexibility through emissions trading and private sector participation



# Kyoto targets based on 1990 levels

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## 1990 level

New Zealand  
Russia  
Ukraine

## Increases

Iceland	+10%
Australia	+8%
Norway	+1%

## Emission cuts

Japan	-6%
Hungary	-6%
Poland	-6%

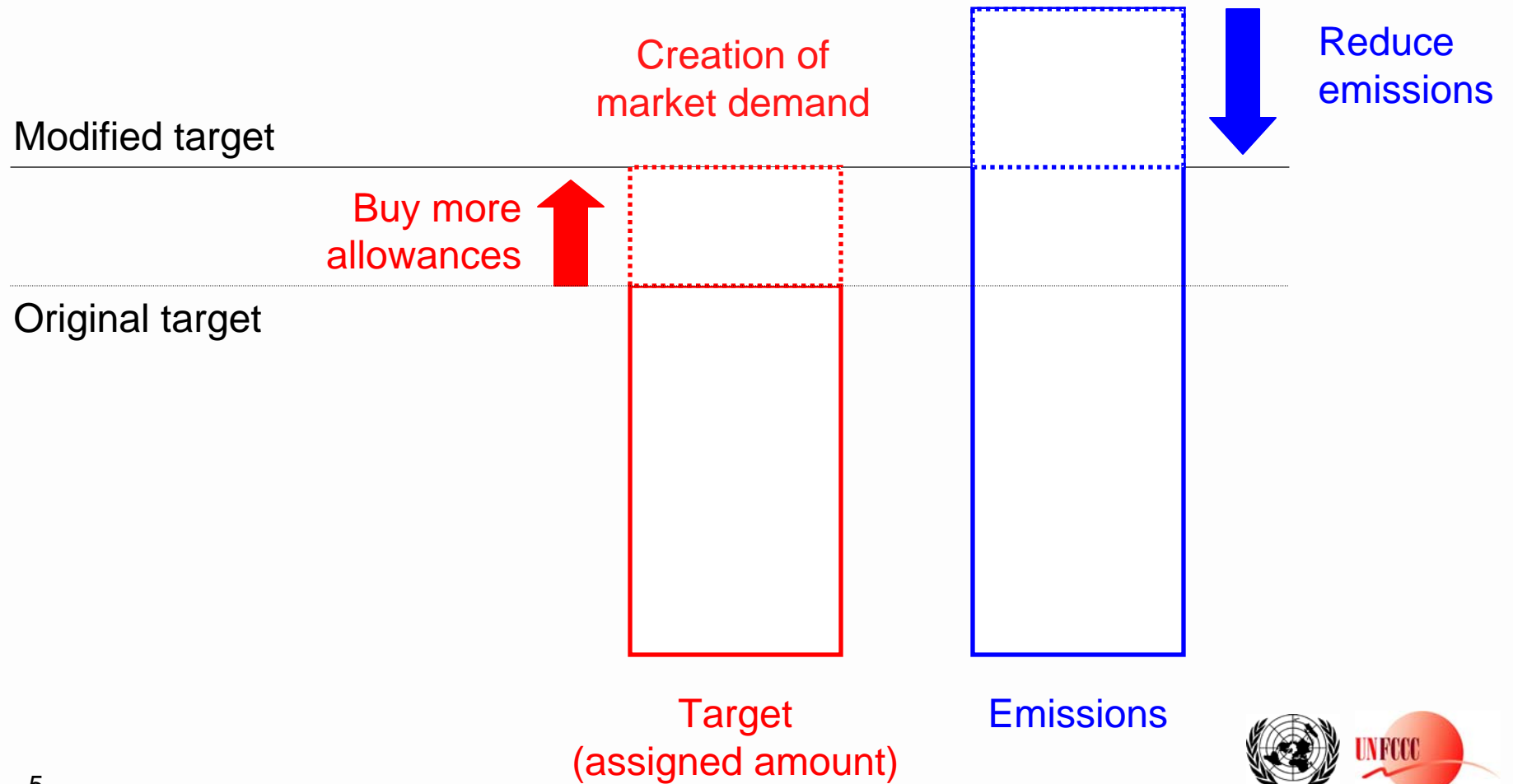
US	-7%
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EU and most others	-8%
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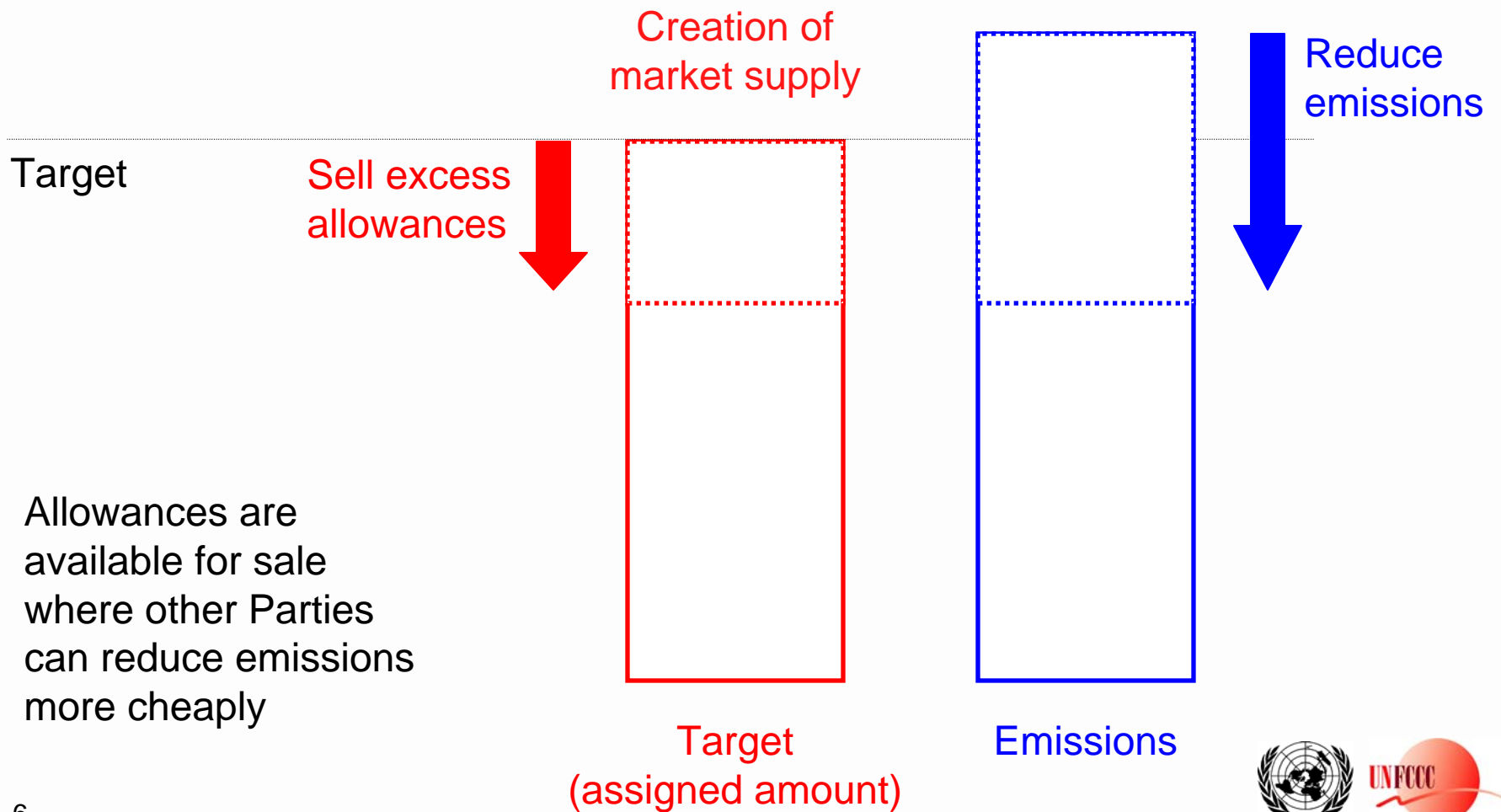
(EU “bubble” range  
from +27% to -28%)

