



# The Carbon Agenda

What have we achieved and  
where are we going?

Richard Gledhill  
Head of Carbon Market Services

December 6th, 2006



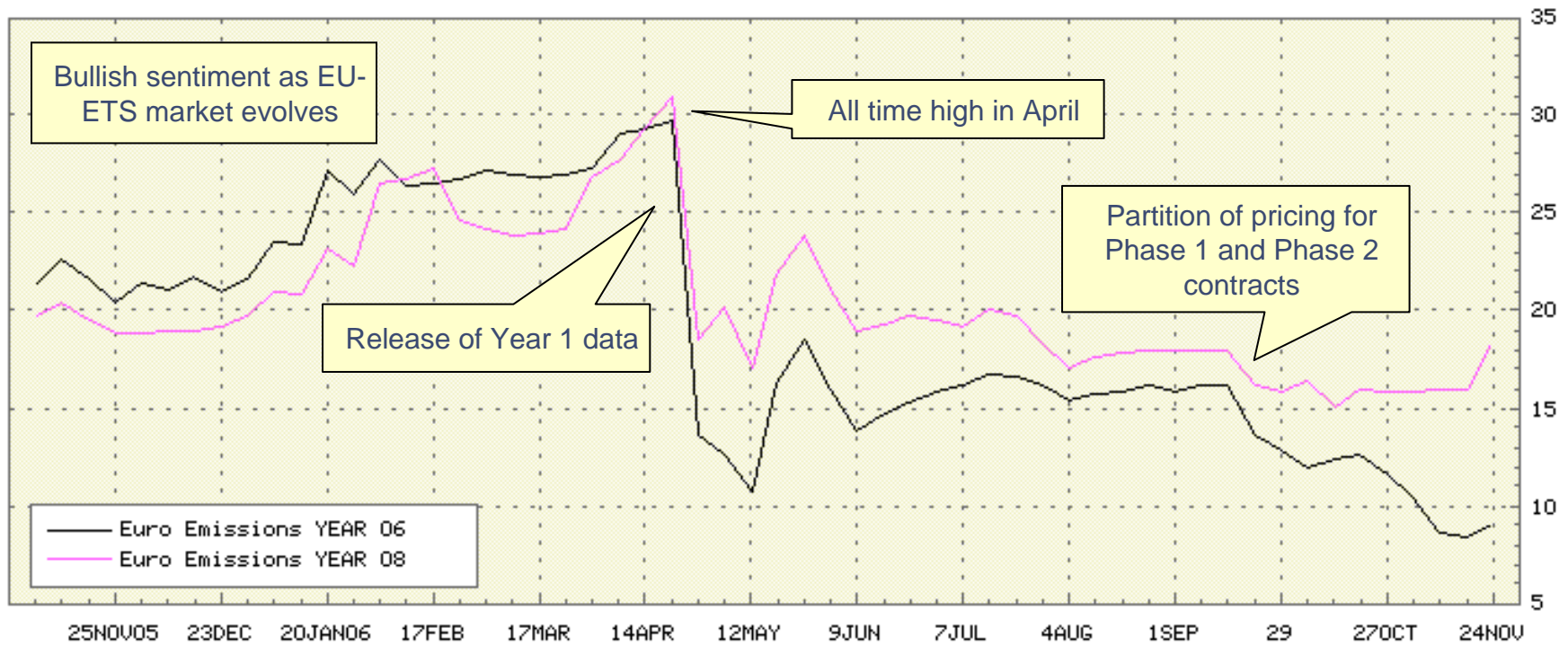
# Carbon as a value driver

- Global carbon markets worth over \$10Bn in 2005
- \$40Bn/year for climate change mitigation over next 20 years
- Stock markets have woken up to the carbon story
- Carbon regulation can both create and destroy value
- Tightening carbon policy look likely

