

## Meet The People Shaping The Future Of Energy: Reinventing Energy Summit policy - 25 November in London

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# Leaking gas mains help to warm the globe

By

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in

BRUSSELS

MAINS that carry natural gas in Britain leak so much methane that they may contribute more to the greenhouse effect than burning the gas does. This conclusion by a British consulting firm, Earth Resources Research, undermines the theory that by burning natural gas instead of other fossil fuels, countries can reduce the emissions of greenhouse gases. A policy based on this theory is being proposed for the European Community, but, if the consultant's report is correct, then such a policy will fail to slow global warming.

When it is burned, natural gas emits less carbon dioxide per joule of energy produced than any other fossil fuel. So substituting gas for coal and oil would cut emissions without

reducing energy production. Environment ministers of the European Community meet in Rome this week to discuss targets for cutting emissions of greenhouse gases. A decision is expected within a month.

Taxes in the Community encourage the use of coal and oil rather than gas. The Commission wants to change this. A confidential report by experts to be discussed by the ministers states that 'energy policies should (promote) low or zero greenhouse gas-emitting energy sources. The latter implies the potential of substantial switches to natural gas.'

But according to Catherine Mitchell and Jim Sweet of Earth Resources Research, in a study commissioned by the environmental group Greenpeace, substantial increases in the use of natural gas may worsen the greenhouse effect. Natural gas is composed mainly of methane, itself a greenhouse gas some 60 times as powerful, over 20 years, as carbon dioxide. If gas mains leak enough methane, this could more than offset any advantage gained by generating less carbon dioxide through switching to natural gas.

The effects of different greenhouse gases can be compared by calculating their global warming potential over a certain number of years. Mitchell and Sweet calculated how much methane would have to leak out of gas mains to equal the difference, in global warming potential, between the carbon dioxide produced by burning gas, and that produced by other fossil fuels.

Using figures reported by the UN's

Intergovernmental Panel on Climate Change, Mitchell and Sweet calculated that if 5.8 per cent of the gas flowing through British mains leaks each year, gas will have no greenhouse advantage over coal over the next 20 years. At this rate, leaked methane will have more impact on warming over 20 years than the carbon dioxide produced when the gas is burnt. They calculate that a leakage of 2.8 per cent would cancel the greenhouse advantage of gas over oil.

It is impossible to calculate precisely the leakage rates from British mains, says Sweet, because British Gas and its predecessors have kept measurements secret. 'It has been totally impossible to get any information out of British Gas,' says Sweet. British Gas, and gas companies elsewhere in Europe, report that one per cent of gas leaks out every year, but provide no direct evidence for the estimate.

Officially, the British government estimates that 10 per cent of the methane pollution in Britain leaks from gas mains. The other major sources are coal mines (29 per cent) and flatulence from animals and humans (23 per cent).

'The only time there has been a real study of leakage was in 1970,' by the Gas Council, a consumer organisation, says Sweet. Sweet and Mitchell estimated how much gas is leaking now by painstakingly reconstructing, from the annual reports of gas boards, how much of the system that was analysed in 1970 is still in use today.

The team then adopted the conservative

assumptions that mains installed since 1970 leak little; that the worst pipes have been replaced since 1970; and that methods of reducing leakage in existing pipes work reasonably well. Using the most conservative assumptions, they calculated an annual leakage rate of 1.9 per cent. This excludes leakage from gas fields or appliances.

But with different assumptions about repairs and conditioning, the team arrived at what it considered to be more probable leakage estimates of between 5.3 and 10.8 per cent per year.

‘We understand, but have not been able to confirm, that British Gas is carrying out its own investigation of methane leakage,’ the team says.

British Gas says the amount of gas flowing out of its system to consumers appears to be less than the amount flowing in from its production facilities. They claim this is partly because customers’ meters underestimate what flows through them. The team says it understands that studies by British Gas show that meters actually overestimate gas flows. This would mean consumers pay for gas they never receive, and also that there is an even larger gap between inflow and outflow, possibly due to leakage, than British Gas has admitted.

A spokesman from British Gas said this week: ‘Figures assumed to be valid in 1970 may not be the best starting point. We still believe that the best figure is close to 1 per cent. Without seeing the document, there is nothing more sensible that we can say.’

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