

# The Journey to Trading

Stuart Frazer

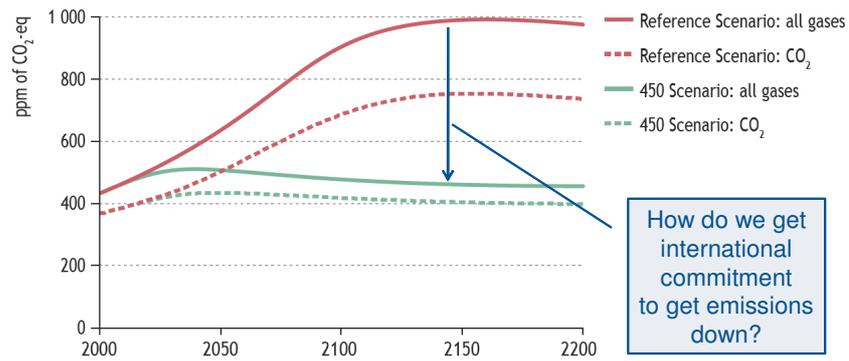


## • Topics

- What is it all about?
- Copenhagen 2009 – Why is it so hard?
- Regional and National Policy Development
- The NZ ETS Amendments
- The Corporate Journey

## What is it all about? – the task

**Figure 5.1** • Greenhouse-gas concentration trajectories by scenario

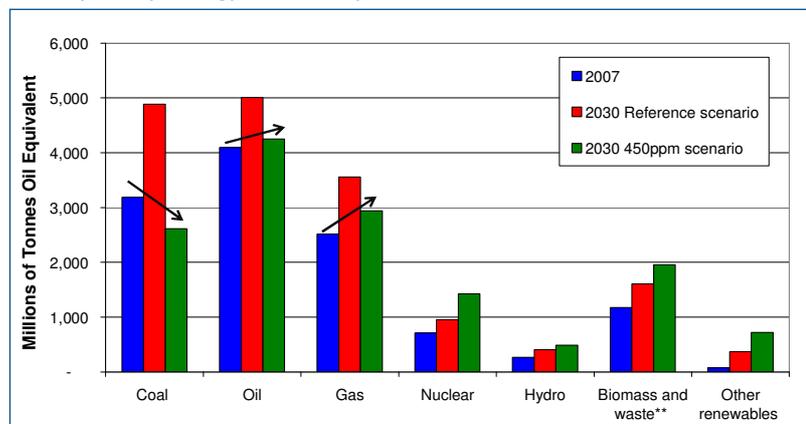


Source: IEA analysis using the MAGICC (version 5.3) and ENV-Linkages models.

OECD/IEA Source World Energy Outlook 2009

## What is it all about? – primary energy shifts

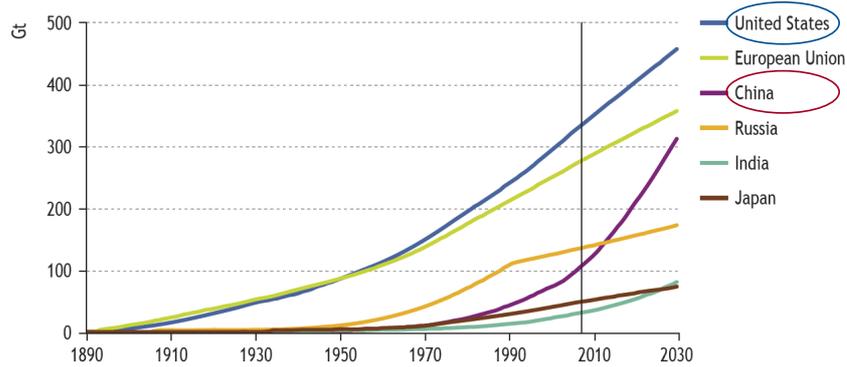
- World primary energy demand by fuel: OECD/IEA WEO 2009 Scenarios



