



# The Carbon Market

Franck LECOCQ – Development Economics Research  
Group and Carbon Finance Business, World Bank

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# Why a Carbon Market?

- Because of regulatory pressure (present or anticipated) or for voluntary reasons, firms, governments, and even individuals constrain their greenhouse gases (GHGs) emissions
- Since GHGs mix in the atmosphere, it does not matter where emissions are reduced
- Both in-house mitigation and purchase of outside “GHG commodities” can thus be used

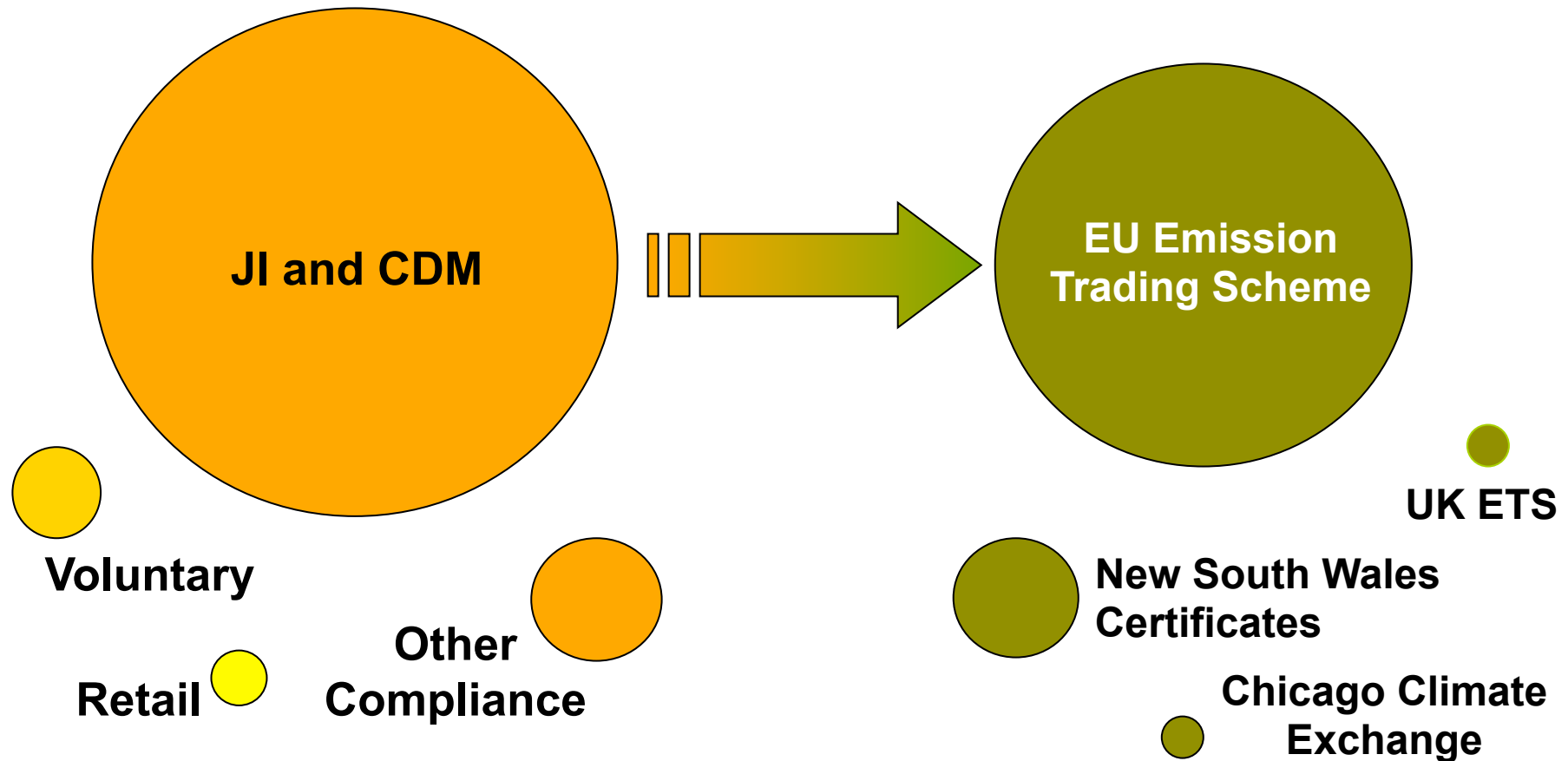
