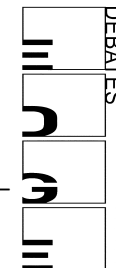


Edge Debate 39 - Engineering the Road to Copenhagen

19th November 2009 – The Residence of the Danish Ambassador, Knightsbridge, London.



Chair: Isobel Hilton – Editor of China Dialogue

Introduction: H.E. Birger Riis-Jorgensen – Danish Ambassador

Speakers:

Anders Hasselager – Danish Energy Agency

Colin Challen MP - Chair: All Party Climate Change Group

Jeremy Leggett - Chairman Solar Century and social entrepreneur

Alison Cooke – Cooke Associates; Chair of IMechE Future Climate Steering Group.

INTRODUCTION

H.E. Birger Riis-Jorgensen – Danish Ambassador

After welcomes, GR-J set out the scene as it stood less than 18 days before the UN Climate Conference start in Copenhagen.

There has been huge progress in the negotiations – in terms of positions and attitudes of many countries over the past 12 months (e.g., USA - their position and now under Obama). There are many other examples of progress.

But the challenge remains huge.

The Danish Prime Minister is involved in intensive consultations with world leaders. In answer to a question last week in Singapore, where he met with Asian-Pacific leaders, including presidents Obama and Hu, Prime Minister Rasmussen said that by focusing on what we can agree, a strong, comprehensive and global agreement is within reach – as evidenced by the world leaders he had consulted.

In the coming weeks this focus should not be distracted by what is not possible – but be routed in the instruments and principles already agreed to lock in the commitments expressed by countries throughout the world.

Denmark believes, an Agreement can be constructed to provide for continued negotiations on a legal agreement as well as immediate action. The Copenhagen Agreement should be political by nature, yet specific and binding on countries committing to targets, to actions or to providing finance.

It should be global, comprehensive and substantial, yet flexible enough to accommodate different national circumstances.

It should finally mandate continued legal negotiations and set a deadline for their conclusion.

In other words: a vision of “one Agreement – two purposes”

It will be ambitious and set the path to limit global warming to a maximum of 2 degrees Celsius as recommended by science.

It will build on already agreed legal instruments and principles - admitting a common, but differentiated responsibility and respective capabilities. The agreement will cover all the key issues and all parts of the Bali mandates.

It will be binding, even if it does not hammer out the last dots of a legally binding instrument, it should produce specific commitment to mitigation and finance for action in the years to come.

It will cover all aspects of the Bali mandates; commitment of developed countries to reductions and of developing countries to actions. The Agreement will build on the principles of the Convention and on the experience of the Kyoto Protocol – to admit continued negotiations with a deadline for agreeing new legal terms.

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There is no intention to push action forward into an uncertain future. Denmark's vision as chair of the conference is that the Agreement will provide for immediate action to commence even before a full new legal framework is agreed and effective.

So that's what the Danish government stands for regarding the approach and the outcome in Copenhagen.

The effects of climate change and the strategies for dealing with it will have an impact in the places where we live and work. Therefore, strategic urban design, master planning and the management of buildings, spaces and places must be essential parts of any sustainable development or climate change strategy.

Scientists, engineers and architects all play an essential role in a move to a low carbon economy and cross disciplinary international collaboration and knowledge sharing is crucial for this move.

Therefore, closer collaboration between government and industry on research and development is critical to stimulate the development of a broad portfolio of low carbon and sustainable technologies and practices. The construction and the built environment infrastructure currently accounts for around 50 per cent of the national carbon emissions only emphasises the importance of this debate.

Danes believe that sustainable design is an integral part of good design. No building, space or place can be considered well designed if it does not contribute to environmental, social and economic sustainability.

PRESENTATIONS

Anders Hasselager: Danish Energy Agency

The objective of the Rio Convention on Climate Change was the stabilization of greenhouse gases.