Measurement over  
the 2008-2012  
commitment period

# Buying Parties under Kyoto



# Selling Parties under Kyoto

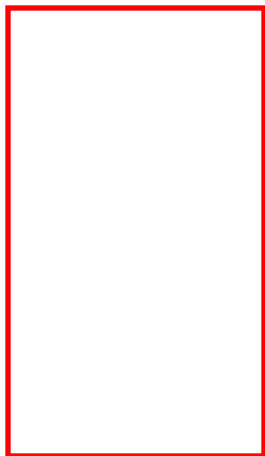


# Kyoto cap-and-trade

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Assigned amounts (targets) are denominated in units

- Each Assigned Amount Unit is equal to one tonne of CO<sub>2</sub> equivalent
- Expecting 55.5 billion AAUs across all Annex I Parties
- AAUs bought and sold by governments (and companies if authorized)



Target  
(assigned amount)

- Trading puts a price on carbon emissions
- Emitters think twice before emitting
- Buying allowances may be cheaper than making very expensive reductions
- Flexibility allows stronger targets to be set

# Cap-and-trade at company level

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- Governments are devolving targets down to company level
  - allocating targets (giving allowances) to big emitters
  - allowing allowance trading between companies
- Reductions made by companies contribute to meeting national targets
- First regulatory example was the EU trading scheme
  - mandatory for industrial installations meeting specified criteria
  - companies trade domestically and across EU borders
  - scheme fits under the umbrella of the Kyoto Protocol



# Regulatory trading schemes

<b>EU ETS</b>	Mandatory cap-and-trade 2005-2007 (phase 1) 2008-2012 (phase 2) 2013-2020 (phase 3, under construction) Approx 12,000 industrial installations in 27 member states Covers approx 45% of EU emissions
<b>Japan</b>	Voluntary cap-and-trade Small experimental scheme primarily to gather experience
<b>Norway</b>	Mandatory cap-and-trade (2005-2007) Will now apply the EU ETS (as an EEA country)
<b>Switzerland</b>	Voluntary cap-and-trade (as alternative to a CO <sub>2</sub> tax) 2008 onwards
<b>Other proposals</b>	Australia, Canada, New Zealand ...

# Credits through Kyoto projects

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One Party invests in emission-reducing projects in another

- Investor Party/company puts in finance and technology
- Reward = additional credits for the emissions reduced

