

# Global trading versus linking: Architectures for international emissions trading

Christian Flachsland

Climate Strategies Workshop on  
“Linking Carbon Markets”

Paris, 23 March 2009

---

„What are conceivable international emissions trading architectures after 2012, and what are their main pros and cons?“



# Carbon market architectures / building blocks

---

## I. Top-down (UNFCCC driven)

- World-wide government level cap-and-trade
- Kyoto-type

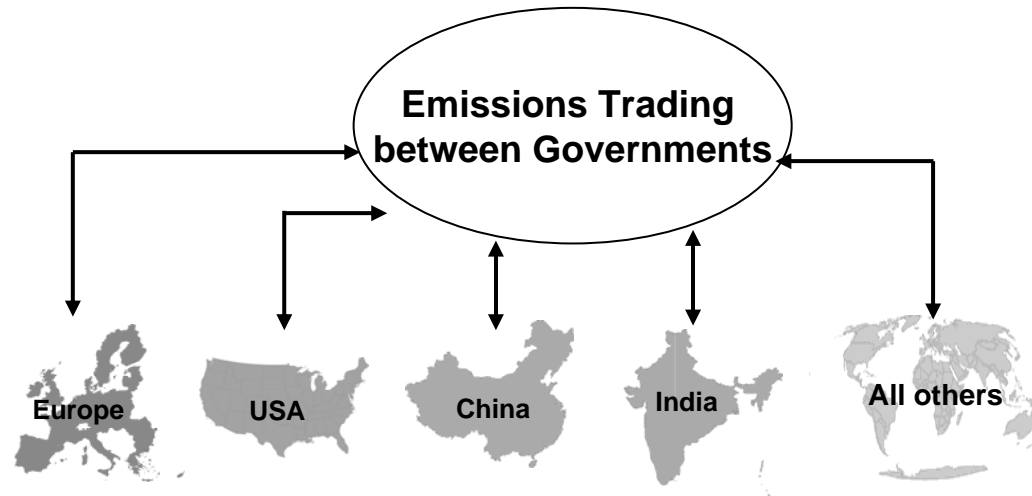
## II. Bottom-up (Regional systems)

- Direct linking of regional ETS
- Indirect linking of regional ETS
- Fragmented markets



# Top-down (I): Global government cap-and-trade

---



## *Pros:*

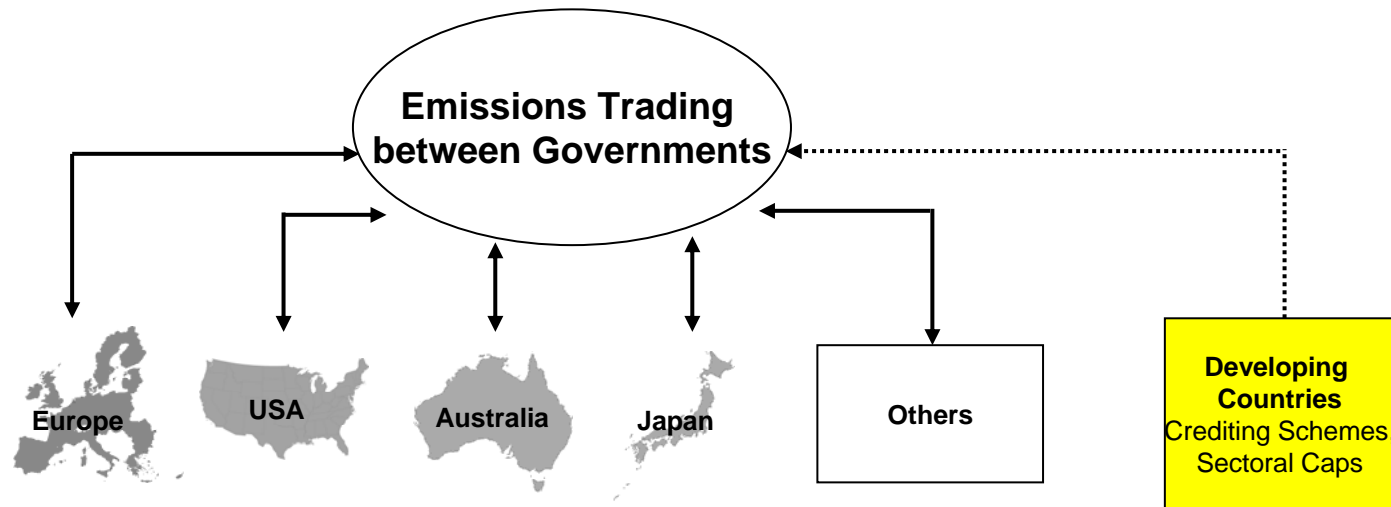
- No leakage
- Enables global burden-sharing

