

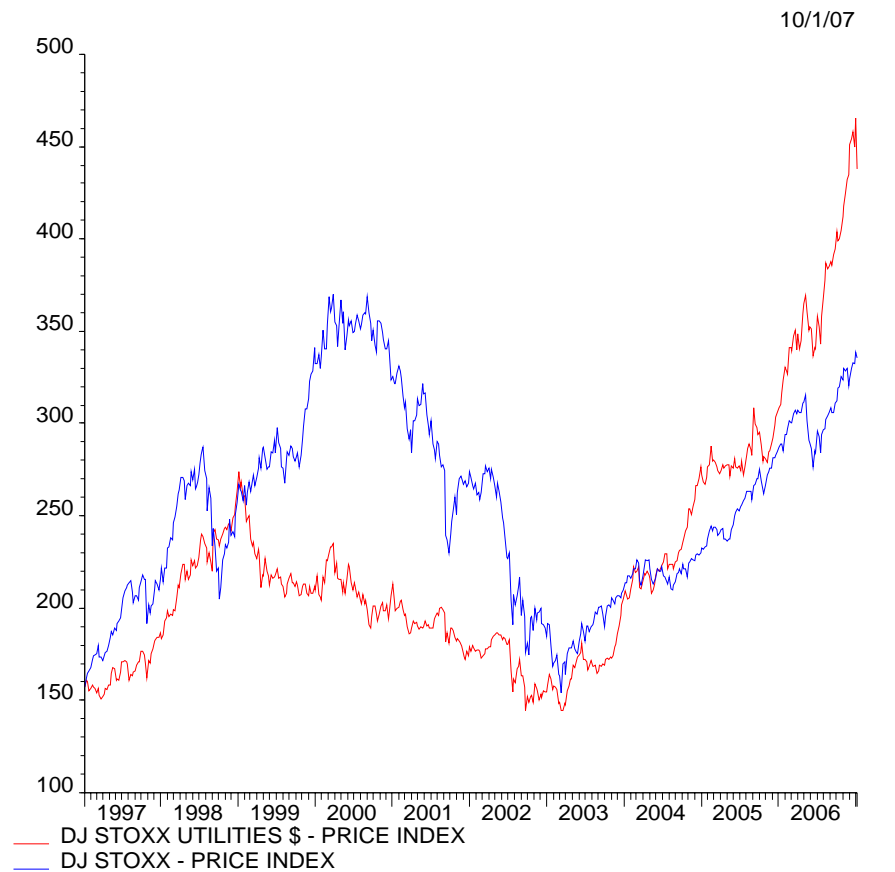
ETS Auctions – investor perspective

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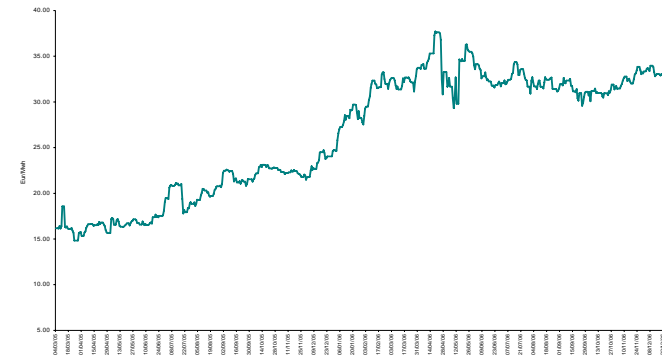
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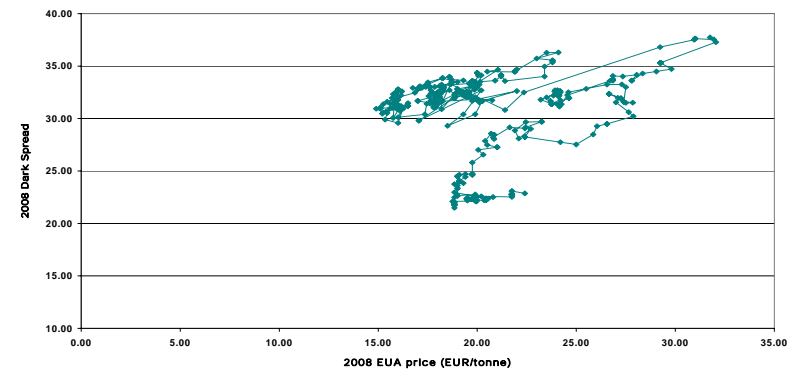
Source: DATASTREAM

