

COMING CLEAN: Revealing the UK's true carbon footprint



We believe in life before death

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UK charity number 1105851 Company number 5171525

Introduction

'[If] we shut down all of Britain's emissions tomorrow – the growth in China will make up the difference within two years. So we've got to be realistic about how much obligation we've got to put on ourselves.'

Prime Minister Tony Blair, on returning from a Caribbean holiday, Christmas 2006

Last year Christian Aid broke new ground for a development agency. In its report *The Climate of Poverty*, Christian Aid described in detail the grave dangers posed to poor people by climate change. Since that report was published, scientists have announced fresh perils to the planet from the terrifying, increasing pace of global warming.

It is vulnerable people in poor countries that are affected first and most seriously. That is why Christian Aid said then – and repeats now – that climate change is the most significant single threat to development; it could undo decades of progress in fighting poverty.

In this briefing, Christian Aid returns to the subject of climate change – the most pressing campaign issue for the organisation.

Where *The Climate of Poverty* reported from the frontline of climate change across the developing world, *Coming Clean* focuses squarely on our own back yard, and on how the UK has a major influence over global action to preserve the climate.

Having established beyond doubt that climate change is also an issue of poverty and injustice, Christian Aid believes that the best way to fulfil its remit to tackle the scandal of poverty throughout the world is twofold: to find ways of stopping the greenhouse gases that are causing the climate to change, and to help poor people in dealing with the ravages of climate change on their doorstep.

These two goals are indivisible, mutually inclusive and must be carried out in tandem. However, as the opening salvo of Christian Aid's climate change campaign, this briefing concentrates first on the responsibility of the rich world to take the initial steps towards stopping global warming – and the UK's part in this tentative international shuffle.

Why the rich world? Because it is indisputably the rich, industrialised, northern countries that caused this problem in the first place. It is their emissions of carbon dioxide (CO₂) and other noxious greenhouse gases (GhGs) that are currently polluting the atmosphere and trapping too much of the radiative force of the sun inside our planet's atmosphere.

At the moment there is general agreement that these emissions must be reduced; the latest science suggests at a rate of around five per cent per year globally. But before anyone can do this it is imperative to know what we are dealing with.

Yes, there is widespread awareness that the USA is the biggest polluter; it is known that Europe, India, Australia, China and Russia are all major emitters. But how much do they emit, and on whose behalf?

To create the mechanisms to cut emissions and decide by how much they should be cut, it is imperative to know how much CO₂ there is, and what actions lead to those emissions in the first place.

In the UK, the general figure of 2.13 per cent is accepted as the UK's share of global emissions – 'only' 2 per cent, according to Prime Minister Tony Blair, seeking to make light of our responsibility to clear up the mess.

Given that the UK arguably began the whole process of polluting the planet by leading the industrial revolution, this sidestepping of our moral culpability for climate change is unworthy and will do little to inspire developing countries to curb their own emissions.

Christian Aid, using data provided by the environmental research agency Trucost, has analysed the figures, and an extraordinary picture is emerging of a UK that – because of its extensive and global economic reach – should bear a far greater responsibility for reducing the world's CO₂ emissions than government rhetoric suggests.

At the heart of this wider responsibility lies the City of London, whose trading might allows the UK to punch above its weight economically. The Stock Exchange is a powerful global institution that deals with some of the world's largest and most influential companies.

Many of their factories and offices may be overseas but they come to London to trade. Christian Aid argues that if they have the right to trade here and enjoy the benefits of being able to move their capital around the world freely, then they also ought to have the responsibilities that a place at the world's top trading table demands. These include responsibilities relating to climate change.

Most matters relating to companies' costs and benefits are obliged to be reported in annual statements to owners and shareholders. Profits, losses, acquisitions, investments, stock – all are rightly and according to mandate on show.

However, despite climate change being such an overwhelmingly important issue for business as well as for mankind, it is not yet compulsory to show the extent to which a company emits CO₂; the age of carbon accounting – surely a prerequisite of the pricing of emissions – has not yet dawned.

There are agreed CO₂ disclosure standards – some of which the UK's Department of Environment Food and Rural Affairs (DEFRA) uses already – but it is currently up to individual companies as to how and when they are used.