## *Cons:*

- Stalemate over global burden-sharing
- Institutional requirements
- Market efficiency questionable

# Top-down (II):Kyoto-type

---



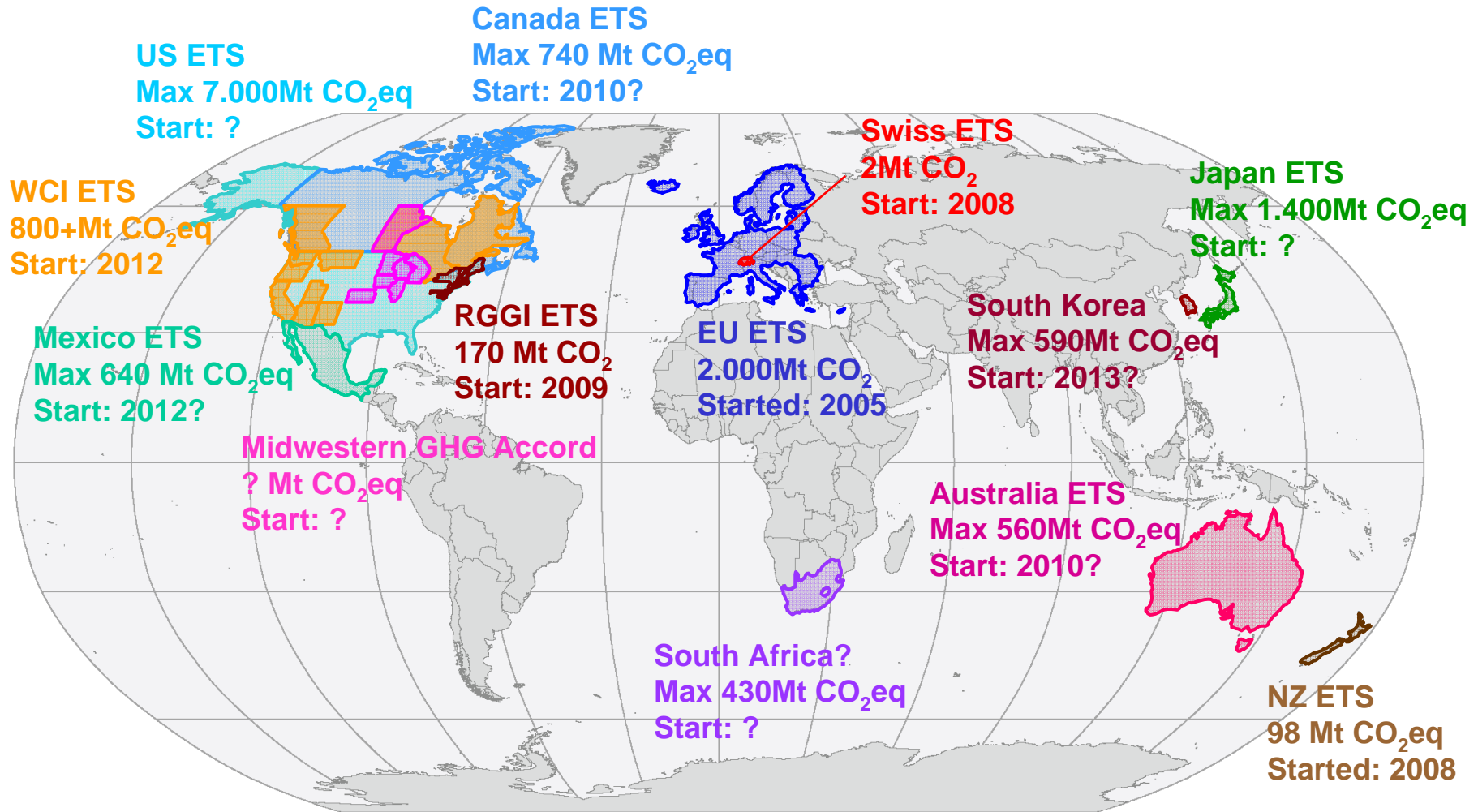