**→ Carbon Market**

# Structure of the Carbon Market



## Project-Based Transactions

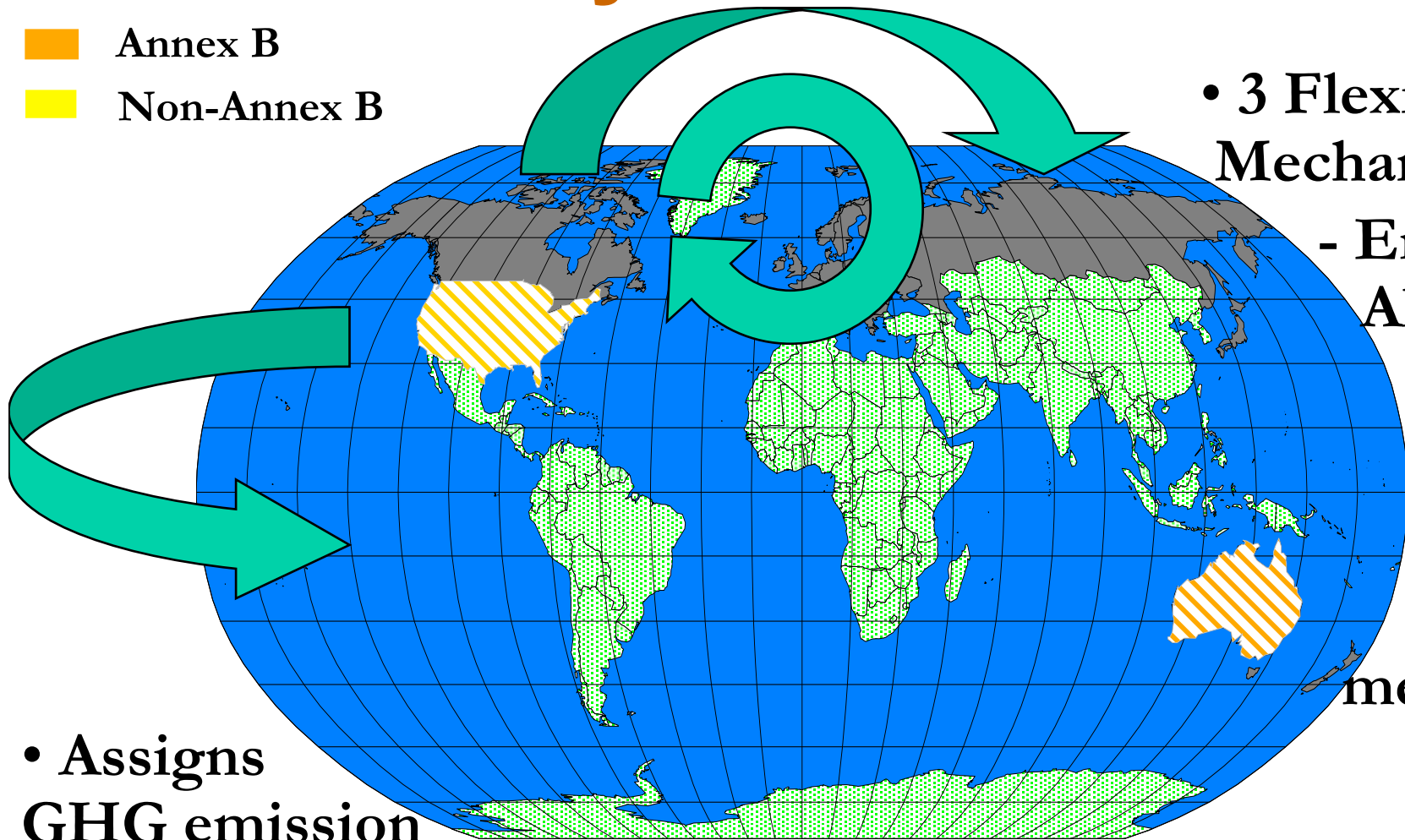
## Allowance Markets



# The Kyoto Protocol



- Annex B
- Non-Annex B



## • 3 Flexibility Mechanisms

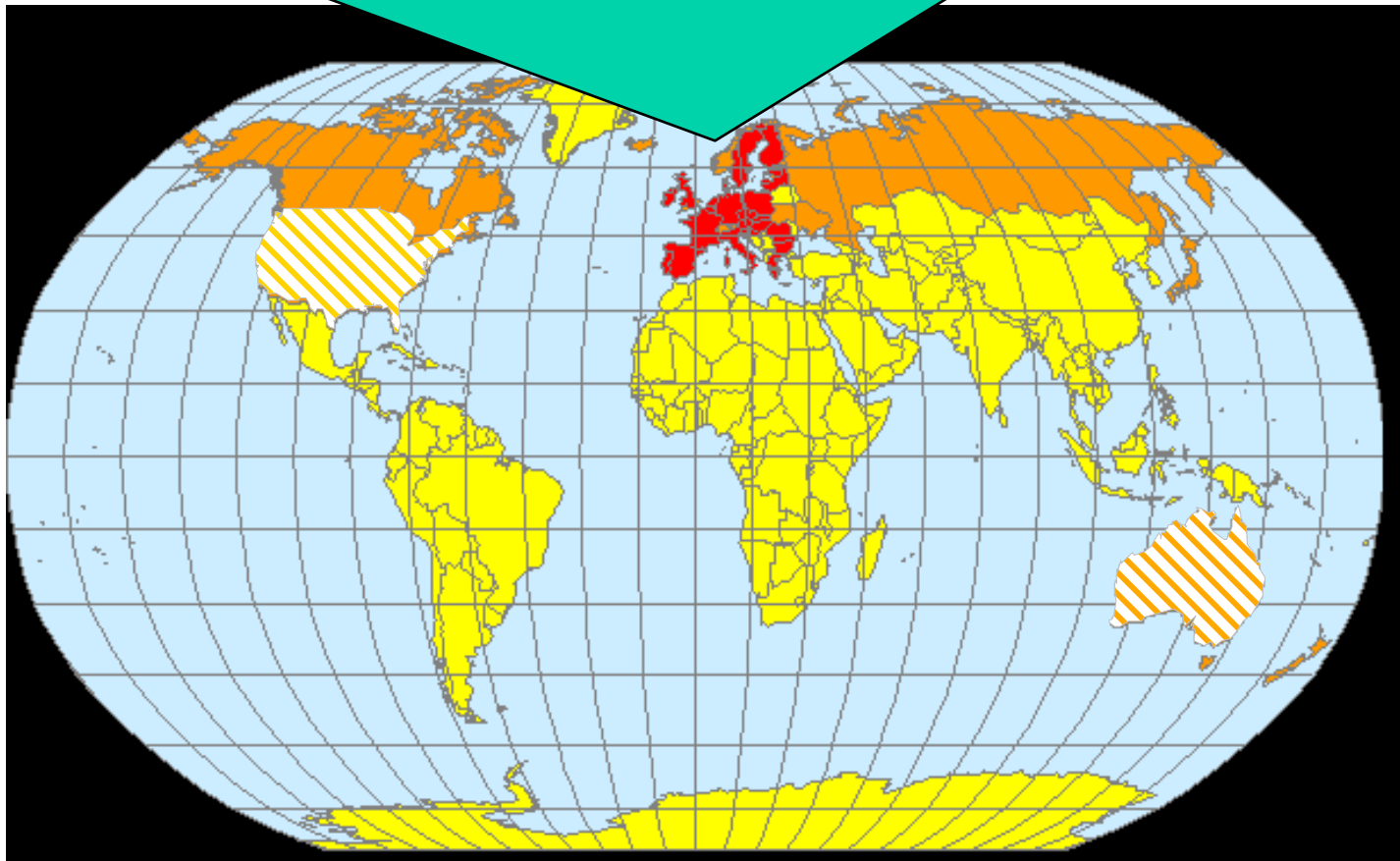
- Emissions Allowance Market

- Joint Implementation

- Clean Development Mechanism

• Assigns GHG emission targets to Annex B countries between 2008 and 2012

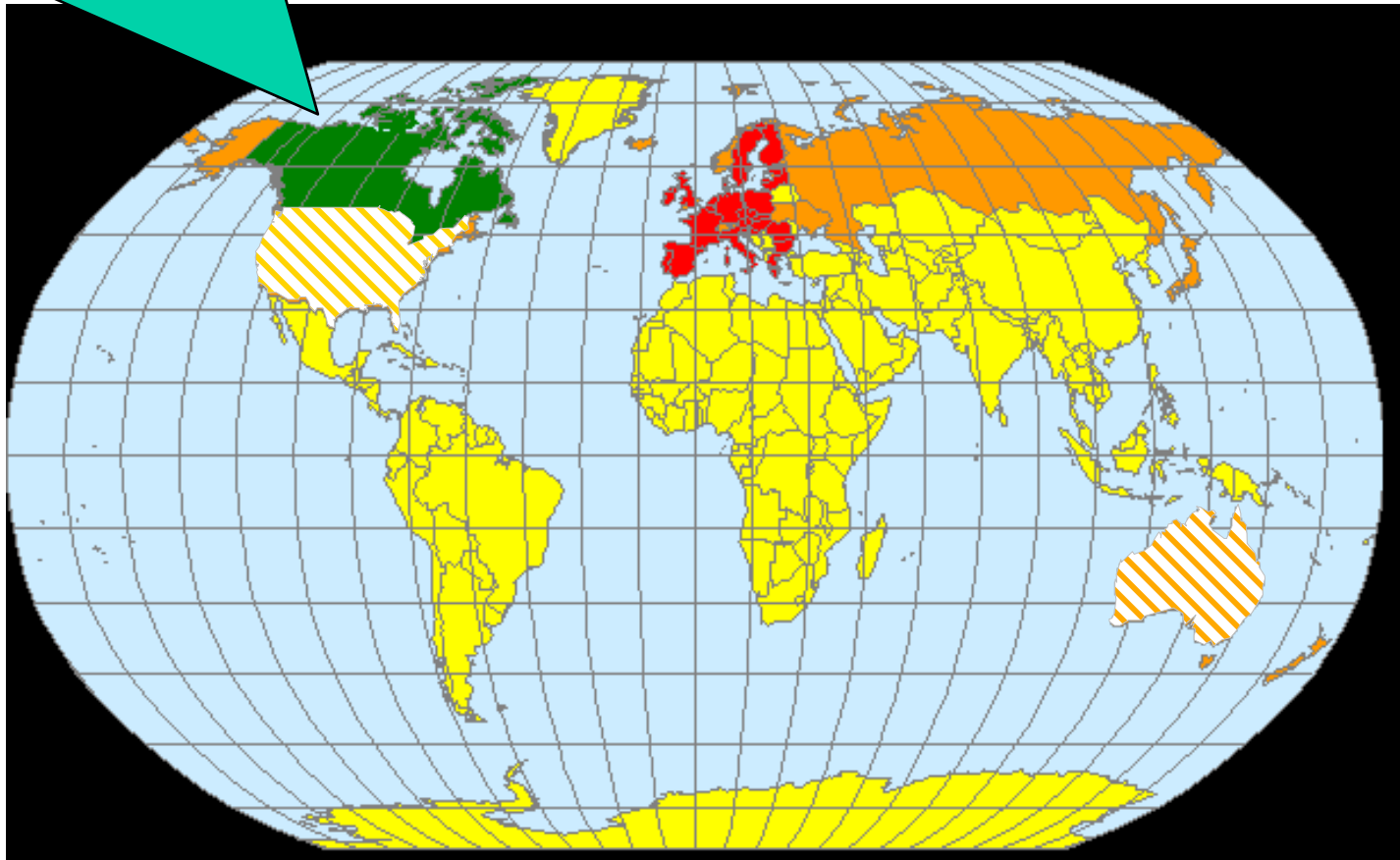
# EU Emissions Trading Scheme



- Caps over 40% of EU CO<sub>2</sub> emissions
- 2 phases : 05-07 and 08-12
- JI and CDM authorized...
- But NOT LULUCF (review in 2006)