This briefing reveals how only 16 of the FTSE 100 companies have adhered to these standards and disclosed in their annual accounts or parallel environmental reports¹ how much CO₂ they emit in the most basic of categories – their direct emissions (fossil-fuel fired central heating in offices and shops, and fuel used in their own vehicles). These 16 companies account for a staggering 285.93 million tonnes of CO₂ – equivalent to more than half of the UK's total emissions (although many of these emissions take place elsewhere in the world).

If the remaining members of the FTSE 100 used these same standards to report their direct CO₂ footprint, Christian Aid believes they would total some further 191.42 million tonnes.² These are the FTSE's missing millions which represent the UK's dirty

underbelly; the unreported CO₂ emissions that our money – invested through the stock exchange – buys.

This briefing calls on the government to develop, as a matter of urgency, mandatory disclosure standards on CO₂ and, ultimately, all GhGs.

It will only be when companies come clean and present their carbon figures with the same transparency with which profits and losses are presented – in their annual accounts – that the public and investors acting on our behalf will see the full spectrum of CO₂ emissions for which the UK has responsibility.

And of course it is only when there is transparency in a firm's CO₂ emissions that we will know if, and by how much, they are cutting back those emissions and helping to reduce climate change. If carbon is to be traded or taxed in future there has first to be a clear and transparent settling of carbon accounts.

On behalf of the world's most vulnerable people who are encountering disease, sea-level rises, floods, famines and conflicts as a result of climate change, Christian Aid demands that the UK government takes the first step and makes carbon reporting mandatory.

Climate change is too important to be left to the whims of voluntarism.

1. The UK and its emissions

At more than 552 million tonnes (658 million tonnes of CO₂e),³ the UK's CO₂ emissions are the seventh largest globally. They are, of course, dwarfed by those of the USA (5.77 billion tonnes), China (4.49 billion tonnes), the Russian Federation (1.58 billion tonnes) and India (1.14 billion tonnes). As the prime minister has pointed out, the UK's total emissions represent 2.13 per cent of the global total, a figure that by implication seems almost irrelevant, given the vast amounts of greenhouse gases (GHGs) that others are pumping out.

But even if taken at face value, the UK's 552 million tonnes is by no means a harmless quantity. It is more than the 112 smallest emitting countries put together and, as such, should not be dismissed.

However, there is another – hidden – dimension to the UK's emissions that makes a mockery of the UK government's self assessment as the most progressive climate activist in a world community still largely in denial about the scale of the problem and the urgent need to act.

While it is true that the prime minister and others are taking global leadership on this issue, they are also behaving like ostriches about the true extent of the UK's impact on the world. Because while only 2.13 per cent of the world's CO₂ emissions emanate from the UK's domestic economy, through the process of globalisation CO₂ is emitted around the world on the UK's behalf in China, India, Africa and elsewhere.

The UK's apparently light carbon footprint rapidly begins to assume a much greater profile when the worldwide investments made with its money, through the mighty City of London, are taken into account. The companies trading on the UK stock exchange serve British consumers through the proliferation of cheap goods made around the world. But they do so at the cost of proliferating quantities of CO₂. This CO₂ is to some extent hidden from view, as it happens beyond the domestic realm, and yet – since it is the beneficiary – the UK should accept some of the cost too.

This is a significant problem. While the actual size of our footprint as a nation is not known, one estimate suggests that emissions associated with the worldwide consumption of FTSE 100 company products amount to 12 to 15 per cent of the global total.⁴

In this case, the UK's influence, if not its direct impact, is revealed as not only statistically significant, but also critical to the future of the planet and its people. As Christian Aid has already described, it is the poorest people who are suffering the impact of climate change through floods, sea-level rises, drought, disease and conflict.

This is why what happens on the UK stock market is of direct and compelling relevance to millions of the poorest people around the globe.

The UK's multinational companies and those from other countries that come to London to raise money have argued for the right to operate through open, global markets in investment, goods and services. But with rights come responsibilities. Christian Aid has often in the past published examples of where businesses do not meet their social and

environmental responsibilities when operating in poorer countries, but rarely has there been such a crystal clear case as with CO₂ emissions.

Mr Blair is fond of pointing to the relative futility of cutting the UK's emissions when developing countries, where hundreds of millions of poor people live, are producing even larger amounts of CO₂. In the Blair world view the climate change that these nations are engendering with their emissions thereby becomes even worse. 'It's not we who are doing harm to poor people, it is they themselves,' the false argument goes.

