



Emissions Trading

EU ETS Experience & Lessons for New Zealand

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Agenda

- What is Emissions Trading?
- Emissions Trading Prospects for New Zealand
- ETS Design parameters
- EU ETS Design and its suitability for New Zealand
- EU ETS Performance to Date
- A better way?
- Conclusions

What is Emission Trading?

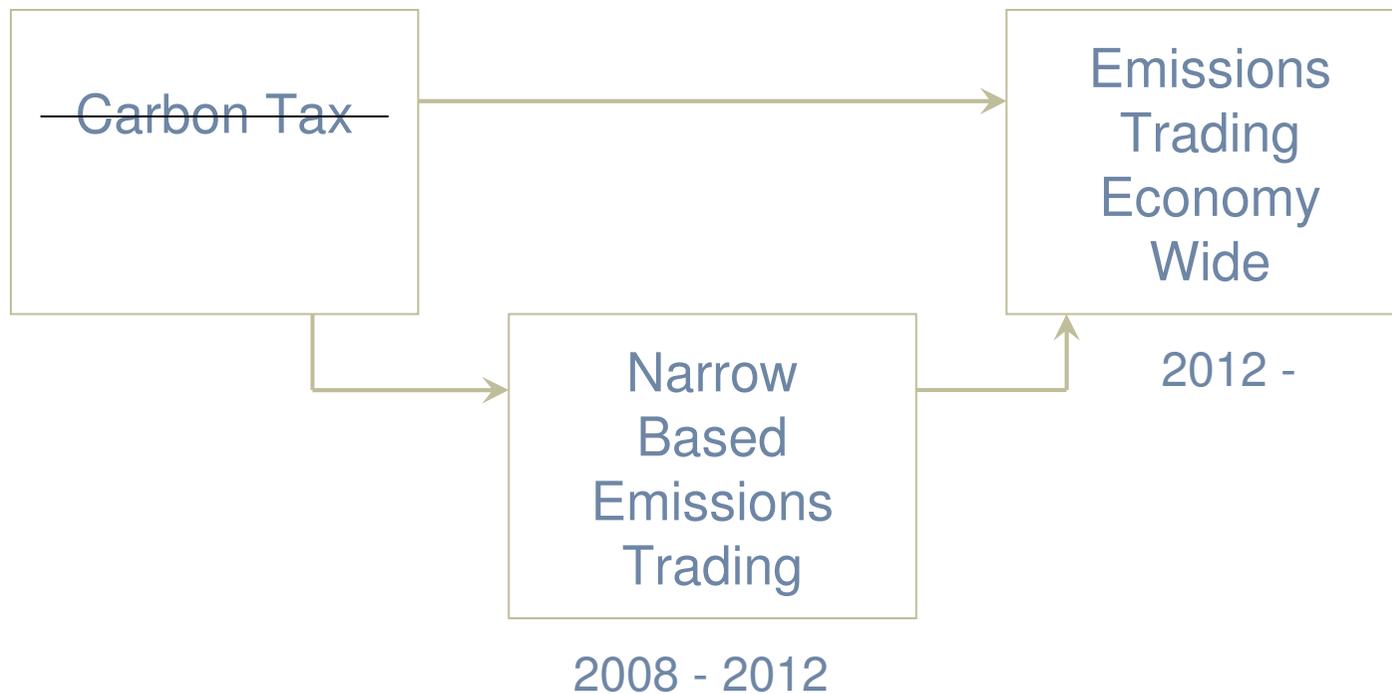
Emissions trading is a market-based instrument used for environmental protection.

- cap and trade
- baseline and credit
- offset

Emissions Trading Prospects for New Zealand: Cabinet Decisions

1. *Should NZ economy get prepared for carbon pricing through a “broad price-based measure” post 2012*
2. *The scope of sectoral climate change objectives for large direct emitters ...from 2008-2012 and post-2012;*
3. *The type of transitional policy measure (eg, a carbon tax, emissions trading regime, voluntary agreement scheme, regulation under the RMA, or other measures) for large direct emitters pre-2012*
4. *The detailed design features of the transitional policy measure(s) for large direct emitters;*
5. *The detailed design features of the longer-term policy measure for introducing the price of emissions into the New Zealand economy (eg, economy-wide emissions trading post-2012, or other price-based measures).”*

Emissions Trading Prospects for New Zealand



ETS Design parameters

- Gases
- Sectors Covered
- Point of Obligation
- Emissions Cap
(target)
- Permit Allocation
- Credit for Early Action
- Competitiveness
- International Linkage
- Offsets
- Banking
- Penalty

Linking: A Driver for Uniformity

- Linking is desired by regulators (including NZ)
 - Liquidity
 - Market size
- EU ETS linking directive to Kyoto Protocol
 - 162 countries (JI/ CDM)
- Linking may drive uniformity of ETS design
 - Definition of trading units
 - Absolute versus relative targets
 - Allocation methodology
 - Trading and compliance period
 - Monitoring, reporting and verification

EU ETS Design and its Suitability for New Zealand

“Like it or not, the EU ETS is now the Centerpiece of Kyoto, and hence of efforts to tackle the climate problem.”