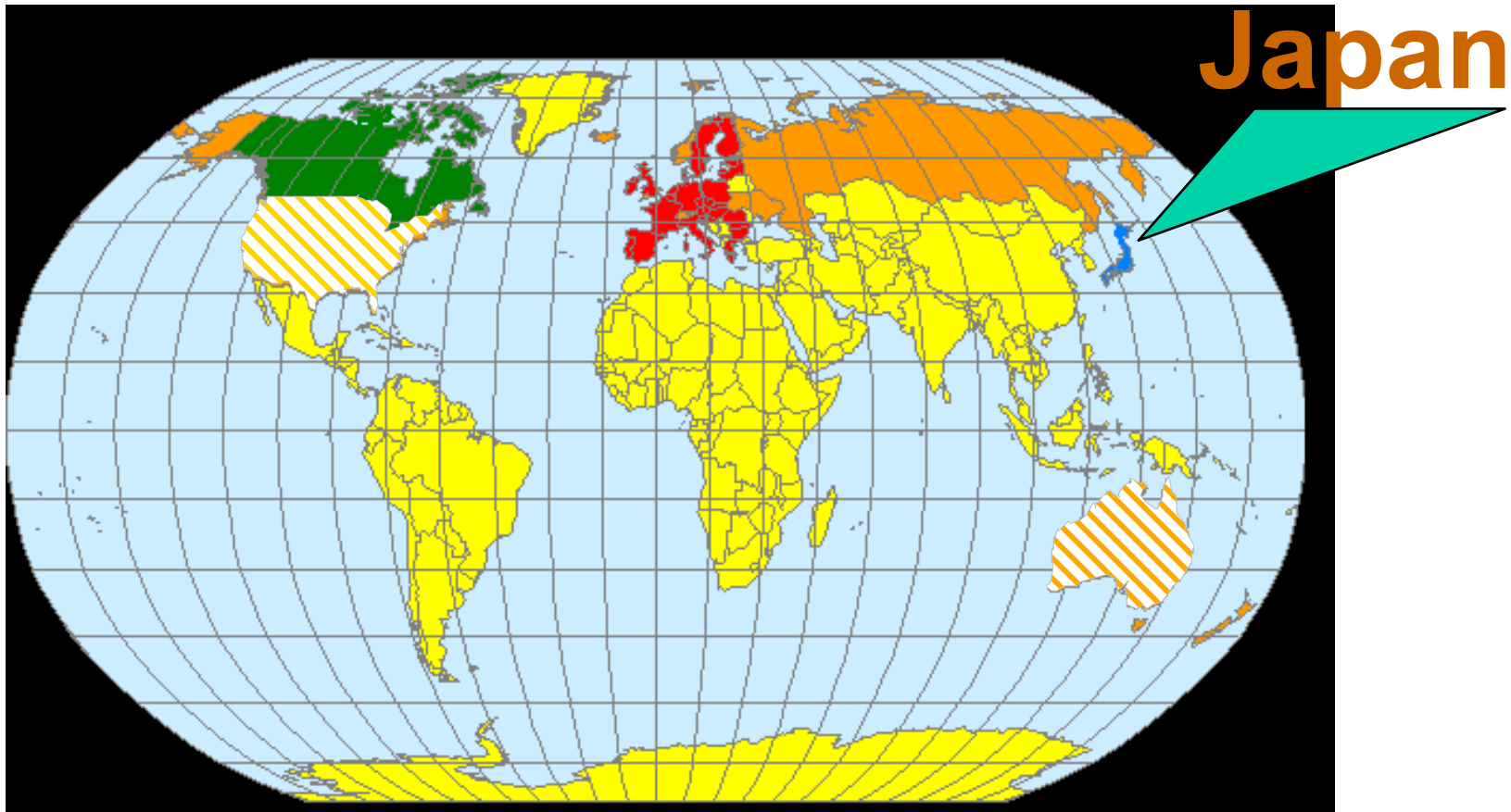


# Canada



- Sectoral covenants being negotiated
- Domestic carbon market

- At least 50 MtCO<sub>2</sub>e through flexibility mechanisms

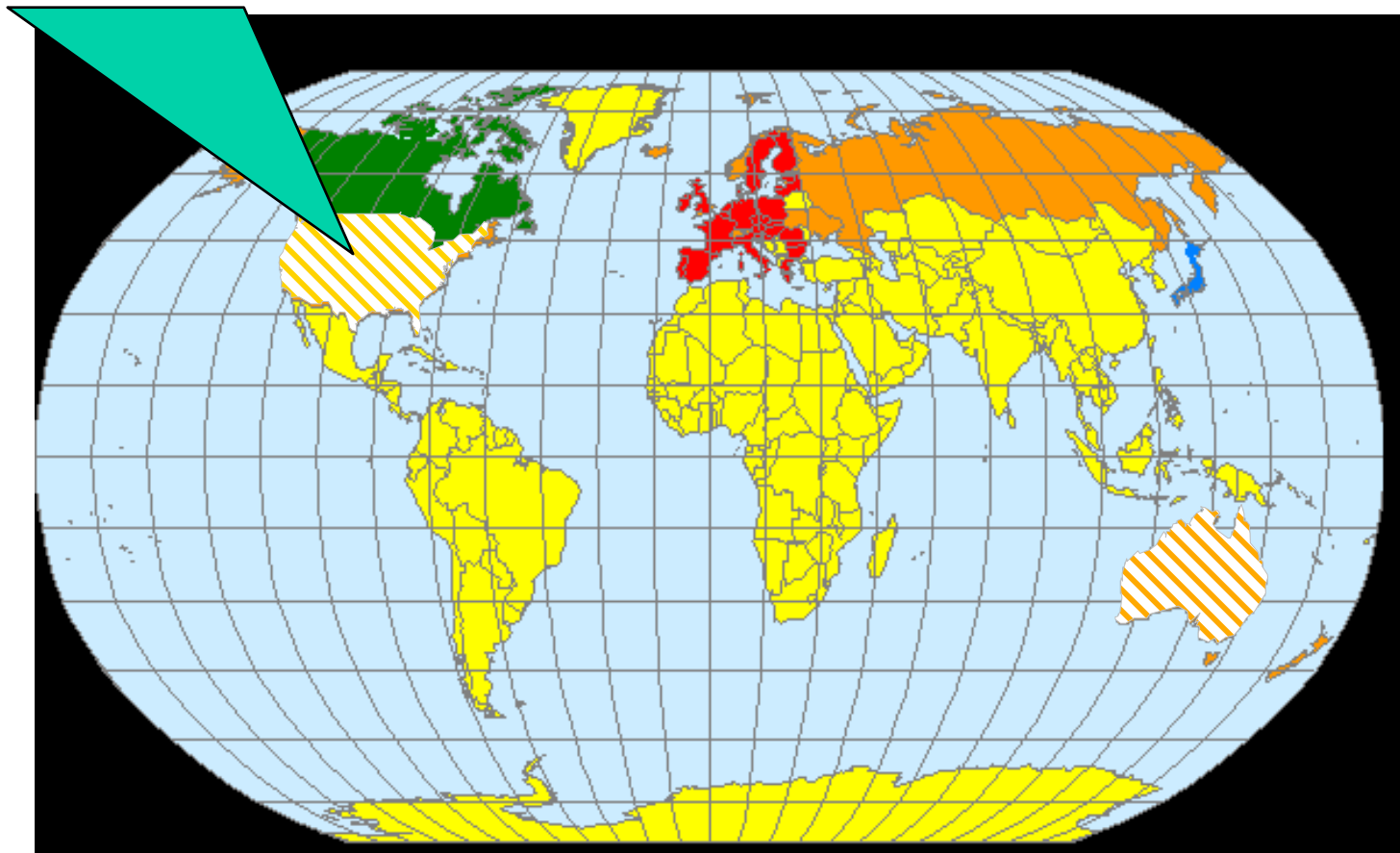


- **National Policies still in the making**

- **Firms and increasingly government active on CDM market**



# USA



- Policies constraining GHG emissions in various States (e.g., Oregon, Mass., etc.)

