

Price Drivers In Power Markets

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Price Drivers In Power

- CEE Power Markets are becoming increasingly subject to common drivers:
 - Carbon Pricing
 - Increasing Environmental Standards
 - Regional Trade
 - Rapid Demand Growth
- Significant requirement for new build
 - Estimates of up to 4.5GW of capacity in SEE alone by 2010
 - \$20bn of infrastructure investment
 - EU Environmental Standards likely to apply

Opportunities In The Market

- 2 Types of significant opportunity:
 - Strategic opportunities with unique cost advantage
 - E.G. Kosovo 'C'
 - Windows in time and space
 - Spatial opportunities presented by restrictions in interconnector capacity
 - Temporal opportunities presented by fluctuations in supply-demand balance
 - All relatively short term – participants will need to move quickly and flexibly to secure them

Seize The Day

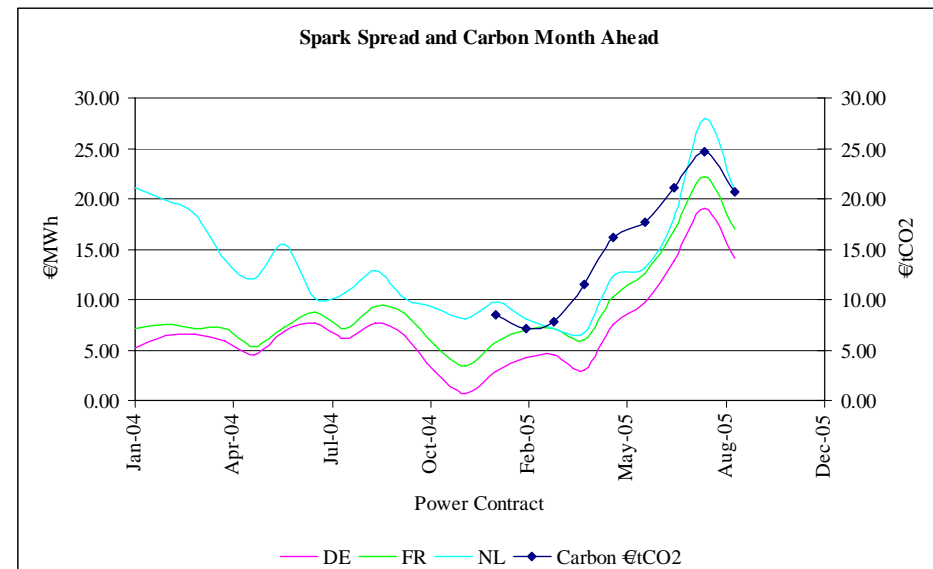
- Many opportunities are likely to be available only to fast-moving participants
 - Short lead time projects
 - Able to finance at least initially from own resource
 - Access to fuel supplies

Can Hydro Play a Part?

- Hydro investments
 - Large scale
 - Long term
 - Capital intensive
 - Long lead times
 - Faced with reducing demands for ancillary services as UCTE network expands
- But.....
 - Impact of carbon pricing on economics?
 - Encouragement of renewable energy?

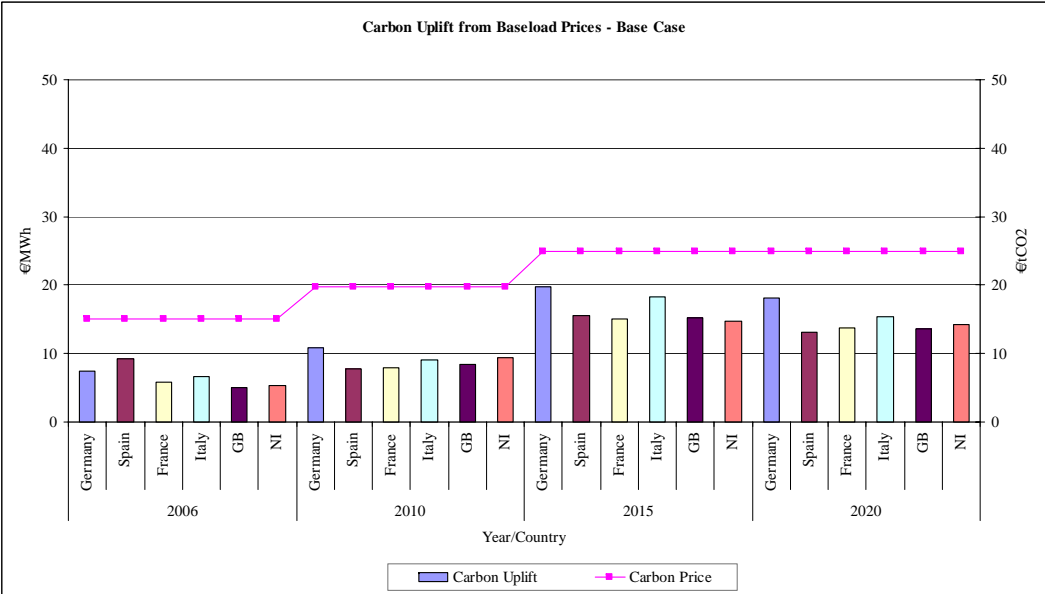
Carbon Pricing

- Carbon is increasingly dominant price driver
- Wherever liquid markets exist in EU carbon pricing is a major driver of electricity prices
- Market liberalisation and integration will accelerate the process



Impact of Carbon on EU Power Prices

- Forecast Impact of Carbon on EU Power Prices



Increasing Environmental Standards

- Athens process brings EU environmental standards into SEE:
 - Environmental impact assessment from entry into force of the Treaty;
 - Directive 1999/32/EC relating to a reduction of sulphur content in certain liquid fuels and amending Directive 93/12/EEC is to be implemented by 31 December 2011; and
 - LCPD Directive to be implemented by 31 December 2017.
- In addition, contracting parties are to endeavour to accede to the Kyoto Protocol, and to Directive 96/61/EC on integrated pollution prevention and control.
- Future new parties to the energy community required to meet EU standards on environment and safety (e.g. EU-Ukraine Memorandum of Understanding)

Impact of Market Growth

- Rapid demand growth in region
- Significant legacy of older and inefficient plant
- Existing plant likely to be required to maintain security even in face of increasing environmental restrictions
- Significant requirement for new build
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Access to Gas

- New Sources for CEE?
- Security of Supply
- Gas by pipe or gas by wire?
 - Will Russian gas suppliers allow third countries to capture generation margin
 - Will Russian gas suppliers move downstream by generating in consuming markets, reducing losses and avoiding electrical constraints (loop flows, nested constraints etc.)