*Professor Michael Grubb,
Chief Economist of
Carbon Trust*

The EU ETS covers:

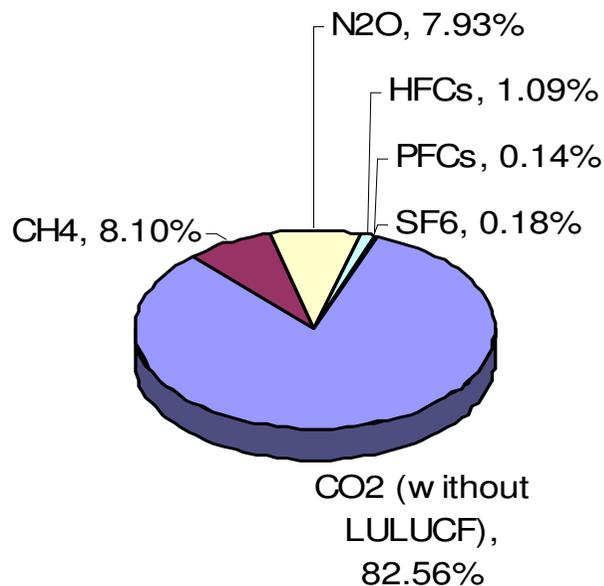
- 45% of total EU CO₂ emissions are covered
- 2.2 billion allowances per annum over
- 11,500 installations in 21 countries

EU ETS Design and its Suitability for New Zealand

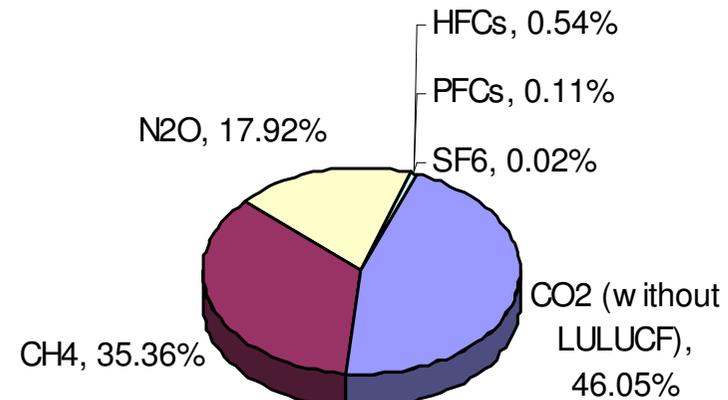
Gases Covered

EU ETS covers CO₂ only; 45% of total EU GHG emissions are in the EU ETS.
 If same rules (& CO₂ emissions profile) NZ ETS would cover < 21%.

