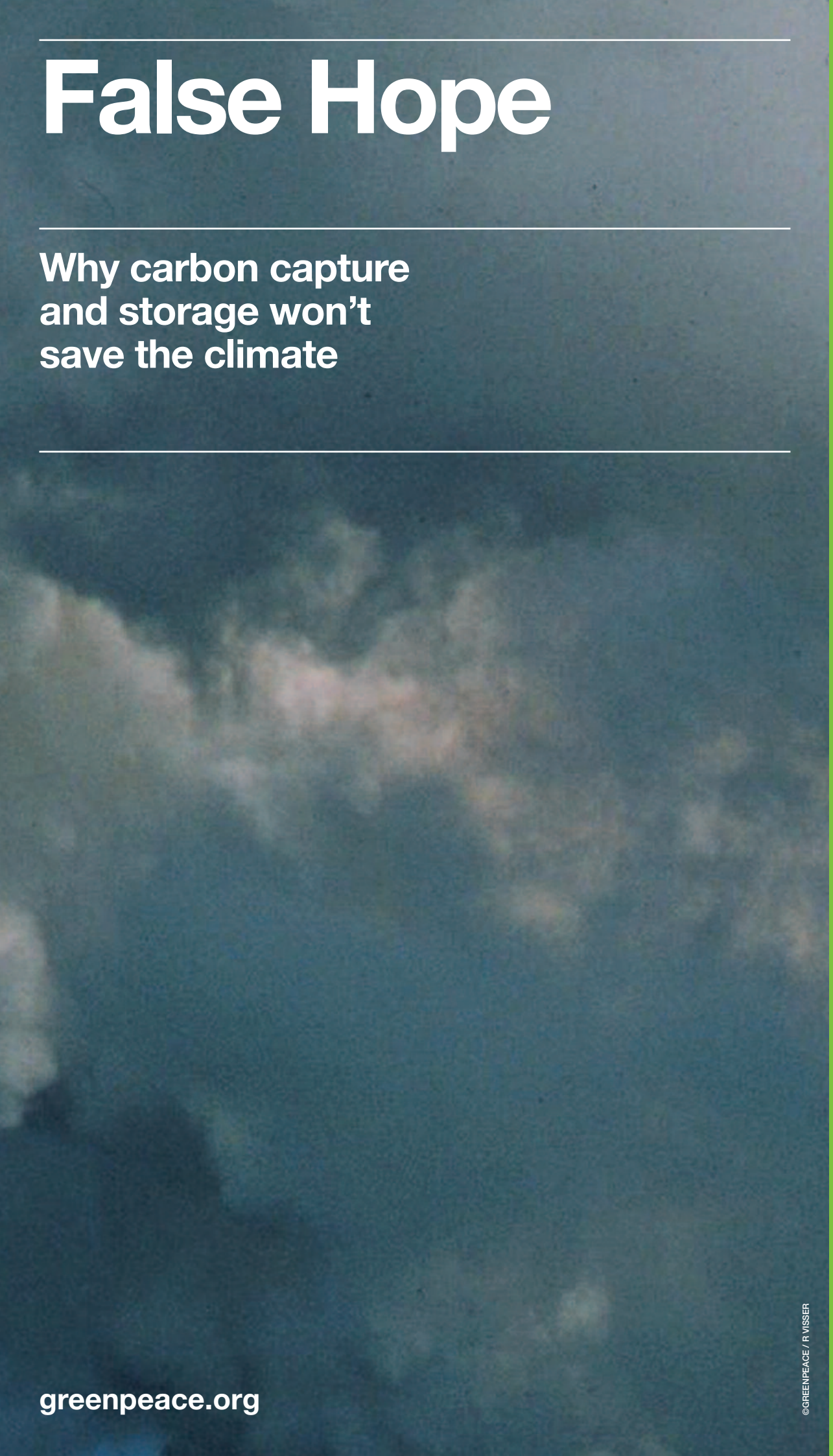
False Hope

Why carbon capture and storage won't save the climate



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Catalysing an energy revolution

The facts

Carbon Capture and Storage (CCS) aims to reduce the climate impact of burning fossil fuels by capturing CO_2 from power station smokestacks and disposing of it underground. Its future development has been widely promoted by the coal industry as a justification for the construction of new coal-fired power plants. However, the technology is largely unproven and will not be ready in time to save the climate."