German 2008 Dark Spreads



Source: Exane BNP Paribas analysis of Bloomberg data

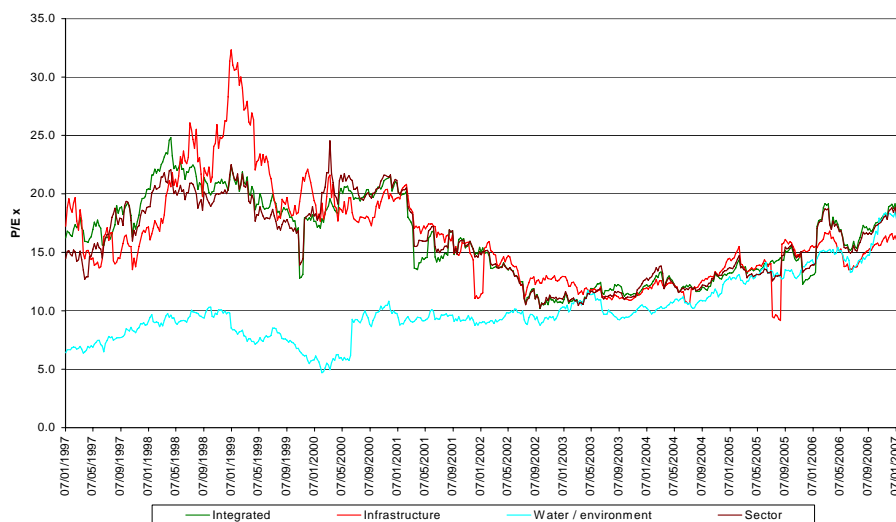
German 2008 dark spreads vs 2008 EUAs



Source: Exane BNP Paribas analysis of Bloomberg data

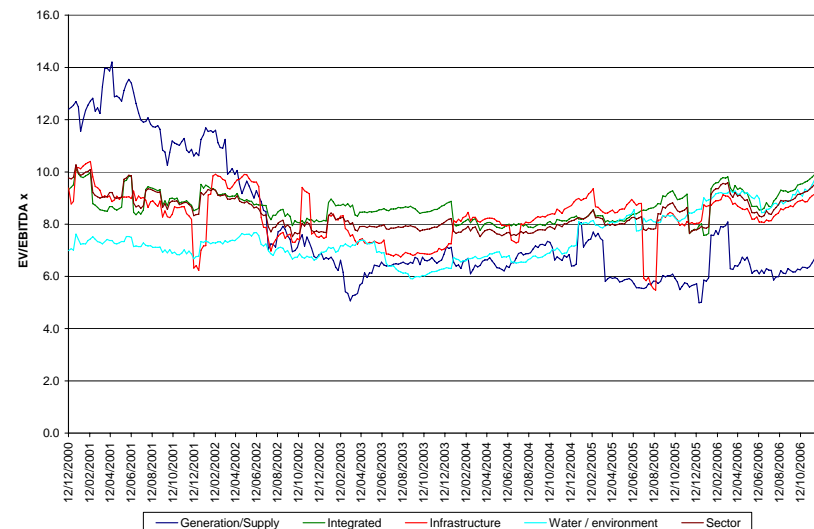
Outperformance result of change in profit outlook rather than sector re-rating

Sector P/E ratio (market consensus)



Source: Exane BNP Paribas analysis of datastream data

Sector EV/EBITDA ratio (market consensus)



Source: Exane BNP Paribas analysis of datastream data

- P/E has increased, but still lower than at time of last period of intense M&A activity
- EV/EBITDA has remained relatively stable in recent years, although now trending up. Divergence from P/E affected by return of value to shareholders, and divestment of underperforming assets and financial stakes.

A few company concerns

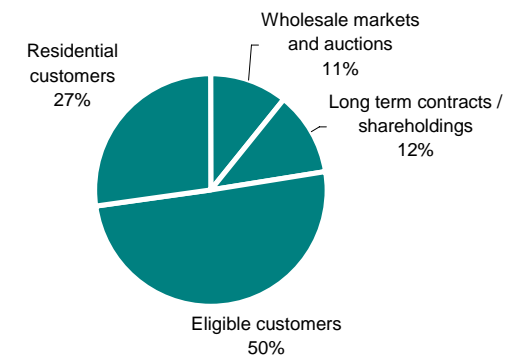
- **Lack of long term investment incentives**
- **Volatility in the price of EUAs which is unrelated to fundamental changes in the market**
- **Potential for shortage of allowances to lead to extreme price spikes unrelated to global costs of mitigating greenhouse gas reduction, with potential serious price impacts and possible collapse of the system**
 - **Some do favour caps and collars to bring stability to the market, and the price of related commodities**
- **The impact of the policy on competitiveness, and concerns that the emission reductions achieved as a result of the policy are far lower than the associated costs**
- **Conflict with other policy objectives**

