



# The Emerging Carbon Market:

State, National and Global Context

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# Presentation Overview

- Basics of Cap and Trade Markets
- The Kyoto Protocol
- U.S. Programs
- State Programs

# Implementation of Cap-and-Trade

- Regulator sets cap on total emissions for a group of sources
- Cap is divided into allowances (e.g. 1 ton CO<sub>2</sub>)
- Allowances are distributed
- Emitters measure emissions
- Emitters surrender allowances

# The Kyoto Protocol

- Covers 160 countries and 55% global GHG emissions
  - 2008 to 2012: 5% below 1990 emission levels
  - Annex I countries (developed nations)
  - Non-Annex I countries (developing nations)
- If countries maintain or increase emissions, they must engage in emissions trading
  - Flexible mechanisms for mitigation
  - Clean energy projects, land-based projects
  - Forestry offsets are eligible (afforestation only)
    - Premium placed on social and ecological value (co-benefits)
    - “rural livelihoods”
    - Cost-intensive, high transaction costs,

# The role of GHG Offset Projects

- The cost of compliance is prohibitive for many countries (e.g., Japan, Netherlands)
- Treaty allows these countries to purchase Carbon Credits to mitigate their emissions from non-annex I countries
  - Non-annex I countries do not have emissions targets, but may sell carbon credits.
- Under current rules, carbon sequestration is not an attractive mitigation method (less than 1% traded volume)
  - High Cost
  - Only Temporary Credits generated
    - Higher transaction costs
    - Lower credit value

# Current U.S. Market for CO2

- Pilot market
- Voluntary
- >200 participants
- Only legally binding market in U.S.



# CCX Participant Motivations?

- obtain detailed expertise through “hands-on” participation
- build institutions: first-mover; global linkages
- get ahead of disparate regulations, prepare for policy
- reduce GHG mitigation costs: all gases, all sectors
- improve focus on energy efficiency, identify free savings
- build carbon price into minds of operators and planners
- trading profits, possible early action crediting

# CCX-Eligible Offsets

- Unlike Kyoto, CCX allows offsets from North America and other industrialized nations.
  - Landfill and agricultural methane destruction
  - No-till agriculture
  - Forestry
  - Renewables/energy efficiency