## *Pros:*

- Caps not for all countries
- Enables burden-sharing across capped economies

## *Cons:*

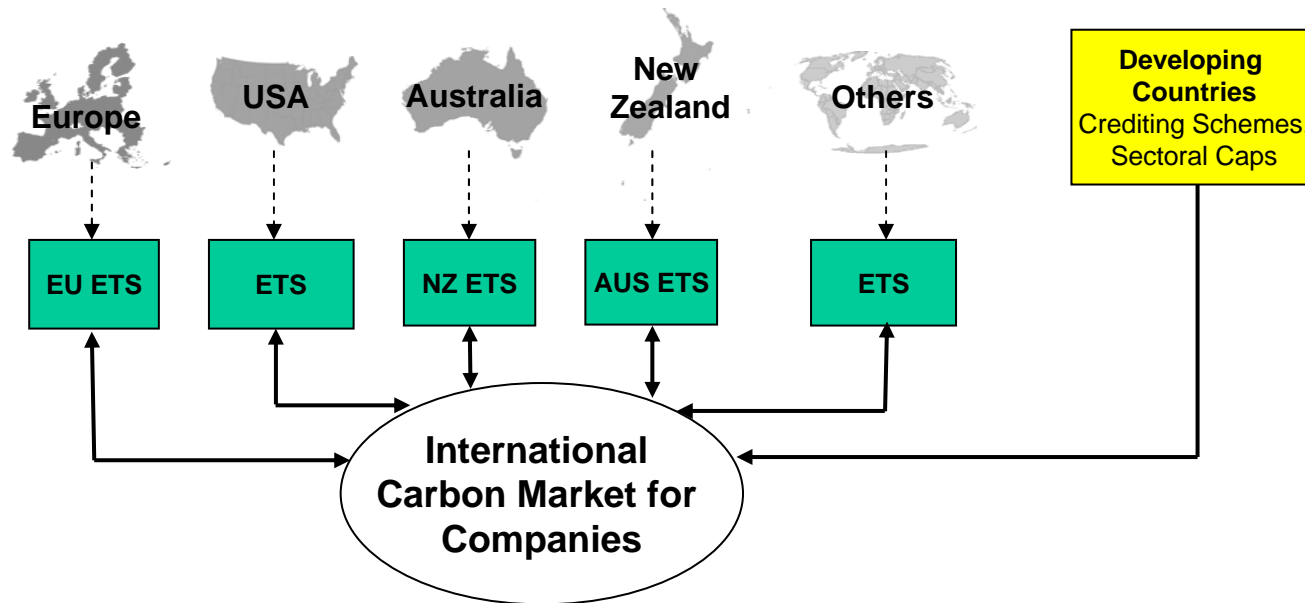
- Stalemate over burden-sharing
- Market efficiency questionable
- Leakage concerns