Investor concerns

- **Some reflect company concerns (volatility, allocation decisions)**
- **Late decisions on policy are leading companies to make the wrong strategic decisions now**

- **Obligation imposed by European Commission associated with acquisition of stake in EnBW**
- **Auctions for 4,400MW baseload capacity, and 1000MW peak capacity.**
- **Products offered are availability of capacity with a specified exercise price for its use for 3, 6, 12, 24, 36, and 48 months**
- **Offers made for capacity in EUR/MW/month, with an exercise price of EUR9/MWh (base) and EUR57/MWh (peak)**
- **Auctions held every three months**
- **Auction volumes represent a small proportion of overall electricity market**
- **Structure of auction is ascending clock**

EDF 2005 electricity sales in France
(502TWh excluding losses, own consumption)



Source: EDF

Auction results for French VPP 12 month forward electricity contract 2005-06

Date	Capacity price EUR/MW/month	Exercise price EUR/MWh	Total Price EUR/MWh	Forward market price (next calendar year) EUR/MWh	Number of bidders	Number of successful bidders	
29-Nov-06	31173		9	51.7	51.9	31	17
13-Sep-06	33859		8	54.4	56.3	35	20
08-Jun-06	33945		8	54.5	54.5	34	18
01-Mar-06	40515		8	63.5	59.5	35	15
30-Nov-05	29317		8	48.2	48.1	35	16
14-Sep-05	27607		8	45.8	45.3	31	18
25-May-05	24126		8	41.0	40.1	35	20
01-Mar-05	19317		8	34.5	34.7	34	10

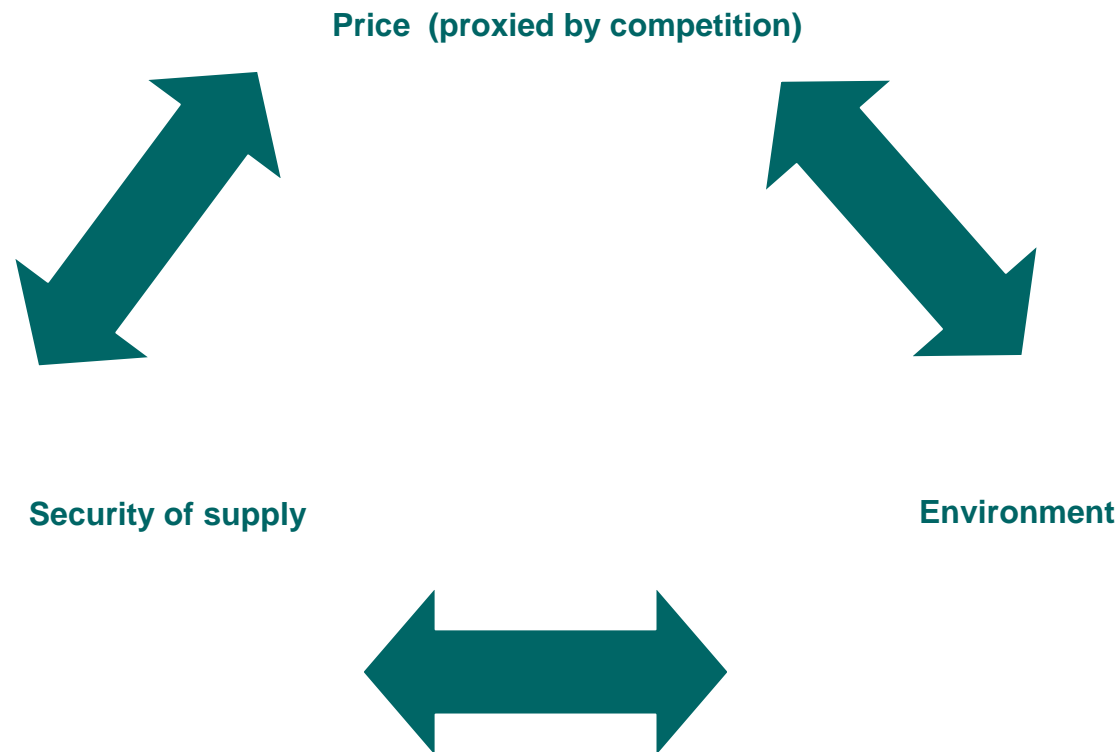
Source: EDF, Bloomberg, Exane BNP Paribas.

