



GHGT *Times* 10

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Next Venue
Next venue of the GHGT-11 will be in Kyoto in Japan from 18 to 22 November 2012

Friday
24 September 2010

CCS finds the way to reality

A high-level panel debate, chaired by former Dutch Prime Minister Ruud Lubbers, closed the 10th International Conference on Greenhouse Gas Control Technologies in style.

Yesterday, the debate showed that CCS is taken seriously as a low-

carbon technology, but still a lot of issues have to be solved: not only scientific and technological, but also economical, political and social.

The panel consisted of opinion leaders from different stakeholders; from industry and politics to science and NGOs. Main topics were

the position of CCS within a low-carbon energy system and the way politics, industry and science should deal with the technology. The debate showed that all of these parties take CCS into their considerations: some as opponents, some as advocates, some still don't know their position.

Next venue of the GHGT-11 will be in Kyoto in Japan from 18 to 22 November 2012. As a symbol for passing the baton, chairman of the organising committee Chris Hendriks presented some large pictures as a present to prof. Kaya from the Research Institute of Innovative Technology for the Earth (RITE).



Some voting statistics

During the plenary discussion, the public voted on several statements. Almost half of the 500 voters were scientists and some 40% worked in industry and they came to sometimes surprising votes.

The first question was: "Is CCS a good idea?" Not very surprisingly at a CCS conference, the large majority was in favour. According to 90% of the public CCS is needed in climate change portfolios. But also CCS opponents were present (6%). One in six people thought he or she did not know enough to express their opinion. Science was a little bit less positive on CCS than industry.

On the question if CCS technology should be freely accessible for developing countries, a small majority agreed. The North American participants however disagreed in majority, and thus found Intellectual Property more important. A remarkably large part (three quarters) of

the public thinks that CCS has no future without a strong international climate agreement. And a similar amount (70%) thinks that coal has no future without CCS.

Both science and industry are strongly of the opinion that governments should take the lead in introducing CCS. Only one quarter pointed at the industry. The affiliation did not influence the opinion.

In the end the costs of large-scale implementation should be paid by the polluter, said 80% of the voters. That did not imply that government funds are not needed to bridge "the valley of death" (Bert Metz, European Climate Foundation).

Last but not least: about half of the public did not think stimulating CCS would cause a slowdown of the implementation of renewables. "Renewables and CCS are complementary and can help each other," said panel member Jeff Chapman (CCS Association, UK).

40 years of CCS, and still at the front

The 10th international conference on Greenhouse Gas Control Technologies welcomed one special guest this week. Back in the 70s, Meyer Steinberg was one of the first scientists to investigate the possibility of removing carbon dioxide from the atmosphere. "I am really proud that the issue has grown to this, a conference visited by almost 1600 scientists," said the chemical engineer, now 86 years old.



Looking at the career of Meyer Steinberg is a brief history of modern energy. Steinberg was working at the nuclear Manhattan Project in Los Alamos in the fifties and sixties. At the time, nuclear energy

seemed to be 'too cheap to meter', so some first ideas occurred about electrolysis of water and CO₂. "By electrolysis, we could have had a complete basis for organic chemistry," Steinberg recalls.

It was Steinberg's first engagement with CO₂. But nuclear energy did not fly that high. Around the sixties, CO₂ came up again, but now as a greenhouse gas. "Around 1970, the head of the Basic Sciences division of the US Department of Energy asked me to look into something he came across: removal, recovery and disposal of carbon dioxide. We did many studies, although not many people were interested in this topic. We especially looked into storage in oceans, which is not a topic anymore."

"Capture was boosted around 1988, when James Hansen of NASA alerted the world about climate change. In 1990, Wim Turkenburg

visited me at Brookhaven National Laboratory." The rest is history. There and then, the foundation was laid for the first International Conference on Carbon Dioxide Removal 1992, and nine other conferences on CCS thereafter.

Meyer Steinberg attended them all. And although he retired, he is still consulting on CCS. In 1999 he was co-author of a book and nowadays he works on 'coelectrolysis' (getting syngas from water and CO₂). "I am still very interested. Unlike 40 years ago, the global warming issue has been recognised widely; the present dip is only temporarily. I believe in CCS."

Quotes & Tweets

Bo Diczfalussy, International Energy Agency:

"Concerning scenarios, the IEA moves from a descriptive state to a prescriptive state"

Ruud Lubbers, Rotterdam Climate Initiative:

"The US and the EU should take the lead. We should not wait for a global climate treaty. That is more practical than negotiating again"

Bert Metz (European Climate Foundation) in reaction:

"Since Copenhagen, this is actually the case. The problem is that it is not fast enough"

Dave Hawkins (Natural Resources Defense Council, USA):

"As long as CCS is something coming from a fossil fuels industry that does not take its responsibility, CCS has a credibility problem"

Bert Metz:

"If CCS wants to bridge the 'Valley of Death' between R&D and implementation, CO₂ prices will not increase fast enough. Only regulatory measures work"

Greenman Award



During the closing session the so-called Greenman awards were presented by Kelly Thambimuthu to Howard Herzog and Peter Cook (picture). The chairman of the IEA GHG programme explained that the awards are given to honour important contributions toward harnessing technology for mitigation of greenhouse gas emissions. Herzog was 'speechless' - which he admitted was very rare - and Cook was 'staggered and humble'.

“A success, in many aspects”

In many aspects, the organising committee of the GHGT-10 looks back on a successful conference.

