Strategies for suppliers in a carbon constrained world

Coaltrans, October 2004
Jon Dudas
“Dethroning King Coal” *

- Environmental enemy no. 1
- Google results 1-10 of about 1,960,000 (English) pages for global warming
- Google results 1-20 of about 17,100 images for global warming

* Economist, July 4, 2002

100m sea rise

Lawrence Williams- An End to Global Warming

Mark Maslin
Carbon constrained world a reality

- evidence of global warming due to anthropogenic GHG emissions is mounting

- increasingly clear that a carbon constrained world will become a reality

- multiple initiatives are under way to realise this:
  - UNFCCC (1992) and the Kyoto Protocol (1997) were first steps
  - EU Emissions Trading Scheme (ETS) is the first multilateral trading scheme
    starts January 2005
    will go ahead even if Kyoto is not ratified
  - NSW in Australia commenced emissions trading scheme January 2003
  - Japan and Canada plan to implement their own emissions trading schemes
  - in the USA, support for a scheme to reduce GHG emissions is growing
Technological developments will address this over time

- coal has become cleaner over time: efficiency and emissions reductions

- continuing efforts to improve coal power efficiency levels... both absolute and relative to gas
  - ultra-super critical combustion, oxygen fired combustion, circulating moving bed

- many research programmes for clean coal technologies
  - IGCC
  - chemical looping integrated to CO2 sequestration

  central technologies already proven
  ..... process of integrating them and improving system economics
The EU ETS is a prototype for the future

- in coal marketing and environment related issues, the EU is a leading market
  - to widely use a coal index for swap trading and pricing purposes
  - to implement renewable electricity generation targets and emissions trading scheme

- belief that the EU ETS will become a successful and liquid market
- EU emissions trading scheme is a prototype for implementation elsewhere

Source: TFS
Coal is a major contributor to GHG emissions

- power an easy target for emissions reduction legislation
  - large CO$_2$ emission intensive assets in regulated industry
- within power industry, coal-fired generation (CF) is the most carbon intensive, increasingly under threat from gas fired generation
  - CF generation emits 0.9 t CO$_2$/MWh
  - CCGT gas-fired generation emits 0.4 t CO$_2$/MWh

- globally, CF generation emits 6 066 Mt CO$_2$ or 26 % of global CO$_2$ emissions
- across the EU, CF generation represents 20 % of all CO$_2$ emissions
- CF generation represents 36 % of the emissions in the EU ETS

Coal fired generators AND coal suppliers are facing a significant challenge in the changing regulatory environment

Strategic decisions for coal suppliers

- carbon-constrained world is real…. but policies and regulations remain a moving target
- suppliers must choose response to changes in regulation and fuel markets
- pre-position your company and respond to uncertainty
  - scenarios of the future vary widely
  - strategies need to be flexible and adaptable
  - danger of being left behind…..but also of being too far in front

- the greater the uncertainty, the higher the value of flexibility
- portfolio approach to fuel supply is the optimal approach – coal plus increasing role for renewables and emissions credits

*three generic choices:*

*Wait and see/ Participate / Embrace the opportunity*
Strategic choices for coal suppliers

• **Wait and see**
  – monitor the regulatory environment
  – wait for clarity on rules
  – comply

• **Participate**
  – internal structures in place, small scale trading
    (even before regulation is fully in place)
  – participation in Clean Development Mechanism (CDM) activities

• **Embrace the opportunity**
  – help shape the development of regulation and the market
  – integrate emissions into business
  – new product development
  – global participation
Embrace strategy

• aim to become a market leader in the field

How?
– shape the development of and influence market structure
– new products assist customers to run coal plants optimally
  ……. and burn the maximum amount of coal
– create a liquidly traded market to increase transparency
  ……. reduces the cost of compliance

• but this strategy has its drawbacks:
  – will make mistakes and pay some “school fees”
  – accept some regulatory uncertainty and volatility
  – requires upfront investment without the guarantee of returns
What can be structured?

• An example is the guaranteed delivery of CDM credits
  
  – access a large number of global projects
  – due diligence and contract negotiation
  – manage the credit and delivery risk
  – aggregate credits for multiple utilities
  – carbon credits become “fuel” component
  – augment/ replace utilities’ own reduction activities and credit purchases
  
  – product has the most value as a long term stream of credits
    .......... especially when combined with long term coal contracts
Your CO₂ emissions?

Coal buyer 2004 - 216 g/km of CO₂
Driver career commute - 130 000t

Coal seller 2004 - 9 g/km of CO₂ *
Driver career commute - 1 800t

* [based on cyclist consuming 6.3g of rice and using 22 Kcal/km]
Conclusions

• carbon-constrained world is a reality

• largest impacts of climate change are yet to come:
  – initial responses are **behavioural**
    …. involving energy efficiency improvement, fuel switching, emissions credits
  – **fundamental** investment shifts will follow
    switch to gas, nuclear and renewable generation capacity……
    and clean coal

• the climate change perspective has to be addressed by coal producers and power generators working together

*Together embrace the change and shape the *(our)* future market*