Data Source: OECD/IEA Source World Energy Outlook 2009

## What is it all about? – commitment required

**Figure 4.9** • Cumulative energy-related CO<sub>2</sub> emissions since 1890 in the Reference Scenario

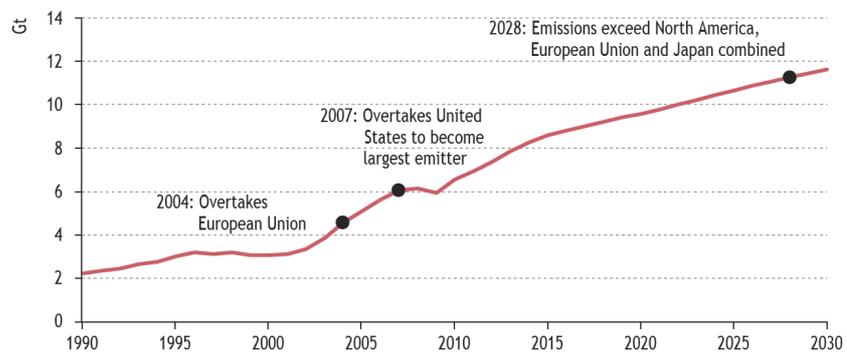


Sources: IEA databases and analysis; Marland *et al.* (2006).

OECD/IEA Source World Energy Outlook 2009

## What is this all about? - China in focus

**Figure 4.12** • China's energy-related CO<sub>2</sub> emissions in the Reference Scenario



OECD/IEA Source World Energy Outlook 2009

## ⚡ Copenhagen 2009 - Why is it so hard?

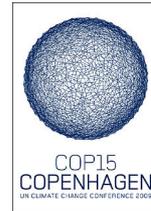
- UNFCCC + Kyoto Protocol negotiations

"It is easily the most complex piece of diplomacy ever devised.."

"A set of interlocking negotiations taking place on parallel tracks, ranging from aviation to trade and forests to adaptation, finance and science."

"It's quite possible it will all collapse under its own weight"

- British diplomat.



## ⚡ Copenhagen 2009 (7-18 December 2009)

- The Challenge:

1. How much are the industrialized countries willing to reduce their emissions of greenhouse gases?
2. How much are major developing countries such as China and India willing to do to limit the growth of their emissions?
3. How is the help needed by developing countries to engage in reducing their emissions and adapting to the impacts of climate change going to be financed?
4. How is that money going to be managed?



"If Copenhagen can deliver on those four points I'd be happy," says Yvo de Boer.



## ⚡ Copenhagen 2009 (7-18 December 2009)

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### Challenge 1: QELROS

*“Quantified Emissions Limitation and Reduction Objectives”*

Industrialized countries reduction commitments

- Required:
  - For a stabilization target of 450ppm CO<sub>2</sub>  
25-40% reduction on 1990 emissions by 2020
- Collective offers to date:
  - 18% on 1990 (including US)
- Challenge:
  - Comparability (what is fair?)
  - Conditionality (if you do it then I'll do it)



## ⚡ Copenhagen 2009 (7-18 December 2009)

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### Challenge 2: NAMAs

*“Nationally Appropriate Mitigation Actions” for Developing Countries.*

- Focus on China and India but also on Brazil, Mexico, S Korea and other rapidly developing economies
- Challenge:
  - How to define to satisfy US and others
    - How are NAMAs “locked in” ?
    - How are NAMAs quantified to allow verification and review?

## ⚡ Copenhagen 2009 (7-18 December 2009)

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### Challenge 3: Adaptation Funding

- Developing countries demand funds for:
  - climate impact adaptation
  - technologies to adapt from fossil fuel based growth
- Quantum:
  - G77 + China seeking US\$200bn-US\$400bn p.a.
  - EU agreed €100bn (\$148bn) p.a. by 2020, and would pay its "fair share" conditional on other nations.
- Mechanism:
  - Carbon Markets (revised CDM?)
  - Direct Funding

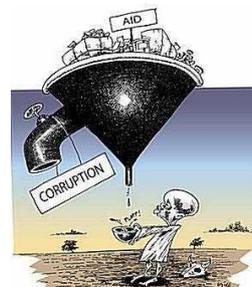


## ⚡ Copenhagen 2009 (7-18 December 2009)

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### Challenge 4: How is that money going to be managed?

