

Carbon Capture: Permission to Pollute?

Rebecca Murphy

In order to prevent runaway climate change, we must reduce our carbon emissions. There is now a scientific consensus that we must stabilise global temperatures at no more than 2°C above pre-industrial levels [1], while the UK has finally agreed to binding emissions cuts of 60% by 2050 [2]. However, the best methods for emissions reduction are still hotly disputed. One of the most novel currently under discussion is Carbon Capture and Storage (CCS).

CCS could be ideal for reducing UK carbon emissions. We currently produce 74% of our electricity from fossil fuels [3], and although gas supplies may be declining [4], the government confidently expects a concomitant expansion in the coal industry [3]. CCS, which is predicted to reduce carbon emissions from the burning of fossil fuels by 80–90% [3], would allow us to continue relying on fossil fuels, while reducing the amount of carbon dioxide (CO₂) released into the atmosphere.

yields from an oilfield in Canada [3]. Neither of these projects has coupled CCS with commercial electricity production; nevertheless, their existence suggests that carbon capture is already technologically viable.

Initially, the British government appears to be wholeheartedly embracing CCS technology. International collaborations are currently developing strategies for the efficient storage of CO₂ in the North Sea [3]; while a national competition was launched in 2007 to create a demonstration plant within the next decade [6].

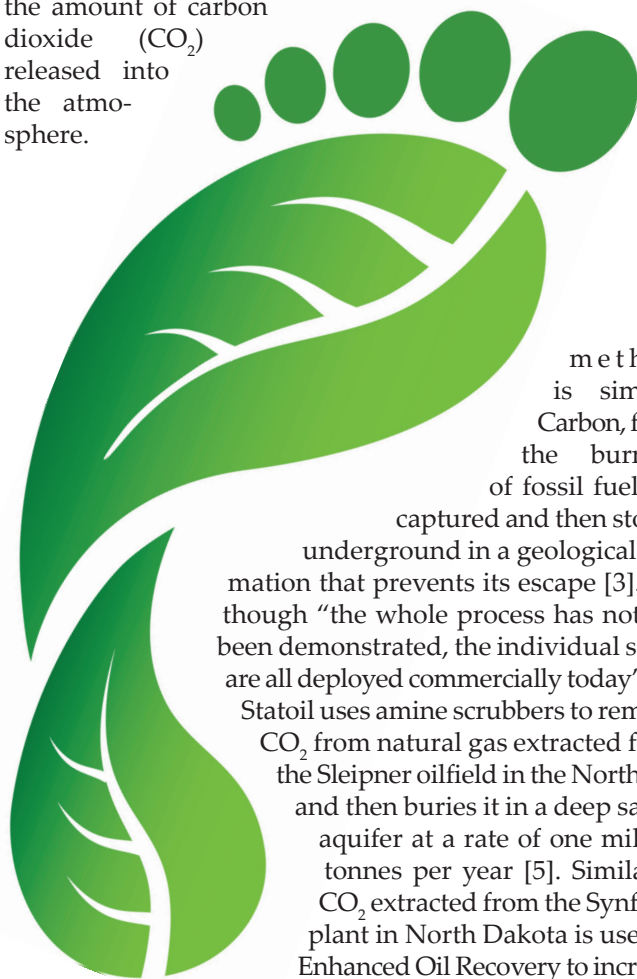
Unfortunately, closer examination of government policy reveals a different story. Shortly after the CCS competition was launched, lack of government support forced BP to abandon a £500 million project to develop a CCS plant in Peterhead [6]. Furthermore, regardless of the fact that no demonstration plant will be operational before 2014, the government is on the verge of approving six new coal-fired power stations; the UK's first since Drax was completed in 1986 [5]. Government justification for this irresponsible energy policy is that the new power stations will be "CCS ready" – able to be retrofitted with capture mechanisms once viable technology becomes available [7].

However, while the government believes that assessment of any demonstration plant would take at least 15 years [8], meaning that CCS has "real potential as an emissions mitigation tool" only "from 2030" [4], the first proposed conventional plant, planned for Kingsnorth in Kent, would be operational by 2012 [5]. If all six new plants are approved, their combined CO₂ emissions could total 54 million tonnes per year [5], reducing all the promises that CCS will produce clean coal to "a fig leaf to give unabated coal-fired power stations an appearance of environmental acceptability." [7]

CCS may well provide a technological solution to the problem of halting global warming without drastically cutting power usage; it is not an excuse for the UK to ignore the need to reduce carbon emissions. If we are to prevent catastrophic climate change, it cannot and must not be used to justify inaction, complacency and the wilful pursuit of obsolete energy policies. ■

Rebecca Murphy is a second year studying Chemistry at Trinity College. She is currently an Associate Editor for The Triple Helix Cambridge.

The method is simple. Carbon, from the burning of fossil fuels, is captured and then stored underground in a geological formation that prevents its escape [3]. Although "the whole process has not yet been demonstrated, the individual steps are all deployed commercially today" [5]: Statoil uses amine scrubbers to remove CO₂ from natural gas extracted from the Sleipner oilfield in the North Sea and then buries it in a deep saline aquifer at a rate of one million tonnes per year [5]. Similarly, CO₂ extracted from the Synfuels plant in North Dakota is used in Enhanced Oil Recovery to increase



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