Emissions Trading National Allocation Plans and UK Experience

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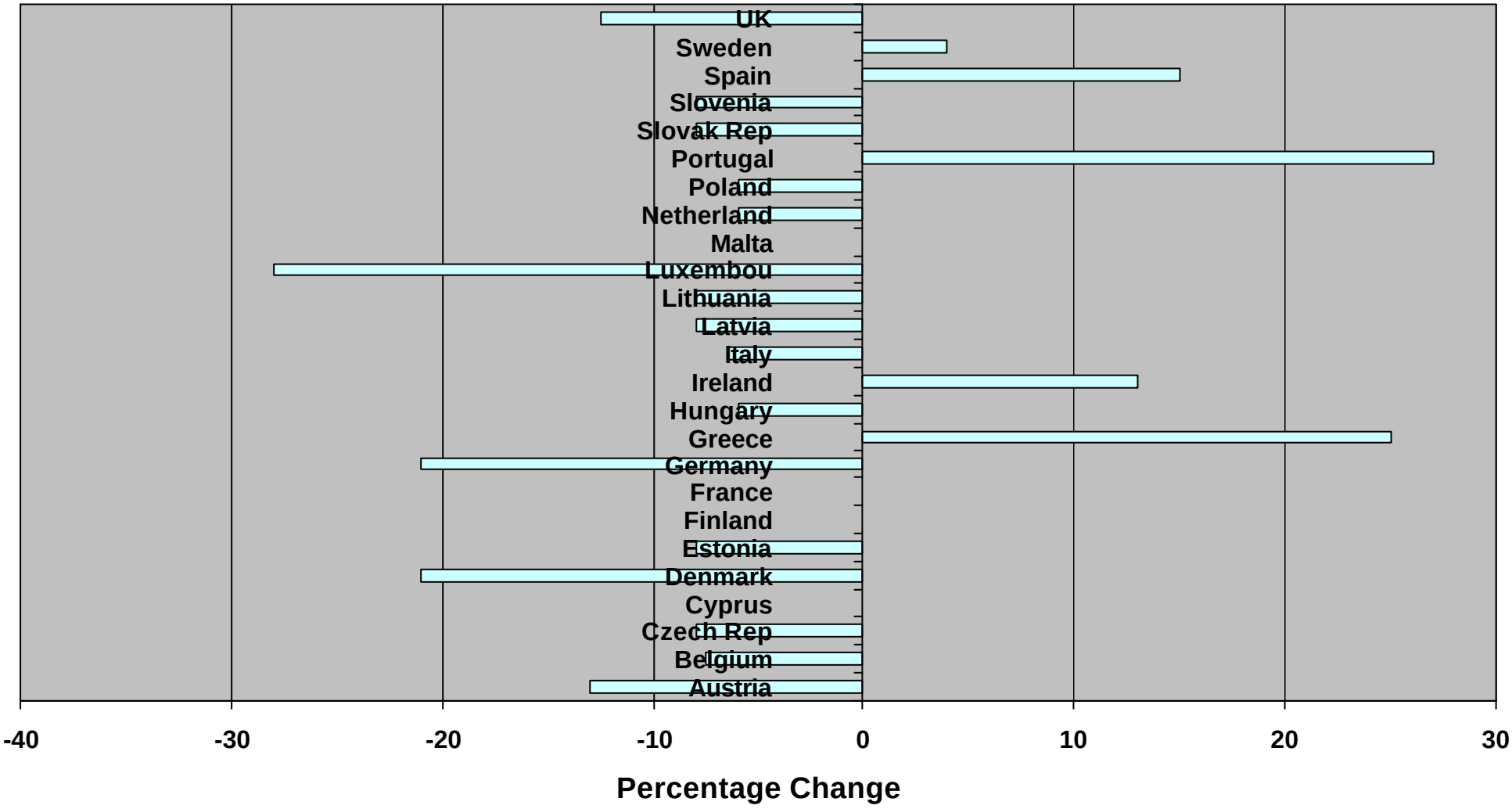
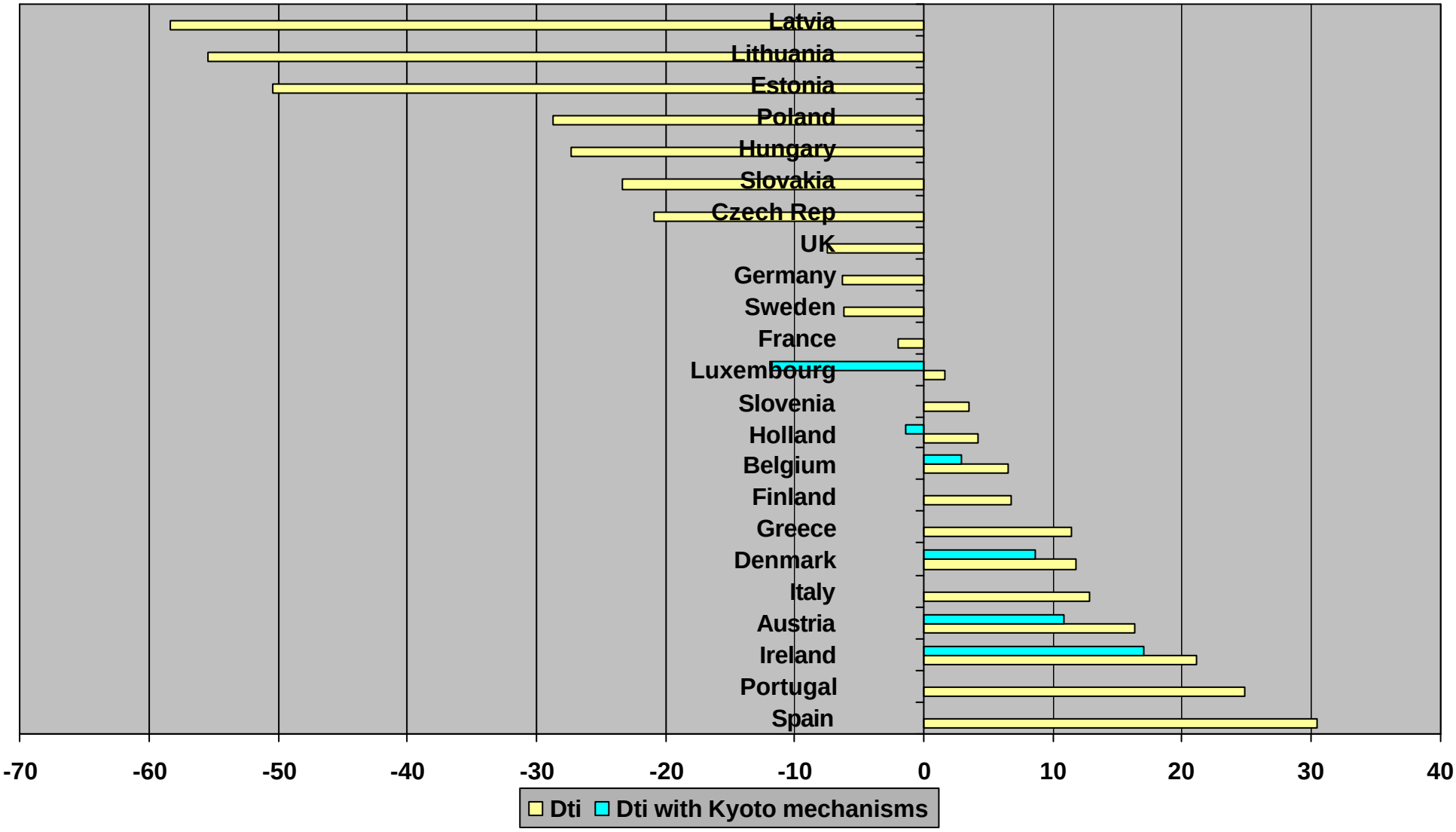
Kyoto Target