# Putting a (volatile) price on carbon..

Weekly EUA2006 and EUA2008 Contracts: October 2005 - November 2006

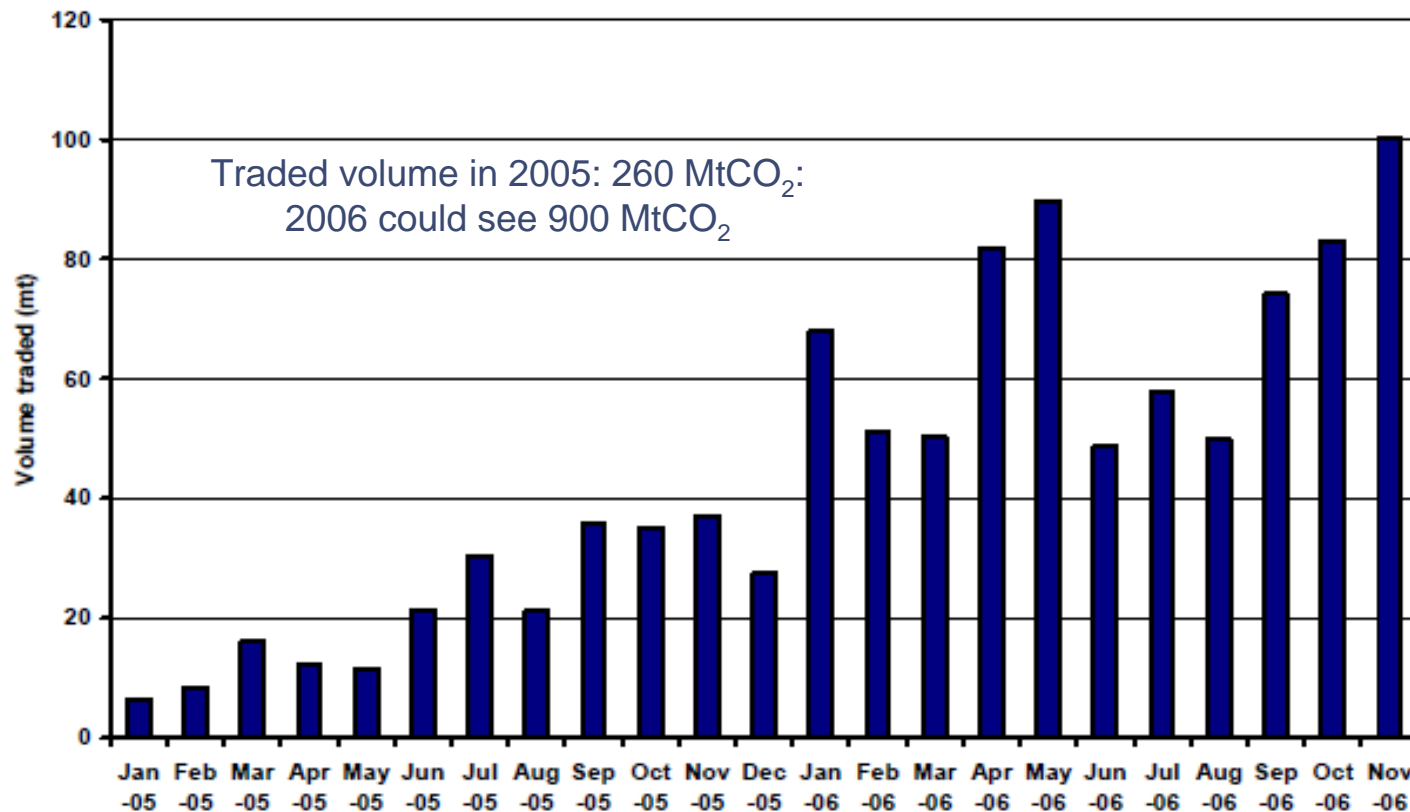
Price €/t



Source: Bloomberg

# Growing confidence and trading volumes

Traded volumes since Jan 2005 (all contracts, includes OTC data and reported volumes, by ECX, EEX, EXAA, Nord Pool and Powernext).



