

Untapped data in vaults

Washington

ALTHOUGH it is not the sort of thing they always like to talk about, oil and gas companies spend millions on environmental measurements each year, collecting satellite, atmospheric, geological, and oceanographic data that could prove invaluable to climate change researchers. Invaluable, that is, if the scientists could only get their hands on it. Fear that the data might be misused has forced industry to dub most environmental data "proprietary", and guard it jealously.

The problem is "environmentalists", says Mark Settle, manager of integrated exploration research at the oil and gas company ARCO. "The concern is that we might be identified [as environmental offenders] by the release of that data." Because many of the measurements are collected so that oil and gas companies can catch environmental problems (and presumably fix them), they can contain evidence of gas leaks, pollution, and oil spills — not the sort of information a company would want to release unprompted. Some of the data, such as satellite observations and geological measurements, might also be useful to competitors looking for untapped resources.

Some cooperation between industry and researchers on previously proprietary data has already begun, largely through the efforts of the industry sponsored Gas Research Institute (GRI), an independent body set up (with funding from a percentage tax on gas transactions) by the federal government to investigate environmental and energy efficiency implications of gas use.

Working with the US Environmental Protection Agency (EPA), GRI has started a programme to measure leaks in natural gas pipelines. About one per cent of all methane produced is lost to the atmosphere in pipeline leaks, and perhaps

twice that lost elsewhere, says Kathleen Hogan, chief of the methane programme in EPA's office of air and radiation research. Although the total — around three to four terragrams — is less than the amount of methane released by landfills and livestock, it represents a greenhouse gas source that may be relatively easy to reduce.

But the methane leak study also points to a limitation in data collected by industry. Because gas companies are more interested in knowing whether or not a leak exists, than exactly how much methane is escaping, instrumentation is relatively coarse and rarely calibrated. Comparing readings from different sites and companies quickly proved impossible, Hogan says. As a result, EPA and GRI researchers will have to take their own measurements as the study continues over the next several years.

Other data may prove more useful. Satellite measurements commissioned by industry to spot potential oil and gas deposits have provided some of the best geological maps of large parts of the world. Similarly, the search for fossil fuels has led to a great deal of mapping efforts of the ocean floor and considerable research on oceanic chemistry. Nevertheless, "We have to be careful that the data is not splattered around the public out of context, because it might be damaging", says Howard Reiquam, director of GRI's environment and safety research department. In the past, GRI and the American Petroleum Institute have helped by collecting pollution data from industry and "homogenizing" or contouring it to hide the individual — and potentially self-incriminating — data points, says Reiquam. Establishing an industry clearinghouse for greenhouse data is an idea worth pursuing, but one that may still be some years off, he says.

Christopher Anderson

Carbon currency proposed to cut emissions

Washington

IN a world faced with global warming, carbon may become a virtual currency of international trade, at least if policy makers follow the recommendations of a new report* by the Washington-based Brookings Institute. After finding flaws in four common strategies (carbon taxes, across-the-board cuts, per capita targets and cuts based on historical emissions) to encourage global reductions in carbon emissions, the Brookings report proposes a new one: a scheme in which nations are issued "carbon chits" based on projections of populations and economic activity.

Countries may release only as much car-

bon as their chits allow; if they need more, they must buy them from other countries.

The advantage, according to the report, is that underdeveloped — but populous — nations such as India and China could sell their unused chits to carbon hogs such as the United States, a process that would both help to pay for energy-efficient technology in the developing nations, and also encourage the industrialized nations to cut their own emissions or risk going bankrupt.

Christopher Anderson

Controlling the Greenhouse Effect — Five Global Regimes Compared. The Brookings Institute, 1990.

Abuses in Sudan

London

As Western aid donors predicted a return to the famine conditions of the mid-1980s in Sudan last week, and accused the military government of obstructing their relief efforts, news also emerged of the extent of the abuses of academic freedom currently being perpetrated in the country. Since the elected government of prime minister Sadiq El-Mahdi was overthrown in a military coup in June 1989, the fundamentalist Islamic government, led by Lieutenant General Omar Hassan Al-Bashir, which replaced it has tried to reshape the educational system to fit with its ideals. Rakiya Omaar, from the human-rights pressure group Africa Watch, who has just completed a report on academic freedom in Sudan, says that the vice-chancellors of Sudan's four universities have been replaced by government appointees, and large numbers of academics have been dismissed.

Of particular concern is the fate of a number of academics, probably more than 20 in total, imprisoned without trial. One of these, Professor Moneim Attia, from the University of Khartoum, embarked on a hunger strike on 1 October, after being detained since January, beaten and tortured. Omaar believes that Attia has now discontinued his hunger strike. But Attia's academic colleagues in Britain still fear for his safety, given the appalling sanitary conditions of the Shalla prison in western Sudan in which he is held.

Salah Bander, a Sudanese geneticist now working at the Institute of Animal Physiology at Babraham near Cambridge, believes that Attia has been imprisoned because of his scientific work. In 1988, and with the support of the previous government, Attia set up an International Heat Stress Research Centre in Khartoum, winning finance from the Saudi Arabian government. Bander says that international scientific links are opposed by the governing revolutionary council, and adds that Attia's work on the problems of heat stroke among Sudanese industrial workers will also have been unpopular with a government committed to a rigid programme of industrialization. Although he is a former communist (not uncommon among Sudanese academics), Attia is not thought to have been politically active since last year's coup.

Professor John Bligh, a retired environmental physiologist formerly at Babraham, who is a trustee of Attia's research centre, hopes that pressure from the international scientific community can secure Attia's release. Professor Farouk Ibrahim, imprisoned apparently for teaching the theory of darwinian evolution at the University of Khartoum, was released earlier this year after international protest.

Peter Aldhous