



Carbon Expo 2007

Cross commodity pricing dynamics and sectoral hedging strategies

Louis Redshaw
Head of Environmental Markets

3rd May 2007

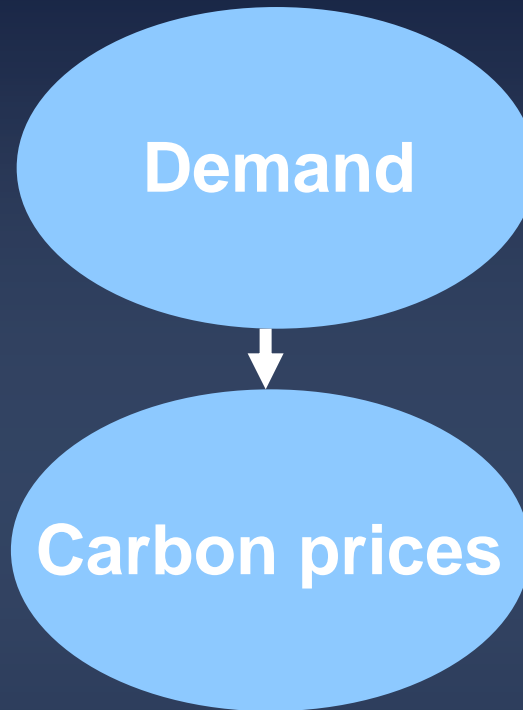
Cross commodity pricing dynamics and sectoral hedging strategies