Source: European Commission

Distance to Target Indicators for EU25 (2002)



Source: European Commission

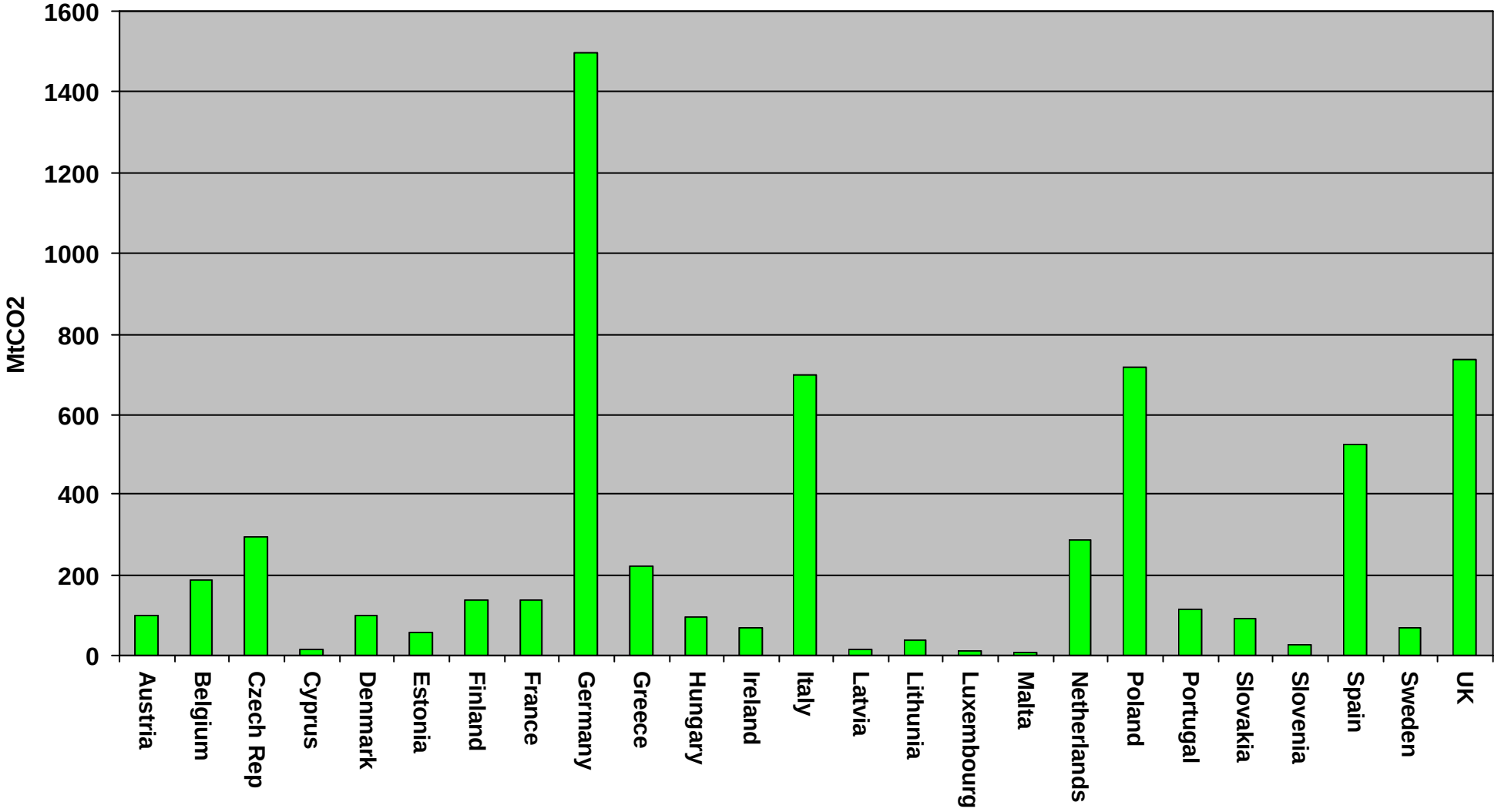
EUETS Phase I 2005-7

- Fines if emissions > allowances
  - €40/tCO_2e for 2005-2007; €100/tCO_2e for 2008-2012
  - Payment does not remove obligation to deliver certificates
- Allocations
  - "free" allowances given to incumbents
  - >95% of allowances created for 1st period; 90% for second
  - up to member states to set method of allocation
  - Number of allowances issued must be consistent with Burden Sharing Targets for 2008-12
  - NAPs can assume of purchase of flexibility credits (CDM/JI/AAUs)
  - Some countries have turned their back on AAUs – unless "greened"
  - "Supplementarity" requires 50% of abatement from domestic measures

EUETS Phase I 2005-7

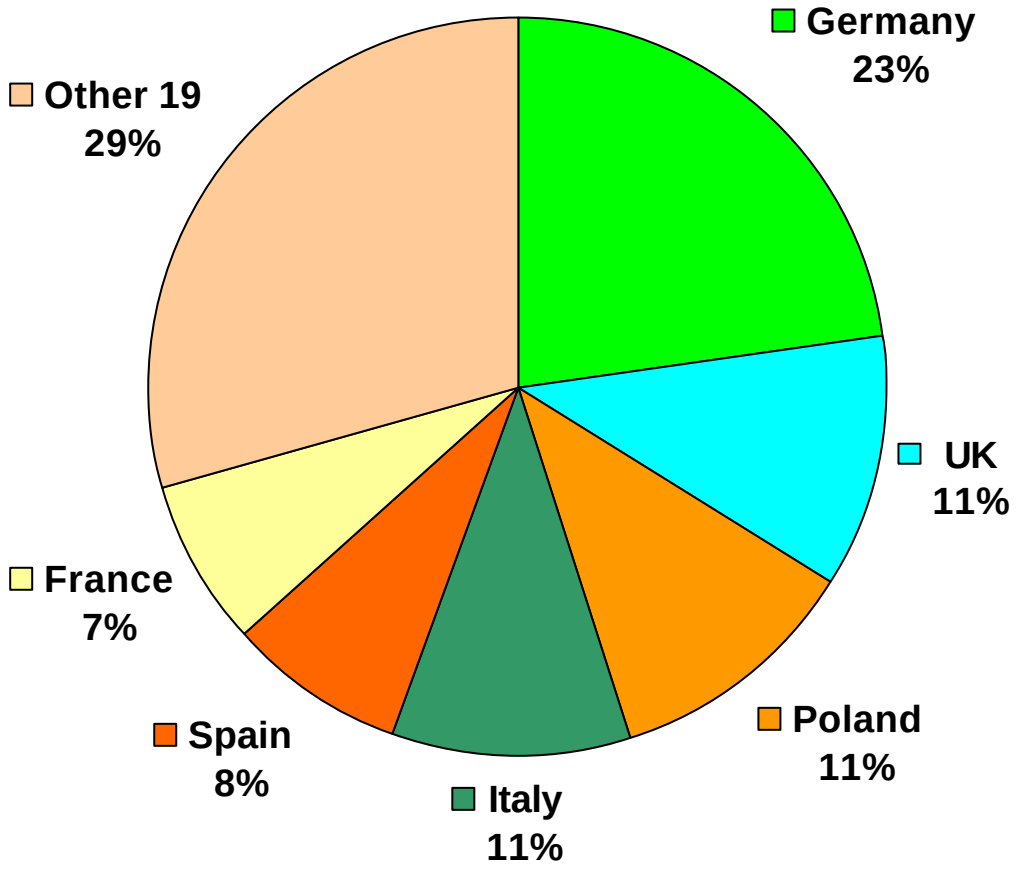
- CO_2 only
- Covers 11,400 installations
- Allocation of 6.57 billion allowances
- Commission have cut 290 million allowances from notified National Allocation Plans