# Bottom-up: Emerging regional cap-and-trade systems



# Bottom up (I): Direct bilateral linking of trading systems

---



## *Pros:*

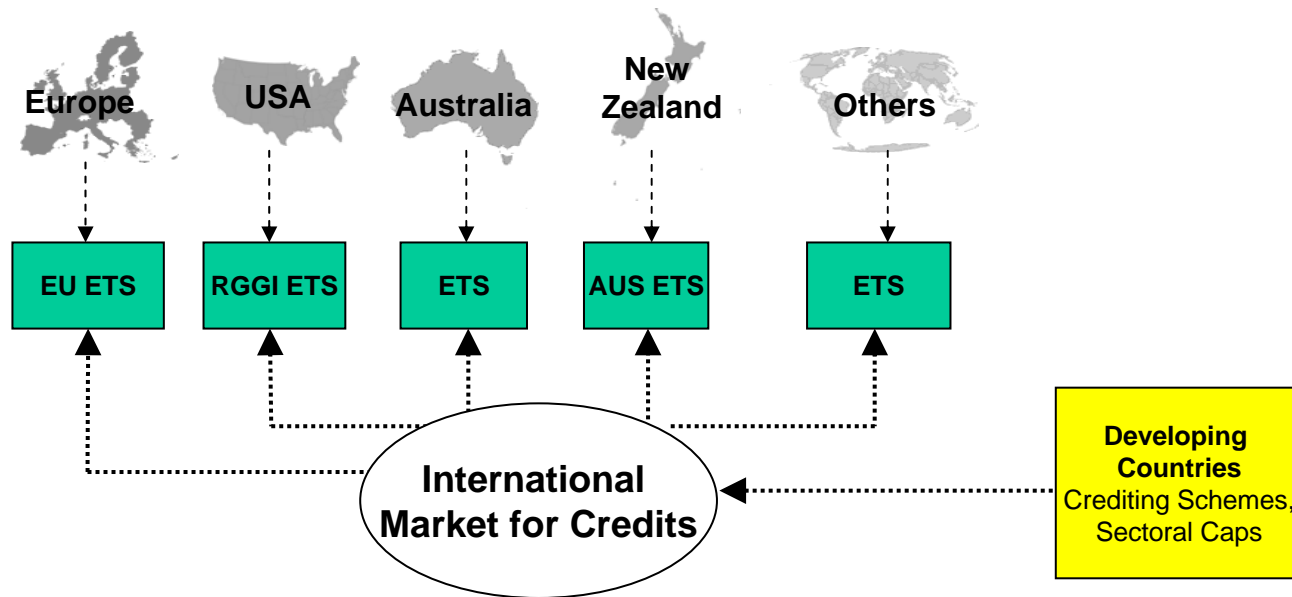
- Market efficiency
- No leakage among partners

