IEA World Energy Outlook 2007 China and India Insights – Coal Trade Workshop Agenda

Tuesday, 26th June 2007
International Energy Agency, 9 rue de la Fédération, Paris

Coal industry experts and IEA Coal Industry Advisory Board Associates are invited to review preliminary results from the IEA's modelling work on coal trade which will be presented at the meeting (attached papers show results from World Energy Outlook 2006). During the meeting, each session will be introduced by a short, two minute presentation outlining key points for debate. The IEA will facilitate discussion by posing many questions; the responses from experts will help draw conclusions and key messages to be published in World Energy Outlook 2007. The meeting will be held under Chatham House Rules.

China and India are already key players in the global energy market, and their role is expected to grow significantly in the future. In the Reference Scenario of IEA's World Energy Outlook 2006, they account for around one-third of the incremental demand for oil between 2004 and 2030, and almost 80% for coal growth. Issues of key importance include the prospects for oil and gas demand/supply balances and import requirements, for indigenous coal supply, for the fuel mix in power generation, and for energy-investment flows, and their implications for the environment and energy security.

A central component of WEO-2007 will be an assessment of the implications of energy trends in China and India for global energy markets and for the world economy. In particular, we will analyse the impact of rising energy needs in these countries on energy security and prices, on investment needs and financing arrangements, and on energy-related greenhouse gas and other emissions. The publication is expected to be completed and released in November 2007.

11:00 Welcome and introductions

11:10 Introduction to IEA World Energy Outlook 2007

- Dr Fatih Birol, Chief Economist, IEA

11:25 Coal Resources and Reserves

- sources of data
- global distribution
- reserves reported by companies
- China and India

Can we assume that reserves will be available to meet demand for the foreseeable future? What recovery rates are assumed in reserve figures? What limits are there to exploitation? For example, can surface mining in India expand significantly given the resulting loss of forest; could coal be mined in Alaska; are there any limits in desert areas such as Mongolia and other regions where water is scarce?

11:45 Coal Demand and Consumption to 2030

- key assumptions
- Reference Scenario - trends in key regions
- High Growth Scenario - impact of strong growth in China and India
- Alternative Policy Scenario - impact of strong environmental policies on coal demand
- China and India

Are the scenarios all plausible? What is the capital cost of coal-fired power plant today and how could it evolve? Do NIMBY issues hinder major coal projects more or less than other major energy projects? What key technologies could change demand forecasts (*e.g.* FGD, IGCC, CCS, Corex, HIsmelt)? Would markets respond in an orderly manner to the growing demand for coal?

12:05 Coal Production to 2030

- key producers: China, USA, Germany (brown), Poland, Russia, South Africa, Australia, Ukraine
- key exporters: Australia, Indonesia, Russia, South Africa, China, Colombia, Vietnam, Canada
- new exporters: Mozambique, Botswana, Zimbabwe, Mongolia, Alaska?
- estimated cost curves for suppliers to international market: steam and coking coal

What views on the ability of China and India to meet rising coal demand from indigenous production? Are there other potential exporters? Will coal quality be maintained into the future as the best reserves deplete? Will Russia push growth in coal-fired power generation to free up natural gas for export (*n.b.* Russia generates over 400 TWh from gas)? Will FGD in the USA allow greater use of indigenous production, e.g. high sulphur coal from the Illinois basin? What is the current rate of cost inflation for key inputs (*e.g.* labour, mobile plant, tyres, belts, explosives, longwalls, continuous miners)? What cost forecasts have been published? How will cost curves evolve in the long term? What is the planning time horizon of mining companies? What investments need to be made in infrastructure (*e.g.* ports, shipping, rail, roads) to ensure coal can be delivered to consumers? Will NIMBY or environmental issues slow development?

12:30 buffet lunch

13:00 International Coal Trade to 2030

- trade pattern in 2005: steam and coking coal
- market drivers (competition between suppliers, alternative fuels, prices and indexes, quality, environmental issues, carbon pricing, taxes/subsidies, paper market, industry consolidation, shipping rates, … and others?)
- Reference Scenario: trade pattern in 2030
- High Growth Scenario: implications on trade pattern in 2030
- Alternative Policy Scenario: impact on trade growth until 2030
- IEA price assumptions

How long before Russia is displaced by a lower cost supplier? What impact India given the wide range of import demand forecasts? Can the Atlantic market realistically be balanced by Pacific suppliers? How much crossover between steam and coking coal trade – will this change?

14:30 Coal Transport

- shipping rates
- rail freight rates

Will shipping rates return to historic norms? Can inflationary pressures (*e.g.* rail car costs, locomotives, vessels) be offset by productivity improvements? Is port congestion in Australia today a forewarning of capacity limits elsewhere? Or can international coal trade continue to grow as forecast? In USA, Russia, China and India, coal is moved over very long distances by rail at around $0.01-0.03/t-km. Is this economically sustainable compared with alternative forms of energy and energy transmission.

15:00 Coal Mining Technology

- impact of technology on productivity
- health and safety

Is mining productivity improving or declining? What are the emerging mining technologies that could improve productivity? Will recovery rates improve? What should China be doing to reduce fatalities?

15:20 Future Perspectives

- What could completely change the outlook for coal?
- Trends can be extrapolated, but step changes are rarely predicted.

Does polygeneration have a role? Will OECD countries import low capital cost plant from non-OECD countries? Are any coal mining companies diversifying into other businesses? What are the short, medium and long-term risks to coal mining businesses? Could liabilities swamp the industry?

15:40 concluding remarks

15:45 close of WEO-2007 workshop

All attendees are invited to remain for the CIAB Associates' meeting, to include presentation of a recent IEA publication *Climate Policy Uncertainty and Investment Risk* (executive summary attached) by Dr Ming YANG, Energy and Environment Economist, IEA Office of Long Term Co-operation and Policy Analysis.

18:00 close of business

19:30 dinner – all attendees are invited to join CIAB Associates at Restaurant de la Tour

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20 June 2007