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DINNER/DISCUSSION

CLIMATE CHANGE- MITIGATION AND ADAPTATION

Held at the Royal Society on Wednesday 31 January 2001

Sponsored by:

**The Department of the Environment, Transport and the
Regions
The Department of Trade and Industry
Tyndall Centre for Climate Change Research**

In the Chair: **The Rt Hon The Lord Jenkin of Roding**, Chairman, Foundation for Science and Technology

Speakers: **The Rt Hon Michael Meacher MP**, Minister for the Environment, Department of the Environment, Transport and the Regions (DETR)
Professor Michael Grubb, Centre for Environment Policy and Technology, Imperial College
Mr Nick Otter, Director Technology and External Affairs, ALSTOM Power

Mr. Meacher stressed the seriousness of the climate change predictions. Latest predictions from the Shanghai IPCC meeting was that average global temperature may rise by 1.4 to 5.8°C relative to 1990 by 2100. We do not know at what point irreversible damage will occur. A global response is essential; the IPCC estimate that 60 to 70% global reduction in CO₂ emissions are needed to stabilise the climate; our own RECP suggested 60% below 1990 levels by 2050 for the UK. But to cope with the inevitable increase in emissions from developing countries, developed countries may need to reduce emissions by 90%. Kyoto is only the first step, but it is vital to start achieving those targets. Progress is being made in spite of the breakdown of the Hague meeting. The crucial difference between the US and the EU is whether the US can meet its targets by trading instead of thorough domestic restraint. While the EU understand the US problem, there is grave doubt about whether terrestrial sinks are genuine solutions to emission problems – do we know enough about their permanence, and can we be sure they will not be manipulated by creative accounting. His view was that making real cuts in emissions was essential to avoid the predictions of climate change; that this could only come about if energy use was decoupled from economic growth; that all citizens played their part in achieving reductions (individual carbon limits were not an impossibility); and that we adapt processes and living styles.

Professor Grubb discussed the prospects for international agreement on climate change. He outlined the essential elements of the Kyoto protocol and the targets for the industrialised

countries. The Protocol has a double trigger – it comes into force when ratified by 50 countries, which contain 55% of CO₂ emissions from industrialised countries. The US has 36% of these emissions. The Protocol can therefore only come into force if all other industrialised countries agree. As to the targets, the UK will make it, Germany may make it, the EU will be near it, but there is no chance that the US will make their 7% reduction over 1990 levels target. Indeed, current predictions are that they will be 30% over 1990 by 2010, although there is reason to think this is too high. That is why the US, even if they took domestic action needed generous treatment over sinks, and credit for action already taken. There were two issues – bringing Kyoto into force, and enabling the US to join. The non-US industrialised world could, if united, do the first, but it would be wrong to do it without bringing the US along and devising mechanisms, which would allow them to join when appropriate. Pressures from multinationals, realisation of the way the world was going, making sure the various mechanisms work, would be powerful influences on the US. So the EU should join others in bringing Kyoto into force, ensuring that technologies develop which create an export spillover to developing countries to help them reduce emissions, and think seriously about different form of trading and sinks.

Mr. Otter explained the position of ALSTOM – a major power producer centred in Europe, and keen to work with the EU in meeting emission targets. The crucial factors, as ALSTOM saw them, were the global market, with global players, and great potential for growth in developing countries; the changing nature of energy markets, the changing

attitudes of governments as reflected in deregulation and privatisation, and the growing importance of merchant and independent power producers (Utilities are now only 50% of the market – they were 85% in 1985).

Climate change will undoubtedly affect fossil fuel use – the challenge on suppliers of technology will be to mitigate emissions from them, as well as explore other energy sources. ALSTOM's strategy was to assess the implications of climate change, monitor the timeframe of reduction measures, and identify future technology to formulate product strategy. They sought to keep a watching brief on international negotiations and national policies, have key technologies in place, and work with their customers to identify cost effective schemes, with early application. There was a range of technologies covering conventional fuel sources and new ones, as well as those, which reduced emissions e.g. through sequestration. A product could become a business opportunity through emission reduction where that was paid for e.g. the Dutch scheme. ALSTOM had hoped that COP6 would set out clearer rules, but was not surprised that not much was achieved. But in the long run, the picture has not changed, although the time frame has lengthened. Trading schemes, within companies, or industry sectors, or internationally, will continue to develop. But the real bite will come when legislation is enacted.

Before the discussion started, the Chairman invited Dr. Griggs to give a brief summary of the conclusions of the IPCC meeting in Shanghai. Dr. Griggs said that the main conclusion was that there was now new and stronger evidence that global warming was the result of human activity, and that previous estimates of the consequences may be too low. He cited rises in temperature, rising sea levels, decreased snow cover, and increased precipitation, and gave the projection of 1.4 to 5.8°C increase in surface temperature over 1990 to 2010.

Three themes merged in the following discussion – the feasibility of bringing Kyoto into force without the participation of the US; the use of nuclear; and concern over waste in energy use and production. On the first, although it was theoretically possible to do so without US participation, it would clearly be difficult to get unity with all other industrialised countries. It would clearly be easier to do so if there were good prospects of being able to reach agreement with the US over sequestration and trading. A possible way forward would be to try to distinguish between “good” and “bad” sequestration – i.e. those measures, which would lead to a genuine reduction in fossil fuel use, and those, which simply stored it. There was some doubt about the strength of the influences which it had been suggested would play on the US if Kyoto came into force without them. A worry was, that if

industries in the EU and other industrialised countries had to incur costs, or suffer regulation, which US industries did not, the US might have a clear advantage in the market place. Much depended on the length of the gap between EU and US accession, and the perception of the rest of the world on the willingness of the US to sign up eventually. But one should not underestimate the anxiety of developing nations – e.g. China - about global warming – they were more likely in many ways to suffer from, e.g. rising sea levels.

On nuclear, several members felt strongly that, without reliance on nuclear power, it would be difficult to meet the Kyoto targets and impossible to meet the longer term targets of 60 or 70%. In the UK existing nuclear stations would be closing over the next decade; it was irresponsible to wait until closures took place before deciding to build new ones – it would then be too late. Public concerns about safety and about how to deal with nuclear waste were genuine, but could be dealt with by firm political leadership. More difficult was the problem of producing nuclear power at competitive prices; the solution to this might well be ensuring that CO₂ producing fuels paid a price for the environmental damage they caused.

Waste in the use and production of energy was clearly seen as being an important issue to tackle. The existing electricity network, with long distance transmission lines was inefficient and more effort should be put into encouraging and installing embedded generation systems. But waste in use could be tackled even more quickly. Mr. Meacher had said that everyone should contribute to reducing CO₂ emissions; this meant changes of style and energy use in the home as well as elsewhere. It was doubtful if present measures were as effective as they might be.

Although some speakers were concerned over the uncertainties which still lay over the projections, and in particular, the wide spread of opinion about possible increased surface temperature, others considered the scientific evidence solid, and the need to act urgently as proven. There was no single measure, which could tackle the issue; both regulatory and economic measures were needed. Greater use of renewables, vigorous action on waste, active promotion of alternative sources of energy to fossil fuels were vital.

Sir Geoffrey Chipperfield KCB

The discussion was held under the Foundation's Rule that the speakers may be named but those who contribute in the discussion are not. None of the opinions stated are those of the Foundation, since by its nature and constitution, the Foundation is unable to have an opinion.