Wim Turkenburg, head of the programme committee: “Despite the economic situation, the growing opposition against climate change policies in general and against CCS in particular, the attendance was large: almost 1600 people. But even more important: our theme, ‘from research to reality’, was confirmed in many ways. The presentations, posters and the exhibition showed that science is coming down from the ivory tower and industry is very interested.”

One way science shows to become more aware of the outside world is the increase in social research. Turkenburg: “In general, science is deepened. But now we pay more attention to aspects like public

perception. We are really learning a lot there.”

Being a member of the organising committee he did not have the chance to see as many presentations as he would have liked. However, Turkenburg is well aware of the increasing insights in capture and storage. “If I look at capture today, I must admit increasing the efficiency will take more effort than we expected in 1992. Probably, that will mean that capture will stay more expensive than we expected.”

“Regarding storage, this conference leads to the conclusion that generic remarks about theoretical, technical, economic or social potential simply are not possible. Every storage site is unique, as several speakers confirmed. We will have to communicate that better to the outside world.”

CCS and biomass, a new marriage for sharp emission reductions

CCS and biomass are both really necessary in the energy package to achieve sharp cuts in the world’s greenhouse gas emissions in the next decades. Both groups of technologies do not necessarily have to be combined. But if the world would leave one of both out of the energy systems, costs of sharp emission reduction will rise considerably.

During the GHGT-10, biomass was mentioned at many places in one breath with capture and storage of CO₂. When they are applied together, you could create negative emissions. Already at the kick-off on Monday, two keynotes mentioned that negative emissions in the second half of the century are a way to keep costs and cuts lower in the first half of the century. At

several other sessions the topics returned, confirming the growing interest in biomass and CCS.

A large number of scenarios enforced the position of both CCS and biomass in several sessions: from the IEA, the Joint Global Change Research Institute, the Potsdam Institute for Climate Impact Research, the Energy Research Centre of the Netherlands (ECN), Columbia University and many others.

Co-firing biomass

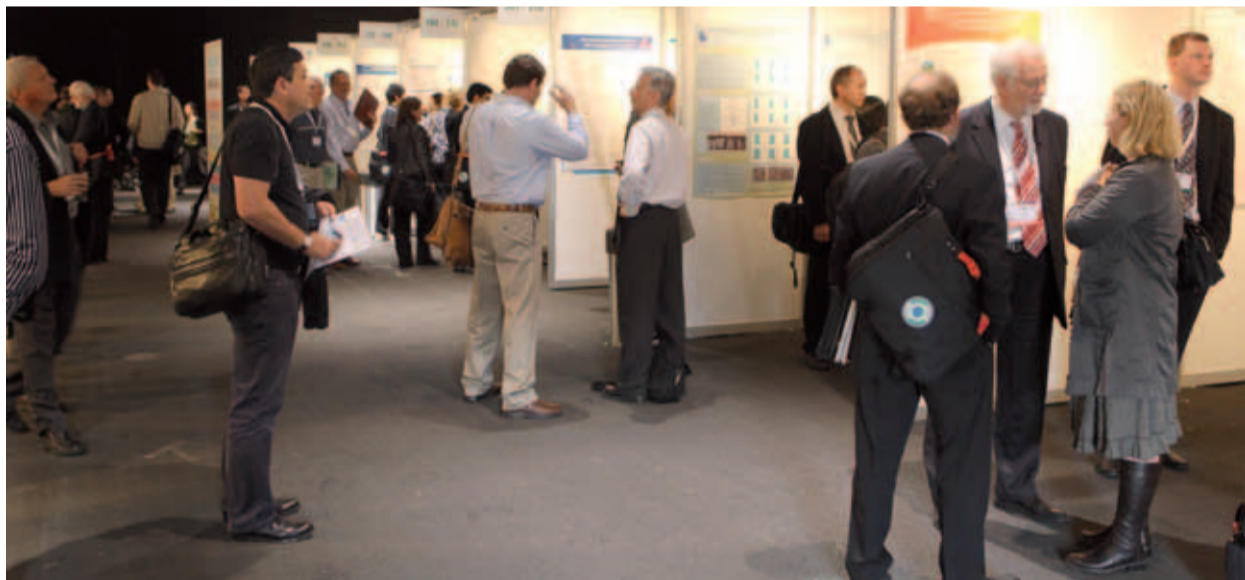
Most interesting opportunities to step up the contribution from biomass seems to be the option of co-firing biomass, preferably in coal power stations (e.g. mentioned in presentations from Utrecht University and Foster Wheeler).

Significant other conclusions were that wind energy and CCS could be a good match in a new energy system, while nuclear energy and CCS – both base load power supply – could have both their contributions, instead of competing with each other (Columbia University). No possible mix is identified as an obstacle that cannot be overcome.

Quite easy

The power sector is not the only sector where biomass and CCS could be combined. One particular alternative that was mentioned was the production of biofuels. When biodiesel or bio-ethanol is produced from biomass in a Fischer-Tropsch process, the opportunity to capture CO₂ could be quite easy, at relatively low costs.

Impressions of a week full of CCS



Clockwise, starting upper left

Exchanging knowledge in front of some 700 posters.

Networking under the Nightwatch of the famous Dutch painter Rembrandt

One of the boat trips on the Amsterdam canals.

Visiting the exhibition booths of the sponsors.



Disclaimer

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GHGTimes¹⁰



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