- Prices close to market prices, discrepancies in above data because of differences in time period for forward contract
- Active participation from traders, suppliers, other utilities
- One part of the French electricity market that appears to work well
- Electricity procured is used, resold on market, or used to fulfil contractual obligations

- **Auctions increasingly a regular part of energy markets**
 - German gas release
 - French VPPs
 - Belgian VPPs
- **Well-designed auctions such as the French VPP auction provide access to commodity but at market prices**
- **If auctions do not change the quantity of EUAs available within the EU, the timing and frequency of auctions is unlikely to have any material impact on achieved price**
- **Derivative contracts on EUAs will be used to hedge differences between date of delivery of EUAs into the market and the date at which they are required (liquidity determined by the overall volume of EUAs that will be issued, not just the amount that happens to have been released)**
- **Emitters likely to hedge EUA forward positions only when sales price of product also fixed, implies restrict timing of auctions to when liquidity already high**
 - Under IFRS, cost of emissions booked against time of deemed use. Mark to market valuation of any surplus, booked through P&L as reported. With free allowances, volatility probably greater than when there is significant use of auctions

- **The auctioneer is an asset manager**
 - What is its objective? To maximise revenue? Facilitate orderly market?
 - Will auctioneer have discretion over the timing and volume of sales?
 - If so, will auctioneer have privileged information, or will market participants believe it has? May this have an impact on the market?
- **Lower frequency would**
 - Lower transaction costs for seller
 - Higher risk for seller (if prices are volatile, receipts subject to market price risk on that day)
- **From perspective of emitters, hard to see why frequency should be greater than annual**
 - Annual reconciliation of emission allowances, so ensures appropriate volume of certificates are available
 - Leave secondary and derivative markets to sort out risk management issues
- **Balance of these objectives probably points to quarterly auctions (given likely continued volatility in EUA prices)**

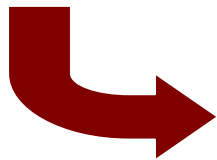
- **Use of auctions of limited quantities is surely feasible.**
 - **Simple sales in the secondary market would also be straightforward, but transparency of auction process is attractive to demonstrate best sales price was achieved**
- **Existence of auctions should have limited impact on overall EUA price levels, just allocation of value of EUAs and direction of revenue recycling**
- **Design should avoid key flaws to avoid downward distortion of prices, or opportunities for collusion**
- **Detailed design: ascending clock auctions have worked well in energy and other markets, and is one design that could be considered**
- **Frequency need not be high, with secondary markets to allow market participants to manage risk.**
- **If a way can be found to establish caps and collars within a trading framework consistent with legal and other aspects of the EU ETS, this would meet major concerns of some utilities and major users (in particular as scheme is extended)**
- **All this seems relatively uncontroversial**



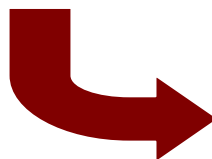
Company investment decisions based of assessment of policy outlook for all three combined

- **Large increase in coal build announced in recent months**
 - e.g. in the UK, E.ON has applied for consent for a new unit at Kingsnorth
 - Several projects by E.ON and RWE in Germany. These use latest technology. For example, an existing unit at Staudinger already operates at 46% efficiency, new unit to exceed 50%, RWE's new "BOA" lignite plants operate at around 45% compared with 35% for existing plant
- **Limited new nuclear build**
 - Finland under way
 - France (new EPR at Flamanville), site clearance has begun
 - UK – will policy environment develop sufficiently?
- **Is this different from what would have happened without the EU ETS?**
- **Plant build decision have impact on emissions for next 40 years so build decisions being made now are crucial, especially given need for replacement, and narrowing reserve margins.**

Additional coal build with partial but substantial allowances



Increased demand for EUAs



Increased EUA and therefore electricity prices



Higher CO₂ emissions

Increased profits for all output including the new capacity

- **Quickly implement plans for auctions for 2008-12 period**
 - Issues are relatively straightforward
 - Details of level of permits and other incentives more important for EUA price
- **Urgently address policy decisions for the post 2012 world**
 - Some possibly undesirable irreversible investment decisions have already been made
 - Other possibly undesirable investment decisions are being made now

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