EUETS-National Allocation Allowances

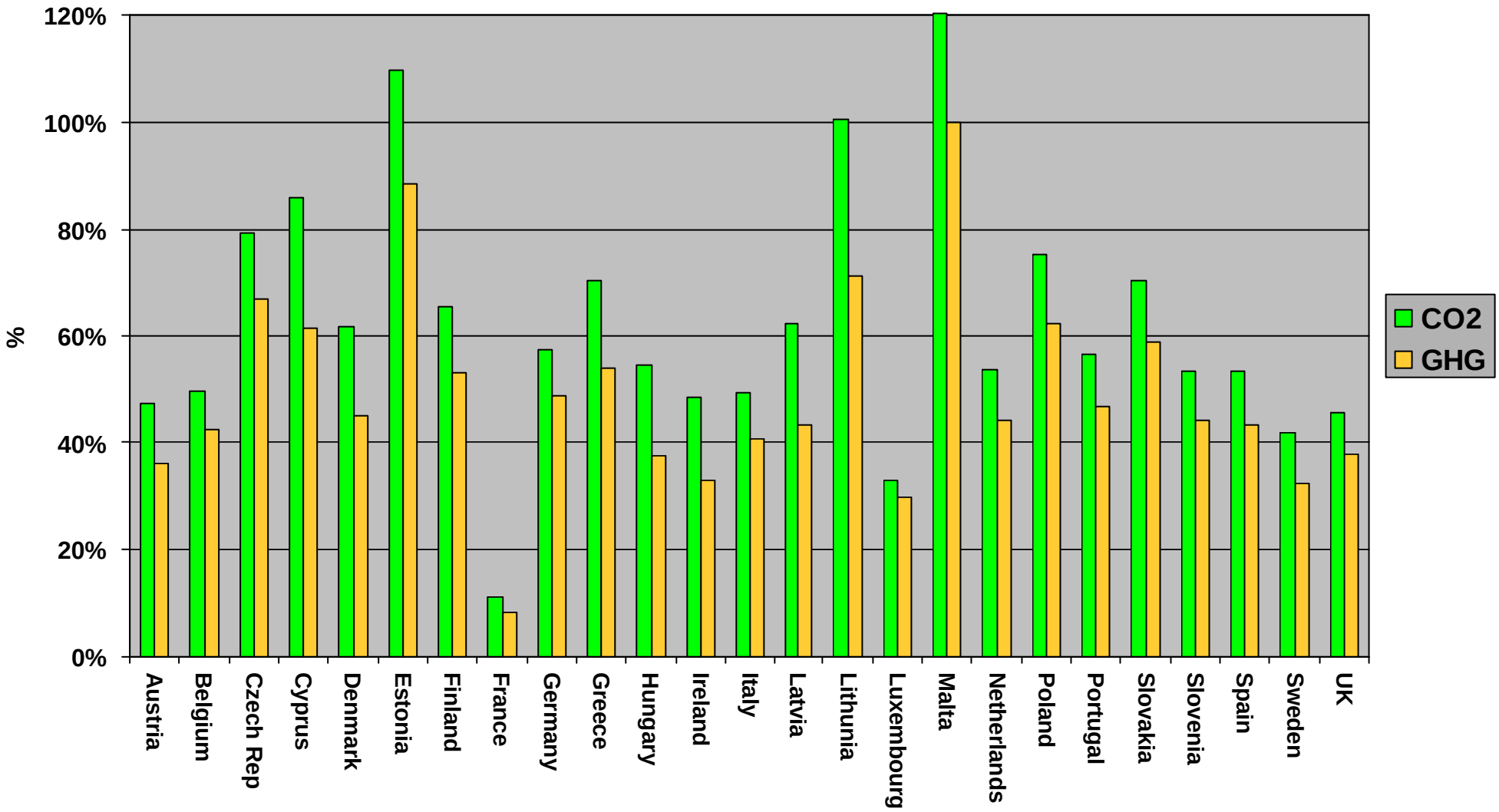


Source: European Commission

EUETS-Share of Allowances



EUETS-Proportion of Trading Scheme against Total Emissions



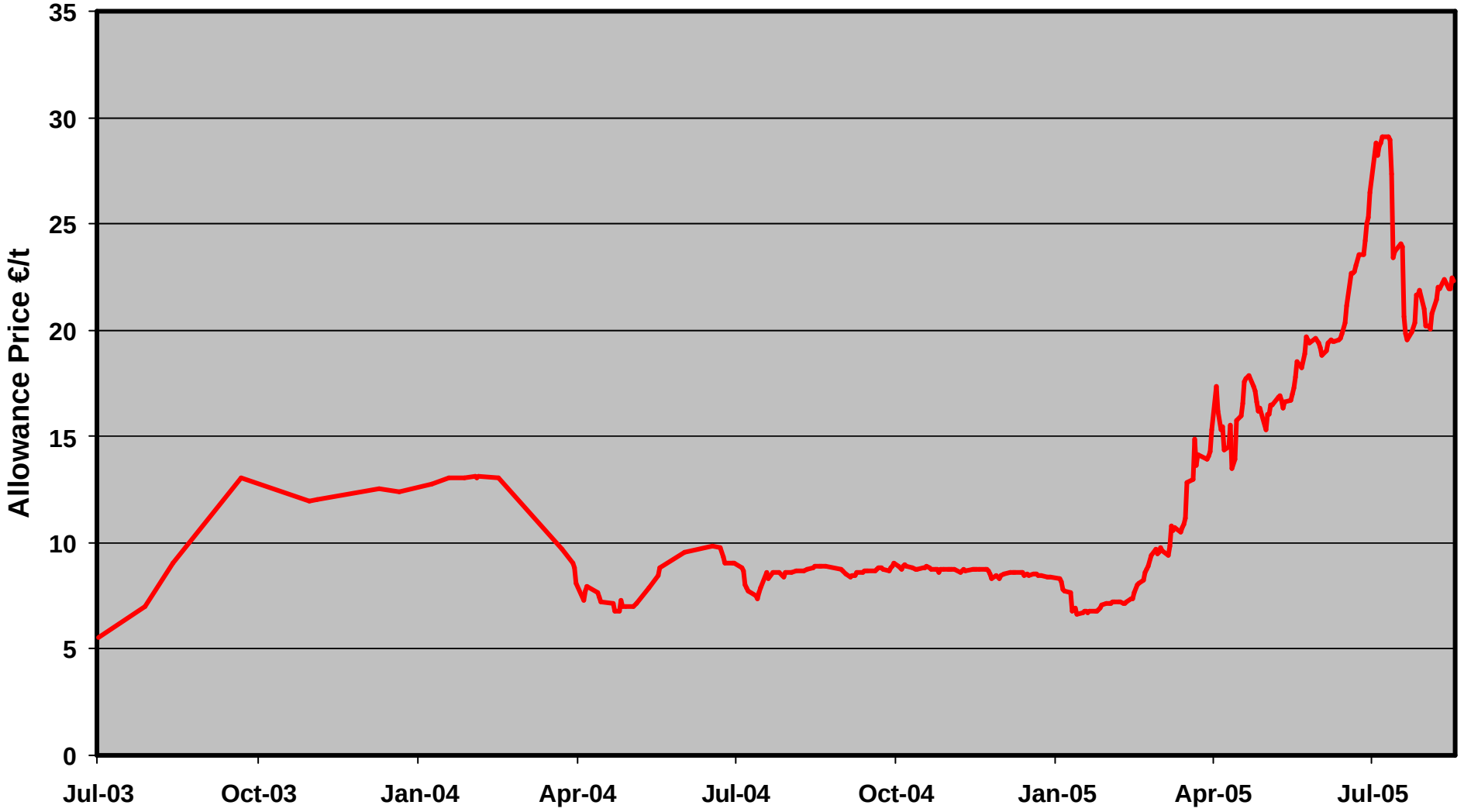
Source: European Environment Agency / European Commission