- Who gets what?
  - Basis for allocation
- Who administers the funds?
  - UN
  - World Bank
  - Individual / Regional Nations



## ⌘ Copenhagen 2009 (7-18 December 2009)

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### Some Added Complications:

- Legal Form of New Agreement?
  - Kyoto Protocol or
  - New UNFCCC implementing agreement
- Base Year decisions
- How many years in next commitment period?

## ⌘ Copenhagen 2009 (7-18 December 2009)

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- What can be achieved?
  - Broad post-2012 Framework?
  - A signed Treaty?
- What will it take?
  - US engagement
    - \$ and emissions reductions
  - Developing country commitments
- What then?
  - 2010+ put flesh on the bones...



### **De Boer: “Unexpected stop” in negotiations**

“A number of unsolved issues” are left for world leaders to resolve during the next two days, said the UNFCCC Executive Secretary, after observers of the UN climate conference had spent Wednesday afternoon waiting for breaking news on the climate talks.

## ⚡ Copenhagen 2009 – New Zealand’s 2020 offer

- **New Zealand’s emissions reduction target** [10-August 2009]
  - responsibility target for emissions reductions of **between 10 per cent and 20 per cent below 1990 levels by 2020**,
  - if there is a **comprehensive global agreement**, and other New Zealand conditions are met...
- **Conditions attached to the New Zealand target**
  1. the global agreement sets the world on a pathway to limit temperature rise  $\leq 2^\circ\text{C}$ ; ?
  2. **developed countries make comparable efforts** to those of New Zealand; ✓ ?
  3. **advanced and major emitting developing countries take action fully commensurate with their respective capabilities**; ?
  4. there is an effective set of **rules for land use, land-use change and forestry (LULUCF)**; ✓ and
  5. there is **full recourse to a broad and efficient international carbon market**. ?



Energy Federation of NZ  
17 December 2009  
Wellington, NZ

## ⚡ “Climategate” - Does it change things?



It looks like you're trying to generate a Hockey Stick graph. Would you like me to:

- Ignore data after 1980 that makes the curve bend downwards?
- File a \$100M research grant proposal?
- Get the editor of Geophysical Research Letters fired?



- **Yes**
  - Better scientific peer review process
  - **Harder to pass domestic policy**
    - Australia?
    - Canada?
    - US?

- **No**
  - **Existing carbon pricing remains**
    - Government revenue
    - Security of energy supply
    - Ocean Acidification [CO<sub>2</sub>]

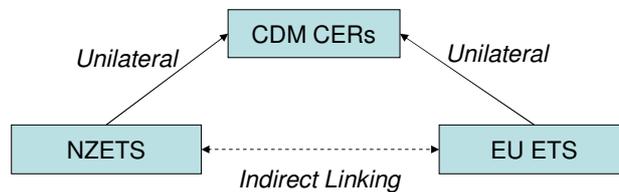


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## Regional and National Policies



## Linking Between Schemes



Although schemes may not be directly linked, the schemes' prices may be linked if units are allowed from other schemes.