- Chicago Climate Exchange (CCX), private allowance market



# Voluntary Action by Firms and Individuals



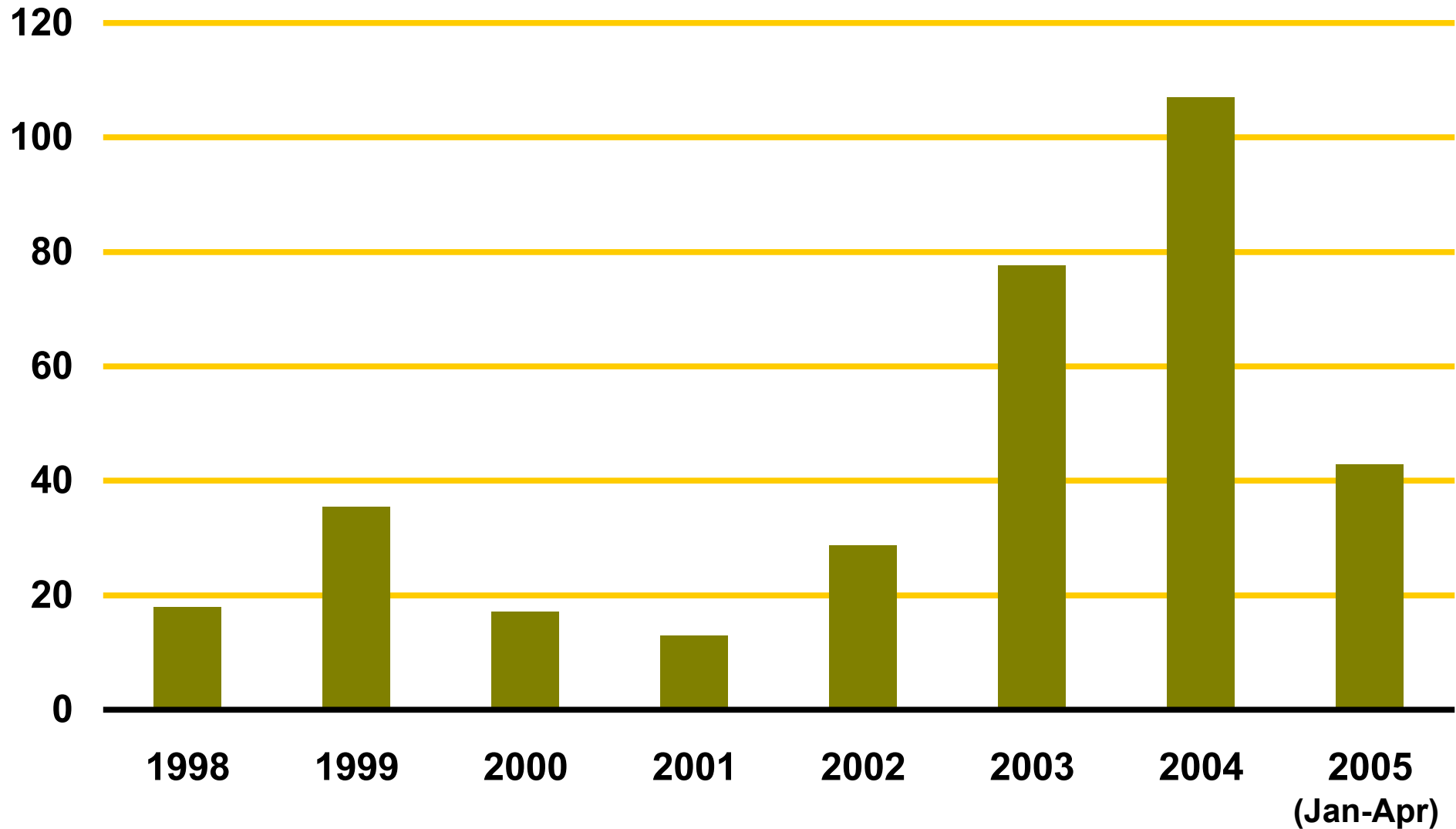
- A large number of companies have engaged in programs to reduce their GHG emissions even absent regulations
  - Various motivations: *inter alia*, corporate responsibility, strategic positioning, competitive advantage, learning-by-doing, public relations, etc.
  - These firms have large-scale emissions (2002 survey: 18 firms with more CO<sub>2</sub> emissions than France had voluntary targets for 2010)
- Individuals and Firms have engaged in purchases of small amount of emission reduction to become “carbon neutral” (event, corporation, or product)



# Methodology

- Limited information on carbon transactions is publicly available
- This study is based on material provided by **Evolution Markets LLC, Natsource LLC**, and on interviews with many market players
- Database of **487** project-based transactions (signed or advanced stage of negotiation) + aggregated data on allowance markets

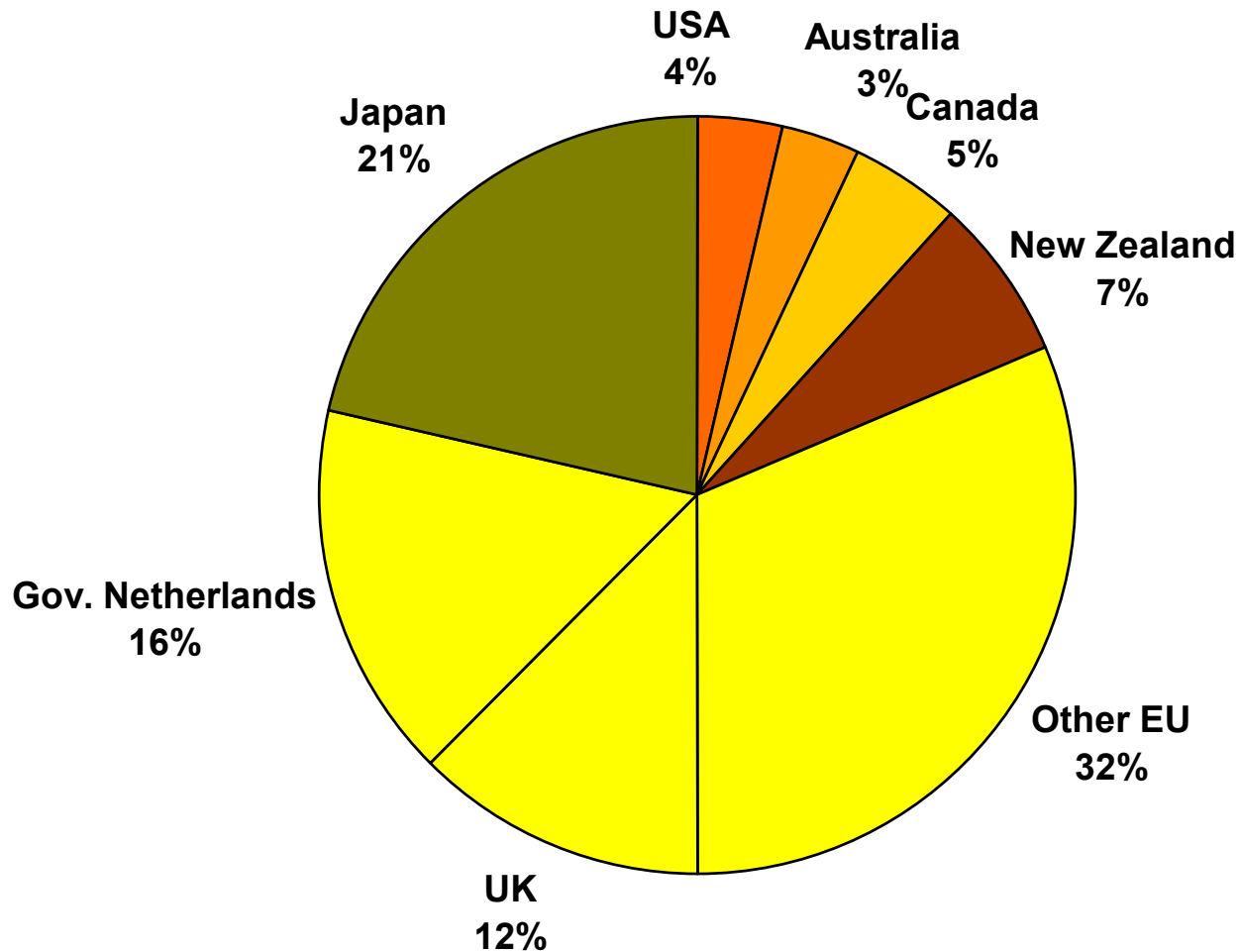
# Volume Traded Through Projects: Growing (in million tCO<sub>2</sub>e)