UK Position EUETS - Phase I

- Allowances guaranteed for Phase I only
- Allowances to industrial sector derived from Government projections – target savings placed on power generation
  - Generation allocated 28% lower than reference emissions (1998-2003) as compared to cement 3.5% and chemicals 12%
  - Coal stations allocated 37Mt burn (2004 50.5Mt)
- Allocation to individual installation based on historical emissions
- New entrants – power generation benchmarked against gas
- Auction up to 5% of allowances
- No purchase of CDM credits

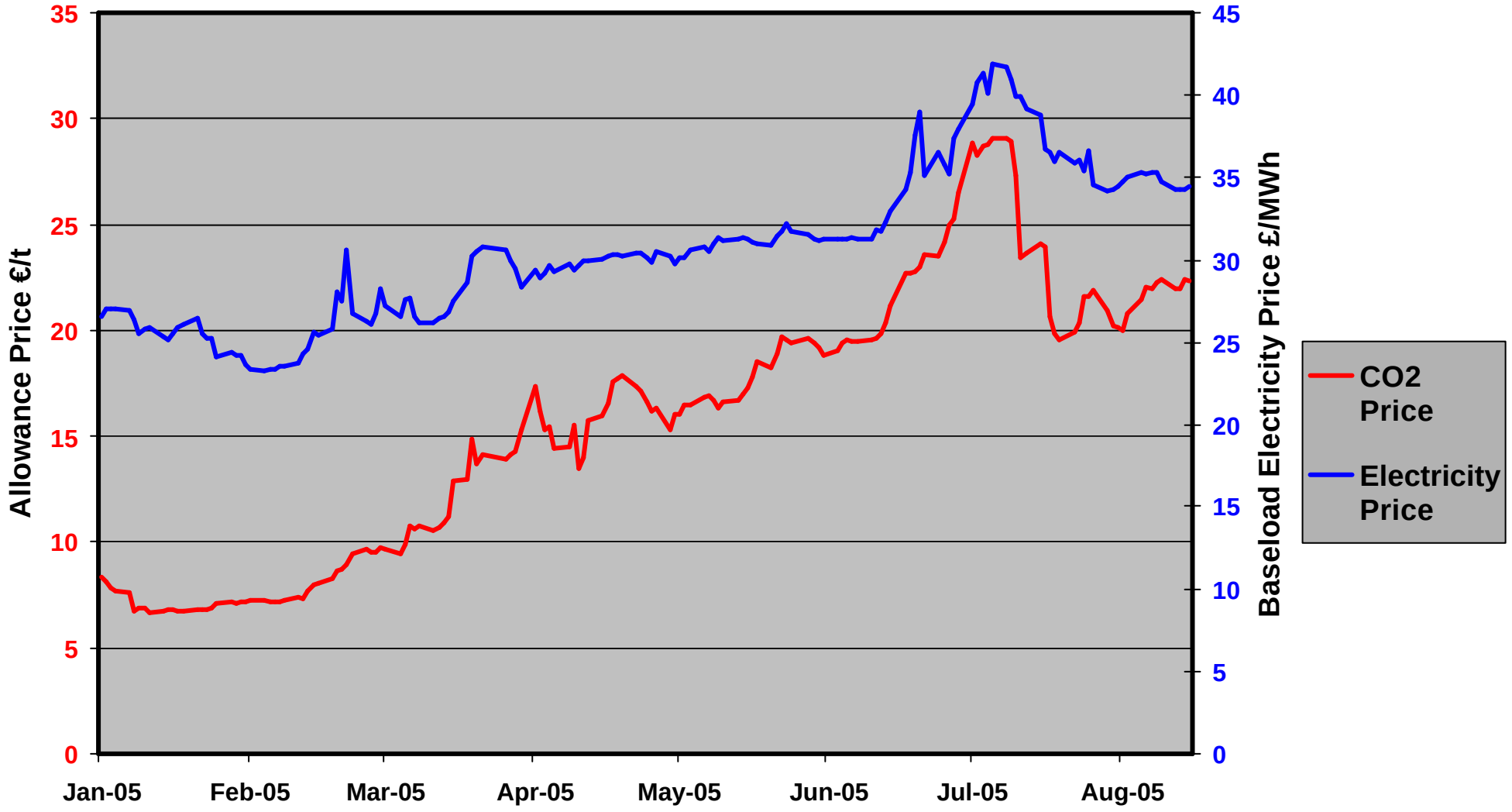