## Linking Between Schemes

Regime :	Kyoto	EU ETS	NZ ETS	AU CPRS
<b>Domestic Units</b>				
• EUA		X		
• NZU			X	
• AEU				X
<b>Kyoto Units</b>				
• AAU	X		X (restricted)	
• CER	X	X	X	X
• I-CER	X			
• t-CER	X			
• ERU	X	X	X	X
• RMU	X		X	X



THOMSON REUTERS

<b>EUAs</b>	<b>12-Nov</b>
BlueNext SPOT	€13.31
ECX Dec-09	€13.31
ECX Dec-12	€14.86
<b>Reuters CER Index</b>	
Dec-09	€12.48
09-12 Strip	€12.49
Dec-12	€12.43
<b>Exchange CERs</b>	
BlueNext SPOT	€12.44
ECX Dec-09	€12.31

schematic only and does not take into account price control restrictions that are contemplated in the early years of the NZ ETS and Au CPRS.

- International benchmark prices exist



## Policy Development Steps – United States

### The Bills

#### – Waxman Markey



- American Clean Energy and Security Act passed by the House of Representatives on June 26, 2009

#### – Kerry Boxer



- Chairman's Mark of The Clean Energy Jobs and American Power Act (S. 1733) introduced to Senate on October 23, 2009

### Their Targets

#### – Waxman Markey

17% reduction from 2005 in 2020

#### – Kerry Boxer

20% reduction from 2005 in 2020

#### – Common

3 % reduction from 2005 in 2012;

42% reduction in 2030; and

83% reduction in 2050.



## Policy Development – United States

- **Environmental Protection Agency (EPA)**



- **Endangerment and Cause or Contribute Findings for Greenhouse Gases under the Clean Air Act. 7 December 2009**

- **Endangerment Finding:** The Administrator finds that the current and projected concentrations of the six key well mixed greenhouse gases in the atmosphere threaten the public health and welfare of current and future generations.
- **Cause or Contribute Finding:** The Administrator finds that the combined emissions of these well-mixed greenhouse gases from new motor vehicles and new motor vehicle engines contribute to the greenhouse gas pollution which threatens public health and welfare.

- **What does it mean?**

- **Action on greenhouse gases does not need the Senate...**
- **Negotiation ploy and / or plan B ?**

## Policy Development Steps – EU ETS



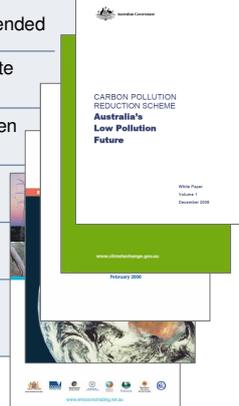
2013-20	Phase III
2008-12	Phase II
2005-07	Phase 1
Oct-2003	ETS Directive Finalised
Oct-2001	Draft ETS Directive
Mar-2000	Green Paper

## Policy Development Steps – Australia



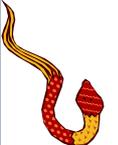
Nov 2009	CPRS amended again...
May-2009	CPRS Amended
Dec-2008	CPRS White Paper
Jul-2008	CPRS Green Paper
Feb-2008	Garnaut Report
May-2007	PM's ET Taskforce
Aug-2006	NETT Discussion Paper

2 December 2009  
Senate Rejects  
CPRS for 2<sup>nd</sup> time



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## Policy Development Steps – New Zealand

National led	Labour led				National led	
1996...	Nov-1999	Apr-2003...	Dec-2005...	Sep-2007...	Nov-2008...	Nov-2009...
Industry Voluntary Agreements + ETS Development	?	Carbon Tax + NGAs, + Projects to Reduce Emissions	?	NZ ETS	ETS Review + Moderated ETS development	NZ ETS (amended)
						



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## NZ ETS in Detail – The Legislation

- Primary Legislation

- Climate Change Response Act 2002 as amended by...
- Climate Change (Moderated Emissions Trading) Amendment Act 2009



- Regulations directly relevant to Energy Sector

- Climate Change (Liquid Fossil Fuels) Regulations 2008 (SR 2008/356)
- Climate Change (Stationary Energy and Industrial Processes) Regulations 2009 (SR 2009/285)
- Climate Change (Other Removal Activities) Regulations 2009 (SR 2009/284)
- Climate Change (Unique Emissions Factors) Regulations 2009 (SR 2009/286)
- Climate Change (Unit Register) Regulations 2008 (SR 2008/357)
- *More to come...*