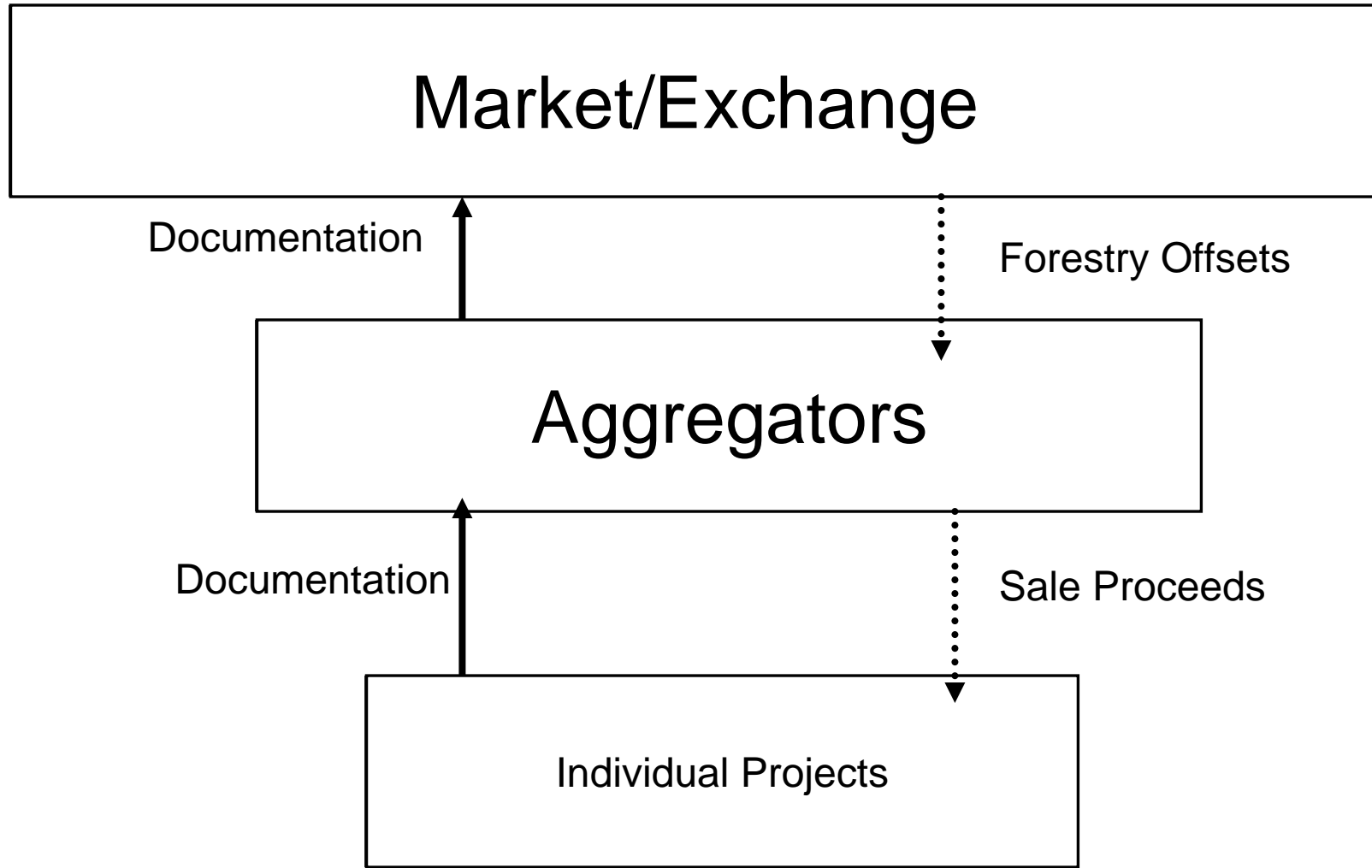
# CCX Forestry Offsets (XFO's)

- Offsets (metric tons CO<sub>2</sub>) are issued based upon annual increases in carbon storage for enrollment period (2003 – 2010)
- Evidence of sustainable management
- Long-term commitments
  - Working forest easements
  - CRP contract
- Commitment to long term carbon storage