EU25 Greenhouse Gas Emissions by Gas



NZ Greenhouse Gas Emissions by Gas



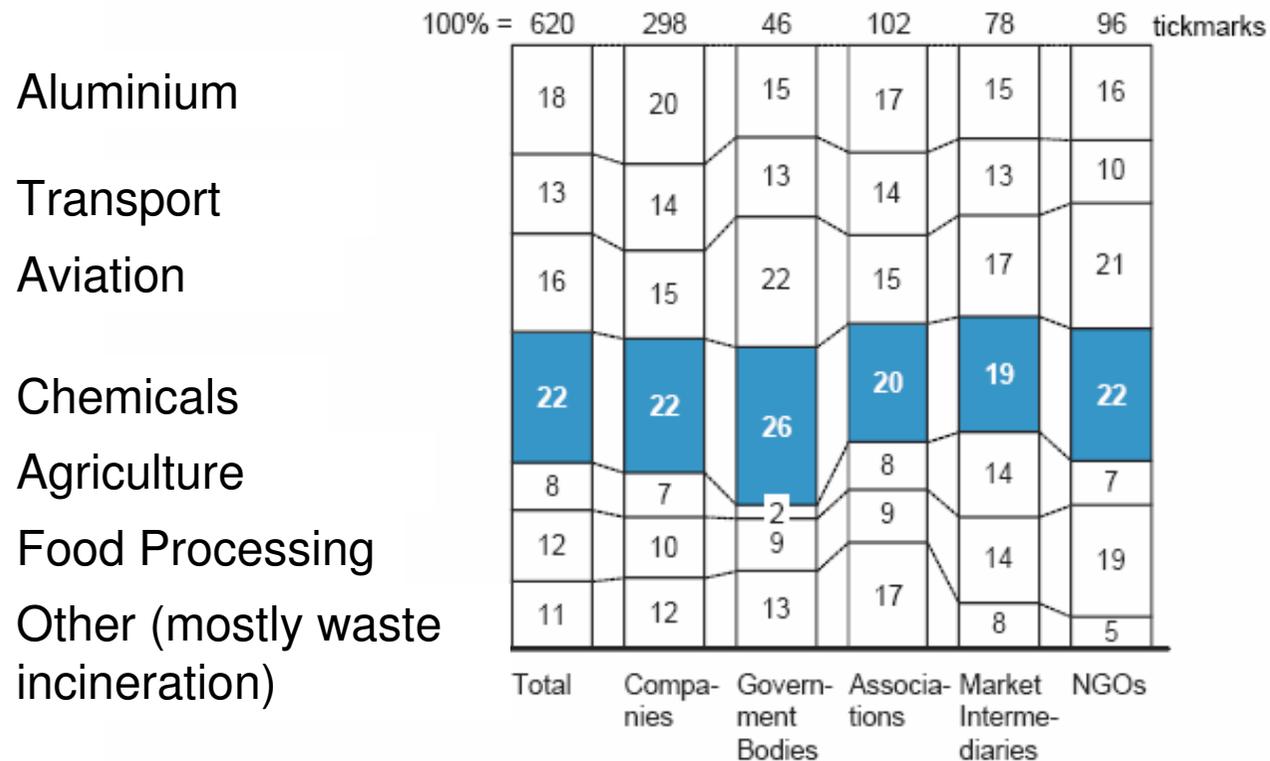
EU ETS Design and its Suitability for New Zealand

Sectors Covered

- combustion installations (>20MW)
- oil refineries,
- coke ovens,
- metal ore and steel installations,
- cement kilns,
- glass manufacturing,
- ceramics manufacturing, and
- paper, pulp and board mills.

EU ETS Design and its Suitability for New Zealand Sectors not Covered

Question: Which other sectors should be included in the EU ETS beyond the combustion installations? Please tickmark



Source: Survey EU ETS Review

EU ETS Design and its Suitability for New Zealand

Allocation Methods

Allocation Methodology:

$$\text{Allocation} = \text{Baseline} * \text{Multiplier}$$

Baseline setting

- Historical
 - *Germany*
- Forecast
 - *Majority*
- Benchmarked
 - *Germany, Denmark and Finland: New Installations*
 - *Sweden, Netherlands, Italy: Existing Installations*

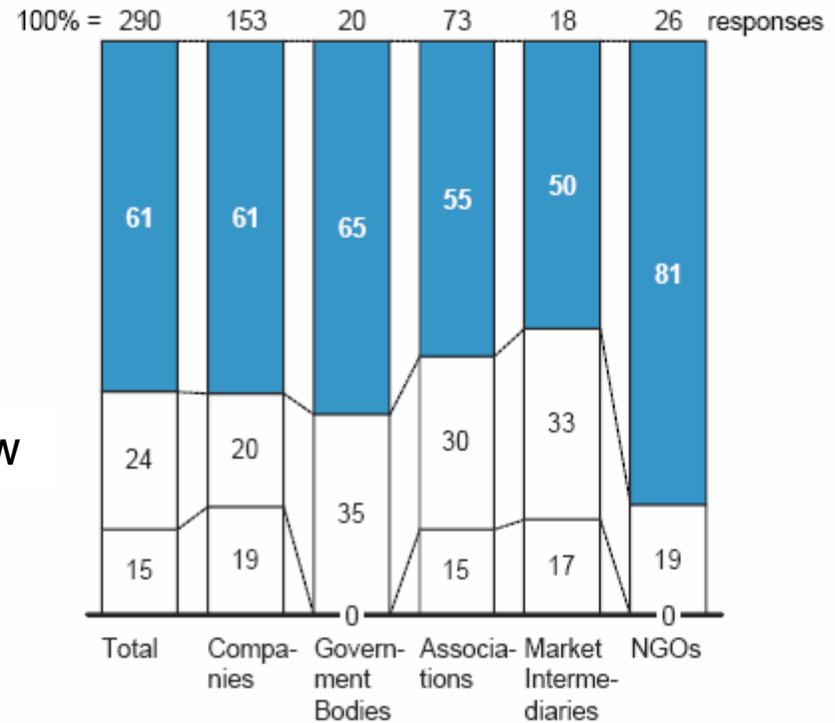
EU ETS Design and its Suitability for New Zealand

Allocation Methods

Question: Do you believe a benchmarking system would be feasible?