This was agreed to be achievable at 450ppm through two parallel processes:

- One for industrialised countries - Kyoto
- One for other countries including the USA

Negotiations continue: In November 2009 they are still over 2,000 matters in square brackets

A legally binding agreement may be achieved in Mexico at COP16 involving:

- Long term goals for global emissions
- Country by country commitments

Denmark's own aim is for over 50% electricity to come from wind energy

Colin Challen MP:

It is a widespread misconception that Copenhagen is about creating a new climate change deal. Newspaper headlines of late have pointed to how no deal will be reached next month, and how this spells the end of the world. It is true that Copenhagen was once referred to as the last chance saloon but has now become, in President Obama's words, just a significant step, or in others'; merely a milestone. In reality of course Copenhagen was intended as the end point of the Bali Roadmap, a two year process designed to consider what should be in the second commitment period of the Kyoto Protocol. The Bali Roadmap was intended as a map of two halves – the first year to thrash out the issues, the second year to resolve them in negotiation.



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Clearly, negotiations of such complexity might never have been completed in twelve months, and perhaps it was overly optimistic to think that 189 countries with 189 different national interests could have come to an agreement. I guess the good news is that they are still talking. Perhaps we may yet see a political agreement – whatever that means – emerge from Copenhagen, if not a fully fledged legally binding agreement.

We have until 2012 until the end of the first commitment period, so some will argue that there is still sufficient time to get the agreement we need into place. But with new commitments so far on the table from developed countries showing, in the main their lack of ambition, we have to pause and remember the fact that the first commitment was a failure, that is more specifically a failure of policy even amongst those countries, mainly in Europe who met their Kyoto targets. A great many of these countries were the so-called EIT group – the Economies in Transition group of former Communist countries whose economies collapsed. In Germany's case, some of their success meeting Kyoto targets came from the same source, though re-unification and the collapse of East German industry. In the British case, some of our success can be attributed to the dash for gas. The UK government itself claims no more than 15% of the credit for its policies on greenhouse gas emissions reductions.

This European success story leads to some strange outcomes. The EIT countries, having seen massive reductions in greenhouse gas emissions now feel they should be able, even within new limits to increase their output. Russia has so many credits for this so-called hot air that it barely faces any serious constraint. Indeed, most countries which are involved in the UNFCCC talks will be able to make a reasonable claim that their emissions should, at least in the near future be allowed to rise. Many will point to the US and China and argue that the two countries responsible for over half of global emissions do the heavy lifting.

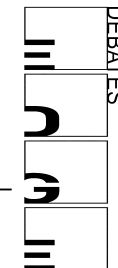
It now seems plausible that China could be the country to take a lead on this, since the American political system seems weighted against Obama securing enough domestic support to sign a redrawn Kyoto treaty on climate change. But China has with some justification made the point that since most of its greenhouse gas emissions growth was caused by the West's demand for cheap Chinese manufactured goods, it is the consumer of those goods who should pay for their external environmental costs. When some in the US, as they did under the Bush administration, argued that US carbon intensity was falling, they omitted to mention that much of this was due to the relocation of industry to China – a problem all Western economies have faced, and which has largely been ignored in our self-congratulatory smugness for hitting our targets.

What we must fear coming out of Copenhagen is a political commitment predicated on the idea that different countries may go away and simply come back with national offers and the hope that patched together these will suffice. This apparently is the approach favoured by Obama, and considering the difficulties he faces getting climate change legislation onto the statute book one can well understand his problem. Any serious attempt at legislation cannot even be called climate change, but must be known by some euphemism lest the horses are scared away. As in cowboy films, one slap on a senate horse's backside could start a stampede.

Obama has his own deadline, which is to get something onto the statute book by November of next year, which is when the mid-term elections take place. Many pundits foresee a slight Republican comeback by then, and the Democrats' majority in Congress will be put under more pressure. Even now, with a 60 seat majority in the Senate, it seems unlikely that Obama could get the 66 votes constitutionally required to pass an international treaty. I imagine that anything with the name Kyoto on it comes with a lot of baggage – hence Obama's desire to forge something new out of these talks.

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Having said that, we must look to the consequences of yet more delay. Prof. Schellnhuber, Chancellor Merkel's climate change advisor, has outlined the scale of the task. He said that if emissions peak in 2010—next year—we will need an annual cut of 2 per cent. If we are to halve global emissions by 2050, relative to 1990. If the peak occurs in 2015, which is when the IPCC says that we should reach it, the annual cut required increases to 3.6 per cent. If we peak in 2020, which is the most likely possibility in the mind of a realistic optimist, that translates into a 6 per cent. annual cut in greenhouse gas emissions. If the peak happens in 2025, which is perhaps bordering on the pessimistic, the figure is 12 per cent. If we go to 2030, which is not that far away, the annual cut is 22 per cent.