## Joint implementation (JI) projects

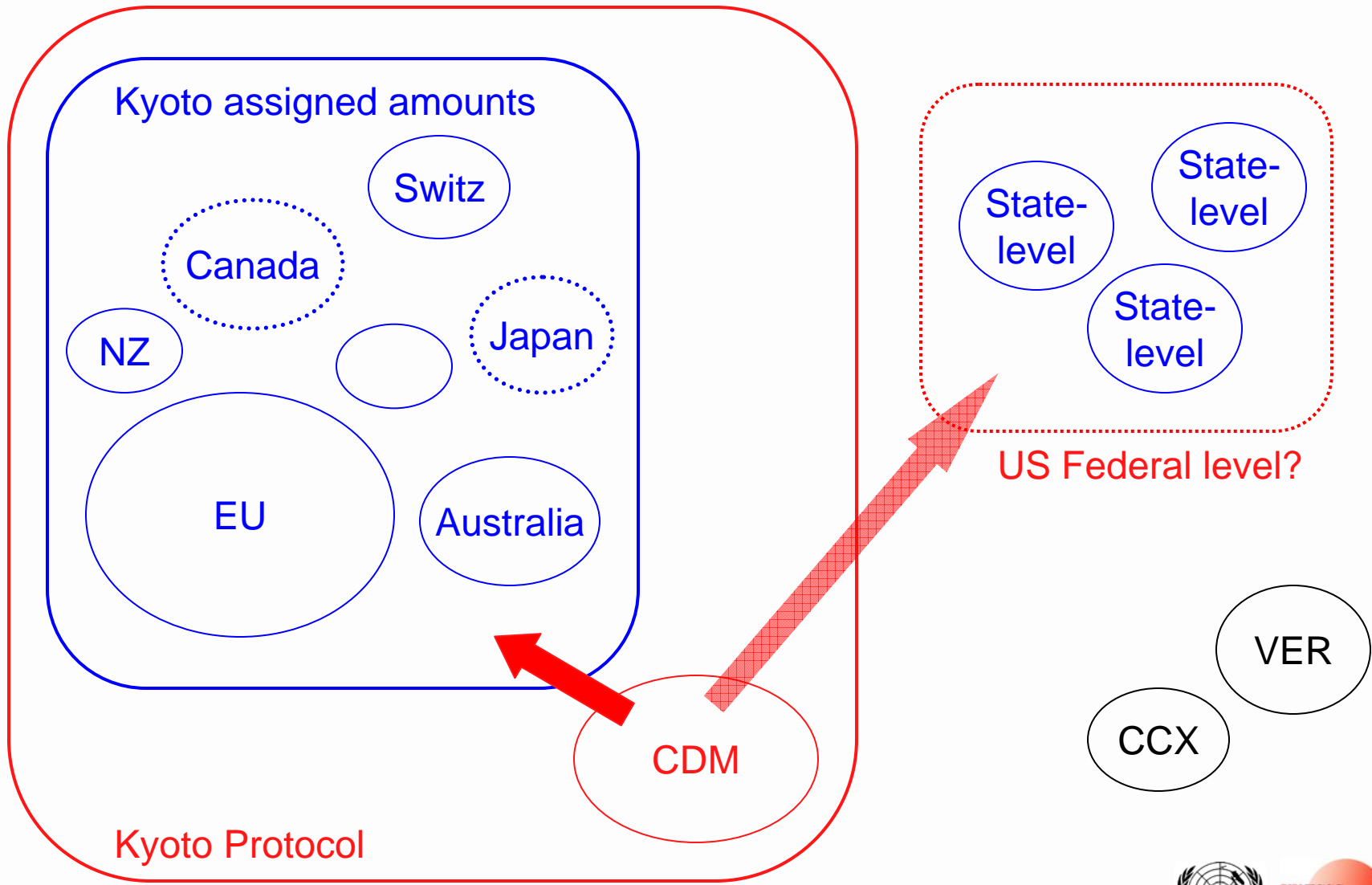
- Between Annex I Parties
- Still in its early days, with 2 registered projects

## Clean development mechanism (CDM) projects

- Between Annex I Parties and developing country (non-Annex I) Parties
- 1082 registered projects, with 154 million credits issued so far
- Circa 2000 further projects in the pipeline, bringing total credits expected by the end of 2012 to approximately 2.7 billion



