



Equity and Venture Capital Investment in CCS

Anthony White

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Contact:
Anthony White
+44 (0) 20 7290 7053
awhite@c-c-capital.com

Climate Change **Capital** 

At what carbon price is CCS economic?

Around €25-30/tCO₂e for coal?

But far lower if you can use the CO₂

Difference Between Economics and Financing

Economics
Is it conceptually possible?

- Is it a positive NPV under-taking?
- Are all the component parts economically viable?
- Does it meet a reasonable cost of capital?

Financing
Can you raise the money?

- Are the risks correctly allocated?
- Are risks well managed?
- Is the capital structure right?
- Is there investor appetite?
- What does the asset-class look like?

Issues in clean coal exist in the gap between economics and financing

Hypothetical abatement related investment

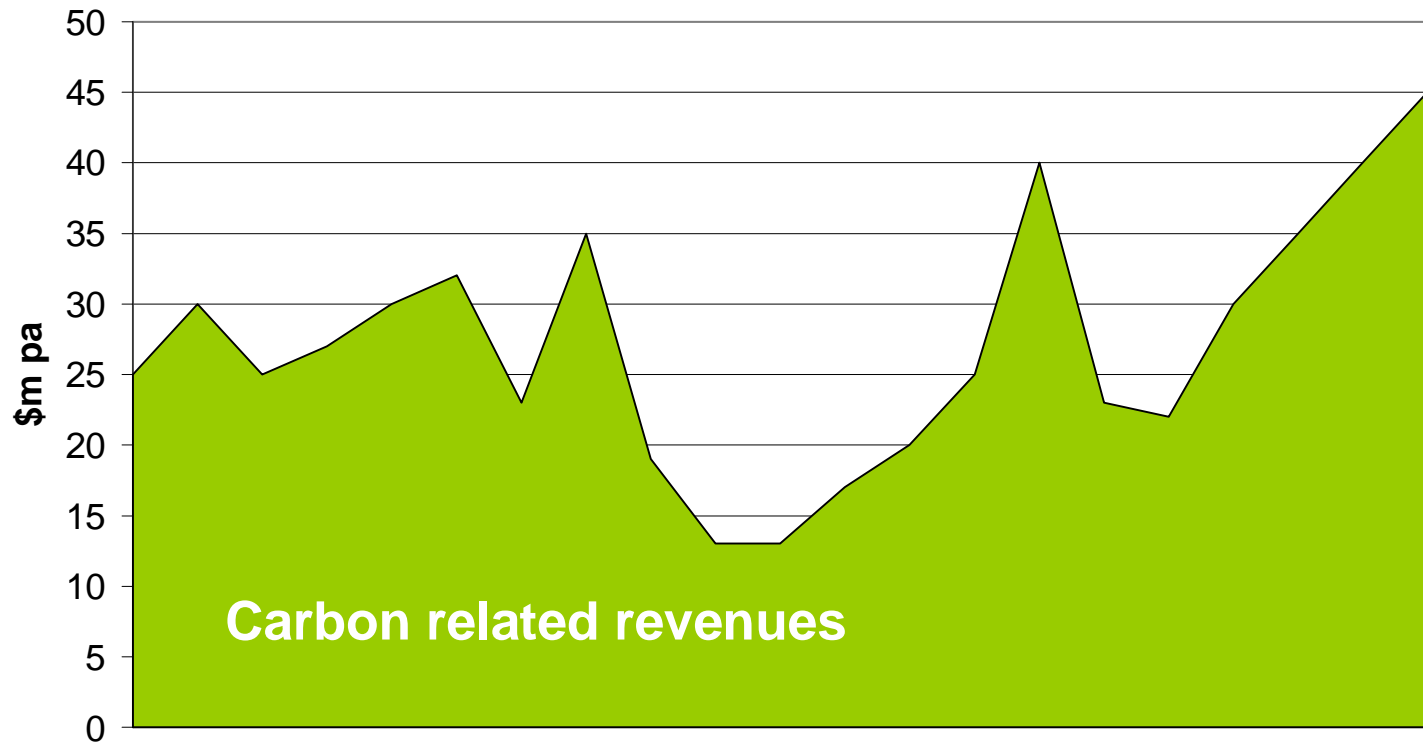
Revenues from Investment

Investment costs
\$200m

NPV of savings
amounts to \$220 m
over period

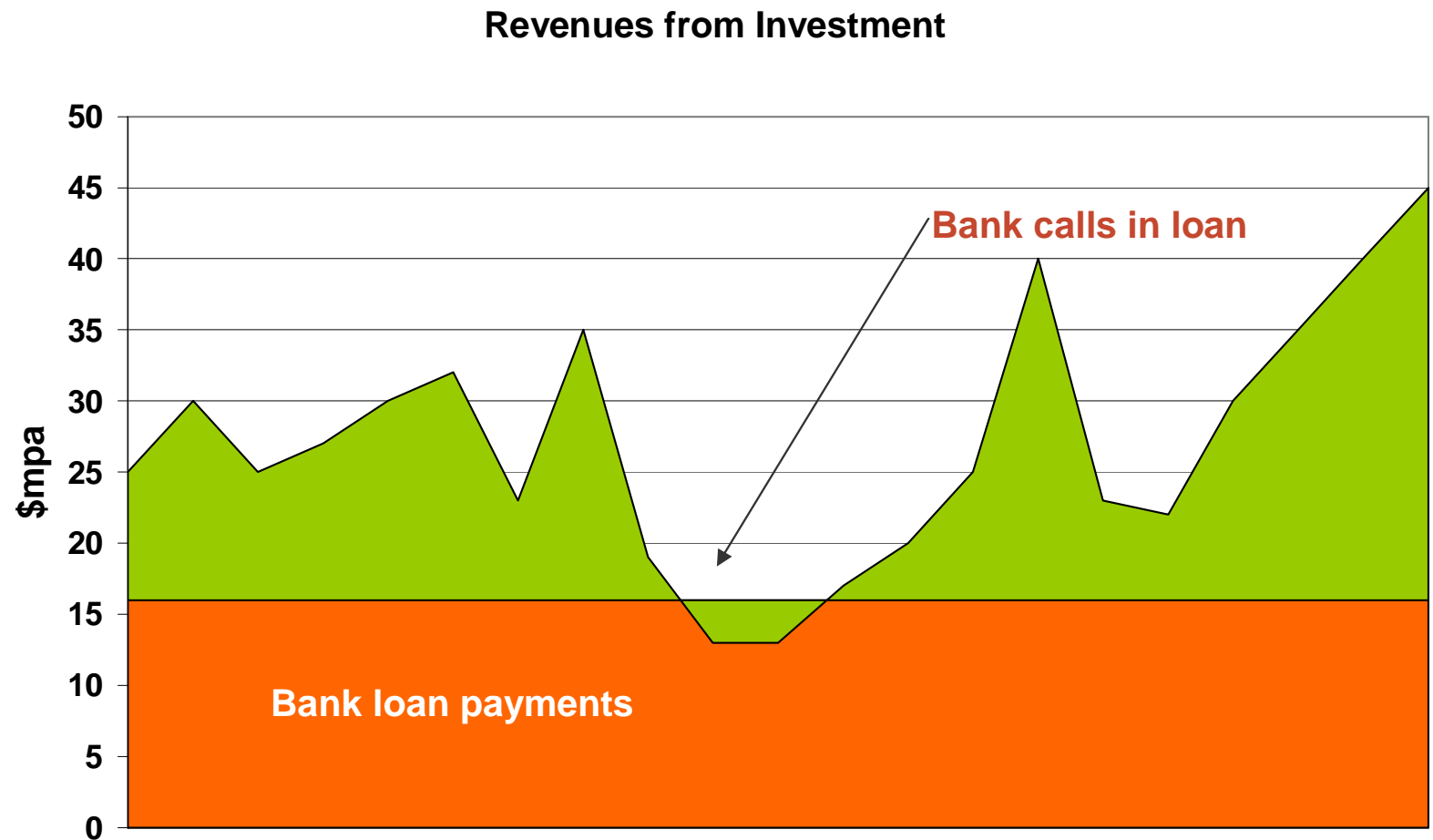
So go ahead?