This report, based on peer-reviewed independent scientific research shows that:

CCS cannot deliver in time to avoid dangerous climate change. The earliest possibility for deployment of CCS at utility scale is not expected before 2030.[1] To avoid the worst impacts of climate change, global greenhouse gas emissions have to start falling after 2015, just seven years away.

CCS wastes energy. The technology uses between 10 and 40% of the energy produced by a power station.[2] Wide scale adoption of CCS is expected to erase the efficiency gains of the last 50 years, and increase resource consumption by one third.[3]

Storing carbon underground is risky. Safe and permanent storage of CO_2 cannot be guaranteed. Even very low leakage rates could undermine any climate mitigation efforts.

CCS is expensive. It could lead to a doubling of plant costs, and an electricity price increase of 21-91%.[4] Money spent on CCS will divert investments away from sustainable solutions to climate change.

CCS carries significant liability risks. It poses a threat to health, ecosystems and the climate. It is unclear how severe these risks will be.

The climate crisis requires urgent action. Climate scientists warn that to avoid the worst effects, global greenhouse gas emissions must peak by 2015 and then start falling by at least 50% by 2050, compared to 1990 levels. Coal is the most polluting of all fossil fuels, and the single greatest threat to the climate. If current plans to invest hundreds of billions of dollars in coal plants are realised, CO_2 emissions from coal will have risen by 60%, by 2030.

Concerns about the feasibility, costs, safety, and liability of CCS make it a dangerous gamble. A survey of 1000 "climate decision makers and influencers" around the world reveals substantial doubt in the ability of CCS to deliver. Just 34% were confident that retrofitting 'clean coal technology' to existing power plants could reduce CO_2 emissions over the next 25 years without unacceptable side effects, and only 36% were confident in its ability to deliver low carbon energy with new power stations.[5]

The real solutions to stopping dangerous climate change lie in renewable energy and energy efficiency that can start protecting the climate today. Huge reductions in energy demand are possible with efficiency measures that save more money than they cost to implement. Technically accessible renewable energy sources- such as wind, wave and solar- are capable of providing six times more energy than then world currently consumes – forever.

Greenpeace's Energy [R]evolution[6] provides a practical blueprint that shows how renewable energy, combined with greater energy efficiency, can cut global CO_2 emissions by almost 50%, and deliver half the world's energy needs by 2050.

[1] World Business Council for Sustainable Development (WBCSD), 2006. 'Facts and Trends – Carbon Capture and Storage', 2006. <http://www.wbcsd.org/web/publications/facts&trends-ccs.pdf>.

[2] Abanades, J C et al., 2005. Summary for Policymakers in IPCC Special Report on Carbon Dioxide Capture and Storage, B. Metz et al., Editors. 2005, Cambridge University Press: Cambridge, U.K.

[3] Ragden, P et al., 2006. Technologies for CO_2 capture and storage, Summary. Westermann, B, Editor. 2006. Federal Environmental Agency: Berlin, Germany.

[4] Rubin, E et al., 2005a. Technical Summary in IPCC Special Report on Carbon Dioxide Capture and Storage, B. Metz et al., Editors. 2005, Cambridge University Press: Cambridge, U.K.

[5] Carbon Capture Journal (CCJ), 2008. Only 34% confidence in clean coal- climate decision makers. Keith Forward, Editor. January/February 2008, Issue 1.

[6] Greenpeace's Energy [R]evolution was produced in conjunction with the European Renewable Energy Council and the German Aerospace laboratories – it is available at www.greenpeace.org/energyrevolution.