More
Benchmarking?

Yes
Don't Know
No



Source: Survey EU ETS Review

EU ETS Design and its Suitability for New Zealand

Allocation Methods

Allocation Methodology:

$$\text{Allocation} = \text{Baseline} * \text{Multiplier}$$

Multiplier setting

- External Target e.g. Kyoto target
- Political drivers
- Sectoral Competitiveness - EU Directive:
 - *The plan may contain information on the manner in which the existence of competition from countries or entities outside the Union will be taken into account.*
 - *The existence of competition should only be taken into account in the national allocation plan by a modification of the quantity of allowances per activity.*

UK : “power stations sector received a lower allocation given they are more insulated from international competition than other sectors”.

Conclusions

If we adopted current
EU ETS rules?

– the narrow focus in EU
would become even
narrower in NZ...

- Gases
- Sectors

For any NZ ETS we
should remember that
the EU ETS

- Recognises the need
to take into account
international
competitiveness
- Supports allocation
using benchmarking

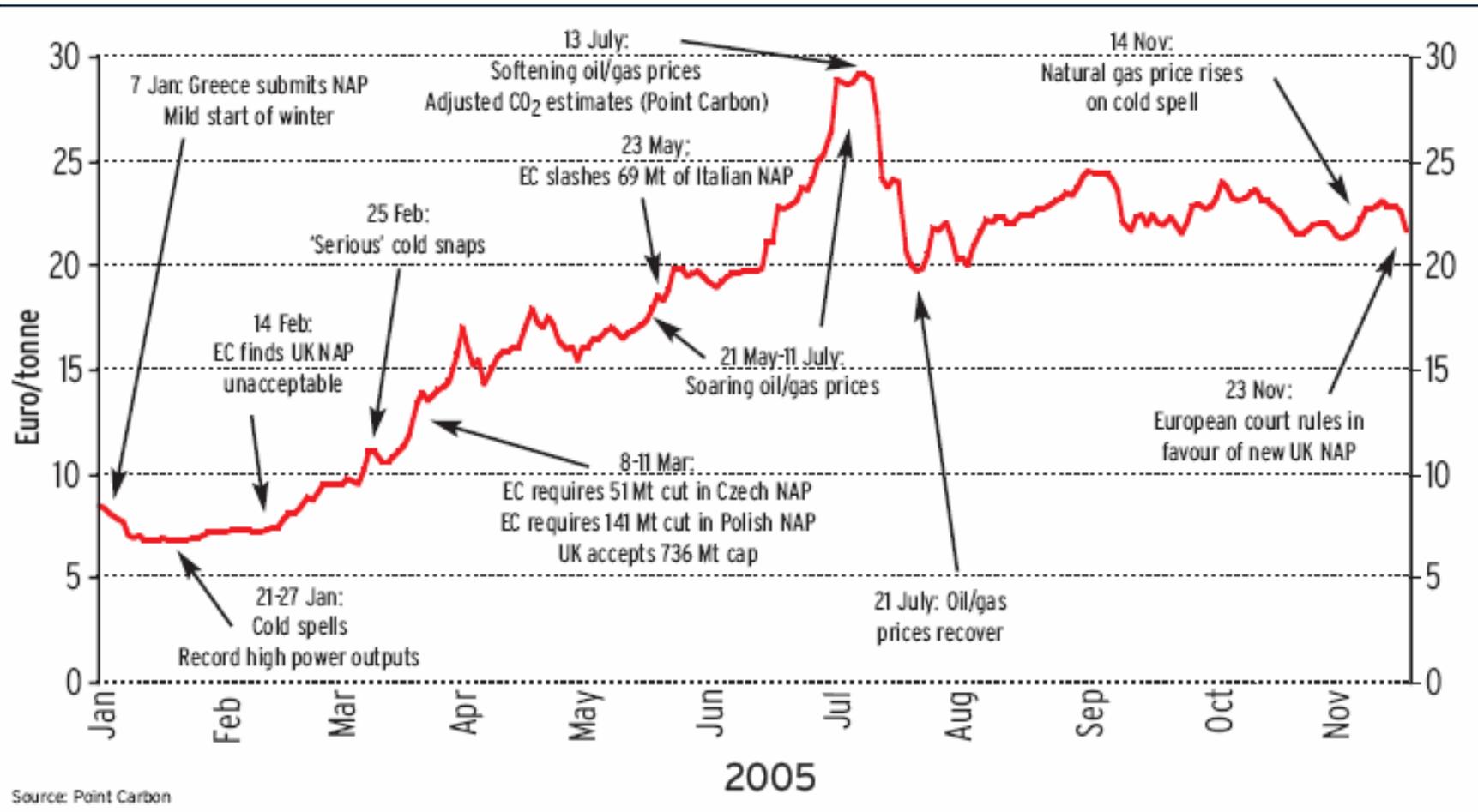
EU ETS – The Dominant Market

Volumes transacted and corresponding values on the main carbon allowances markets¹