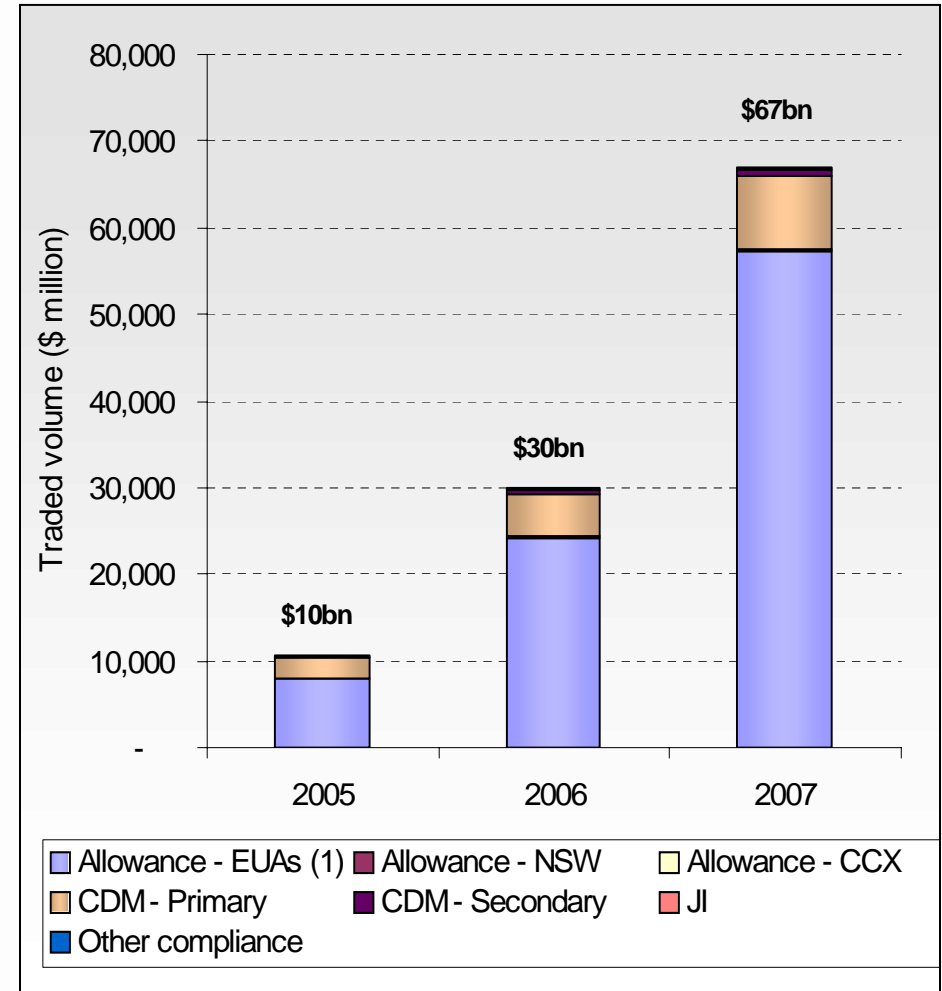
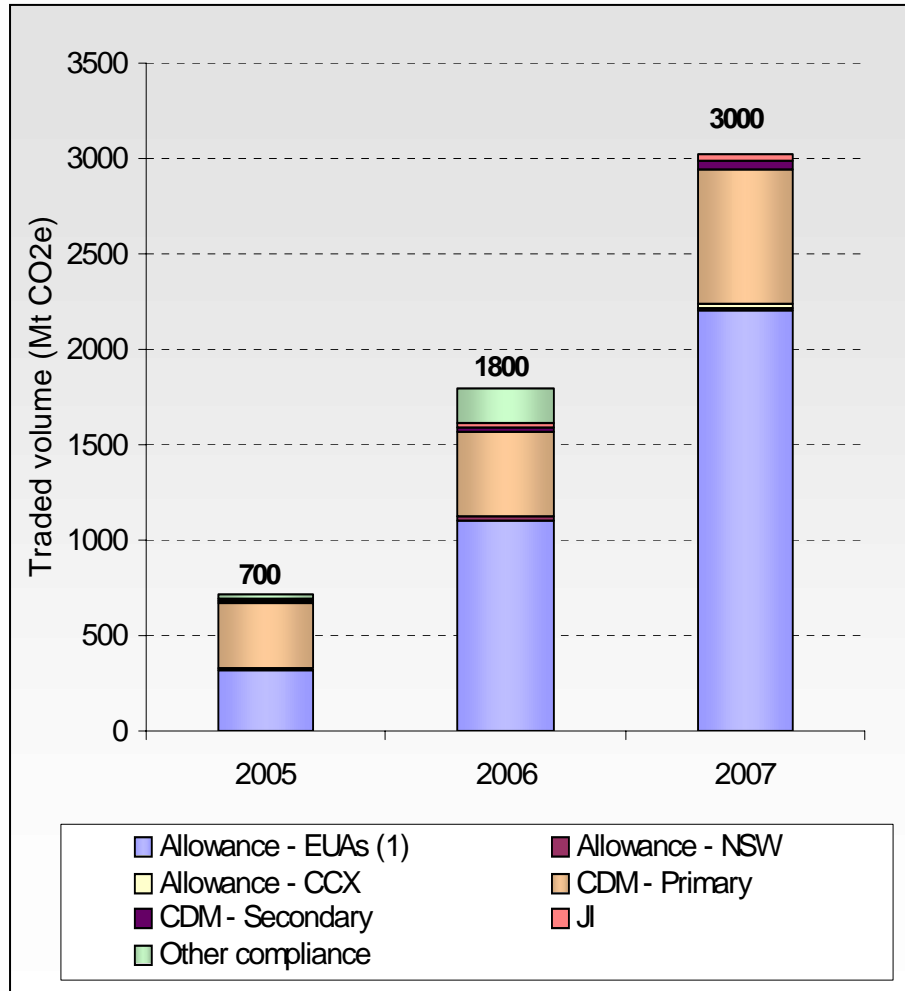
# Carbon market



