

methane uk

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Biffaward programme on sustainable resource use

Objectives

This report forms part of the Biffaward Programme on Sustainable Resource Use. The aim of this programme is to provide accessible, well-researched information about the flows of different resources through the UK economy based either singly, or on a combination of regions, material streams or industry sectors.

Background

Information about material resource flows through the UK economy is of fundamental importance to the cost-effective management of resource flows, especially at the stage when the resources become 'waste'.

In order to maximise the Programme's full potential, data will be generated and classified in ways that are both consistent with each other, and with the methodologies of the other generators of resource flow/waste management data.

In addition to the projects having their own means of dissemination to their own constituencies, their data and information will be gathered together in a common format to facilitate policy making at corporate, regional and national levels.

Mass balance UK

The methane uk project is not strictly a mass balance project, as it deals with post-disposal generation of methane from landfill sites as well as that from agriculture and fossil fuel sources. However, it complements existing publications in the Sustainable Resource Use series including Carbon UK (2002). More than 30 different mass balance projects have been funded by Biffaward. For more information on the Mass Balance UK programme please visit www.massbalance.org

Acknowledgements

The authors would like to acknowledge the many helpful discussions held with Mike Mason (Climate Care), Peter Jones (BIFFA) and Cameron Davies (Alkane Energy), James Blunt (Spectron) and Tim Atkinson (Natsource).

Further thanks goes to Deborah Strickland for her help with the images contained within this report.

We would also like to recognise our partners on the www.ch4.org website – Richard Watson, Catherine Bottrill and Ian Curtis – for their activities in promoting the links between waste, energy and climate change.

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Executive summary

Methane is an extremely powerful greenhouse gas, particularly in the short-term (less than 12 years). It becomes more long-lived and damaging as the concentrations in the atmosphere increase, by altering the balance of the atmospheric chemical processes. These two important considerations for methane mitigation policy indicate that the focus should be on immediate reductions.

The main sources of methane in the UK related to human activity are landfill, coal mines, ruminants and their manure, and leakages from the natural gas system.

In landfill sites, methane results from the breakdown of biomass derivatives (*e.g.* tea leaves, paper) over a period of at least 15 to 20 years. Up to 85% of the methane generated can be captured and then burned to produce electricity which qualifies for Renewable Obligation Certificates – an economically profitable process that provides sufficient incentive to improve methane capture. The remaining uncaptured methane will still escape to the atmosphere. The EU Landfill Directive requires the amount of biodegradable waste going to landfill in the UK to be reduced to 35% by 2020, so the quantity of methane produced will decrease over time.

Coal mine methane comes from both active and abandoned mines, but only the former is accounted for in greenhouse gas inventories. The latter represents a potentially significant figure that is ignored by the present system although DEFRA is close to completing an inventory. This form of methane release should no longer be ignored. Technologies for capturing methane from deep mines exist but lack the necessary financial drivers to encourage implementation in the UK. There are no current policies to encourage capture for energy recovery and it is recommended that these should be developed by the Government.

There are opportunities to process animal manure in anaerobic digesters and thus trap the methane for use in electricity generation that qualifies for ROCs. This avenue is advocated for

greater encouragement. Policies to reduce the amount of methane produced by sheep and cows (the source of 90% of agricultural methane emissions) – for instance injections, different feedstocks and preferential breeding – could meet consumer resistance and are not seen as a mainstream option. The Common Agricultural Policy is expected to reduce the present subsidy (£1.40 per day, per cow), which, along with consumer trends to less dairy and red meat consumption, is likely to have a gradual but persistent effect on UK demand and possibly production. Agricultural emissions have been slowly reducing and may continue to do so, but will remain the major source of methane in the UK.

The leakage of natural gas from the transmission and distribution system is poorly quantified but probably a substantial problem. Because of uncertainty about the numbers there can be no possibility of using reductions in a trading system. The policy emphasis has to be with Ofgem and regulation.

Methane trading is a viable option for reducing emissions in some sectors. Methane from active coal mines and gas and oil rigs has been successfully traded under the UK Emissions Trading Scheme. It is essential that this trading opportunity continues through incorporation of methane into the EU Emissions Trading Scheme in 2008, with interim policies to cover the two year gap after closure of the UK ETS in 2006.

These various programmes should be supported by a more imaginative framework that reflects the importance of achieving rapid methane reductions. Serious consideration must be given to the short-term influence of gases such as methane. A focus on emissions that have a strong, immediate effect on the climate would buy time for carbon dioxide reducing policies and technologies to become more effective and prevent methane from becoming more potent.