Source: PointCarbon

# Learning points from the journey so far

## Positives

EU-ETS has created a base market worth >€20Bn/year

Liquidity and depth have been satisfactory – the market works

Good levels of compliance achieved overall

Advanced risk management products under development

London established as a hub for carbon trading

## Concerns

- First phase allocations were too generous
- Price sensitive information needs to be managed more carefully
- Cost pass-thru from generators is a concern
- Administrative burden for small players is considerable
- How much actual abatement has been undertaken?

# NAP2 rulings and outlook

## Rulings

29/11 announcements removed 47 MtCO<sub>2</sub>/year from the EU-ETS

Greater harmonisation in NAP setting (rule-based)

Allocation methodology based on 2005 actual cf. projections

Strict 'supplementarity' provisions mean reductions in CDM/JI limits

Auctioning remains discretionary area for Member States

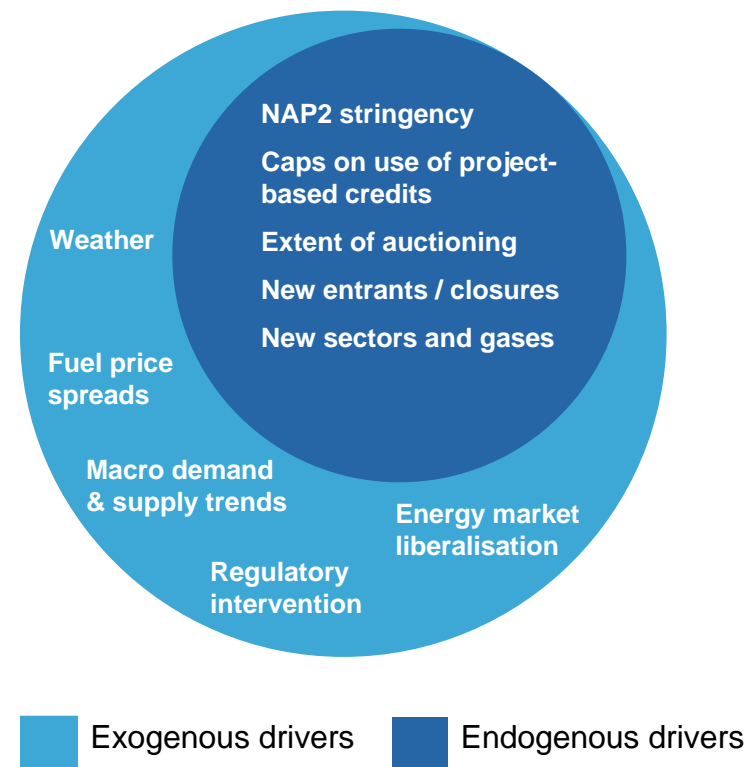
## Outlook

- Further reductions in both absolute limits and CDM/JI limits possible for other large players (Spain, Italy, Poland)
- Decisions should underpin EUA Phase 2 contracts; impact on CER prices more uncertain
- Inter-period banking now allowed, but unlikely to take place (direct subtraction)

# Strategic questions for ETS players, 2008-12

- Stringency of NAPs – who actually pays for Kyoto?
- Restrictions on CERs?
- Impact of CO<sub>2</sub> on operational and capex decisions
- International cost competitiveness
- Carbon as a value driver in M&A; carbon distress?