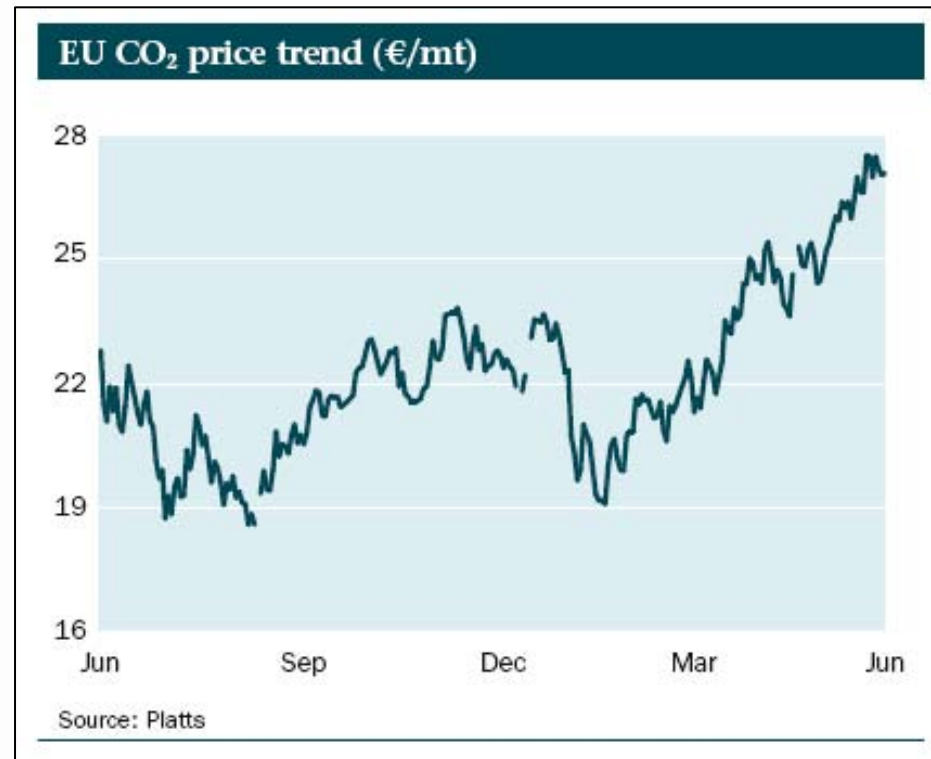
# Global growth

2007 volume: 3,000 MtCO<sub>2</sub>e, \$67 billion


Source: New Carbon Finance



# 16 June 2008

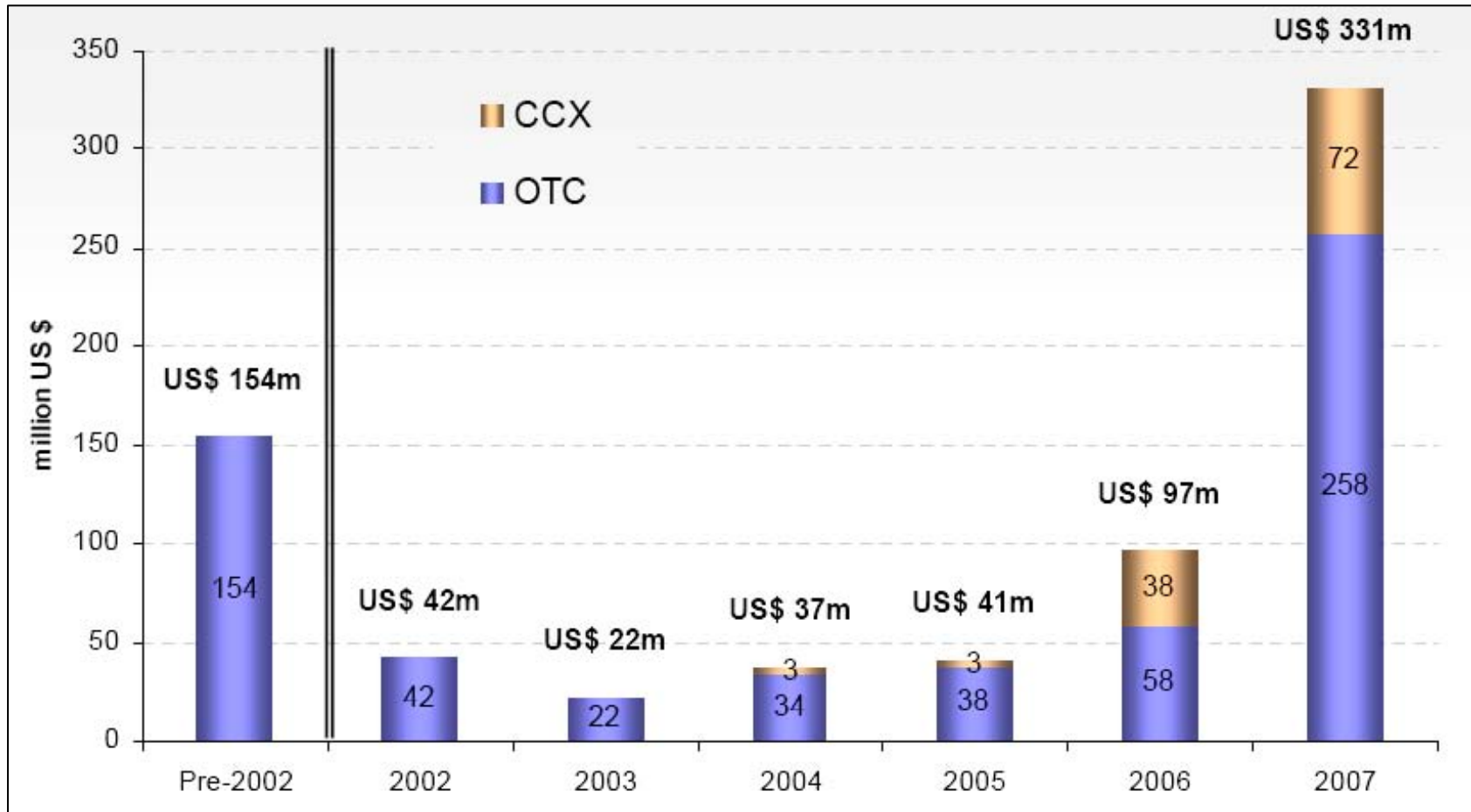


## Platts key emissions assessments

Daily CO <sub>2</sub> 2008 EUA		€27.10 Up 0.05		Daily 2008 CER Price		€20.10 Down 0.10
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# Voluntary market

2007 volume: >65 MtCO<sub>2</sub>e, >\$331 million



Source: Ecosystem Marketplace, New Carbon Finance



# Carbon services

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- A new service industry, to accompany a new commodity
  - exchanges for both EU allowances and CERs
  - trading in futures contracts
  - carbon indices
  - carbon funds
  - traders, brokers, analysts, news services, etc
  - service industry associations
- Market settlement infrastructure is in place - EU to link in soon
- Market is rapidly evolving

# Looking ahead at the CDM

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- Scaling up the CDM seen as key in supporting developing country actions to mitigate emissions and enhance sustainable development
- Some proposed changes to the CDM
  - improving on efficiency, dealing with workload, streamlining ...
  - conservative reduction estimates in return for quicker processing
  - growing out of the learning-by-doing phase
  - incorporate other activity types
  - incorporating sector-based approaches
- But how much CDM demand will be generated by emission targets?
- And how freely will national trading schemes let CDM credits in?



# Looking ahead at emissions trading

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- New national trading schemes emerging
- Current market is too fragmented to call a global market
- Mutual recognition of units (two-way linking) would open access to cost-effective reductions in other trading schemes
- But schemes need some level of harmonization – in particular methods for allocation and for monitoring, reporting and verification
- So how linkable will the schemes be?
- What the US will do?
- What will happen to international aviation?