

Conference on Regulating and Financing CCS

**CCS: Public Perception
and environmental concerns**

*Swiss Re Centre for Global Dialogue,
Rüschlikon, Switzerland 7-8 November 2007*

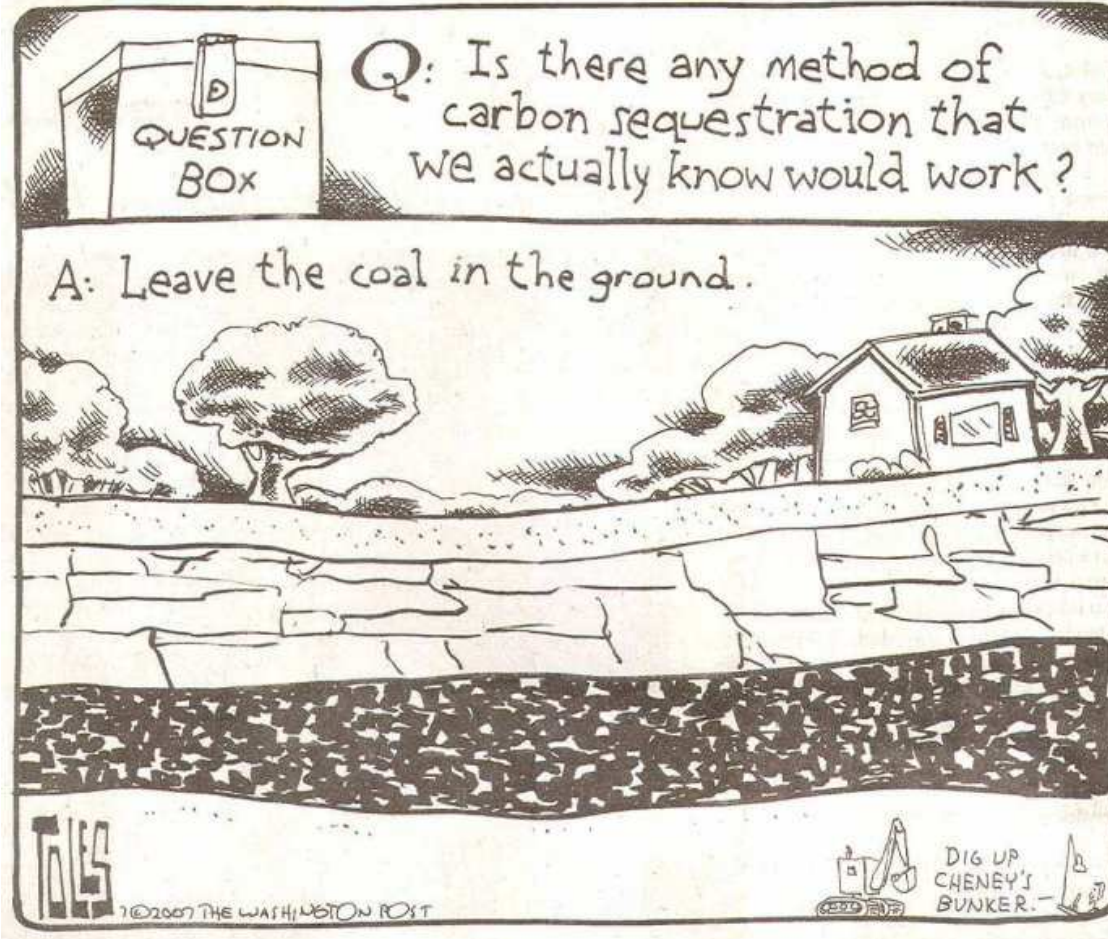
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Greenpeace position on CCS

Tom Toles



Washington Post
16 July 2007

thanks to
Elizabeth Wilson

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Lock-in situation

CCS is a radical departure from the path of renewable energy and efficiency – its intent is not to avoid the production of harmful emissions but instead to bury them:

We take a lot of money in our hands to get the black stuff out of the ground (in many countries coal is subsidized), and then we take even more money in our hands (again subsidies?) to put the climate waste back in the ground.

We don't care about the environmental impacts due to mining and are even willing to increase them with the use of CCS.

Only to make an industry happy that relies on coal. I think there are better ways to produce electricity.