Herein a climate scapegoat is being fashioned. Christian Aid asks: who is truly responsible for these emissions?

Take the famous example of the Kenyan green bean.

If beans grown in Kenya, exclusively for the UK market, are flown to the UK at considerable 'carbon cost', should the poor people of Kenya – both the recipients of climate change's impact and those most in need of atmospheric space to develop – be forced to spend their CO₂ budget on the air freight?

Kenya and its poor population benefit to some extent from the production of luxury vegetables for rich countries' markets, and so it is only fair that some of the carbon cost is absorbed by Kenya. But it is also only fair that the UK, the companies involved and their consumers also bear some of this cost.

This briefing is an opening salvo in what ought to be a lively round of discussion about the transparency of the UK's real carbon footprint. An exhaustive calculation of this is not currently available – and that ought to be of concern to UK citizens, politicians and investors. But through analysis of the direct and indirect supply chain and investment emissions of companies in the power, retail and banking sectors, it is already possible to catch for the first time a glimpse of the much larger scale of the UK economy's contribution to global warming.

2. The scope of the UK's emissions

What is the UK's real carbon footprint? In truth, while the figure of 552 million tonnes of CO₂ is doubtless a relatively accurate aggregate statistic for domestic emissions, once in the atmosphere, greenhouse gases do not respect national boundaries. Neither does investment; UK-based and registered companies whose money is raised in the UK do their business around the world and have concomitant atmospheric impact.

Much of that investment comes home (or lands up 'offshore'),⁵ resting with shareholders and owners, or ensures pensions are paid and insurance risk is covered.⁶ But as the financial and social cost of emitting CO₂ becomes clear – in monetary terms perhaps as much as US\$85 per tonne⁷ – and countries across the developing world begin to count the cost, Christian Aid argues that it is now time for the extent of the emissions associated with the UK's global investments to be calculated and reported transparently to an agreed standard.

There are already standards for declaring emissions of CO₂ and other greenhouse gases, and these are perfectly adequate. But, in Christian Aid's view, it is the fact that these comprehensive, industry-developed standards are not mandatory that is at fault. Were all companies required to report to an agreed standard then the huge inconsistencies and discrepancies would not arise. Given the urgency with which we must set about the task of reducing emissions this is surely not an unreasonable request.

An international standard already exists for reporting CO₂ and other emissions in the Greenhouse Gas Protocol (GhGP), developed by non-governmental organisations, governments and the World Business Council for Sustainable Development. The GhGP is a highly detailed set of guidelines for organisations reporting their greenhouse gas emissions. It is on them that the UK's Department for Environment, Food and Rural Affairs based its own greenhouse gas 'key performance indicators'.

The GhGP sets out three realms of reporting emissions:

Scope 1: Direct emissions

Direct emissions come from sources controlled or owned by the company, such as on-site heating or emissions from a company's own vehicles. Examples would be boilers in head offices and cars or vans leased or owned by the company.

Scope 2: Indirect emissions

Indirect emissions come largely from the purchase of electricity from the grid. These emissions are indirect because although they take place as a result of the demand generated by the company, they occur as a result of the activities of the power-generating utilities.

Scope 3: Other indirect emissions

All other emissions are counted as scope 3. These include the transportation of goods by third-party companies, such as road freighting by hauliers, the emissions generated in the supply and production chain of products before they reach the company, and those generated during the consumption of products.

It is this third scope that is the most complex and in which work is required to develop standards that tackle the 'lifecycle' emissions of products and services from production to consumption. Necessarily, standards in this area will vary from sector to sector, although companies in the same business must be comparable. But the emissions in this category tell the true story of globalisation and must, if development is to be clean, be calculated and cut.

The GhGP recommends that scope 1 and 2 emissions be declared, and suggest that it is desirable that scope 3 emissions also be reported, even though the company reporting them may not bear sole responsibility for those emissions. Clearly, if all companies report all scope 3 emissions there will be a large degree of double counting. But in Christian Aid's view, it is imperative that these emissions are nevertheless counted. Customers and investors have the right to know the degree to which the company is exposed to high CO₂ emissions even if it is not directly responsible – it is in the UK's interest to understand its entire carbon footprint.