## *Cons:*

- Need for regulatory coordination, no unilateral system control
- Leakage

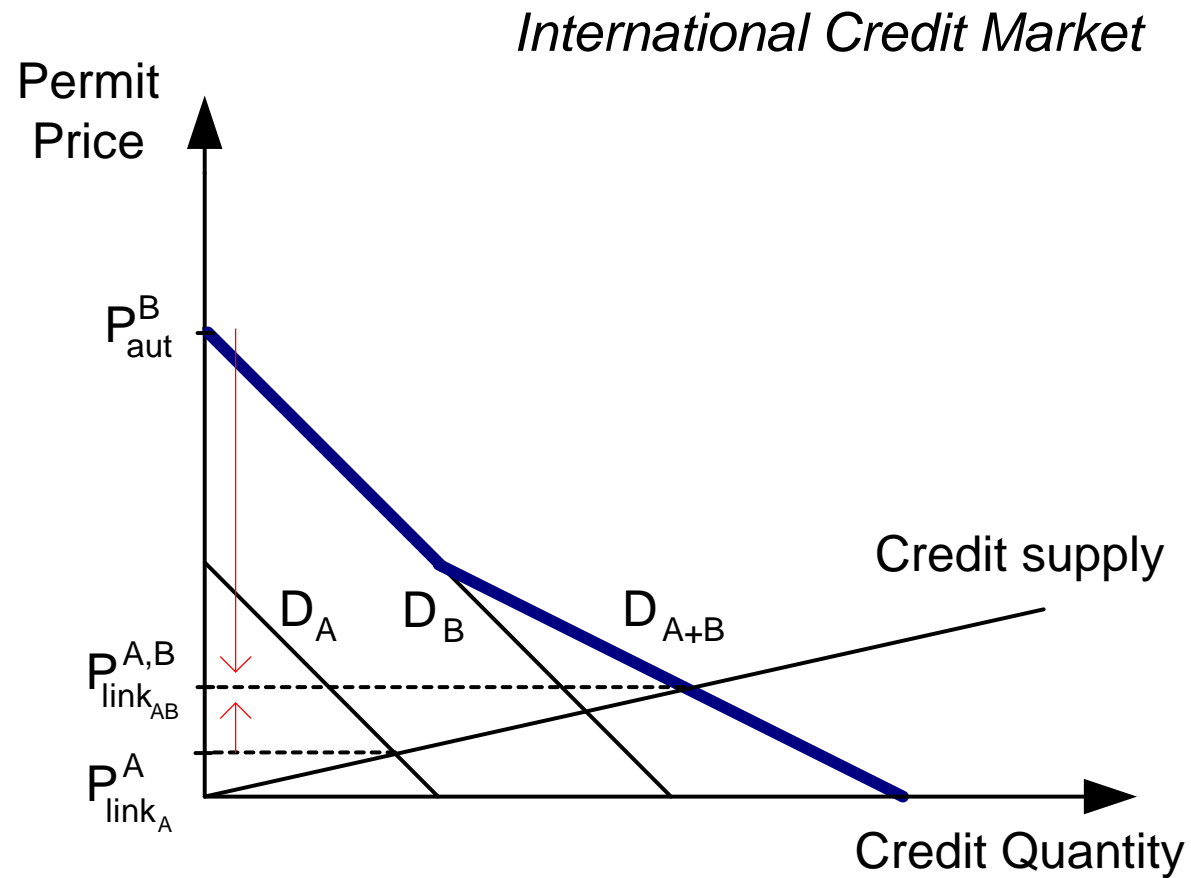
# Bottom up (II): Indirect Linking

---



# Indirect Linking – full price convergence

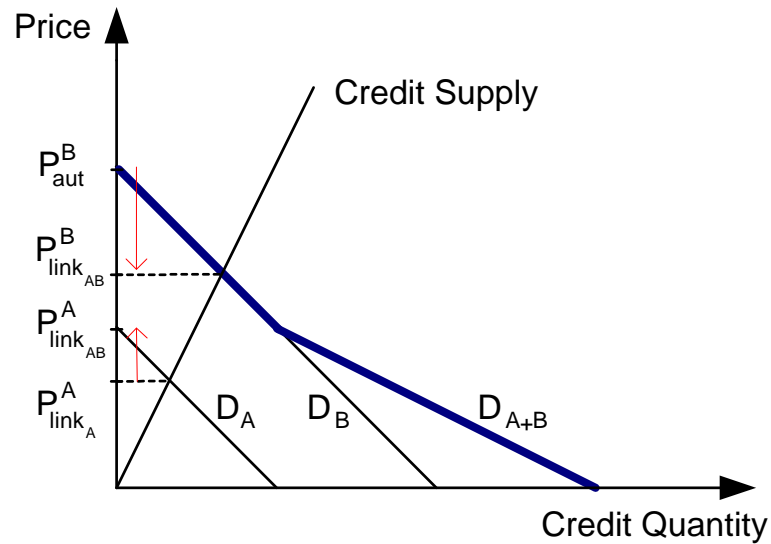
---



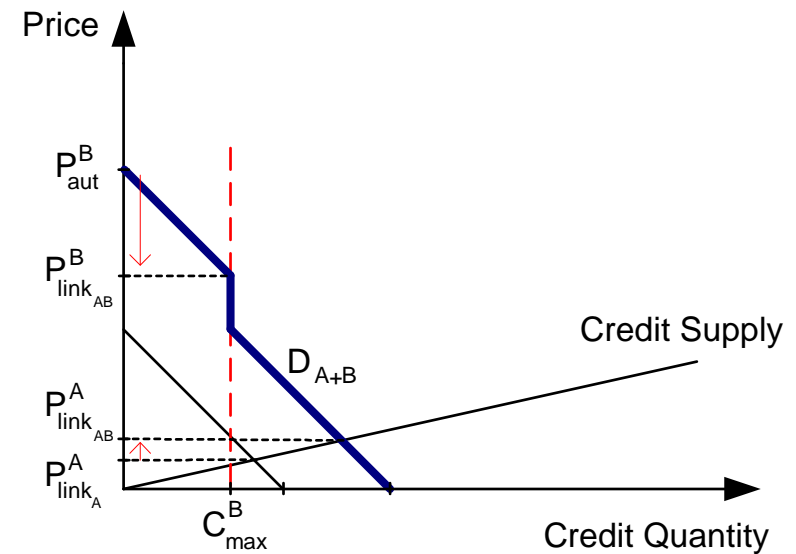
# Indirect Linking – partial price convergence