	2004	2005		1 st Q06	
	Volume (MtCO ₂)	Volume (MtCO ₂)	Value (MUSS)	Volume (MtCO ₂)	Value (MUSS)
EU ETS¹⁶	8.49	322.01	8,220.16	202.51	6,552.24
NSW	5.02	6.11	57.16	5.51	86.55
CCX	2.24	1.45	2.83	1.25	2.71
UK ETS	0.53	0.30	1.31	na	na
TOTAL	16.28	329.87	8,281.46	209.26	6,641.50

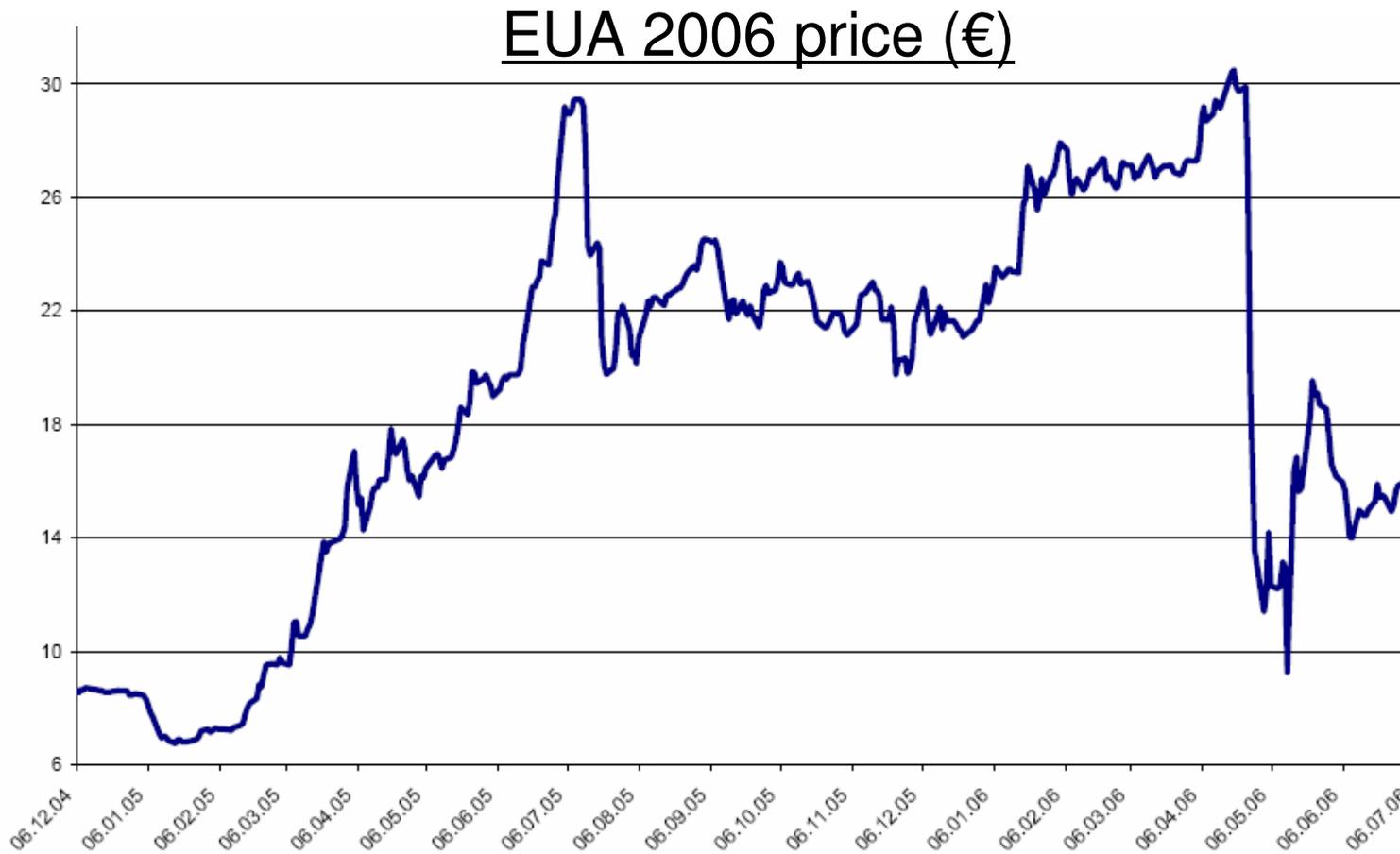
Source: State and Trends of the Carbon Market 2006; The World Bank and IETA