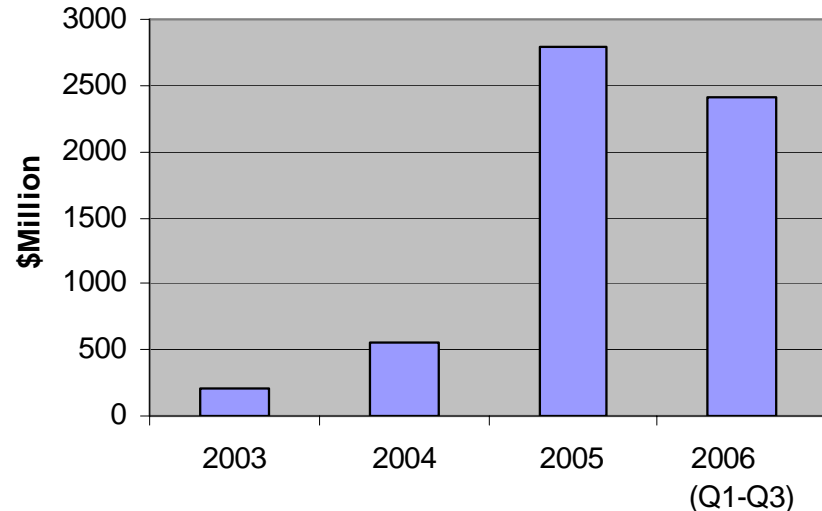
Market drivers for carbon prices



# Outlook for project-based credits

- Exponential growth in CDM during 2006 – driven by private sector buyers
- Pipeline suggests up to 1.5Bn tCO<sub>2</sub> – how much will deliver?
- Key hedging instrument for EU-ETS players
- Window for developing new CDM projects is closing
- Attributing a value post-2012?

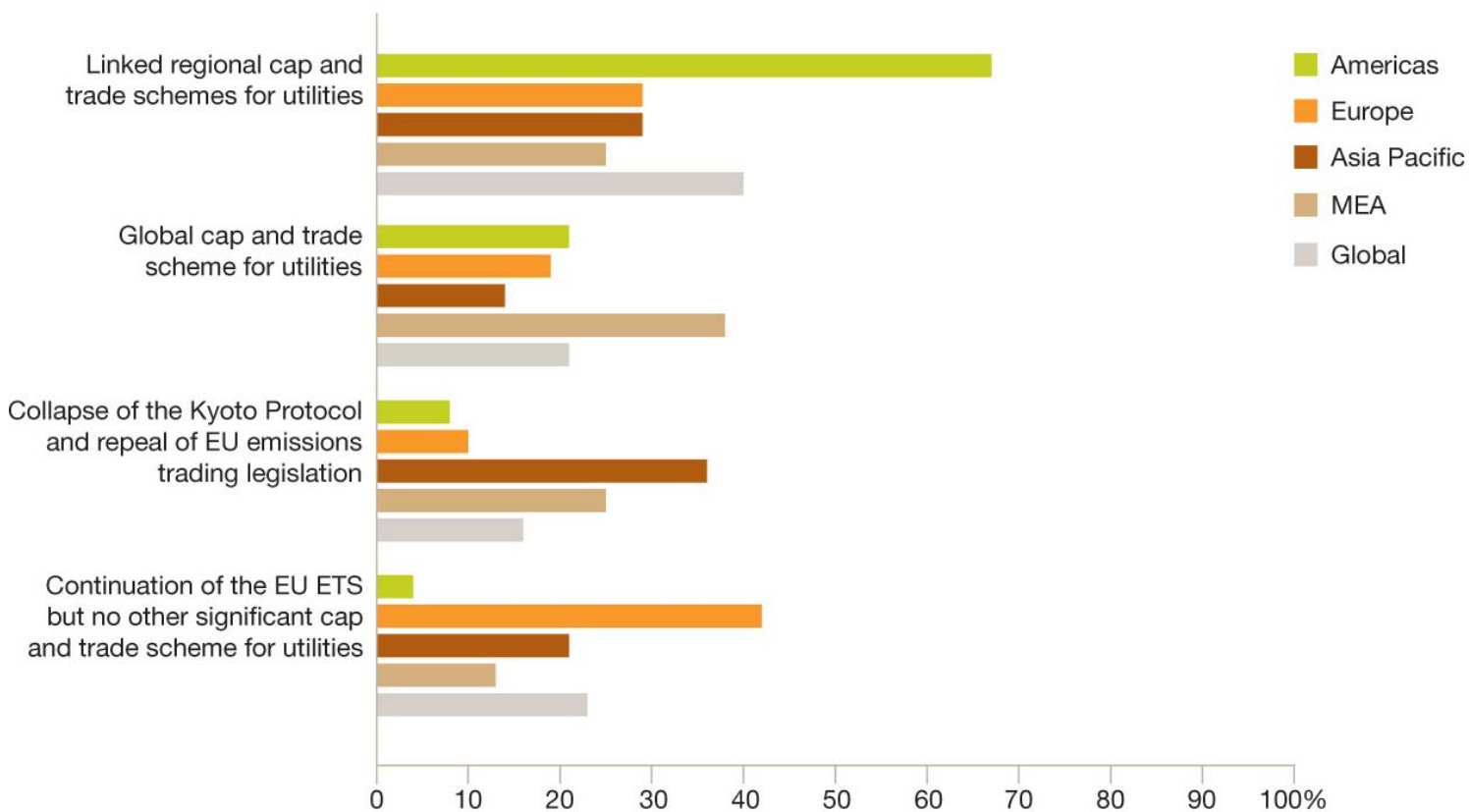
Annual value (\$Mn) of project-based carbon credit transactions



