

DINNER/DISCUSSION SUMMARY

What next after Copenhagen?

Held at The Royal Society on 2nd June, 2010

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Chair: **The Earl of Selborne KBE FRS**
Chairman, The Foundation for Science and Technology

Speakers: **Professor John Beddington CMG FRS**
Government Chief Scientific Adviser, Government Office for Science
The Lord Jay of Ewelme GCMG
House of Lords and Global Legislators Organisation for a Balanced Environment (GLOBE)
The Lord Oxburgh KBE FRS HonFREng
House of Lords and Chair, University of East Anglia (UEA) Climate Science Assessment Panel

PROFESSOR BEDDINGTON said that Copenhagen had not been the total disaster some people thought. Some success, however modest, had been achieved. The final Accord contained a commitment to limit the increase in global average temperature to no more than 2 °C, and more than 70 countries, accounting for over 80 per cent of global greenhouse gas emissions, had submitted reduction targets. But the pledges which had been given for reductions by 2020 would be unlikely to limit temperature rise to 2°C in 2100. Much more needed to be done. He then showed maps to indicate what the world might look like with rises of 2°C and 4°C. Of course there were many uncertainties with very different effects at different latitudes. But overall there could be real destabilization of climate.

He went on to discuss the position in Britain. The Climate Change Committee had made recommendations which had since been taken forward in legislation. According to these, Britain should reduce its emissions by at least 80 per cent by 2050 and by 34 per cent by 2020. If a global deal could be reached, the target should increase to 42 per cent by 2020. If anything like this was to be achieved, major changes would be necessary in the economy, with a fundamental shift in the way energy was produced and consumed. This would include reduction in demand, substantial electrification of heating and transport, decarbonisation of energy supply by the 2030s, and reduction in emissions from agriculture, waste, industrial processes and international transport by 2050.

He then looked into some of the key energy technologies involved, including offshore wind, wave power, biofuels and nuclear (both fission and fusion). We needed to adapt our society to change as well as to mitigate it. In conclusion he had three main points: if the countries in the Copenhagen Accord fulfilled their pledges, we might be able to prevent average global temperature from rising by more than 2 °C, but only if there were major reductions in emissions after 2020; Britain faced enormous challenges in meeting existing commitments; and we had to plan properly to cope with the risks involved in adaptation to change.

THE LORD JAY spoke first of the political dimensions for climate change of which he had long experience, notably as a sherpa to the Prime Minister at the Gleneagles G8 summit of 2005. Since then there had been growing understanding of the issues, well shown in the Climate Change Act of 2008 which demonstrated the seriousness of the British approach. The current broad consensus within the political and corporate worlds, including civil society generally, created many opportunities. This was particularly important in the business community, which for its own sake had to plan for a low carbon economy. This meant thinking differently

about new energy technologies, and about transport in all its forms (especially car design). There was a need, brought out by the recent (albeit largely irrelevant) fuss at the University of East Anglia, for a clear framework in which science could operate in the future. Scepticism was part of science but did not mean denial.

Copenhagen may not have been the failure which was portrayed afterwards, but there were some worrying aspects. The deal which led up to the Accord lacked any serious contribution from Europe, or more specifically from Britain. Indeed the Europeans seemed largely to have been ignored. The world could not be run by the United States, China, Brazil, South Africa and a few others. Poor countries had also played no effective role. Yet they were the worst affected and had the greatest needs. Leadership in relevant technologies seemed also to be passing elsewhere, in particular to China, India and South Korea. Europe had to do better. He was well aware of varying political circumstances in all countries, but these had eventually to be reconciled if there was to be a global deal. He had hopes for progress in Cancun later this year, but suspected that the critical meeting would be in South Africa in 2012.