UK Experience

Spot CO2 Allowance Price



Source TFS Brokers / International Petroleum Exchange

UK Electricity and CO2 Prices



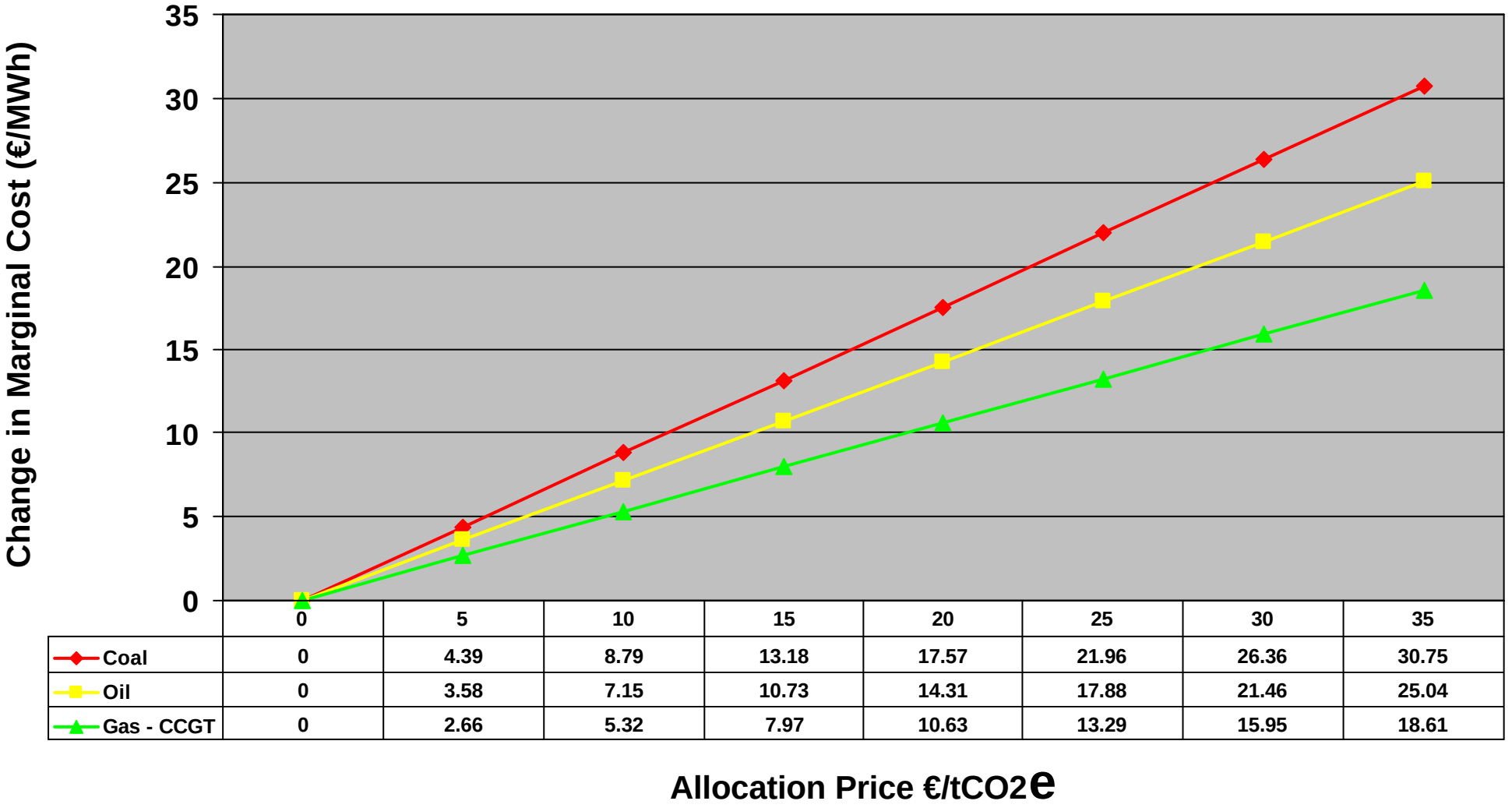
Source TFS Brokers / International Petroleum Exchange

Effect of Carbon on Coal Generation
(incremental over allocation)

Carbon Price €/t	Cost of Carbon p/kWh Coal	Gas	Gas Advantage p/kWh	Coal Price Disadvantage p/GJ	Gas Advantage p/therm
5	0.30	0.14	0.17	16.6	2.5
10	0.61	0.27	0.34	33.2	5.1
15	0.91	0.41	0.50	49.8	7.6
20	1.21	0.55	0.66	66.4	10.1
25	1.51	0.68	0.83	83.0	12.6
30	1.82	0.82	1.00	99.6	15.2