- Cross commodity pricing dynamics
- Sectoral hedging strategies

Cross commodity pricing dynamics

Carbon prices

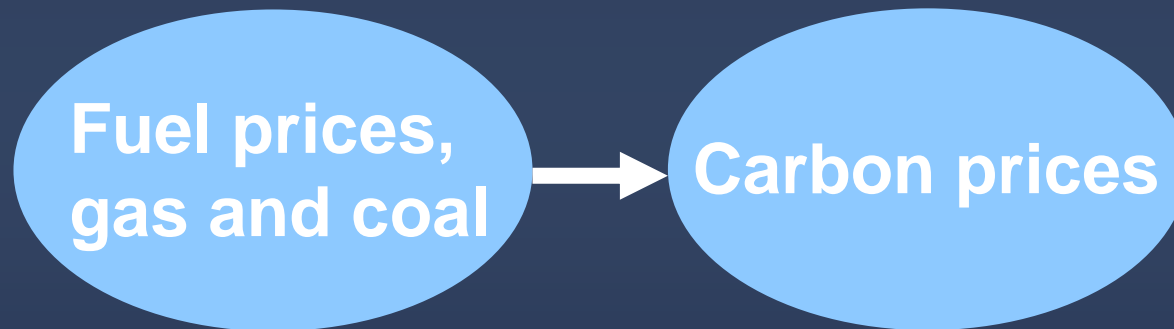
Cross commodity pricing dynamics



Cross commodity pricing dynamics

Carbon prices

Cross commodity pricing dynamics



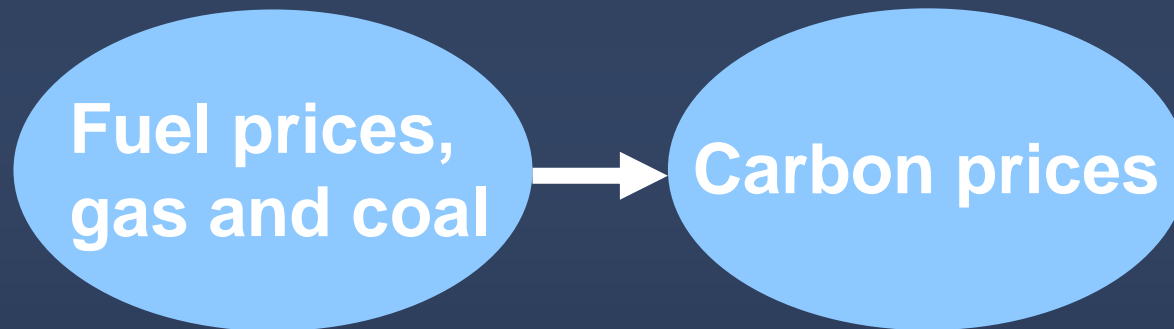
Phase 1 fuel switch vs. carbon price



Phase 2 fuel switch vs. carbon price



Cross commodity pricing dynamics



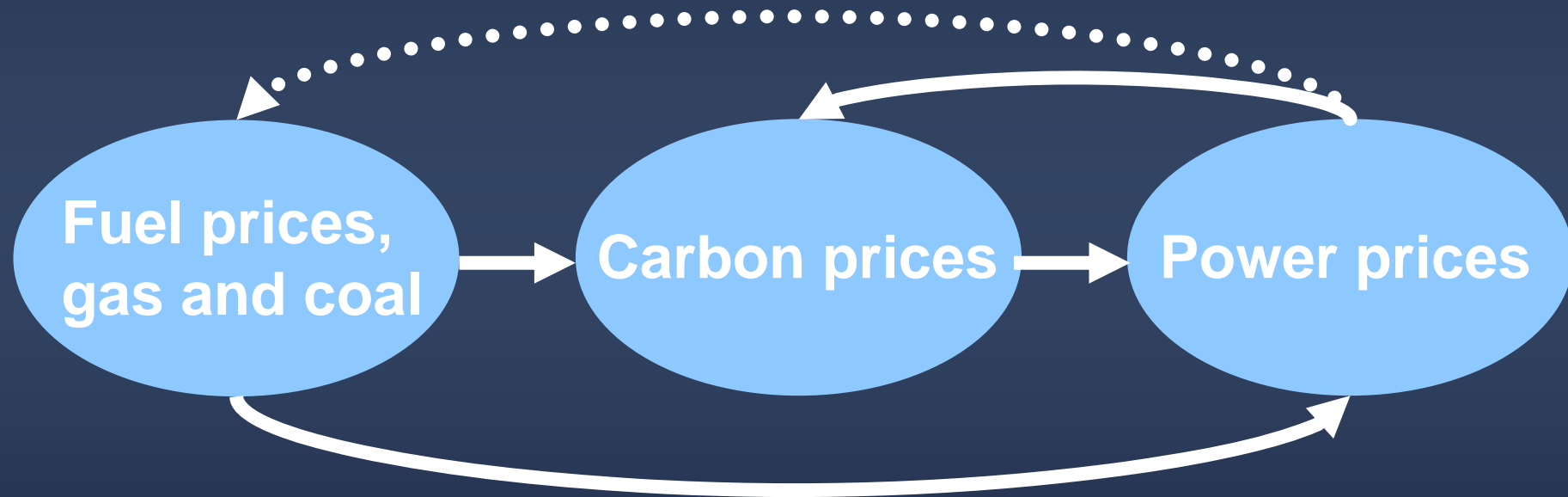
Cross commodity pricing dynamics



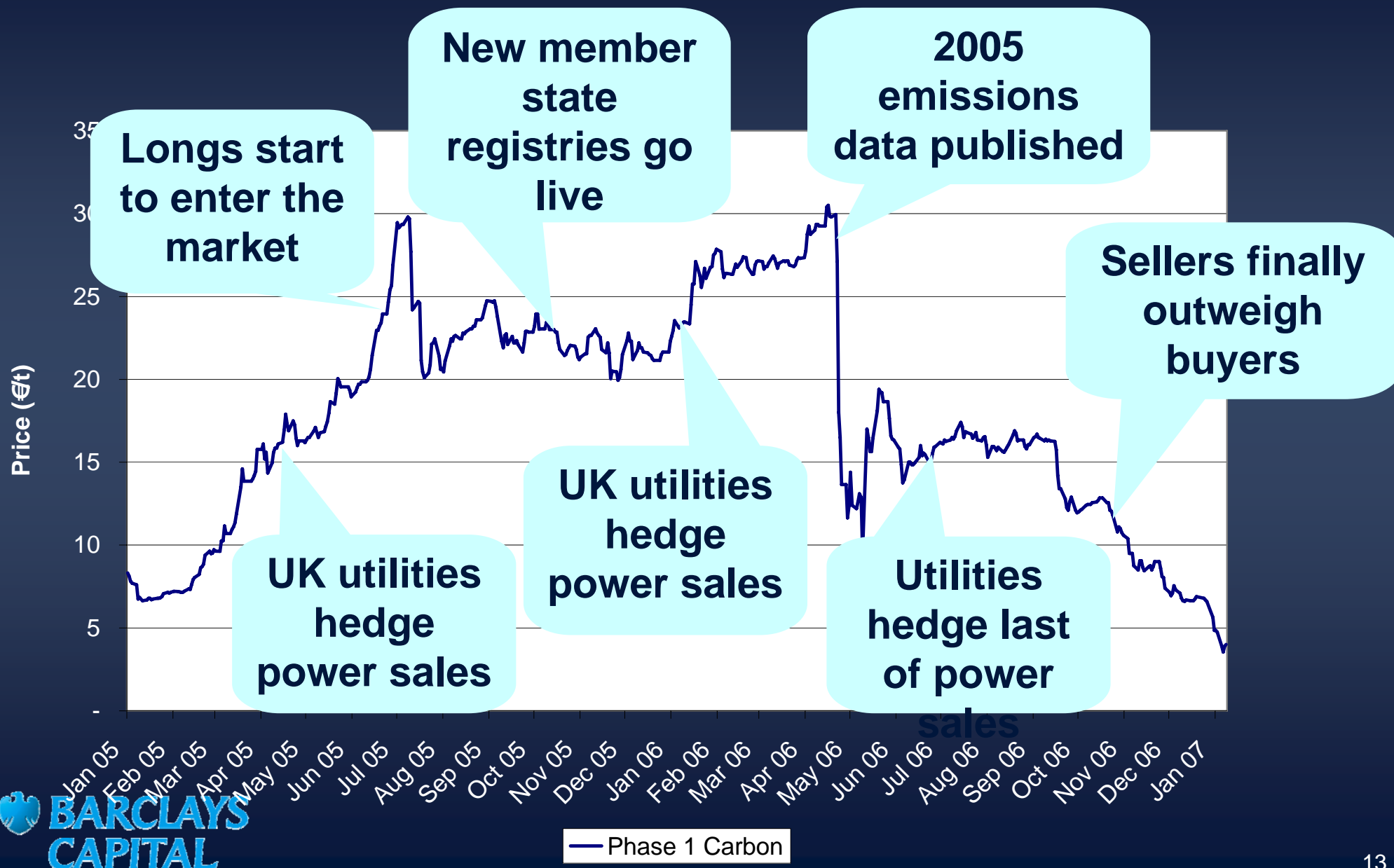
Cross commodity pricing dynamics



Cross commodity pricing dynamics



Market behaviour – hedging timing effects



...hedging strategies also affect prices

Behaviour	Risk Management Strategy

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	Risk averse

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	Risk averse
Actively bet on price moves (by staying or becoming long or short)	

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	Risk averse
Actively bet on price moves (by staying or becoming long or short)	Risk aware

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	Risk averse
Actively bet on price moves (by staying or becoming long or short)	Risk aware
Do nothing (passive bet)	

...hedging strategies also affect prices

Behaviour	Risk Management Strategy
Buy or sell as need	Risk averse
Actively bet on price moves (by staying or becoming long or short)	Risk aware
Do nothing (passive bet)	Risk unaware

Sectoral hedging strategies

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



- Utilities in liberalised electricity markets

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



- Utilities in liberalised electricity markets
- Large industrials

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



- Utilities in liberalised electricity markets
- Large industrials
- Utilities in regulated electricity markets

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



- Utilities in liberalised electricity markets
- Large industrials
- Utilities in regulated electricity markets
- Medium sized industrials and industrial groups

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



- Utilities in liberalised electricity markets
- Large industrials
- Utilities in regulated electricity markets
- Medium sized industrials and industrial groups
- Everyone else

Sectoral hedging strategies

- Strategies are not just sectoral, they can be country specific
- However the generalised sectoral order of risk awareness is:

risk aware



risk unaware

- Utilities in liberalised electricity markets
- Large industrials
- Utilities in regulated electricity markets
- Medium sized industrials and industrial groups
- Everyone else
- Government NERs

Sectoral hedging strategies

- Drivers of hedging strategies seem to be:
 - Immediate need (electricity)
 - Size of position

Sectoral hedging strategies

- Drivers of hedging strategies seem to be:

- Immediate need (electricity)
- Size of position

- Strategies employed were:

- Sell excess as hedge against power prices
- Average in (or out)
- Hope or denial
- Wait and see
- Risk aversion

What strategy is most appropriate?

