Hedging in a volatile market

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Commodities Sales, Barclays Capital

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A (very) quick introduction

### Products:

**Energy**
- Oil
- Power & Gas
- Coal
- Emissions

**Metals**
- Industrial Materials
- Precious Metals

**Chemicals & Plastics**
- Polyethylene/PET
- Polypropylene
- PVC

**Other...**
- Agricultural
- Weather
- Freight

### Awards:

**Energy & Commodity Rankings**
- No 1 Cash to three months – Copper, Aluminium and Other Base Metals
- No 1 Forwards/averages swaps to five years - Copper, Aluminium and Other Base Metals
- No 1 Europe ETS allowances trading
- No 1 Europe CERs trading

**Awards for Excellence**
- Best Commodities House

**European Electricity House of the Year**
- March 2007

**Modern Great: Energy/Commodity Derivatives**
- July 2007

**Carbon Market Awards 2007**
- Best Trading Company for two years running
- Commodity-linked MTN House
- March 2007

**Commodity-linked MTN House**
- January 2007

**Risk 20 Awards**
- Modern Great: Energy/Commodity Derivatives
  - July 2007

**EUROMONEY**
- Awards for Excellence
  - July 2007

**Risk**
- Energy & Commodity Rankings
  - Natural Gas
    - No 1 UK NBP curve
  - Electricity
    - No 1 UK day ahead
    - No 1 UK curve
  - Coal
    - No 1 Europe
  - March 2007

**Point Carbon**
- Carbon Market Awards 2007
  - Best Trading Company for two years running
  - March 2007
Agenda

- Factors influencing the price of oil
- Recent trends in the energy sector
- Coping with volatility
- Hedging instruments
- Summary
Market drivers - supply side

- OPEC
- Political Unrest
- Crude Availability / Refinery Problems
- Logistic Problems
- Weather
- Price
Market drivers - demand side

- Strategic Petroleum Reserves
- Weather
- Investment
- Political Unrest
- Strengthening Economies
- Substitution
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Price and volatility of crude has shot up...

Most forms of primary energy have seen substantial increases since 2000... and as they have risen energy prices have become more volatile.
...with predictable impact

Fuel oil prices have unsurprisingly moved up in line with crude oil... and fuel oil volatility has followed suit.

Fuel vs. Brent Crude

Volatility

3-Month Volatility (3.5%)
3-Month Volatility (1.0%)
3-Month Volatility (Brent)
Within the bunker industry some important developments

- Regulation (SECA) driven change in use of bunker fuel
- Ship operators have limited options — all expensive
- 1.0% LSFO traditionally more expensive than 3.5% HSFO
- ...but there may be opportunities as the industry evolves
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Dealing with fuel price volatility

- If fuel costs are floating, are they sufficiently volatile to effect P/L?
- Can we pass our fuel exposure onto customer?
- Do we wish to offer fixed price to clients?
- What is competition doing?
- Assuming we have an exposure, are the board/shareholders satisfied with a no-hedge policy?
If implementing a hedging strategy...

<table>
<thead>
<tr>
<th>Period</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How far down the forward curve do I want to trade?</td>
<td>• Is the product particularly expensive versus crude?</td>
</tr>
<tr>
<td>• Only this year’s budget or beyond?</td>
<td>• Correlation to physical purchase?</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Timing</th>
<th>Financial Instruments</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Hedging at pre-arranged fixed intervals?</td>
<td>• Outright swap</td>
</tr>
<tr>
<td>• Opportunistic timing?</td>
<td>• Call option</td>
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<table>
<thead>
<tr>
<th>Volume</th>
<th></th>
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<tbody>
<tr>
<td>• Percentage volume hedged based on certainty of price direction?</td>
<td>• Zero cost collar</td>
</tr>
<tr>
<td>• Decreasing volumes further out the curve?</td>
<td>• 3-way</td>
</tr>
<tr>
<td></td>
<td>• Increasingly exotic...</td>
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</tbody>
</table>
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- Coping with volatility

- Hedging instruments
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**Swap**

- **Description**
  - A fixed price swap enables the Client to lock in a fixed price for a product over a fixed period of time and a fixed volume
  - A swap is a financial transaction with no exchange of physical product; physical delivery contract with the Client’s normal business partner stays unaffected

