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KYOTO AND THE FUTURE OF COAL

Natural gas will be more important than the Kyoto Protocol to coal's future

Following the Third Conference of the Parties, one might well imagine that the future of coal is dominated by the prospects for implementation of the Kyoto Protocol. Without any doubt, how—and whether—this ambitious international agreement is implemented will significantly affect coal's prospects. Still, and without gainsaying the significance of Kyoto, the more important feature of coal's future is likely to be an old and familiar one, the possibility for displacement by other fuels. The threat is not so much from oil products as it is from natural gas, whose recent expansion is due far more to its newly found abundance than to its more frequently touted environmental attributes.

Coal does not enjoy any of the intrinsic advantages of oil and natural gas. The internal combustion engine has vouchsafed to oil a virtual monopoly of transportation demand. Natural gas enjoys an ease of handling and environmental attributes that give it clear advantages, where available, in relatively small-scale uses typical of households, commercial establishments and general industry. Coal's only advantage is price. Low cost is not an insignificant advantage, but it is a relative one that depends as much on the competing fuel as it does on coal. Therein lies a threat, no less serious but more real than the prospects for meaningful implementation of the Kyoto Protocol.

Europe

The clearest illustration of coal's vulnerability, and of the interplay with Kyoto, lies in Europe, particularly the western part of the continent. If one were to conduct a thought experiment in which Kyoto were nothing more than the ancient capital of Japan, the outlook for coal in Europe would be no brighter than it is now. Two features dominate coal's prospects in Europe: the removal of domestic subsidy and the evolution of natural gas markets. As long recognized by coal exporters outside Europe, the removal of subsidy will reduce the European coal-producing industry to a mere shadow of its former self and create a nice market for imported coal in Europe. This prospect is based on the current price of oil and oil-parity pricing for natural gas; but the latter is coming under increasing pressure as a result of the development of the European natural gas infrastructure. Unfortunately for coal, the pressure is not for the premium value occasionally ascribed to natural gas to be realized, but for the price of natural gas to sink below that for oil, as it has in North America, the only other well-developed natural gas market. The reason is simple. There is plenty of gas from the North Sea, Russia and Algeria seeking a home in Europe, and increasing capability to deliver it there.

If one is looking for symbols, the Interconnector is likely to be a far more potent threat to the outlook for coal in Europe than Kyoto. The impact of the Interconnector is not to be measured in the relatively small amount of gas that will be delivered to continental Europe, but in the effect it will have in accelerating the transformation of European natural gas markets. That transformation will take time as various forms of by-pass unravel contracts and redefine franchises, but the outcome is not in doubt. Gas-on-gas competition will result in a lower price, below today's oil parity, that will inevitably reduce the share of coal in European energy.

Within Europe, the United Kingdom provides a revealing glimpse of the real threat to coal and of Kyoto's entwining of rhetoric and reality. The UK has been the leader within the European Community both in the removal of subsidy for the domestic industry and in the creation of a competitive natural gas market. The result has been a displacement of coal by natural gas that has been slowed only by the government's insistence on contracts by the two principal domestic generators to provide a better price for the sale of British Coal, and a sporting chance for the new private owners. The UK is also one of the few countries likely to meet the goals set forth in the Rio Treaty, namely, to restrain CO_2 emissions in the year 2000 to 1990 levels. The temptation is undoubtedly strong to credit this result to Britain's concern about global warming, but the memory of Mrs. Thatcher is still too vivid to make such a claim plausible. Still, as that memory recedes, along with New Labour's residual debts to the National Union of Miners, incumbent politicians will not hesitate to credit the final denouement, and likely *coup de grace*, to Kyoto. Such temptation will be even stronger on the continent where the contemporaneous timing will make the claim more superficially plausible.

When we turn to the rest of the world, the outlook for coal varies. Each region must be viewed separately because high transportation cost segments coal markets far more than is true for crude oil. Nevertheless, the varying outlook only reinforces the point that coal's advantage lies only in price.

> *If Kyoto were nothing more than the ancient capital of Japan ....*

United States

In the United States, the outlook for coal is more sanguine. The reason is not the faint chances for Senate ratification of the Kyoto Protocol, but the higher level of natural gas prices since 1994, and the continuing decline in coal prices due to productivity improvements. Were natural gas prices to return to pre-1994 levels, competition would be much tighter and the prospects for coal more restrained. An equal threat would be posed by a further slide in world oil prices from the $15–20 per barrel range experienced since the mid-1980s to something around $10–12 a barrel.

Russia

Coal is a major source of energy in the former Soviet Union, but only because anything resembling a market price has been long suppressed. Russia is the source of the cheap gas that will displace coal in Western Europe, and it has a reasonably developed domestic pipeline system. With the exception of the depleted Donets Basin, coal is located far from the centers of demand, and its historic share is due more to the long-standing socialist attachment to this fuel than to any economic advantage. As employment concerns ease and transportation cost is included in the delivered price, Russian coal output and consumption will decline, regardless of whether Kyoto commitments become binding, or are observed by Russia.

China

No one believes that Chinese coal production or consumption will be constrained by the Kyoto Protocol, but the growth in coal use will not be as robust as usually predicted. Continuing high rates of economic growth are inconsistent with continuing inefficient use of energy in any fuel, including coal. Higher income levels will cause households to switch to cleaner, easier-to-handle fuels, as has been the case with every economy with rising income levels. Moreover, increasingly severe local air pollution will force officials to lean heavily against the industrial use of coal in urban areas.

The fuels to meet this demand are not presently available in China, but the potential demand is recognized in the recent interest in long-distance pipelines to deliver the abundant supplies of natural gas around China into this market. Finally, the possibility of natural gas reserves being found within China cannot be dismissed. Still, however abundant the natural gas and however successful the pipeline projects, the demand for a cleaner, more convenient fuel in urban areas will absorb all of the available supply increments. While the share of coal will diminish markedly in the residential and general industrial sectors, coal will continue to be the primary fuel in the electric utility sector, and the demand for electricity will grow.

Natural Gas: The Likely Key to Coal's Future

No doubt, it will be increasingly hard to discuss either coal or Kyoto without mentioning the other. Coal's standing in the environmentalist demonology—right up there with the motor car—ensures that Kyoto will be invoked as one more reason for limiting coal use. For its part, the coal industry—always and understandably suspicious of environmental arguments—will elevate Kyoto as a grave threat, not just to the coal industry, but to the economy as a whole. These perspectives ignore the changing realities of natural gas supply within energy markets, and they obscure a more important feature in coal's future. After being the fuel that was scarcer and more precious than oil twenty years ago, natural gas has now become, if not as abundant as coal, sufficiently so to be the chief challenger to coal's hold on electric utility markets. This hold is not to be underestimated, but neither is it to be viewed as the natural order. What is happening in Europe could happen elsewhere. And whether in Europe or elsewhere, credit for such a result will be taken by politicians, and given by industry and environmentalists, for Kyoto-inspired policies which would otherwise be hard to discern.

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