---

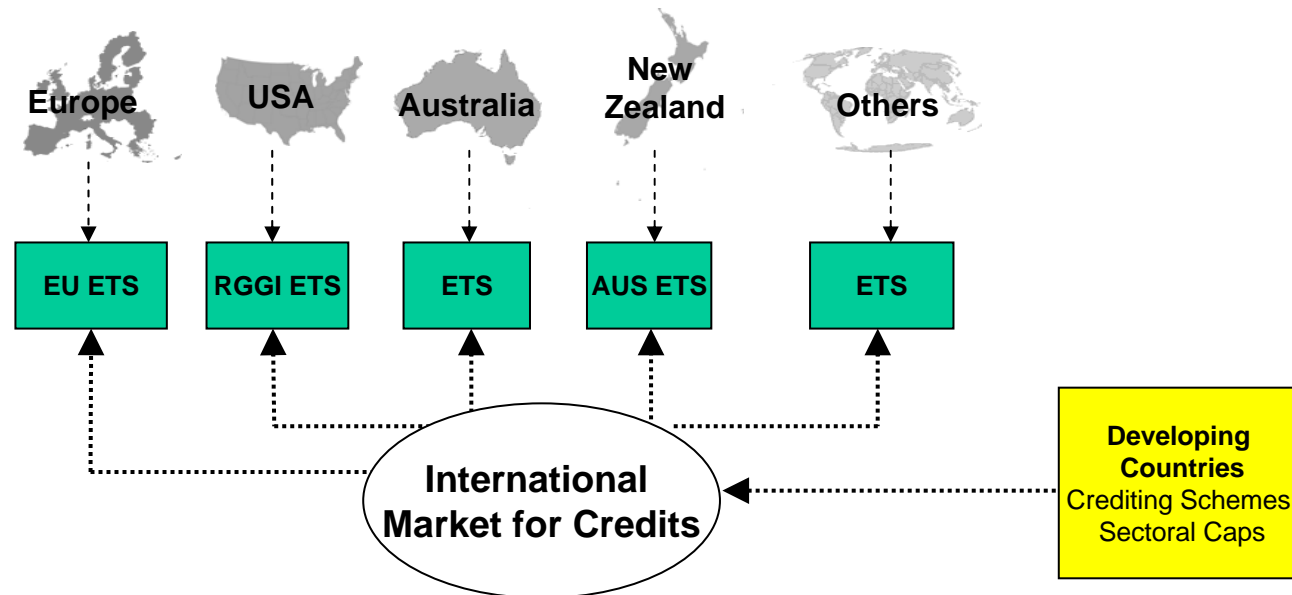
## Steep supply curve



## Credit import restriction



# Bottom up (II): Indirect Linking



## *Pros:*

- No need for coordination and burden-sharing
- Price convergence

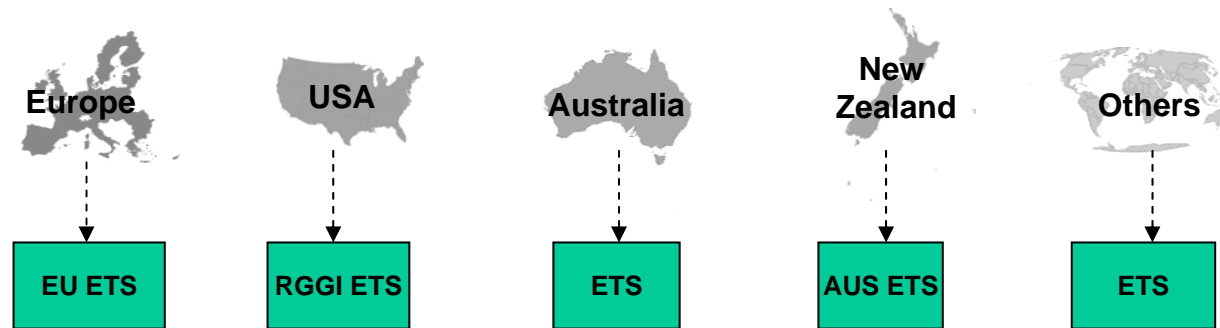
## *Cons:*

- Price convergence uncertain
- Loss of unilateral control, lack of joined market governance
- Leakage
- Ambitious climate policy?