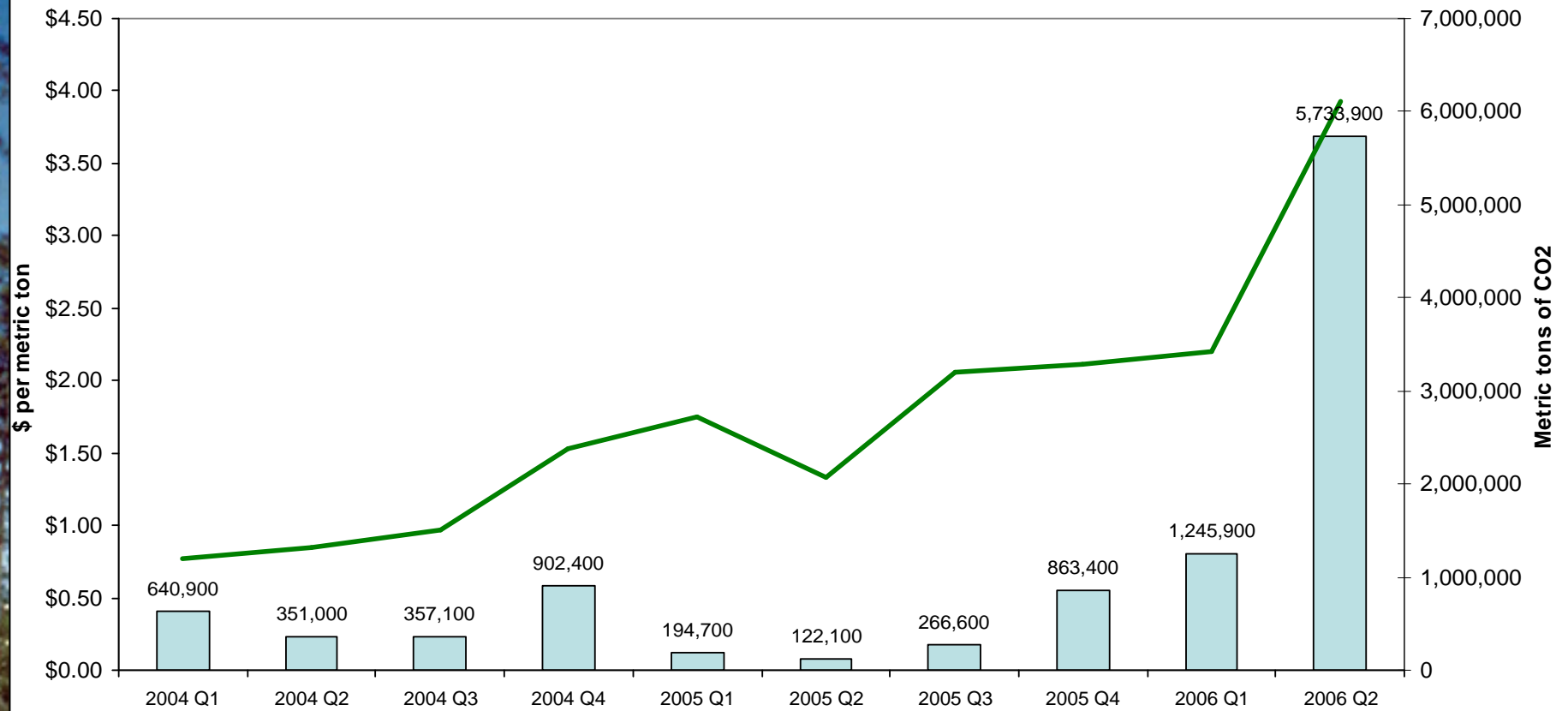
# Offset Aggregation

- Third party bundles multiple projects together to sell on the open market
  - Individual projects do not generate sufficient volume of offsets
  - Reduce transaction costs
  - Streamline reporting and oversight.
- Loblolly Pine plantation: up to \$ 20 to 30 per acre per year
  - After 2010, LO can do anything he/she wishes, BUT
  - Still need proof of “permanence”