## NZ ETS Sector Entry Dates (surrender obligation)



Sector	NZ ETS		Au CPRS		
	Original	Amended	Original Dec 2008	Proposed May 2009	Proposed and Rejected Nov 2009
Forestry Pre 1990 Post 1989 (opt-in)	1-Jan-2008	<b>1-Jan-2008</b>	1-Jul-2010 Post 1989 (opt-in)	<b>1-Jul-2011</b> Post 1989 (opt-in)	
Stationary Energy and Industrial Processes	1-Jan-2010	<b>1-Jul-2010</b>	1-Jul-2010	<b>1-Jul-2011</b>	
Liquid Fossil Fuels and Transport	1-Jan-2011	<b>1-Jul-2010</b>	1-Jul-2010	<b>1-Jul-2011</b>	
Agriculture	1-Jan-2013	<b>1-Jan-2015</b>	Review - no earlier than 2015	Review - no earlier than 2015	<b>Never</b>
Waste and all remaining sectors	1-Jan-2013	<b>1-Jan-2013</b>	1-Jul-2010	<b>1-Jul-2011</b>	

## NZ ETS Energy Sector Inclusion

- **Stationary Energy**
  - Importing and Mining Coal or Natural Gas
  - Using Geothermal Fluid, or
  - Combusting Used Oil, Waste Oil, Used Tyres or Waste, or
  - Refining Petroleum
- **Liquid Fossil Fuels**
  - Owning Obligation Fuel (import or ex-refinery)
- **Opt-in - Purchasing**
  - Coal (>250,000 tonnes)
  - Natural Gas (>2 PJ)
  - Obligation Jet Fuel (10 million litres)
- **Industrial Processes, producing:**
  - Iron or Steel, Aluminium, Clinker or Burnt Lime, Glass, Gold



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## NZ ETS Price Impacts

- Price Increases in Common Units @ NZ\$12.5/tCO<sub>2</sub>e

Energy Source	Increase	Units
Electricity (NZ)	0.7	NZ cents/kWhr
Diesel	3.3	NZ cents/litre
Natural Gas (Spec Gas)	1.1	NZ\$/GJ
Coal (Bituminous) (Assume 30GJ/Tonne)	33.1	NZ\$/tonne

- In the first period (1-Jul-10 until 31-Dec-12) there is a 2-for-1 (Emit 2 units of carbon : Pay for 1 unit of carbon) obligation.
- This effectively converts the fixed price option of NZ\$25/t into a cost of NZ\$12.5/t.



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## Industrial Allocation Overview

### New Zealand ETS



- **Original CCRA:**
  - Capped pool of 90% of 2005 eligible parties emissions
  - “Grandparented” but desirable to treat new entrants the same...
  - Phase out from 2019 at 8% p.a.
- **Modified CCRA**
  - Uncapped intensity based allocation NZUs/unit production
  - Two tiers
    - Highly emissions intense
    - Moderately emissions intense
  - Allocation = 90% or 60% of an allocative baseline
  - Phased out from 1/1/2013 at 1.3% p.a.



### Australian CPRS



- **Amended Proposed CPRS**
  - Uncapped intensity based allocation AEU/unit production
  - Two tiers
    - Highly emissions intense
    - Moderately emissions intense
  - Allocation = 94.5% or 66% of an allocative baseline
  - Phased out from 1/7/2012 at 1.3% p.a.