EU ETS Performance Initial Performance



Source: Point Carbon

EU ETS Performance Price Collapse

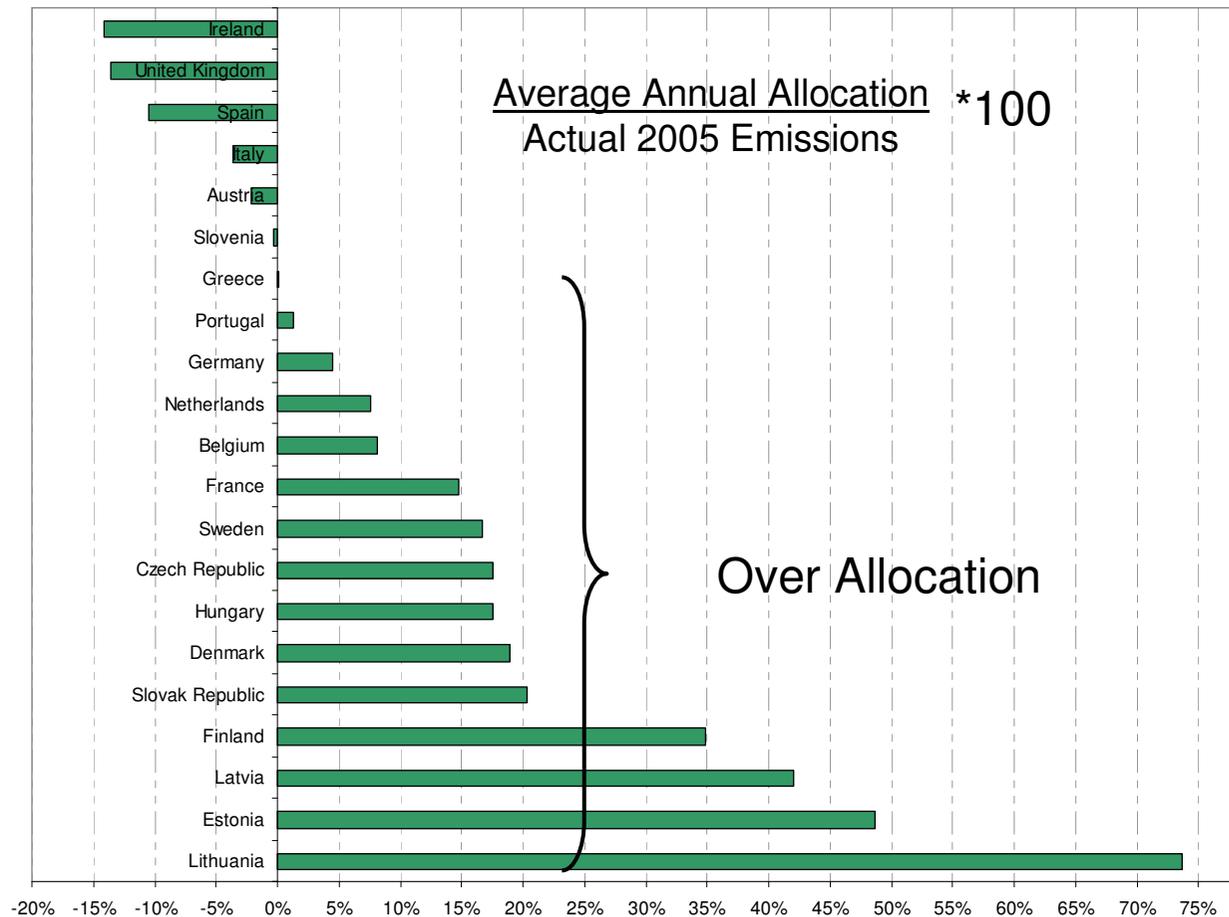


EU ETS Performance – Price Collapse Over Allocation

15 May 2006:
Of 21 countries
reporting, 15 had
over allocated.

Aggregate over
allocation was 44
million tonnes
CO₂.

Price collapse
resulted.



EU ETS Performance – Price Collapse Over Allocation – But Why?