# Offset Aggregation Structure



# CCX Price and Volume History



# Regional Greenhouse Gas Initiative (RGGI)

- Multi-state cap and trade to start in 2009
- 10 state agreement





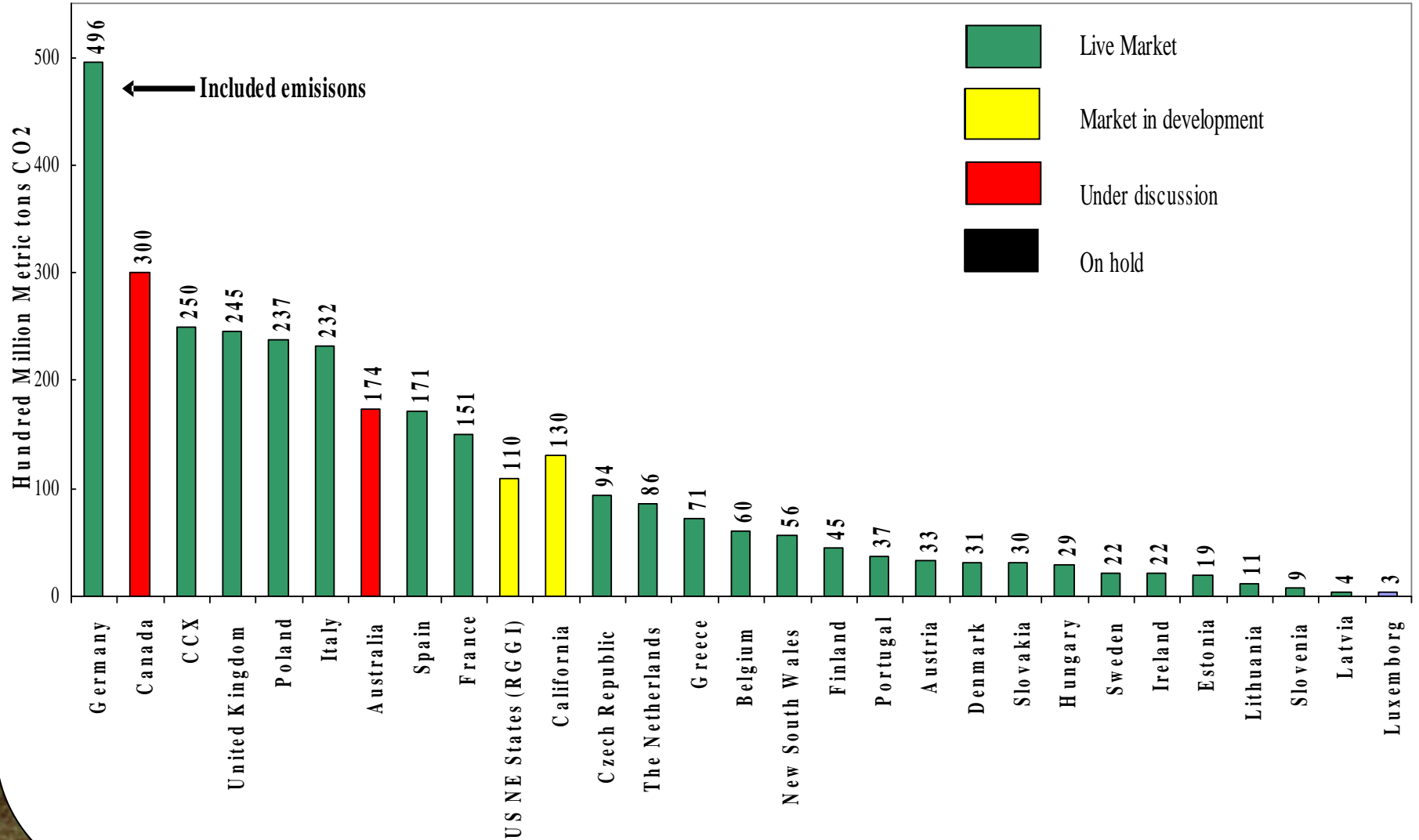
# Forestry Offsets in RGGI

- Offsets “real, surplus, permanent, enforceable”
- Afforestation is only eligible forestry offset
- Entities can mitigate 3.3% of emissions with offsets
- Offsets may be located anywhere in U.S, but state must sign MOU with RGGI.
- Analysts foresee great demand for offsets (including forestry)

# California Climate Action Registry

- CA SB1771 (2000); SB812 (2002);
- Protocols for forestry sector and projects
- Baseline inventory (1990+) → projections → measurement → reporting → monitoring → verification
- CARROT online reporting – simple interface
- tree pool required;
- soils, litter, wood products, etc. optional
- Conservation easement required
- Natural forestry (native species and systems)
- Accepted for CCX

# Current and Potential GHG Markets





# The Emerging Carbon Market

- U.S. Context: No federal cap policy...**BUT:**
- States are forming their own policies
- Industries are making voluntary commitments
- The demand for CO<sub>2</sub> mitigation tools is growing
- New incentives for keeping forests in forest use

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