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CCS

A. Public Perception

- Awareness, comparison of technologies,
- Attributes, deal with the risks / solve the problems, the unknowns

B. Environmental concerns

- Liability, regulatory, accounting issues, monitoring
- Risk of leakage
- Contribution to sustainable development questionable
- Costs, funding, BAU, blocking renewables, greenwashing

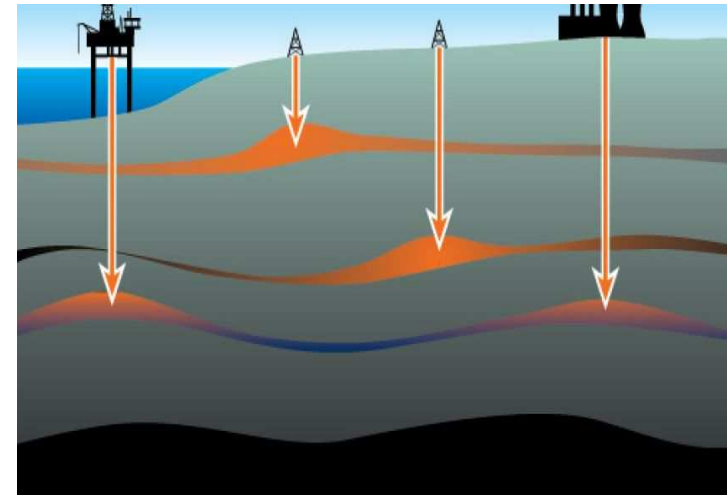
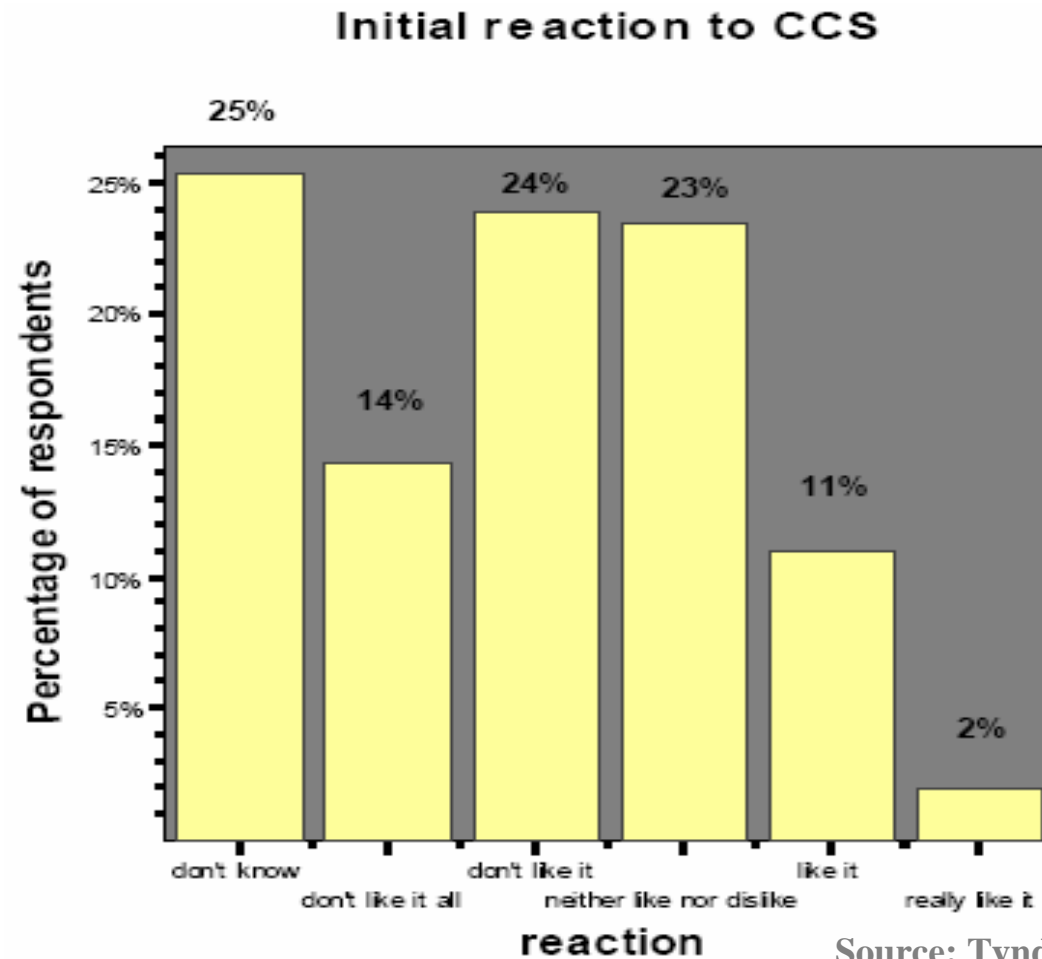
CCS: Geological storage – NO ocean storage (The oceans are rich in biological life and any disposal of CO₂ eventually lowers the pH to dangerous levels; storage not permanent).