Future price risks may be significantly driven by:

- Russia
- US
- Canada
- Japan
- Australia
- Fuel prices

What strategy is most appropriate?

Future price risks will be driven by:

- Russia
- US
- Canada
- Japan
- Australia
- Fuel prices
- Other companies' hedging strategies...

What strategy is most appropriate?

Future price risks will be driven by:

- Russia
- US
- Canada
- Japan
- Australia
- Fuel prices
- Other companies' hedging strategies...

Risk awareness

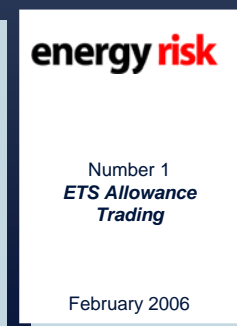
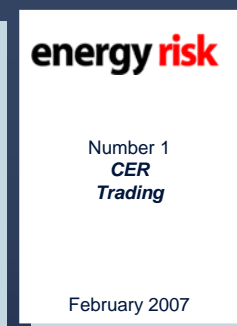
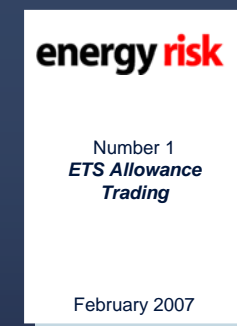
Risk aversion



Carbon Expo 2007

Cross commodity pricing dynamics and sectoral hedging strategies

Email: emissions@barcap.com
Tel: +44 (0)20 7773 5142



Disclaimer

This presentation has been prepared by Barclays Capital - the investment banking division of Barclays Bank PLC and its affiliates worldwide ('Barclays Capital'). By accepting this information, the recipient acknowledges that it will, and it will cause its directors, partners, officers, employees and representatives to, use the information for information and discussion purposes only. This information is confidential and is not to be reproduced or shown, given, forwarded or otherwise distributed to any person outside of the recipient institution in any manner whatsoever, provided, however, that the recipient of this information (and each of its directors, partners, officers, employees, representatives or other agents) may make any disclosure to any and all persons, without limitation of any kind, of the U.S. federal income tax treatment and U.S. federal income tax structure of the transaction (meaning, consistent with Treasury Regulation Section 1.6011-4, any fact that may be relevant to understanding the U.S. federal income tax treatment) and all materials of any kind (including opinions or other tax analyses) of the transaction that are provided to the recipient (or any representative of the recipient) relating to such tax treatment and such tax structure, except that, with respect to any document or similar item that in either case contains information concerning such tax treatment or such tax structure as well as other information, this proviso shall only apply to such portions of the document or similar item that relate to such tax treatment or such tax structure. This presentation is not an offer or a solicitation of an offer or a recommendation to buy or sell any securities or financial instrument, nor shall it be deemed to provide investment, tax, or accounting advice. The views reflected herein are those of Barclays Capital and are subject to change without notice, and Barclays Capital has no obligation to update its opinions or the information in this presentation. The information, including information upon which Barclays' views are based, contained herein (and the data underlying such information) has been obtained from sources that Barclays Capital believes to be reliable but Barclays Capital does not represent or warrant that it is accurate or complete. The information in this publication is not intended to predict actual results, which may differ substantially from those reflected.

Neither Barclays Capital, nor any affiliate, nor any of their respective directors, partners, officers, employees or representatives accepts any liability whatsoever for any direct or consequential loss arising from any use of this presentation or its contents. Barclays Capital and its affiliates and their respective directors, partners, officers, employees, or representatives, including persons involved in the preparation or issuance of this document, may from time to time act as manager, co-manager or underwriter of a public offering or otherwise, in the capacity of principal or agent, deal in, hold or act as market-makers or advisors, brokers or commercial and/or investment bankers in relation to the securities or related derivatives that are discussed in this presentation.

Copyright Barclays Bank PLC (2005). All rights reserved. No part of this publication may be reproduced in any manner without the prior written permission of Barclays Bank PLC. Barclays Bank PLC is registered in England No. 1026167. Registered office 1 Churchill Place, London E14 5HP.