Can we raise debt?



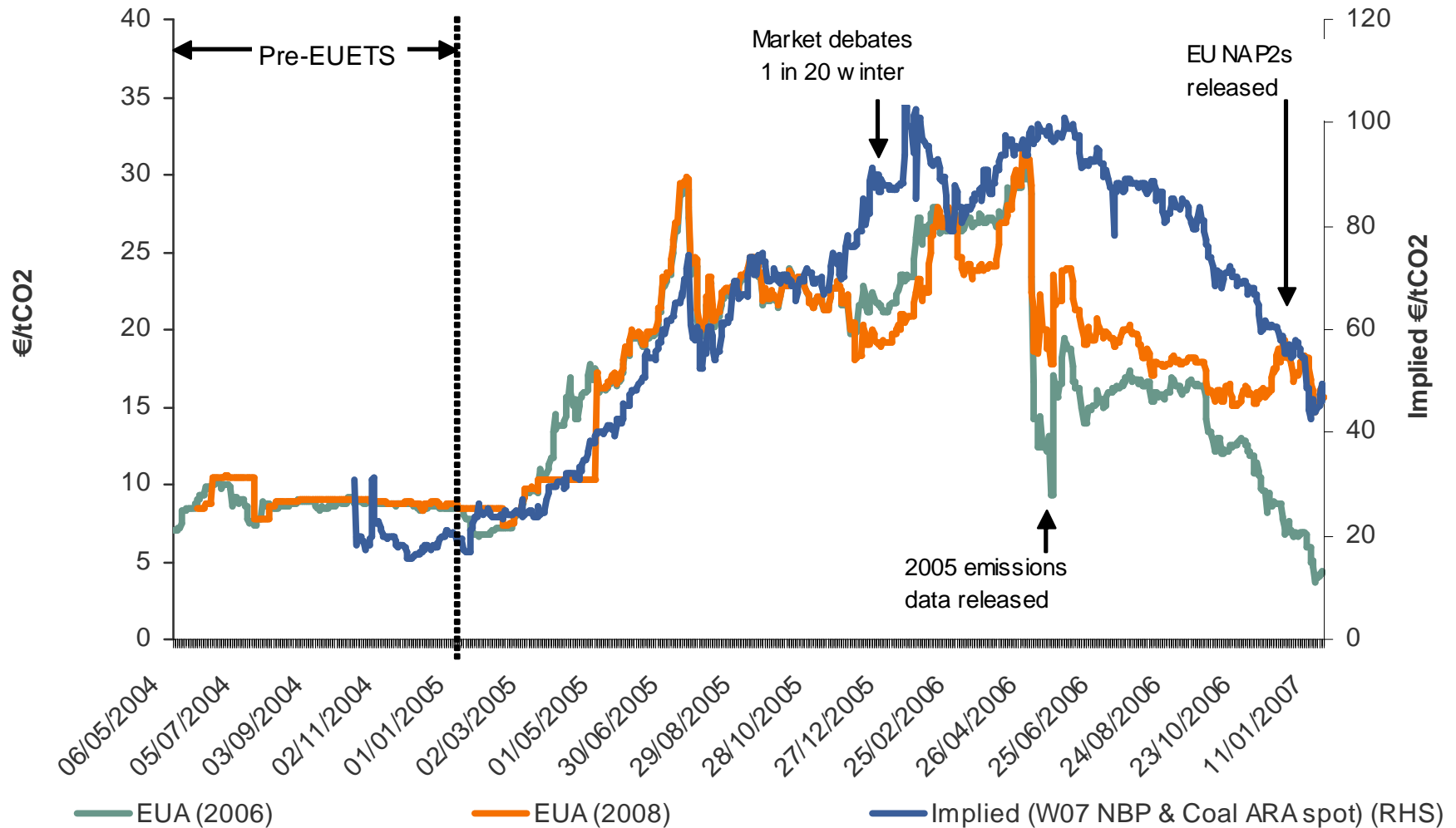
But it helps if you know how low prices can go!