Outside of recession or industrial collapse no country has even achieved a sustained 2% annual cut. To a certain degree we have managed to contain increases, and in the UK we have certainly managed to decarbonise GDP growth quite well. But our task is to cut, cut, cut and this on a global scale seems intractable.

So, we have to lead. The UK and EU, in aiming to contain a temperature increase to within two degrees, have established a bold target, albeit that when one looks at the figures behind the headline it begins to fall apart somewhat, with no clear sign of what exactly is our target atmospheric concentration of CO₂. The UK's CCC has set our now legally binding budgets on what amounts to a less than 50/50 chance of success, and some, such as Aubrey Mayer of the GCI, or Kevin Anderson of Tyndall Centre have suggested where the CCC's analysis may be flawed. There is more than a strong possibility that an optimism bias has crept in. In political terms this means that if we are provided with a target range of say 80 to 95% GHG cuts, we'll go for the lower end, and still claim that our policies are in line with the science. But when, as reported this week that carbon sink failure might be worse than believed, our optimism bias seems misplaced.

What does all this mean for practical, concrete action? There is much talk of a green industrial revolution, but the timidity of governments, especially in the throes of this recession prevents us from taking the challenge up on the scale required. For example, in light of the fact that European electricity consumption in 2008 was something like 70 terrawatt hours, and the potential for renewable generation has been put at over 200 TWh one wonders what is holding us back? Bearing in mind what Schellnhuber has told us about the impact of different peak years on subsequent GHG reductions, why are we messing about with coal and nuclear? Neither of those technologies could produce a new green watt of electricity until 2025, and I suspect for nuclear, capacity over and above what we already have will not come until the 2030s. In the meantime we would be replacing like for like, which does nothing to address emissions cuts. But the government believes that both CCS and nuclear will contribute towards the 40% of clean generation that the EU's 20:20:20 targets demand in just ten years time.

Clearly, and in conclusion, the building sector, responsible for 40% of our emissions should be seen as the place to go hunting for the low hanging fruit. This should be approached through behavioural as well as physical measures. A boiler replacement programme, insulation and all the rest are no-brainer steps that should be taken with a plan akin to the replacement of town gas with North Sea Gas. But that alone would not be enough, and clearly neither is the government's plans for zero carbon new build. Alongside energy efficiency measures we need personal carbon allowances, to induce behavioural change. Reliance upon voluntarism simply does not produce the transformation in the economy that is required. Had we relied upon voluntarism 60 years ago the war would have been lost.

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Jeremy Leggett – Solar Century

JL started in the oil industry as a consultant for BP and Shell. He left the industry in 1989, after being persuaded by research showing the relationship between CO₂ emissions and global warming, to become chief scientist at Greenpeace.

He set up the ‘third phase’ of his career when he founded Solar Century to manufacture photovoltaic solar panels.

A long time sceptic about governments’ abilities to solve the climate change problem, he saw the main chance of resolution lying with an axis between leading businesses and concerned consumers.

As an observer and commentator on international climate change negotiations from their outset, he mapped a brief history:

- 1990 Geneva - where the issues were understood and small countries pleaded for action
- 1995 Berlin - where legally binding targets were discussed
- 1997 Kyoto - where the protocol achieved them
- 2006 The year of magazines, the horror of the Bush years, the Stern Review - all had become amplifying adverse factors
- 2008 Obama elected.
- 2009 Despite the change in political rhetoric, uncertainty and disinformation was rife in USA – e.g., in 2008, 70% of Americans thought climate change was man made; by the end of 2009 only 50% thought this.

If Copenhagen is to fail (as seems likely) it must fail noisily – there is too much at stake and too little time to deal with it to accept fudged agreements and communiqués.

Climate change is a vast global threat. The survival of some species and societies is already beyond redemption.

Yet there are well understood technologies available for survival; the world could be powered by renewables within 20 years if there was any will to do so. But in practice there isn’t and it won’t be. Psychologists and anthropologists are needed to say why.

