

Climate Change Seminars: Supporting effective debate on the Scottish Climate Change Bill

Seminar Two: Policy options to achieve the 80% cut (part one)

Introduction

The second of the four seminars considered the Government's overall approach to the delivery of the 80% cut outlined in the draft Bill. The seminar also moved on to consider the potential for action in two important policy areas: energy efficiency/conservation and carbon capture and storage. Presentations to the seminar were made by **Cameron Maxwell** (Scottish Government), **Dr Brenda Boardman** (Oxford University) and **Prof. Stuart Haszeldine** (Edinburgh University).

The Government's overall approach

With the commitment to a Scottish Climate Change Bill (now published) the Government has been devoting significant time and energy to considering how best to move Scotland on the correct trajectory to achieve an 80% emission cut by 2050, with an interim target of a 50% cut by 2030. In this they have been informed by the **Committee on Climate Change**, the **Stern Review**, ongoing work within Government and by independent research published in November 2008¹. This research provides a detailed appraisal of existing and planned policies and also the potential for further action in a range of areas including:

- Improved vehicle technologies and Smarter Choices
- CCS for energy generation and industry
- Increased forest area
- Renewable heat
- Buildings energy efficiency

These will help the Government prepare a high level discussion document in 2009 that will set out the key sectors for abatement action, the high level policy options the Government intends to pursue, actions over the short (2012), medium (2020) and long term (2050) and the barriers to action.

¹ <http://www.scotland.gov.uk/Publications/2008/11/19142102/0>

In parallel to and connected with mitigation action the Government is also developing tools to ascertain the carbon impact of spending decisions at both a strategic and operational level.

Energy Efficiency and Conservation

Energy efficiency and conservation is the policy area offering perhaps the greatest potential for no-cost or low cost action that will cut GHG emissions. It is also an area where action on energy can also have wider economic and social benefits, most notably with regard to fuel poverty (FP).

Scotland has a particular problem with fuel poverty with almost a third of Scots now in fuel poor households – there has been a negative trend in fuel poverty numbers since 2002. From a sustainability perspective the challenge in alleviating fuel poverty is to do so through reducing energy use rather than simply boosting income but the elimination of FP will require a wholesale transformation of the existing housing stock, moving to an average SAP rating of at least 80 (with a minimum SAP of 50) by 2050 (Figure 1). Action should be undertaken in a joined up way through Low Carbon Zones and supported by mechanisms such as low interest loans aimed at those unable to spend to save.

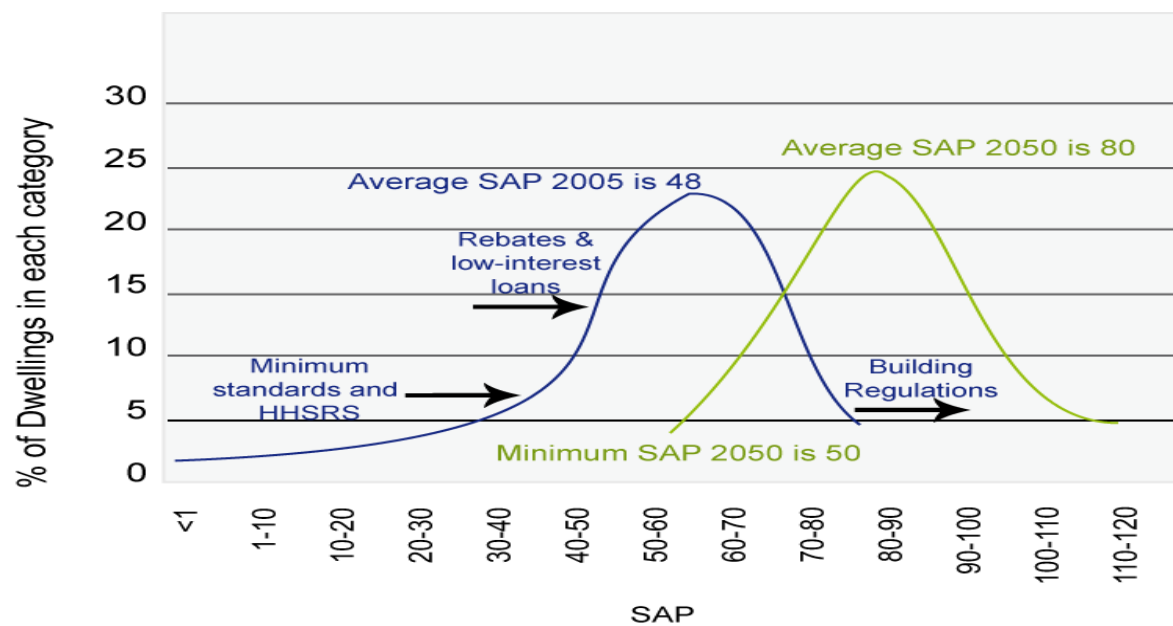


Figure 1: Transformation of the housing stock by 2050

Carbon Capture and Storage

Carbon capture and storage (CCS) is a technology offering great opportunities for Scotland and globally, although significant technical challenges remain in delivering a workable system. There are drawbacks to the technology too.

