Landfill gas

Methane is a very potent greenhouse gas. It is over twenty times more effective than carbon dioxide at trapping heat within the Earth's atmosphere.

In the UK, emissions of methane from landfill sites, the main source of this gas, fell by 59 per cent between 1990 and 2007 thanks to improvements in gas capture and incentives to generate electricity from this source. In the long term, with less biodegradable waste going to landfill, emissions are expected to continue to fall. However this doesn't mean that more can't be done.

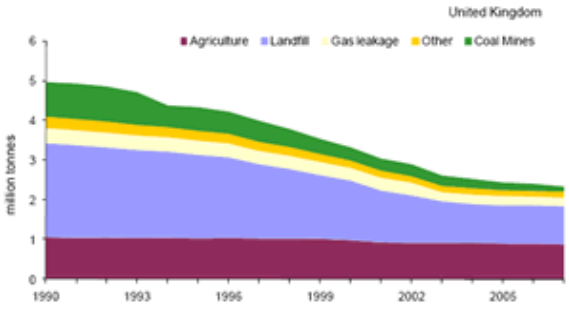

Figure 1: Methane emissions by source, 1990-2007

The Climate Change Act commits the UK to binding cuts in greenhouse gas emissions of at least 80 per cent by 2050 from the 1990 level. This is a huge challenge and at

the Environment Agency we believe that we have to play our part in meeting it. Emissions from landfill sites still make up around three per cent of the UK's total greenhouse gas emissions and they are the biggest 'chunk' of emissions over which we have regulatory control.

We are therefore have a programme of work with the following projects:

Working with site operators to reduce emissions

In 2008/2009 we audited 14 of the top 15 active landfill sites as defined by their methane emissions. This exercise resulted in an estimated reduction of 19,000 tonnes of methane, equivalent to 399,000 tonnes of carbon dioxide over six months. We aim to audit another 30 active sites in 2009/2010 and to begin audits of sites that are now closed but which we still regulate.

Encouraging local authority action

We lobbied for an increased funding stream for local authorities treating areas of contaminated land to allow them to investigate and reduce methane emissions. We then contacted every local authority in England encouraging them to apply so that we could build up a picture of emissions from these sites. We will do the same thing for Wales when the funding window opens.

Influencing government policy

Following discussions with Defra, the UK Low Carbon Transition Plan included a target to reduce emissions of methane from landfill sites by a million tonnes of carbon dioxide equivalent beyond 'business as usual' by 2020. We are also discussing the possibility of including methane from certain types of closed sites within local authorities' targets under National Indicator 186 of the Local Performance Framework. At the moment this only measures emissions of carbon dioxide from a local authority area.

Investigating new technologies

We have quality assured trials of a new type of flare designed to burn landfill gas containing low concentrations of methane. We have produced a case study of its use at sites owned by Chester and West Cheshire County Council. We are investigating a similar approach for a technology that uses bacteria to turn methane into carbon dioxide and water.

Taking action on our own sites

To practise what we preach we have surveyed our four landfill sites and found that they are emitting negligible quantities of methane.

We have major responsibilities for helping to limit greenhouse gas emissions and adapt to climate change in England and Wales. We also administer schemes that cover a large proportion of the UK's greenhouse gas emissions, and play a leading role in reducing the risks from climate change, such as increased flooding, drought, and sea level rise.

For more information, visit our website http://www.environment-agency.gov.uk/
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