- Market working well?
- Too generous allocation:
 - Reliance on forecast emissions
 - Lack of ex-post adjustment for production

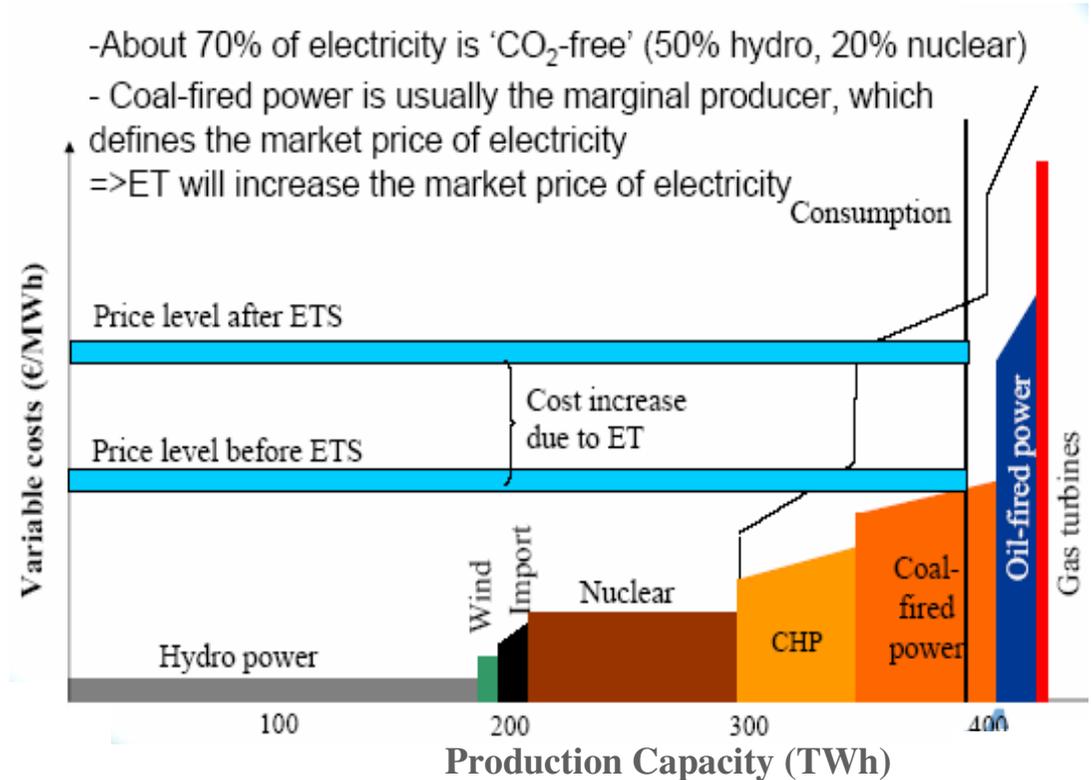
“In a nutshell the EU ETS, as currently designed has the same effect as a cap on the production and encourages carbon leakage”
Claude Lorea, technical director Cembureau.