Based on coal 36% efficiency / gas 52% efficiency
Exchange rate €:£ 1.45

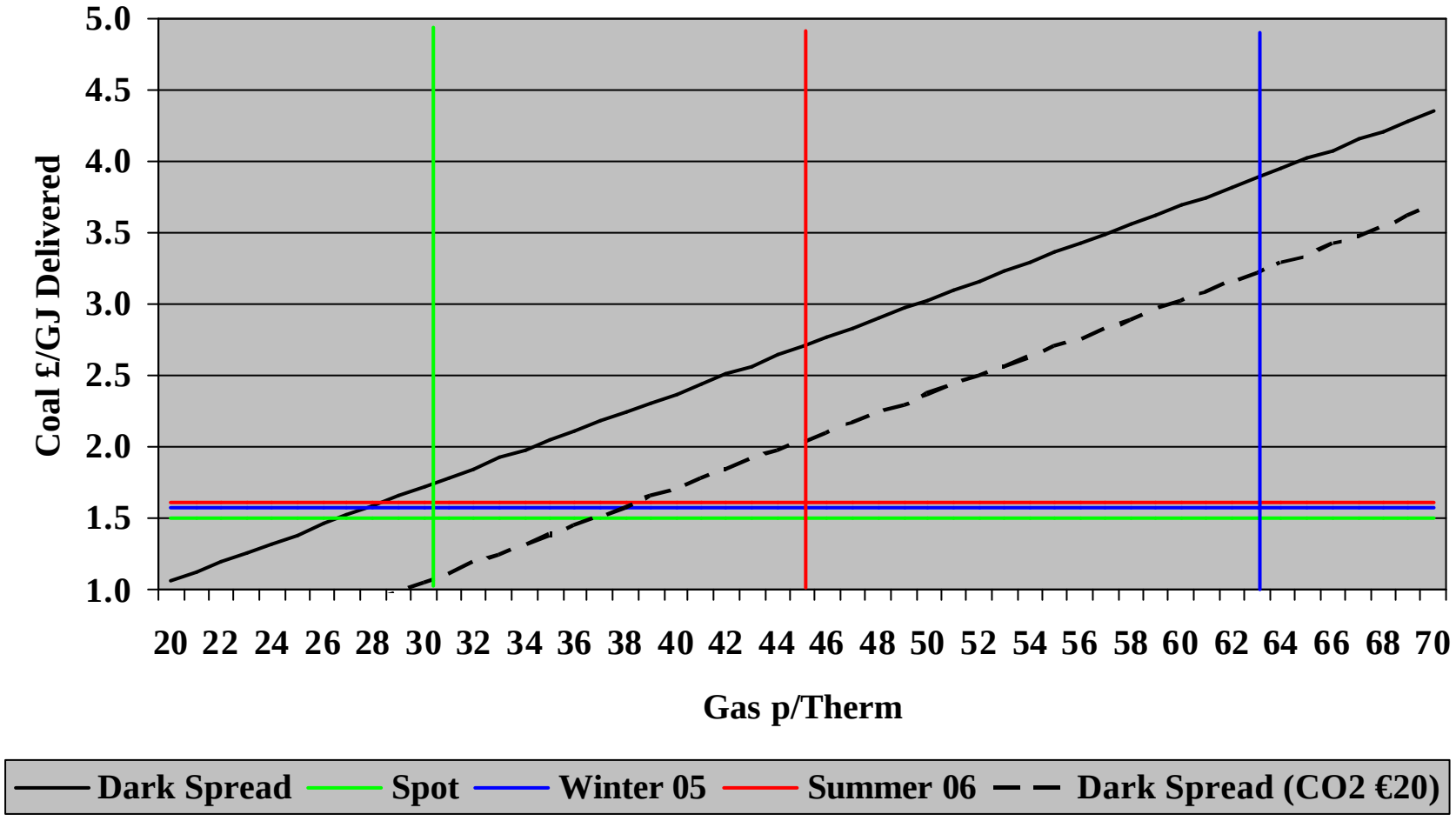
Impact on Marginal Generation



	0	5	10	15	20	25	30	35
Coal	0	4.39	8.79	13.18	17.57	21.96	26.36	30.75
Oil	0	3.58	7.15	10.73	14.31	17.88	21.46	25.04
Gas - CCGT	0	2.66	5.32	7.97	10.63	13.29	15.95	18.61

Based on coal 36% efficiency / gas 52% efficiency

Conditions for Fuel Switching in UK



Prices at 22 August 2005

Key Dates within Directive for Phase II

- June 2006
  - National Allocation Plans submitted to the European Commission - Article 9(3)
- December 2006