- Bank interest payments of \$16m pa
- Company goes bust
- Lose access to later cash-flows



EU ETS: What has happened?

Historical EUA and UK fuel prices

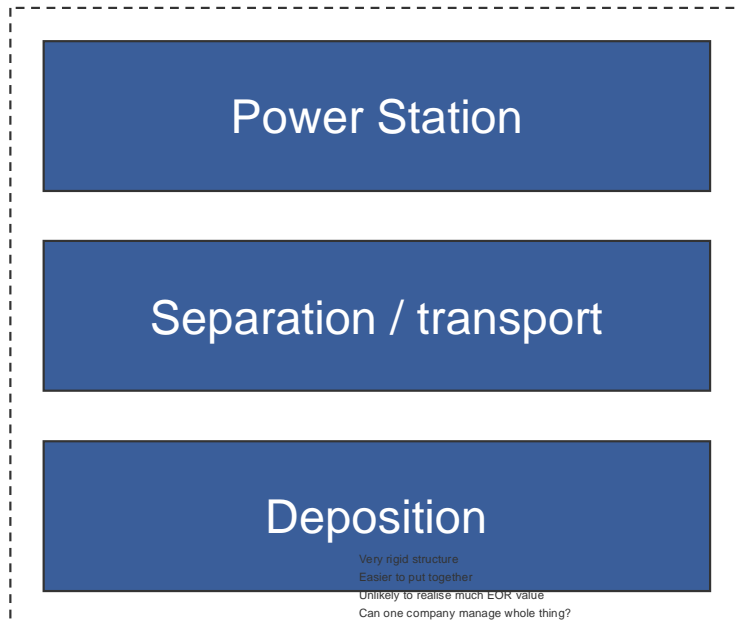


Consequences

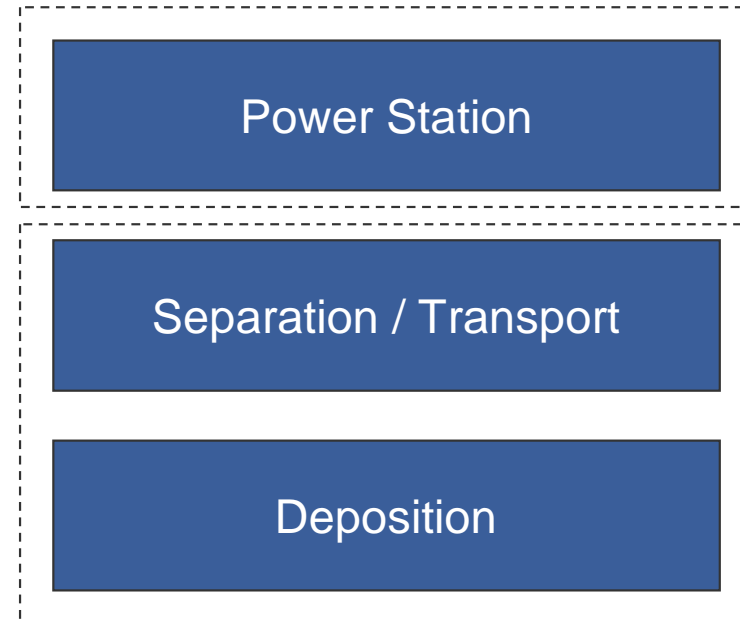
- Prices driven by coal & gas prices AND policy
 - Minimal change in operating behaviour
 - No investment in Europe
 - Large scale investment in developing world
- so a floor to carbon emission costs would be helpful