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Awareness



Only a few studies available
(e.g. in USA, UK, NL, Jap, EU, Brazil)
HERE: UK questionnaire
(2 panels, Interview 212 people)

Source: Tyndall Centre, Simon Shackley et al. (2004)

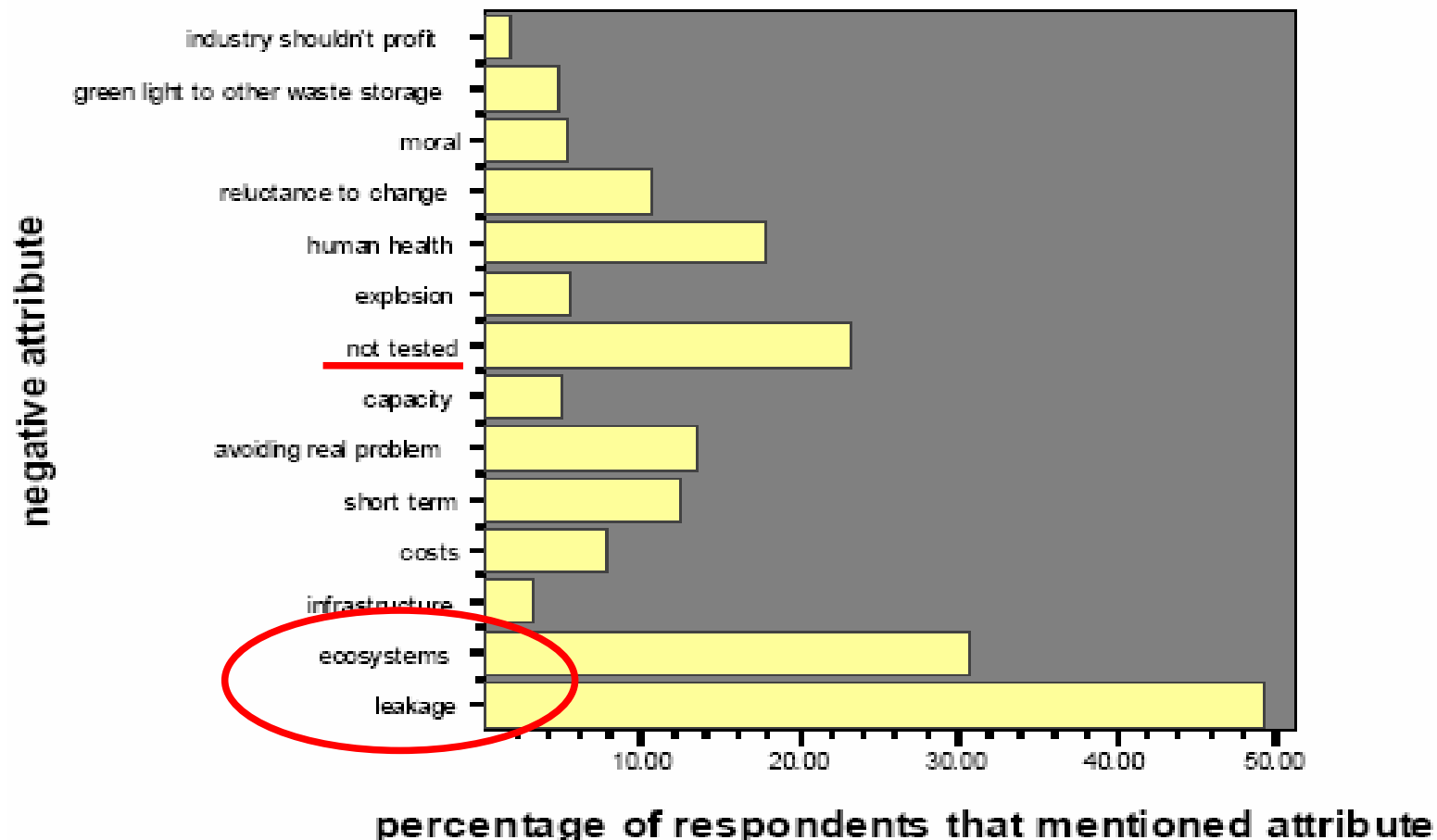
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Public concerns

Negative attributes of CCS



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Risk of leakage

Local risk: If CO₂ leaks out of a storage formation, local impacts may exist for humans, ecosystems; groundwater and oceans (food supply). The risk increases if the injected CO₂ stream contains toxic impurities.