## Price Controls Overview

### New Zealand ETS



- **Original CCRA:**
  - No price controls
- **Modified CCRA:**
  - 1 July 2010 to 31 December 2012
    - Two major elements:
      - 50% obligation (1 unit for every 2 tonnes of emissions)
      - A fixed price option of \$25 per tonne
    - Effective price of carbon will not exceed NZ\$12.50 per tonne CO<sub>2</sub>e
  - *Post 2012 A\$40 ?*



### Australian CPRS



- **Amended Proposed CPRS**
  - 1 July 2011 to 30 June 2012
    - Fixed Price A\$10 per tonne CO<sub>2</sub>e
  - 1 July 2012 -
    - Price Cap of A\$40 (inflated from 2010)

## • NZ ETS in Detail – Gas Miner Example

very high level only...

- A gas miner is a mandatory participant
  - Stationary Energy Industrial Processes sector
- Must surrender emission units to cover:
  - Emissions from own activities (flaring, venting etc)
  - Downstream end use emissions of gas sold
- No free allocation of units
  - Assumed can pass cost through to customer
- May be opted-in on
  - Downstream entity takes over obligations (>2PJ)

## • NZ ETS in Detail – Energy Sector Key Dates

very high level only...

Date	Description (Mandatory and Opt-in Participants)
1-Jan-2010	Stationary Energy Industrial Processes enters ETS <ul style="list-style-type: none"> <li>• Mandatory reporting period begins</li> <li>• Must register as a participant within 20 working days (by 1-Feb)</li> </ul>
1-Jul-2010	Unit surrender obligation period begins
31-Dec-2010	End of 1 <sup>st</sup> year compliance period <ul style="list-style-type: none"> <li>• 1-Jan-2010 to 31-Dec-2010 for reporting</li> <li>• 1-Jul-2010 to 31-Dec-2010 for unit obligations</li> </ul>
1-Jan-2011	Commence filing emission returns for 2010
31-Jan-2011	Deadline for application to use unique emission factors
31-Mar-2011	Deadline for filing emission returns for 2010
31-May-2011	Deadline for surrendering units for 2010

## • The Corporate Journey to Trading



## • The Corporate Journey to Trading

### 1. Understanding Emissions Trading

- Trading scheme fundamentals
- Global trends
- NZ ETS specifics
- Au CPRS and other schemes



## • The Corporate Journey to Trading

### 2. Developing the Corporate Strategy

- Emissions inventory
- ETS implications
- Potential \$ exposure
- Risk and opportunity assessment



## • The Corporate Journey to Trading

### 3. Implementing the Strategy

- Mitigating the emissions exposure
- Addressing the remaining exposure
- Project planning



## ✦ NZ ETS - Trading Strategy Considerations

### ETS as a tax



- Use the fixed price option
  - No trading risk, no traders, minimal compliance...
  - No experience gained...

### ETS as an opportunity



- Seek units sourced from

#### Industry



NZUs

#### Forestry



NZUs  
AAUs

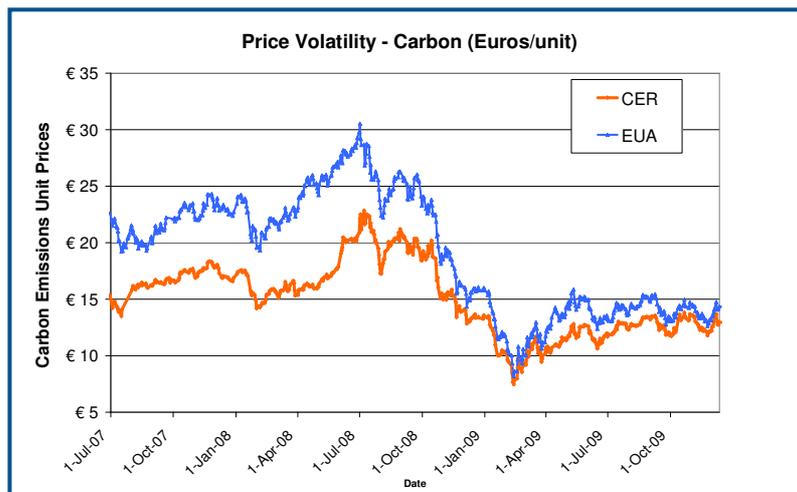
#### Offshore (CER arbitrage)