Current indications are, if anything, gloomier with quasi-institutional denial (evidenced for example by the licensing of tar sands exploitation).

There is no simple solution. As things stand, a tipping point will need to be reached that will make the issue go crazy-viral.

Direct action might be the only means of stimulating the change needed.

Traction would occur if enough private individuals moved their money from ‘big oil’, ‘business-as-usual’ corporations and the institutions that fund them, to reinvest it in progressive renewable energy and LZC businesses. The latter offered good returns - indeed, scope to plough usurious returns towards ethical causes (as Solar Century does – in supporting communities in Sub-Saharan Africa).

Dr Alison Cooke - Cooke Associates;

AC’s passion was to ensure that her children will enjoy the same quality of life that she has enjoyed – as set out by Bruntland’s definition of sustainability.

Her experience of Copenhagen 2009 was positive – unlike the anticipated outcome of COP15 under discussion.

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Copenhagen 2009 saw the first international gathering of professional engineers to discuss national energy plans for 2050.

She amid engineers from 10 countries presented to an audience that included ambassadors, other diplomats, planners, economists, COP15 negotiators and their like.

AC had presented a paper on the Institution of Mechanical Engineers Report "Future Climate - the IMechE UK Energy Plan for 2050" – an holistic national energy/carbon scenario plan covering both supply and demand ends with a balance of measures timetabled to fit within UK's target carbon trajectory to 2050.

http://www.imeche.org/Libraries/Key_Themes/IMechE_UK_Energy_2050_Report.sflb.ashx

She observed there other like scenario plans presented by engineers from other countries.

These plans dealt with different national circumstances and thus involved different ways and means.

She contrasted carbon targets from a number of countries and observed that UK appeared to be one of the early leaders. She asked of the (mainly British) audience how many knew their carbon foot-prints?

But she reported that the Conference demonstrated that viable technical solutions to deal with individual nations' carbon challenges were understood and fairly well developed by the national engineering communities present. Further, there was scope and enthusiasm to share some common problem-solving.

So she left the conference with confidence that the challenges could be resolved sanely at a technical level.

But it involved a third form of industrial revolution – this time a global one.

The difficulty lay in securing and harnessing political will on an international scale to understand and drive through the changes needed. If politicians could also promote 'open-book' collaboration, it would much simplify the task.

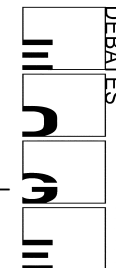
But she acknowledged that the challenge was complex – both in engineering terms (which political structures struggle with) but also then in societal terms which was their domain and not engineers'.

Engineers were positive that technology is there – political comprehension and will is needed. But Engineers were up for the challenge!



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Discussion:

Climate Change must feature in the next election - professional institutes need to shout from the rooftops that these things matter.

The UK has some of the best targets in the world, but the planners are resistant to their implementation. Education is required and needs to be increased

The professions need to take more responsibility - currently we are planning 50% more buildings. We should prioritise maintenance of existing buildings over the building of new ones. The wars in Iraq and Afghanistan show that we can find resources for priorities if desired.

We have been looking at different ways of achieving zero-carbon emissions for over twenty years and we have the technology available now if we want to deploy it. If we are to achieve anything we need to get Joe Public to demand change.

Education is hugely important and working with schools in particular

The feed-in tariff in Germany has created a market for renewable energy that has taken off. Whitehall has a lot to answer for!

We need to aim at buildings using 13W/m² the current average is 30W/m². We need to walk the talk.

Energy needs to be made expensive to make people responsible. Denmark's goal is to reduce per capita emissions from 10 to 2 tonnes of carbon per annum.

Where is the authority over what we, as professionals, do. Do we need to swear an oath?

Can we work out how to fund the developing nations to achieve carbon reductions? The difficulties of achieving reductions are far more achievable in new development rather than retrofitting the old.

There is no sense of urgency - Should a group of like-minded countries agree to show the way and go it alone?

We should use investment as activism. Not aid but pump-priming funds

The new politics has no constituency, but there must be a political debate on climate change, preferably on television, and a government campaign for action on CO₂.

See also Hattie Hartman's blog at <http://blog.emap.com/footprint/2009/11/23/edge-calls-for-professional-activism/>

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