Global risk: Release of CO₂ may contribute significantly to climate change if some fraction leaks from the storage formation to the atmosphere. Continuous leakage could, at least in part, offset its climate benefits.

The IPCC report classifies two types of leakage scenarios: (1) abrupt leakage, through injection well failure or leakage up abandoned wells, (2) gradual leakage, through undetected faults, fractures or wells.

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CCS: Not an efficient option

Efficiency reduction up to 10 percentage points:

Coal power plants equipped with a CO₂ capture facility need more coal and produce more CO₂ than conventional power plants.

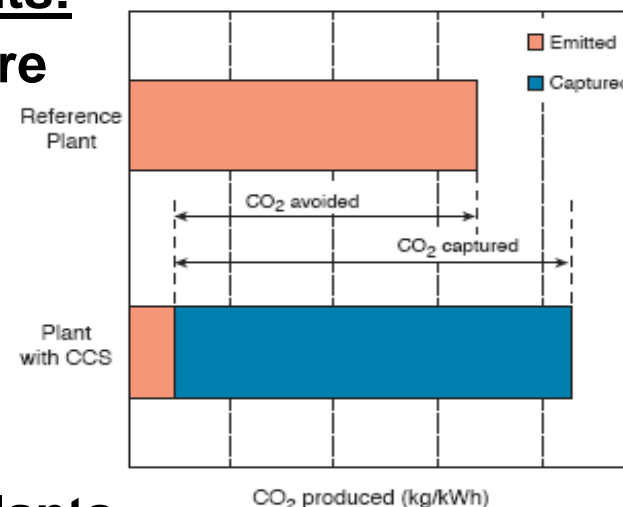
CCS increases the dependence on fossil fuel sources and technologies.

CCS will be used on large sized coal power plants.

Smaller scale efficient e.g. CHP plants may loose ground.

Capturing CO₂ is expensive, repowering of old power plants is highly unlikely, e.g. because of the efficiency loss. But new plants are built today.

Figure: IPCC SRCCS

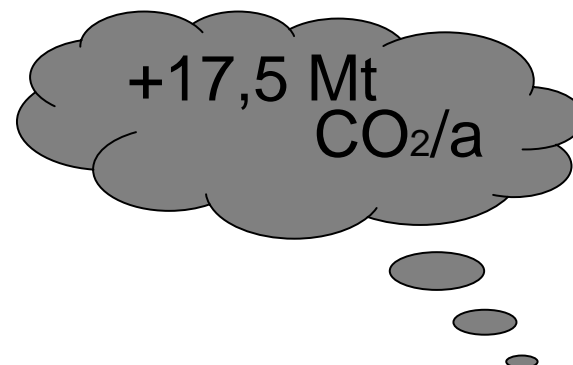


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Side-step 1: trust ...



Example Vattenfall:

Lignite Power plant Boxberg: 675 MW

ca. + 4,9 MtCO₂

planned decommissioning*: ???

Hard coal power plant Hamburg: 1680 MW

ca. + 9,6 MtCO₂

planned decommissioning Wedel 661 MW

ca. -1,5 MtCO₂

(260el-401thMW)

Hard coal power plant Berlin: 800 MW

ca. + 4,6 MtCO₂

planned decommissioning: 188 MW

ca. - 0,1 MtCO₂

*Information from talks, UBA, FoE, media etc. - precise data on planned decommissioning not available