Carbon Transport and Storage: Financing Issues

Integrated Projects



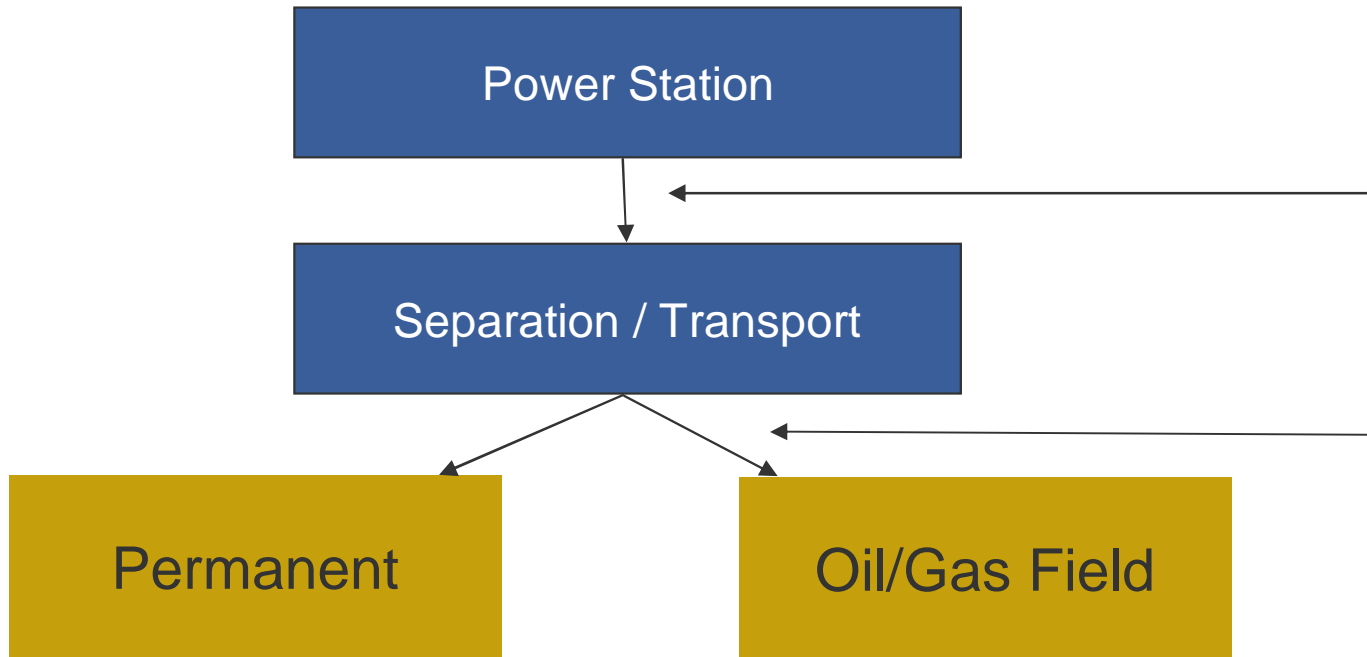
The Value Chain



- Flexible
- Harder to put together
- Requires ability to contract at interfaces
- Better aligns tasks of parties

Who pays?

The Value Chain



Issues

What price CO₂?

Duration?

Credit ratings?

Financial Players

Players

Short term

Long term

Power Station

Venture Capital
Power Companies

Power Companies

Separation / transport

Venture Capital
Energy Companies

Energy Companies
Banks
Private Equity

Deposition

Venture Capital
Energy Companies

Energy Companies
Private Equity

Contact Climate Change Capital



CCC Head Office

Climate Change Capital
49 Grosvenor Street
London W1K 3HP
United Kingdom

Tel: +44 (0)20 7290 7040

Fax: +44 (0)20 7290 7041

www.climatechange-capital.com

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