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UNECE Committee on Sustainable Energy

*Forum on Fostering Investment in Cleaner Electricity
Production from Fossil Fuels*

Financing Cleaner Electricity Production from Fossil Fuels

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Aberdeen Asset Management

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The Financial Markets Can Supply the Financing

The global financial markets have the depth and expertise to finance cleaner fossil fuel power plants, if.....

- Proper political and regulatory policies are adopted;
- The risks are known and properly allocated;
- The cost of CO₂ must be internalized;
- The technology must be demonstrated on a commercial scale;
- There must be ways to hedge the risks assigned to the financial parties;

Political and Regulatory Policies

Equity and debt investors favor certainty

- The policy prescription should recognize the need to attract investment
- Adoption of firm policies that aren't subject to significant change when governments change
- Policies should balance the cost of new technologies with the cost of carbon abated

Risk Allocation

Generally, the party that is best able to manage a risk should bear the risk

- Construction risk
- Operational risk
- Environmental liabilities
- Technological risks
- Competing technologies
- Price risk

CO₂ Storage Risk Must Be Resolved

Financial markets will most likely require resolution on the issue of who retains the environmental liability for any future accidental release of CO₂ from permanent storage.

Given the long term nature of CO₂ storage, the financial markets will want some indemnification from the risk of CO₂ releases from permanent storage.

Internalizing the Cost of CO₂

Putting a price on CO₂ is essential if new, more environmentally friendly, fossil fuel plants are to be developed

- Historically, the release of CO₂ did not cost a power producer
- Cap and Trade and a carbon tax both put a price on CO₂
- Cap and Trade may increase the risk to financial parties unless hedging strategies are developed
- Carbon tax may provide more certainty, but may prevent certain projects from achieving financing
- Without putting a price on CO₂, new technologies may not be able to compete with old technology

Technology Must Be Commercially Demonstrated

A project's technology must be commercially demonstrated in order to achieve financing

- Most equity and debt sources are not comfortable taking the technology risk of new processes
 - Funding for research and development is better provided by governments or corporations with a vested interest in the outcome of a technology
- Capital must be able to make a reasonable assessment of the likelihood that a project or company will be able to meet its financial objectives

Natural Gas Combined Cycle

Natural gas combined cycle plants are more easily financed

- Proven technology and therefore present fewer technological risks
- Lower capital cost per megawatt of installed capacity
- Shorter construction period
- Lower carbon emissions and therefore lower environmental liabilities

However, natural gas costs may be more variable, increasing risks to financial parties. In addition, natural gas combined cycle plants still release significant amounts of CO₂.

Integrated Gasification Combined Cycle (IGCC)

IGCC is more challenging to finance today

- Newer, less proven technology, therefore higher technological risks
- Higher capital costs per installed megawatt of capacity than natural gas combined cycle or pulverized coal
- Longer development and construction timeline, increasing financial risks
- Higher CO₂ emissions per megawatt hour than natural gas combined cycle, and the same level as pulverized coal
- Carbon capture technologies are not ready for commercial application

Pulverized Coal

Don't discount pulverized coal technology

- IGCC may have a head start on carbon capture technology, but advancements are likely for pulverized coal
- Given the large installed base of existing pulverized coal generation, developing a commercially viable CO₂ capture system(s) for pulverized coal represents a huge global market
- Several utilities, E&C firms, and industrial gas suppliers have R&D projects for carbon capture from pulverized coal power stations underway