  - Decision on installation level allocations must be made - Article 11(2)
- January 2008
  - Start of Phase II

Phase II Requirements?

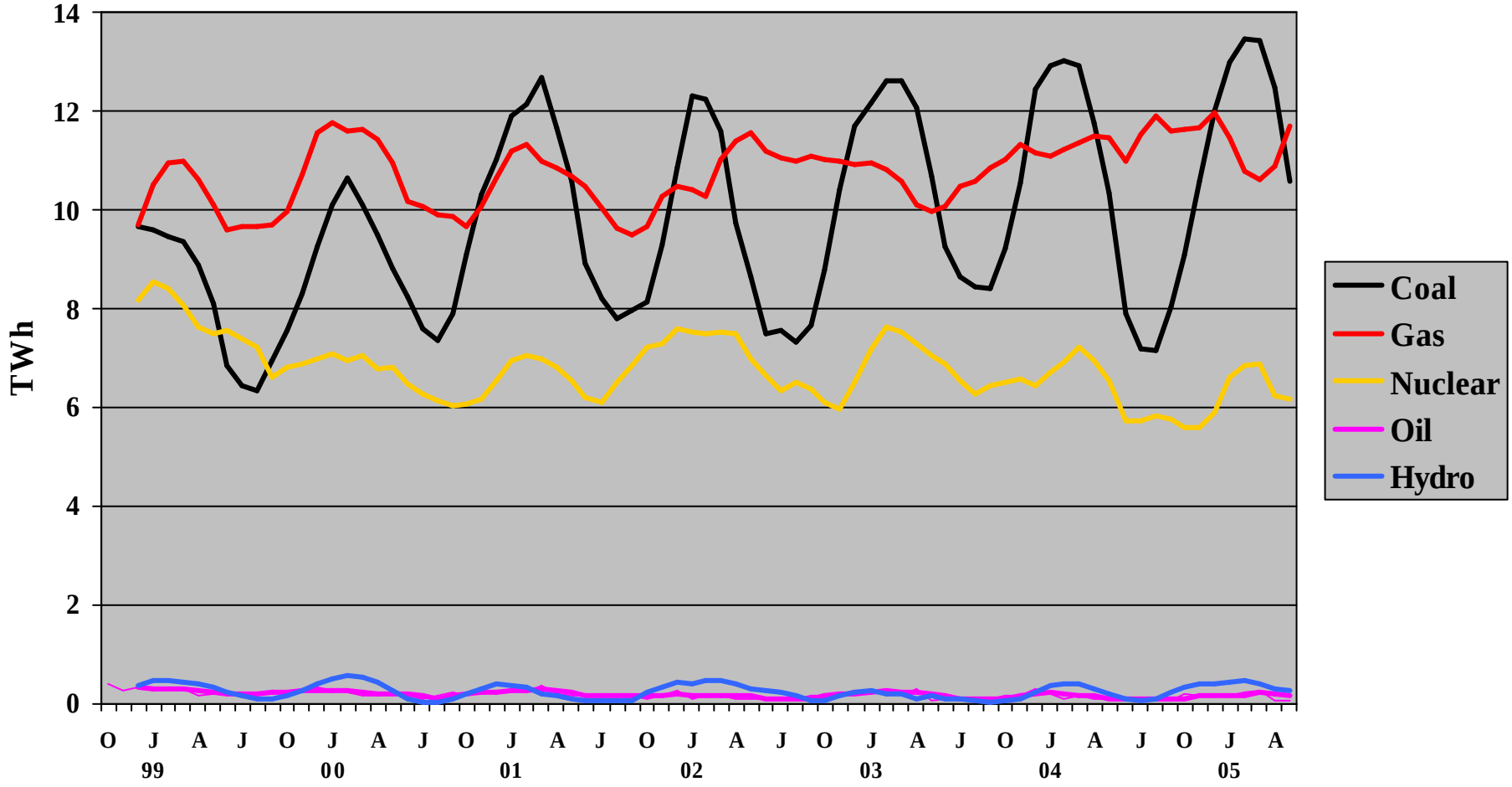
- Harmonisation across countries
- Security for investment in power generation - allocation rules that cover several trading periods
- Benchmarking must use fuel specific emission factors and technology specific efficiencies
- Load factors should take account of opt out provisions under the Large Combustion Plant Directive
- Should encourage clean technology
- Must not jeopardize security of energy supply
- Maximize the use of JI/CDM allowances
- Include non CO2 gases?

