

Money matters

Soulless economics as well as corporate and personal greed constrain climate-friendly behaviour. But explaining climate change in cultural and artistic terms may soften hardened hearts.

Artist David Buckland is a man with a mission. He passionately believes that a cultural approach can shift public opinion and societal attitudes about climate change in a way that cold scientific facts alone so far have not. In 2001, Buckland founded Cape Farewell, a project that brings together artists, writers, musicians and scientists, among others, to find creative ways of communicating climate change issues. The project has had some notable successes (page 137), but changing the behaviour of people, governments and corporations in these economically chastened times is an uphill struggle.

The decision by China in February to ban its airlines from joining the European Union's Emissions Trading Scheme will please the China Air Transport Association, which had expressed fears about increased costs. The inclusion of aviation in the scheme from 1 January 2012 sets to levy emissions-based charges for airlines using European airspace. The professed aim is to help limit emissions from this rapidly growing sector, but many — including powerful aviation lobbies — see it simply as another unwelcome hindrance to free international trade at a time when economies are already struggling and fuel costs are soaring. All eyes are now on how the European Union will respond. Banning flights from China would spark a major diplomatic row and retaliatory trade tariffs. That outcome seems unlikely — certainly undesirable.

February also saw thousands of British students take part in People & Planet's Go Green Week (<http://peopleandplanet.org/gogreenweek>) to raise awareness of climate change. Students called on the UK government to increase investment in carbon-reduction and renewable-energy projects for the education sector. Meanwhile, Conservative members of parliament urged Prime Minister David Cameron to cut public subsidies for onshore wind farms. The nub of their argument is that it makes little sense to fund 'episodic and unreliable' sources of energy from the public purse at a time when many British families are already experiencing a decline in living standards.

Money talks — especially really big money. And it does not get much bigger than that tied up in the vast oil-sand deposits of Alberta in Canada. As discussed by



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Stranded glacial ice on the coast of Svalbard.

Neil Swart and Andrew Weaver (page 134), the US federal government has rejected immediate approval for TransCanada's proposed Keystone XL pipeline, which is needed to transport oil from the Alaskan fields to refineries in the United States. But the idea that the pipeline will not eventually go ahead seems inconceivable, as is the notion that oil moguls will forsake enormous corporate profits by leaving the black stuff where it is — in the ground.

Pipeline or no pipeline, it seems all but inevitable that much of the Alberta oil-sand resource will eventually be exploited, regardless of environmental concerns. After all, estimates suggest that the Alberta oil-sand deposits contain some 1.8 trillion barrels of crude oil — seven times the size of Saudi Arabia's proven reserves. Swart and Weaver calculate that if all of the oil were extracted, refined and used, the carbon dioxide produced would induce a global mean temperature change of roughly 0.36 °C, which is close to half of the observed warming seen in the past 100 years. Add to that the global warming potential of the

estimated 90 billion barrels of oil, 50 trillion cubic metres of natural gas and 44 billion barrels of gas liquids lying largely untapped in the Arctic. The potential profits associated with exploiting these resources seem just too tempting. Indeed, in January, Norway awarded production licences for offshore oil areas in the Norwegian and Barents seas (Q. Schiermeier, *Nature* **482**, 13–14; 2012).

Where big money flows, profiteering, bribery, embezzlement and extortion all too often follow, especially in nations with inadequate governmental, financial and legal institutions, and law enforcement agencies that are not fit for purpose. As discussed by Anna Petherick on page 144, corruption is rife in 20 of the countries most vulnerable to climate change impacts. The United Nation's Green Climate Fund was set up to facilitate the transfer of money from rich nations to poorer states trying to cope with climate change impacts. A major challenge will be targeting money to worthwhile projects effectively while avoiding corrupt practices, and some money will have to be earmarked for anti-corruption measures. Who will be responsible for this, and who will 'check the checkers' will become apparent in the coming months.

Petherick notes that profiteering and bribery tend to flourish in the forestry sector. Two main reasons are that forests are often "controlled by just a few civil servants or politicians with discretionary powers — handy conditions for effective bribery", and that their remoteness hinders policing and law enforcement. Under these conditions it is relatively easy for unscrupulous logging companies to make an extra buck by flouting the rules. Forests are only renewable as a resource if managed sustainably, as discussed by Nicola Jones on page 141, and illegal logging clearly does not help matters.

In fact, as Jones explains, wood production in the Philippines, Thailand and Laos has undergone a dramatic peak and decline, a 'boom-and-bust' pattern that is expected eventually to occur across the tropical Asia-Pacific region. That has led some scientists to suggest that we should think about 'peak timber' in the same way as 'peak oil'. Perhaps that will inspire the creative minds of the Cape Farewell project to find further novel ways of explaining how human activity is affecting our planet. □