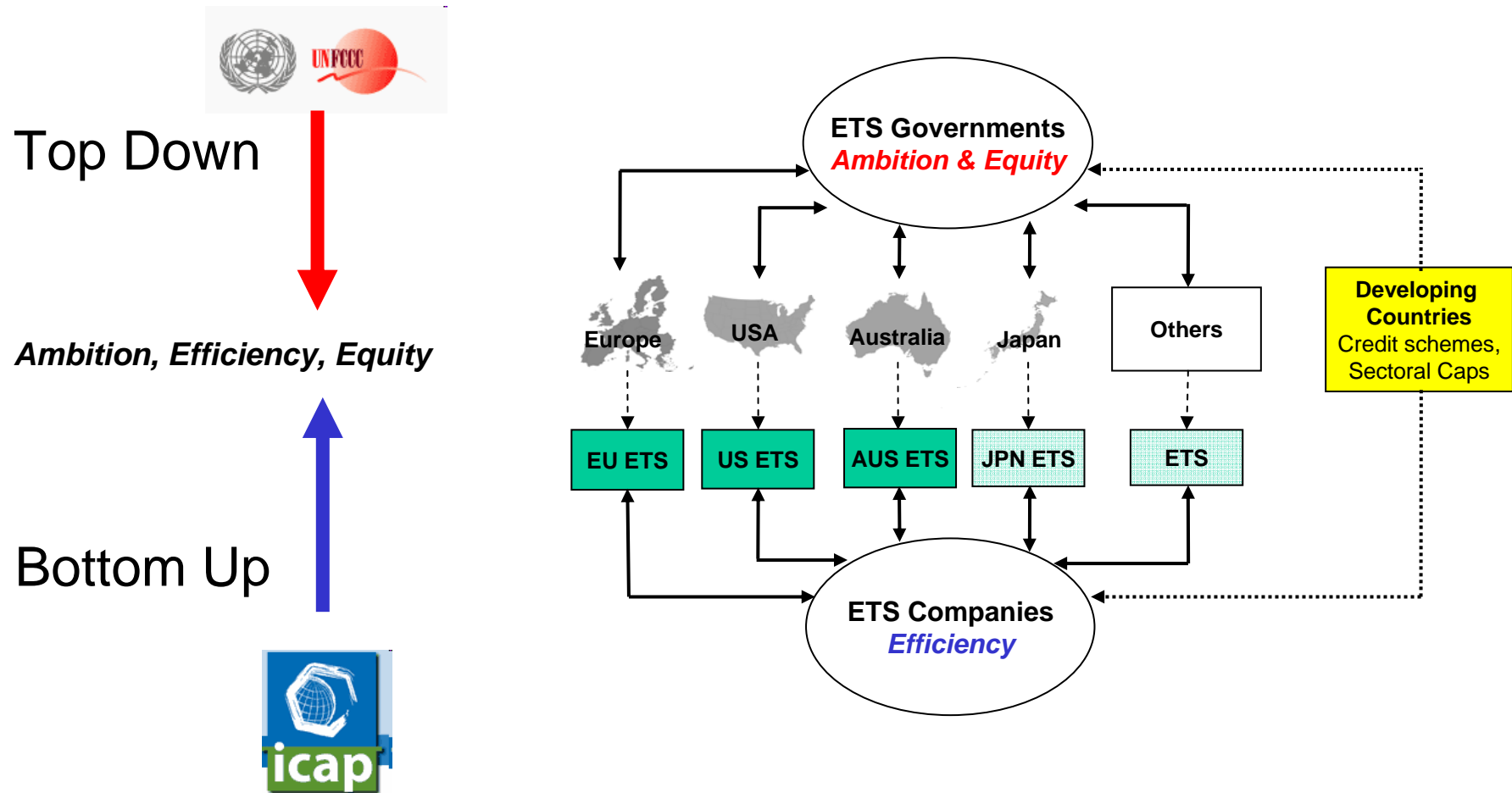
# Fragmented markets?

---



*Unlikely, due to indirect linking*

# Combinations



# Conclusions

---

- *Top-down* approaches' focus on international burden-sharing both a pro and con
- *Top-down* alone will not lead to efficient market
- *Bottom-up* feasible in absence of burden-sharing agreement ('fall-back')
- *Bottom-up* promises more efficient market
- Short-term level of ambition in *bottom-up* probably lower
- *Indirect linking* will guarantee minimum degree of integration
- What trading mechanism(s) for developing countries?
- Is a global company-level ETS with maximal coverage an appropriate first-best benchmark?



---

## References:

Flachsland, C., Marschinski, R., Edenhofer, O. (2008): Global Trading versus Linking: Architectures for International Emissions Trading. *Energy Policy*, in press

Flachsland, C., Edenhofer, O., Jakob, M., Steckel, J. (2008): Developing the International Carbon Market. Linking Options for the EU ETS. Report to the Policy Planning Staff in the Federal Foreign Office