Appendices

Definitions

- Dark Spread – Difference between the price of electricity and the production of electricity from coal (expressed in £/MWh)
- Spark Spread - Difference between the price of electricity and the production of electricity from gas (expressed in £/MWh)
- Clean Dark Spread - Difference between the price of electricity and the production of electricity from coal including the cost of carbon (expressed in £/MWh)
- Clean Spark Spread - Difference between the price of electricity and the production of electricity from gas including the cost of carbon (expressed in £/MWh)

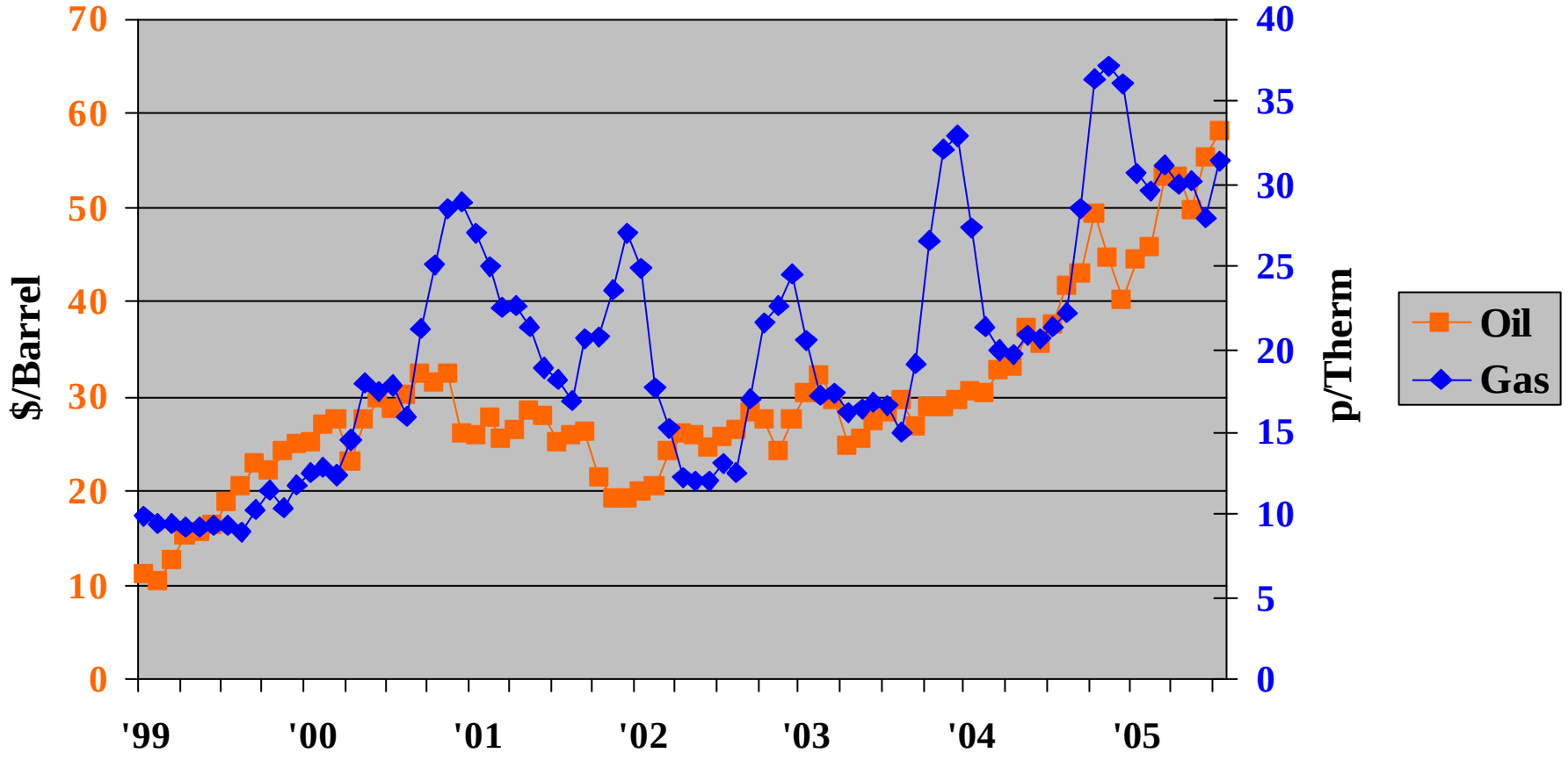
UK Seasonal Electricity Generation



Source: Dti Energy Trends Table 5.4

3 month moving averages - major power producers

UK Spot Oil & Gas Prices



Source: International Petroleum Exchange