EU ETS Performance

Electricity Pricing & Windfall Gains

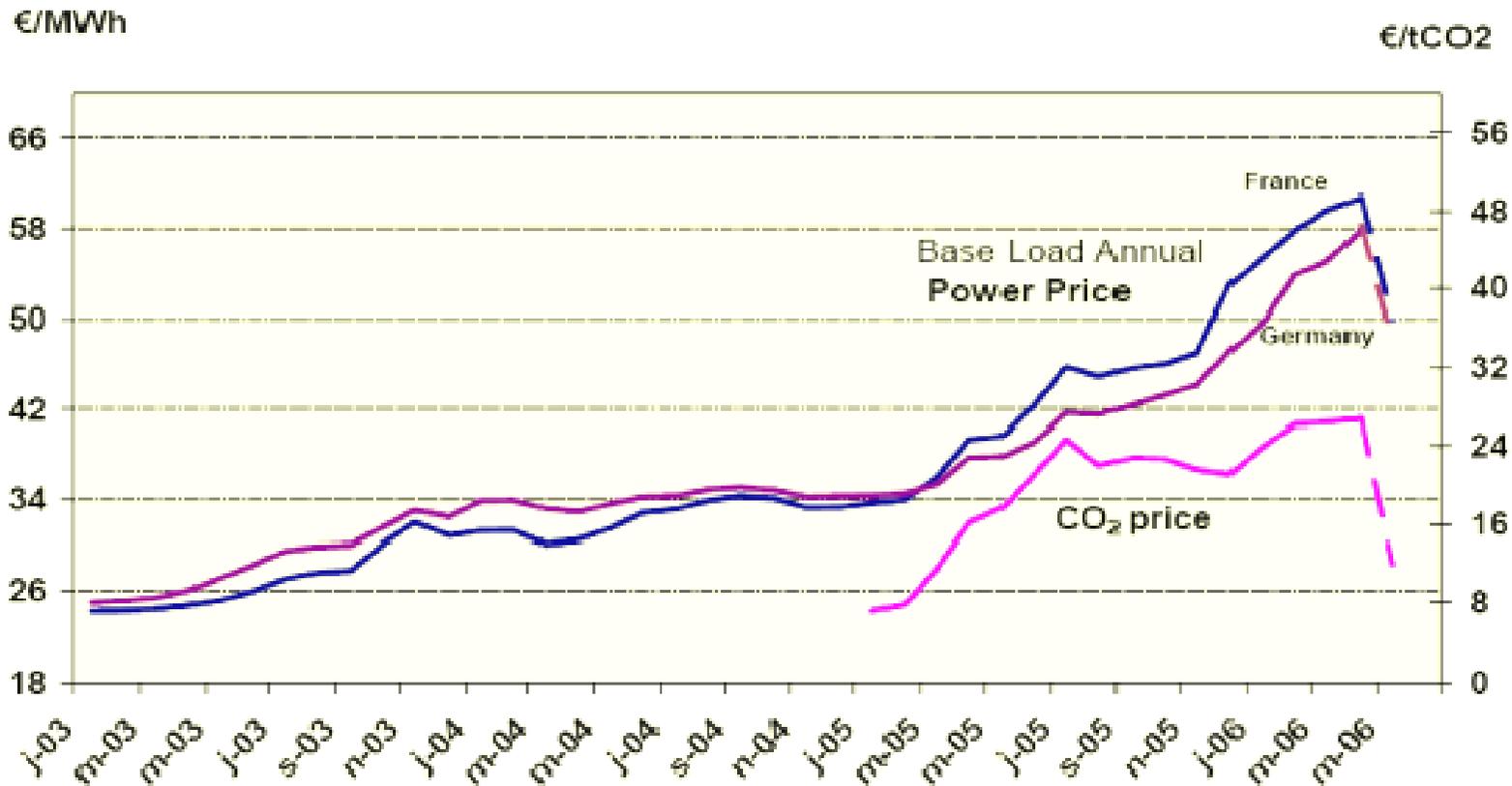
- Marginal pricing electricity market mechanism
- Merit order of carbon intensive generation
- Mark to market methodology
- Allocation and gaming
- Wind fall profits

THE IMPACT OF EMISSIONS TRADING ON THE NORDIC ELECTRICITY PRICES



EU ETS Performance Electricity Pricing & Windfall Gains

Power Price Development in France and Germany



EU ETS Performance

Electricity Pricing & Windfall Gains

- Scale of the windfall gains:
 - Dutch electricity producers: €300-€600 million per annum (half the value of the country's emission allowances);
 - UK electricity producers: estimated to be £800m/year over Phase I.
- Political reaction:
 - Finnish Government “windfall gain tax” proposed on old nuclear and hydro.

EU ETS Performance Issues in a NZ Context

How to avoid windfall profits

- New Zealand faces the same problem of windfall gains. Solutions could be:
 - Electricity marginal pricing model (demand side/ bilateral markets)
 - Priority scheduling renewables (merit order)
 - Unbundling electricity costs from carbon allowance cost
 - Dual market; power producers & energy intensive industry

EU ETS Performance Issues in a NZ Context

How to Minimise Electricity & Carbon Price Volatility

EU ETS Allocation Model Impacts on Wet & Dry Years:

- Allocation for Thermal Generators:
 - baseline allocation – historical emissions based
 - multiplier <100% to establish short market
- Impacts:
 - dry year – upward pressure on allowance price with pass through
 - wet year – sell or bank allowances downward pressure
- Result : Increased carbon pricing & hence electricity price spread between dry & wet years

Solution?

- Ex-post adjustment: allocations assessed and adjusted at trading period end for hydro conditions
 - Thermals do not get windfall gain in wet years
 - Thermals do not suffer in dry years
 - Market for carbon & electricity is more stable

The Issues Identified

- Emissions Trading Scheme design is complex!
- EU ETS experience in Phase I
 - Many unforeseen outcomes / shortcomings
 - Multitude of solutions being proposed
 - Learning is not yet over
- New Zealand's options
 - EU ETS is at 1st sight attractive to regulators
 - But it would be a very narrow based scheme with flaws in allocation & electricity market impact

Conclusion

- If we are to have an NZ ETS we should take the time to develop one that is matched to New Zealand's circumstances.

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