# Main Buyers: European Governments and Firms



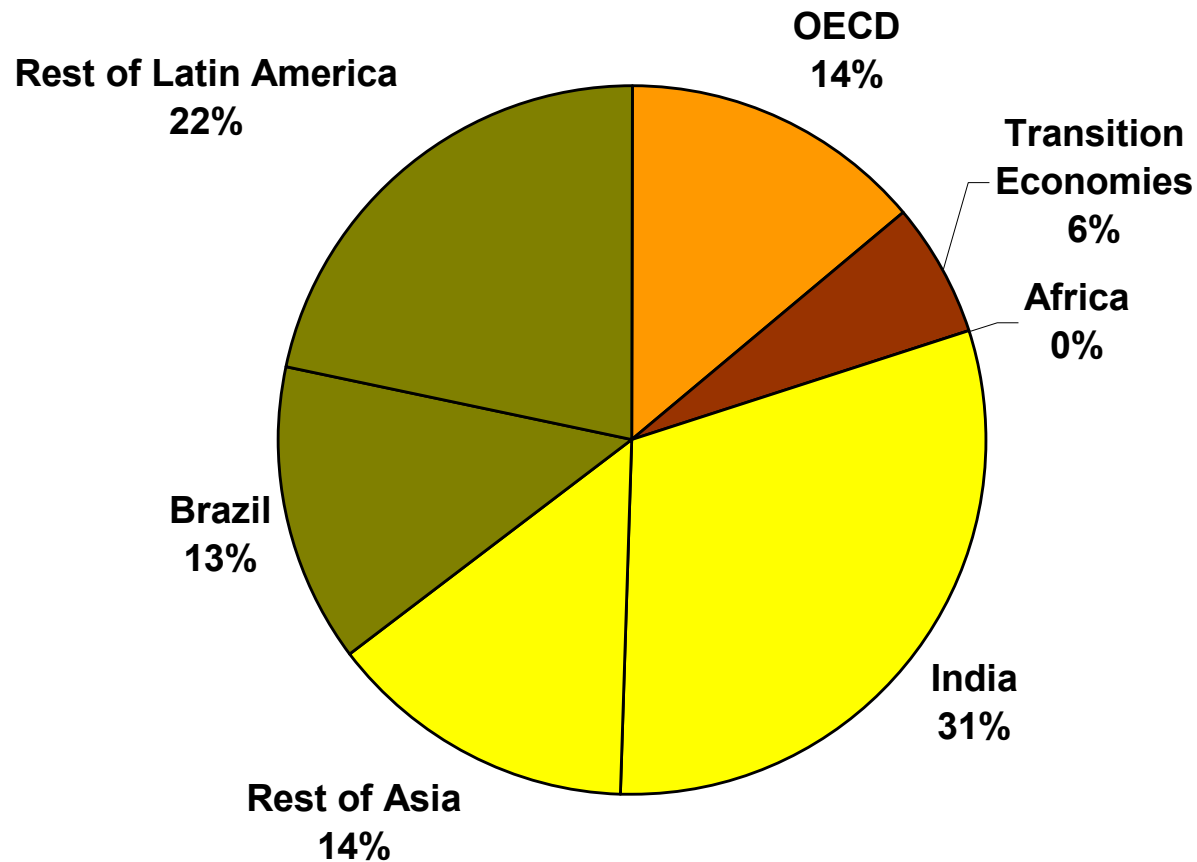
In percent of volume purchased From Jan.04 to Apr.05