Source: World Bank

# Outlook for post-2012

What regulatory or market regime do you expect to develop post-2012 for CO2 emissions?



Source: PwC Utilities Global Survey, 2006. Total % share of responses

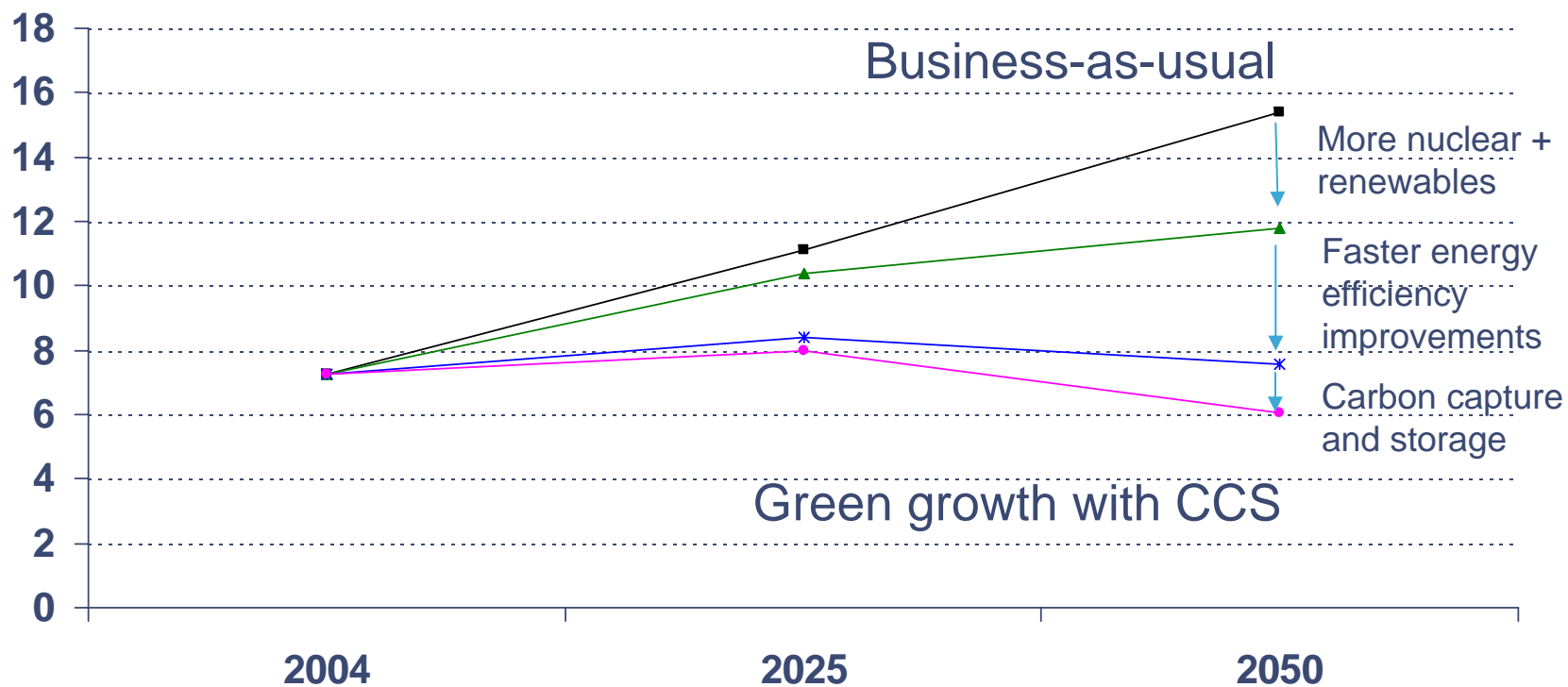
# Outlook for EU-ETS Phase 3

- Allocation methodologies – greater use of auctions and benchmarking?
- Attributing a value for CERs in the absence of Kyoto framework?
- Linkage with RGGI, Japan and other regional trading schemes?
- Recognition of CCS and other mitigation technologies?
- Inclusion of aviation and other sectors/gases?



# The long run – paths toward sustainability

Global emissions from fossil fuels (GtC pa)



Source: PwC model projections: the four lines correspond (starting from the top) to our Baseline, Greener Fuel Mix, Green Growth, and Green Growth + CCS scenarios. 'Sustainable' is defined here as consistent with stabilising global atmospheric CO concentrations at around 450ppm by 2050.

# How to address the transport problem?

EU-15 transport emissions increased 25% over 1990-2004 and are projected to rise further

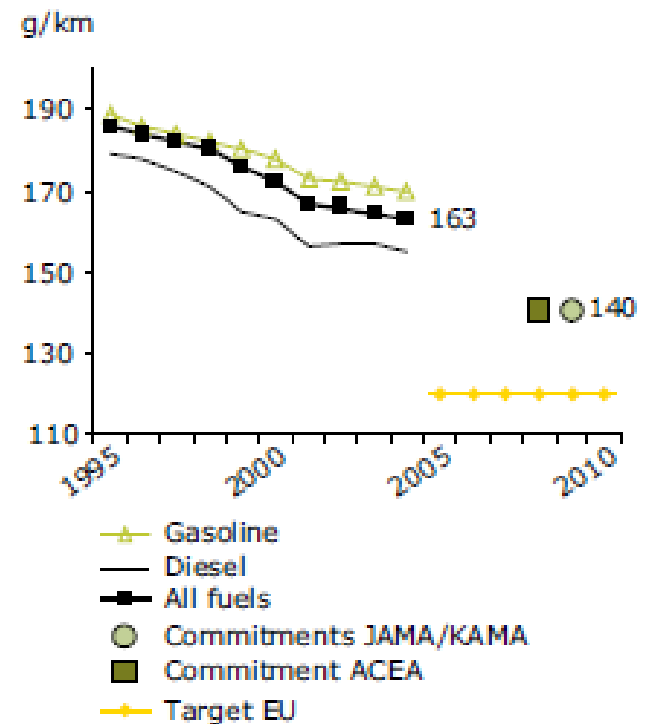
EC to review approach to voluntary agreements with carmakers

Slow progress in implementing Biofuels in Transport Directive

Proposals for EU aviation emissions trading expected 2007

IATA preference for emissions trading over further taxes/charges

Average CO2 emissions for new cars by fuel type and associated targets





# Contacts

## **Global Leader**

Richard Gledhill

Tel: +(44) 207 804 5026

## **Carbon Strategy and Transactions**

Ian P. Milborrow

Tel: +(44) 207 804 1304

## **Sustainability**

Geoff Lane

Tel: + (44) 207 213 4378

## **Emissions Verification**

Hans Schoolderman

Tel: + (31) 30 219 4678

## **Environmental Taxes**

John Manning

Tel: + (44) 207 212 8894

[www.climatechangeservices.com](http://www.climatechangeservices.com)

© 2006 PricewaterhouseCoopers LLP. All rights reserved. "PricewaterhouseCoopers" refers to PricewaterhouseCoopers LLP (a limited liability partnership in the United Kingdom) or, as the context requires, other member firms of PricewaterhouseCoopers International Limited, each of which is a separate and independent legal entity. \*connectedthinking is a trademark of PricewaterhouseCoopers.