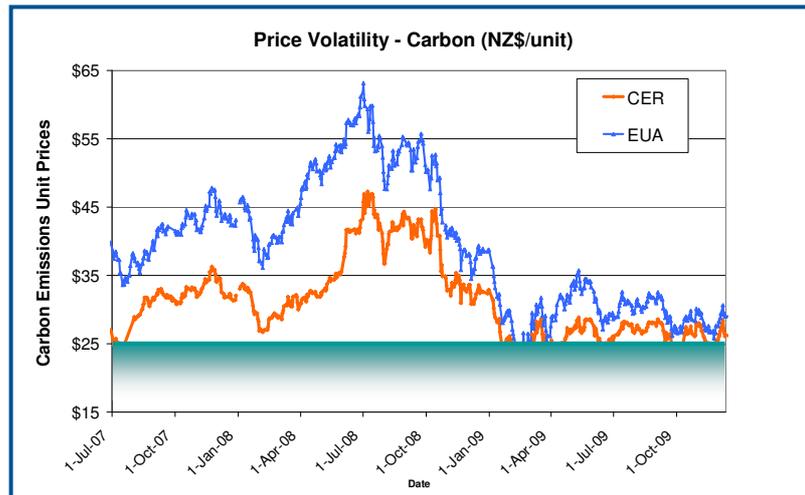
- Buy when under NZ\$25
- Sell or hold if they rise >NZ\$25

Post 2012, a floating price and a more liquid market are likely.  
*Who will be better prepared?*

## ✦ CER Purchase Options



## • CER Purchase Options



## • The Corporate Journey to Trading

### Compliance Activity (ongoing)

- Measurement, reporting, verification (MRV)
- ETS obligations
- Governance of trading mandate
- Audit requirements
- Financial reporting standards
- Tax requirements



## ❖ The Corporate Journey to Trading

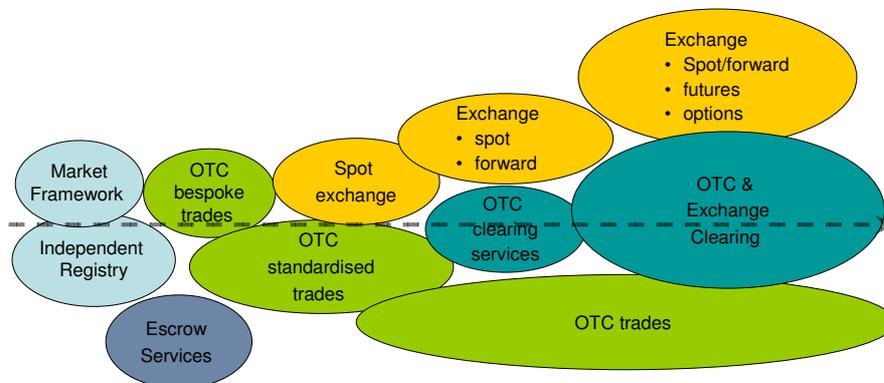
### Trading Activity (ongoing)

- Trading position tracking
- Trading strategy
  - Buy / sell - unit types, volumes, sources, timing
  - Transaction types - OTC, exchange, bilateral
- Trading risk management
  - Market value at risk
  - Governance, trading authority



## ❖ Evolution of an Emissions Trading Market

### Market Development Stages



More Information: [www.frazerlindstrom.com](http://www.frazerlindstrom.com)

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- [The Journey to Trading](#)
- [The ETS Basics](#)
- [ETS Design Parameters](#)
- [Emission Units and Pricing](#)

**Latest Policy Developments :**

**NZ ETS Amendment Bill passes final hurdle.**

- 25 November 2009.

*"This is a balanced and responsible approach to a very difficult and complex issue."*

- [Government Press Release](#)
- [More Details](#)



**Au CPRS rejected by Senate for second time**

- 2 December 2009