CCS involves the removal of CO₂ during the process of fossil fuel energy generation and its long term storage underground in e.g. coal beds, saline aquifers or depleted oil and gas fields. At present this is a technology still in development although there are examples of it being achieved such as the removal and storage of CO₂ from gas in the Norwegian Steipner gas field in the North Sea.

The huge potential of the technology relates to its ability to decarbonise energy generation. 30% of Scotland's CO₂ comes from coal and gas burning for electricity. Even with Government renewable targets we will require baseload generation from fossil fuels or from other sources such as nuclear which the Government is opposed to. Current electricity generation in Scotland is concentrated in a few coal and gas plants which would have the potential to be replaced or refitted if the CCS technology progresses.

Scotland has the potential to be a global leader in this technology, particularly with the large depleted oil and gas reservoirs in the North Sea (Figure 2). Development of CCS in Scotland could be supported by competitions being run at the UK and EU level, decisions on which will be made soon.

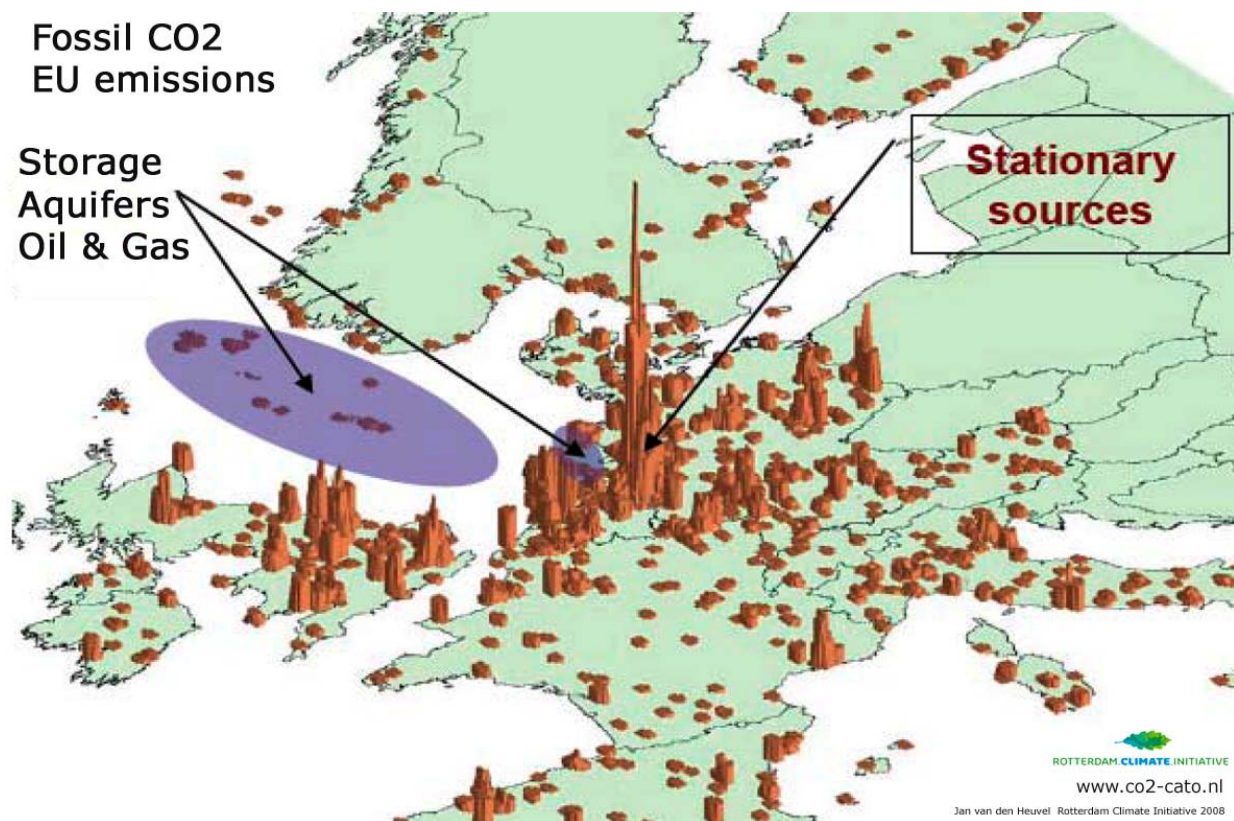


Figure 2: Power station emissions (brown) and potential carbon storage areas (purple)

Looking forward Government has two main options in encouraging the uptake of CCS. It can insist that new fossil fuel stations are '**Capture ready**' or can set an **emission standard** for all new plants.

Both have strengths and weaknesses but on balance an emission standard may be more effective in terms of results – just because stations are 'capture ready' does not mean they will actually take up the technology at a later date. In terms of the longer term the vision could be to develop a North Sea grid of pipelines drawing CO₂ from the huge generation capacity in Holland/North Germany and the UK and depositing the carbon in old North Sea oil and gas fields.