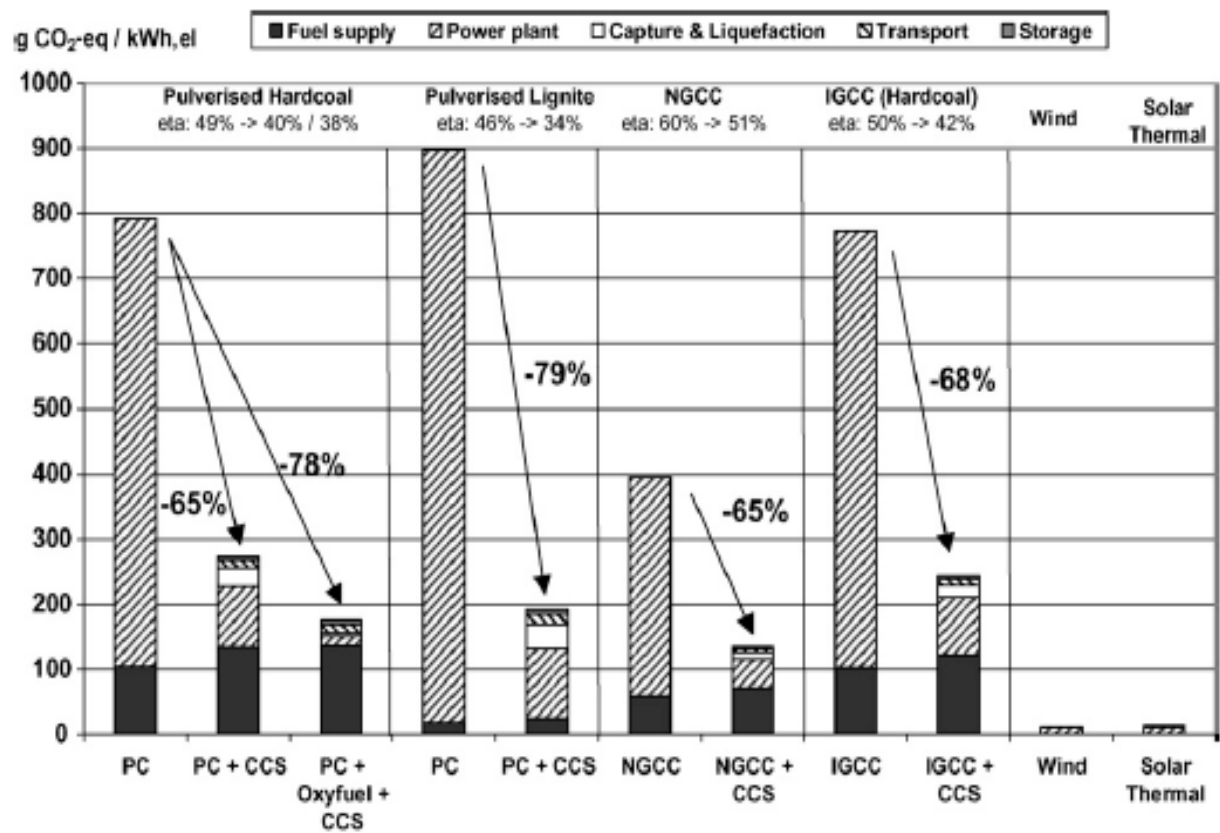
(emission data of old plants from DEHST, planned plants VDEW, calculation baseload 8.000h)

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Still GHG emitted



Full life-cycle assessment

Source: Viebahn et al. (2007), IJGGS-23

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Side-step 2: CDM

- CCS does not fulfil the description of the Marrakesh Accords, that the CDM should lead to transfer of environmentally safe and sound technology.

CCS for coal power plants is still an unproven technology / a technology under development that should not be tested in developing countries. [timeline at least 2020 in developed world]

[Gas cleaning + CCS should become mandatory for the oil/gas industry]

- CCS is a technology for a small number of developing countries that already rely on coal (or oil and gas). Many countries will be left outside (increasing distortion distribution of projects).

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Summary

Public in general is unaware of CCS. Renewable energies are strongly favoured over other energy sources including CCS. To build public trust there is a need to test CCS and to demonstrate that projects are safe, i.e. no leakage occurs, and that CCS is part of a large climate policy.

Environmental impacts increase due to increased mining activities, water needs, and still CO₂ being emitted (although lower compared to conventional coal power plants without CCS, but higher than renewable energies). CCS is a costly, still unproven technology that creates long-term commitment for safe-guarding geological CO₂ storage sites with a risk of leakage remaining.

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And if it not works?

CEO Vattenfall
Lars Göran Josefsson:

„Dann haben wir ein echtes
Problem. Dann müssen wir die
Dämme höher bauen.“

Citation from: Die Zeit from 2007, 4th of April

„Then we have a REAL problem.
Then we have to built higher dykes.“



***And ... we have lost 13 precious years, in which we
could have had reduced the GHG to save the planet...***

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Conclusion

If we take climate change seriously profound, long-term structural changes are needed, especially related to the use of fossil fuels. We must begin and continue to move to efficient use of renewable energy and help developing countries achieving real sustainable development.

CCS doesn't help us with the urgent need to cut emissions in the next 10 to 15 years and to provide access to clean energy!



Thanks !

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