THE LORD OXBURGH began by quoting the motto of the Royal Society: *Nullius in Verba* - Scepticism deserved respect. Those who questioned the current broad political consensus on climate change often complained of oversimplification, manipulation of data, doubtful evidence, and misinterpretation of climate history. Two particular complaints were an alleged failure to take proper account of unquantified negative feedbacks (particularly over the role of clouds), and of inaccurate modelling (for example over the so-called hockey stick graph which showed a steep rise in recent average global temperature). We had to take some of these complaints seriously, while standing back and looking at changes as a whole. In doing so we should distinguish short and long term trends, and take account of different ways of assembling data and measuring change. Different places could produce different results. There was, for example, no doubt about reduction of Arctic sea ice, but in Antarctica there were a few advances of glaciers as well as many retreats. It was not easy to measure the precise anthropogenic effects.

At the same time the broad picture was clear. Here he showed pictures of the Earth and its planetary neighbours to show the effects of greenhouse gases on the Earth's atmosphere, which indeed made the Earth a Goldilocks planet, just right for us and life itself. We could now measure the quantity of greenhouse gases in the atmosphere over the last 700,000 years and see the current steep rise. By drastically increasing greenhouse gases, a process which was still accelerating, we were conducting a gigantic

experiment with the Earth whose final results we could not foresee. Of course change might be mitigated but the trend was clear. In conclusion he distinguished two kinds of sceptic about climate change. There were those, engineers as well as scientists, often from other disciplines, who expressed honest doubts; and there were those, sometimes representing vested interests, who were determined to challenge anything like the scientific consensus. Here he recalled the resistance of the tobacco industry to control of smoking in the recent past. In his view the risks of being wrong about climate change were not worth taking. How to convince the world, including politicians, of the gravity of the issues was another matter. This was one of our biggest problems.

IN DISCUSSION the following points were made.

- Not everyone was happy with the models used in climate research, particularly on the role of water vapour and clouds in the upper atmosphere. This remained controversial. Research was continuing.
- The views of the new coalition government on climate issues did not seem different from those of its predecessor. The Climate Change Act was unlikely to be repealed. Good regulation was vital, and we still needed a clear regulatory mechanism. The government had to set the right incentives and disincentives, and deal with the many difficult practical issues involved in creating a low carbon economy.
- Some people, including politicians, remained sceptical about the need for action on climate change. Trust in the science must be restored. This had been damaged by occasional shortcomings in the last report of the Intergovernmental Panel on Climate Change, and events at the University of East Anglia (here Lord Oxburgh's enquiry had fully established the integrity of all concerned). Science could not give absolute certainties but could describe degrees of risk. These were now clearer than ever, and had been appreciated, particularly within the business community.
- Such scientific bodies as the Royal Society had some responsibility for conveying the facts and combating the fictions which surrounded the debate on climate change.
- Time was needed to convey the message more widely. Here there were generational differences. The young often understood things better than their elders who were trapped in the conventional wisdom.
- The industrial revolution had created a consumer philosophy and attitudes towards economic growth which were unsustainable. We had to think again, taking account of pressure for growth, particularly in poor countries. There had to be due respect for national interests which were often divergent. Emphasis in aid policy should be given to science and technology.
- Some still argued that we were exaggerating the anthropogenic effect among the natural fluctuations of climate in history. But evidence to the contrary was strong. We were giving natural change a vicious kick and accelerating change which affected all aspects of life on Earth.
- As we had to continue using fossil fuels, in particular coal, in the immediate future, we had to tackle problems of sequestration of greenhouse gases, and carbon capture and storage. In this respect there had been progress on recognising the sequestration of carbon by forests at Copenhagen. Climate change had wide effects, and should not be looked at by itself. For example it had direct effects on human health, migration within and between countries, and most other environmental problems.

- There had been a slightly misleading argument about the role of geo-engineering in combating climate change. The whole subject needed better definition. Any global measures would need global agreement, and as we knew from Copenhagen, this was always hard to achieve.
- Progress on action to cope with climate change had so far been patchy. There had been more talk than action. Not enough attention had been given to the problems of poor countries, especially in Africa, the least responsible for climate change but the most affected by it.

Sir Crispin Tickell GCMG KCVO

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¹ A report by Sir Muir Russell for UEA on the hacking of e-mails from the CRU was published on 7th July, 2010 – see www.cce-review.org/pdf/FINAL%20REPORT.pdf