# Supply Concentrated in Middle-Income Countries

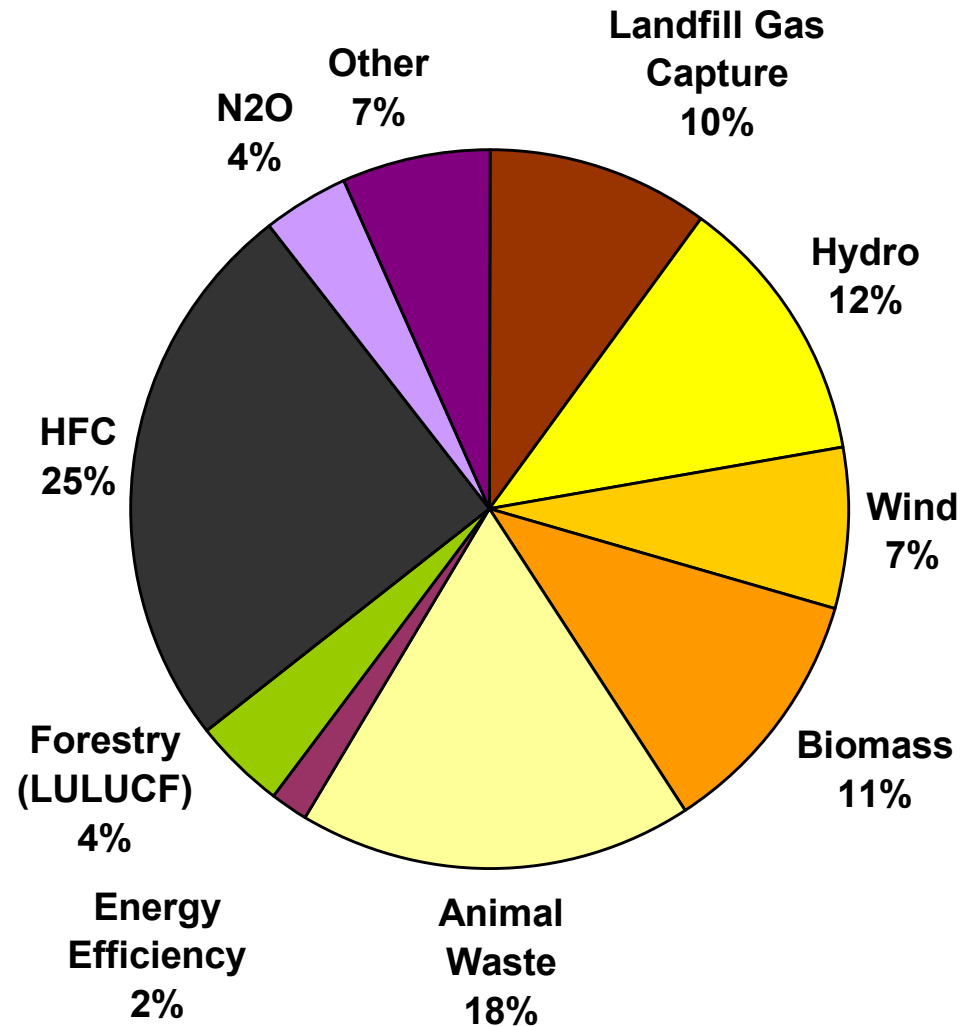


In percent of volume sold from January 2004 to April 2005



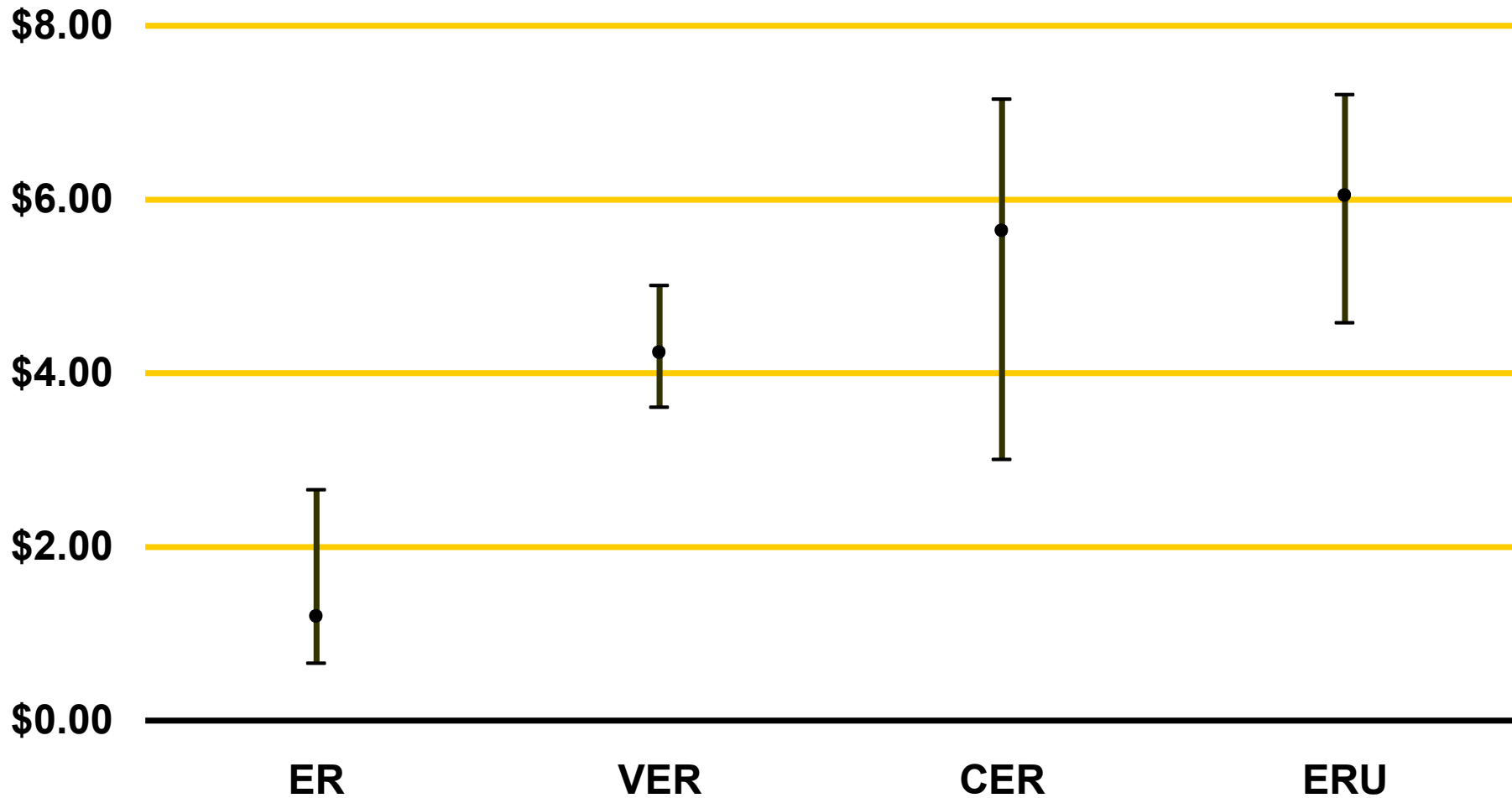
# Non-CO<sub>2</sub> Gases Dominate

In percent of volume purchased from Jan.04 to Apr.05

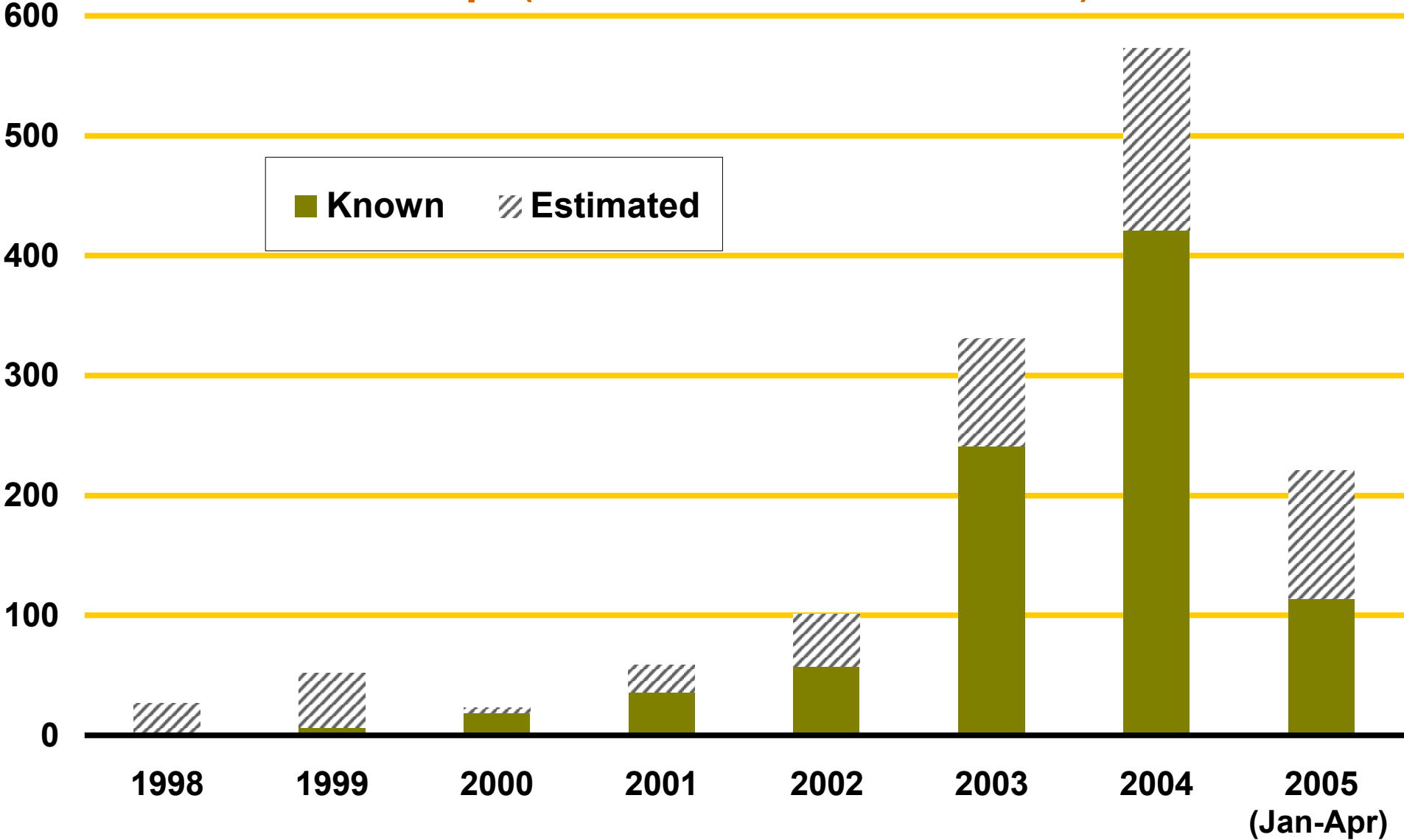


# Prices Depend on Risks

(weighted average prices from Jan. 2004 to April 2005 in U.S.\$ per metric tonne of CO<sub>2</sub>e)



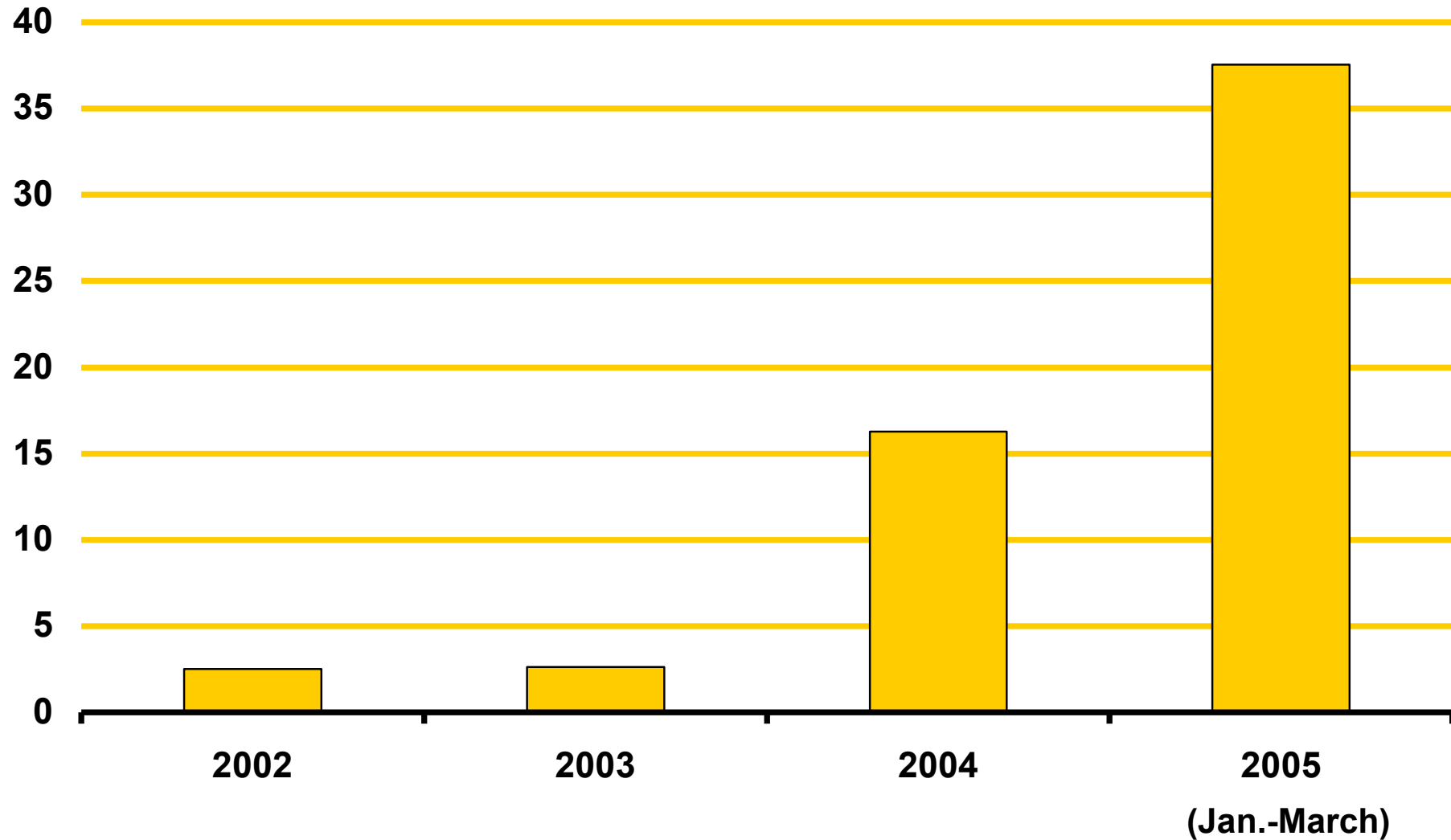
# Total Value of Contracts over 1 b\$ (data in million U.S.\$, nominal)





# Allowance Markets Exploding

(in million tCO<sub>2</sub>e)



# Insights on Price Differential



- Large price differential:
  - EU Allowances: 7 up to 17 euros / tCO<sub>2</sub>e (spot and forward contracts)
  - Project-based: 3 to 7+ dollars / tCO<sub>2</sub>e (forward contracts on expected CERs)
- Allowances and project-based contracts have **very different risk profiles**:
  - **Project and country risks**: high in CDM, none in allowances
  - **Compliance/regulatory risks**: high in CDM, none in allowance
  - **Delivery risks**: higher in CDM



# Market for LULUCF

- Very few transactions (4% total volume)
  - Most LULUCF transactions are outside of the Kyoto Protocol (Australia, U.S. or ‘retail’ )
  - Three signed deals under Kyoto:
    - Moldova PCF
    - Plantar PCF
    - Romania PCF
- Key reasons:
  - Political reluctance to LULUCF
  - Late decision on LULUCF rules (COP9)
  - LULUCF barred from EU-ETS



# Outlook

- **The market has responded to the entry into force of the Kyoto Protocol and of the EU ETS – now a real compliance market**
- Volumes should increase rapidly for both project and allowance segments.....
- ... although important uncertainties still need to be addressed
- Overall supply / demand picture (e.g. under Kyoto Protocol) is still unclear:
  - How much volume will JI/CDM deliver? Issue of **projects lead-time**
  - How many allowances will Russia and Ukraine bring to market?



**State and Trends of the Carbon Market 2005 Report**  
available at

**[www.carbonfinance.org](http://www.carbonfinance.org)**