- **Benefits**
  - Client is protected against product price increases
  - Client has certainty about the price paid for a product and about the volume
  - Client does not benefit from potential price decreases

<table>
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<tr>
<th>Description</th>
<th>Benefits</th>
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<tbody>
<tr>
<td>Unhedged</td>
<td></td>
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<tr>
<td>Hedged</td>
<td></td>
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<tr>
<td>Potential gains</td>
<td></td>
</tr>
<tr>
<td>Potential losses</td>
<td></td>
</tr>
</tbody>
</table>

**Risks**

- Client pays the difference
- "Client" receives the difference

**Diagram**

- Unhedged
- Hedged
- Potential gains
- Potential losses

**Legend**

- "Client" pays the difference
- Swap Price
- Market Price
Call option (Cap)

Description

- A call option provides the Client protection above the call strike, whilst allowing downside price participation

Benefits

- The Client is protected against oil price increases above the call strike
- The Client participates in downside price movements

Risks

- The Client pays a premium upfront for the call

Settlement Market

Price

The "Client" is protected against higher prices.
(the "Client" receives the difference between the settlement price and the call strike).

The "Client" is exposed to floating prices.
(No payments are made by either parties)
Collar

- A collar is a combination of two options. Client buys a call to limit its exposure to product price increases and sells a put to give up part of the benefits of lower prices.

- The strikes can be set so that the two premiums cancel, or tailored to match a Client’s requirements and markets views but potentially with a premium attached.

- Client is protected against product price increases above the call strike.

- Client participates in downside price movements between the call and the put.

- Client does not benefit from potential price decreases below the put strike.

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<th>Description</th>
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<th>Risks</th>
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<tr>
<td></td>
<td>Client is protected against product</td>
<td>Floor (Put strike)</td>
</tr>
<tr>
<td></td>
<td>price increases above the call strike</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Client participates in downside price</td>
<td>Ceiling (Call strike)</td>
</tr>
<tr>
<td></td>
<td>movements between the call and the put</td>
<td></td>
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<tr>
<td></td>
<td>Client does not benefit from potential</td>
<td></td>
</tr>
<tr>
<td></td>
<td>price decreases below the put strike</td>
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![Diagram showing Unhedged, Hedged, Potential gains, and Potential losses in relation to Market Price and Net Price.]

"Client" pays the difference when the market price is below the put strike.

"Client" receives the difference when the market price is above the call strike.

"Client" participates in the market between the put strike and the call strike. No payments occur.
3-way structure

- Client buys an at-the-money call (or nearly at-the-money) and sells an out-of-the-money call to create a call spread
- Client then sells an out-of-the-money put to finance the call spread
- The total premium paid is zero

Benefits

- Client is protected against oil price increases between the call strikes
- Client participates in downside price movements to the put strike

Risks

- Client has limited protection in price moves above the higher call strike
- Client buys at the put strike on price moves below the put strike
3-way structure (cont’d)

- **“Client” Buys Ceiling (Lower Call strike)**
  - “Client” participates in the market between the put strike and the call strike. No payments occur.

- **“Client” Sells Floor (Put strike)**
  - “Client” pays the difference

- **“Client” Sells Ceiling (Higher Call strike)**
  - “Client” receives the difference

- **Unhedged**
- **Hedged**
- **Potential gains**
- **Potential losses**

A Premier provider of commodities solutions
And increasingly exotic...

- Knock-In / Out structures
- Extendible swaps
- Options on spreads (e.g. 1.0% LSFO vs. 3.5% HSFO)
- Freight
- Commodity-linked FX
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Summary
Summary

• Oil markets will remain tight for many years to come
• Price has now become the balancing factor for the oil market
• Clear benefits to implementing a hedging program
• Choosing the right hedging strategy is key
Final thoughts...

- The 1.5% sulfur bunker market is now well established in the North Sea in addition to the Baltic Sea.

- The Mediterranean is moving towards a lower sulfur environment also. In 2008, Greece is tendering for 1.4 million tons of 1.0% sulfur fuel for utility burn.

- Is there sufficient low-metals, low viscosity 1.0% sulfur refinery production to meet the increased Med utility demand and the new 1.5% sulfur bunker demand?

- In addition, where will the surplus 3.5% sulfur material go – can the Middle East and Asia absorb all of this material?

- These are some of the challenges facing the bunker market in the near term – we can offer solutions...
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