In each scope, emissions take place both within the UK and outside. For instance, if a British retailer opens a store in China, then the company ought to count the scope 1, 2 and 3 emissions associated with this store in its UK declaration. Not only are these emissions a potential liability for investors in the UK, they are also part of the UK's real carbon footprint, as some of the money to build the store may have been raised in the UK and some of the profits from it will return to the UK.

Similarly, a UK bank's impact is not restricted to the energy it uses in its headquarters and branches in the UK. It should also take account of branches and offices worldwide, and of the loans and investments it makes with its customers' money. Most banks currently do not screen-out highly carbon-intensive activities in their lending, nor require borrowers to declare the CO₂ likely to be emitted as a result of the loan.

Of course, the countries in which retailers build their supermarkets and those that are the beneficiaries of loans from UK banks will share the responsibility for the resulting CO₂ emissions. There is already an appropriate mechanism to do this. The GhGP sets out clear guidelines for how emissions should be divided between the organisation that is the direct emitter and its customers and investors. In other words, it is not only perfectly possible to calculate and report scope 1, 2 and 3 emissions of a company with global reach, but there is already a useable international protocol on which this can be based.

The UK's true impact on the global climate is not confined to the twists and turns of its coastline. Any political solution to the climate problem must recognise this and take into account the true carbon cost of globalisation, apportioning responsibility not along the lines of national boundaries but according to responsibility for the emissions (and capacity to deal with reducing them).⁸

This briefing is a clarion call to British business, to investors who are paying for CO₂ emissions and, most importantly, to the UK government to make transparent and cut the emissions generated by UK investment wherever they occur. No longer can we dismiss as relatively insignificant the impact of our economy – the true, global impact – on the world and its climate.

If, in the prime minister's words, 'we've got to be realistic about how much obligation we've got to put on ourselves', then we must do just that – which means facing up to a new inconvenient truth. Just as we've outsourced the dirty end of our industry to poorer countries and invested in those countries to get them to produce for us, so have we outsourced our CO₂ emissions. If we are doing this, then ultimately we in the UK will have to pay for it.

3. The state of play

'The question we need to ask is whether the current regime of accounting, disclosure and financial regulation is 'fit for purpose' for a carbon-constrained world. And if the answer is that it isn't, then we need to start designing a market regime that will give London a head-start in the emerging low-carbon economy.'

Nick Robins, Head of Socially Responsible Investment, Henderson Global

At first glance, current emissions reporting among companies listed on FTSE indices appears encouraging in that a majority of the 100 largest firms say something about their emissions. But the question is not so much 'whether' they declare but 'what', 'how' and 'where' they declare them.

According to the fourth annual report of the Carbon Disclosure Project (CDP) (a project that aims to encourage companies to report emissions voluntarily to a neutral third party):

- 88 of the FTSE 100 responded
- 55 per cent provided quantified emissions data
- 24 per cent provided 'scope 1' emissions data as recommended by the CDP.⁹

This clearly indicates that while an overwhelming majority of companies appear aware of the importance of some level of response on greenhouse gas emissions, less than a quarter are reporting to anything resembling an acceptable standard.

The picture worsens among the wider FTSE 350 companies:

- 49 per cent of companies responded to CDP questions
- 27 per cent provided quantified emissions data
- 10 per cent provided 'scope 1' emissions data as recommended by the CDP.¹⁰

The CDP lists – among several key reasons for this poor performance – a 'lack of legislation requiring emissions disclosure'. Christian Aid believes this absence of government-required reporting standards is likely to blame for the relatively low response rate across the FTSE 350, as well as for the wide and wild variation in the quality of what's declared.

Given the nature of the CDP – a voluntary mechanism providing a neutral third party to which companies can experiment with emissions declarations – the quality of many responses is disappointing. DEFRA guidelines on environmental reporting suggest that such disclosure should ideally take place in annual reports or the new business review. Thus, disclosure to the CDP is not just unsatisfactory; it is unsatisfactory disclosure in an unsatisfactory forum.

The lack of mandatory standards means that there is massive under-reporting, even among those that declare the emissions closest to their immediate operations (such as the 16 companies in FTSE 100 that declare acceptably their scope 1 emissions). But it also means that the UK's global footprint – that which extends way beyond the head offices and executive travel of companies, and into supply chains and through the

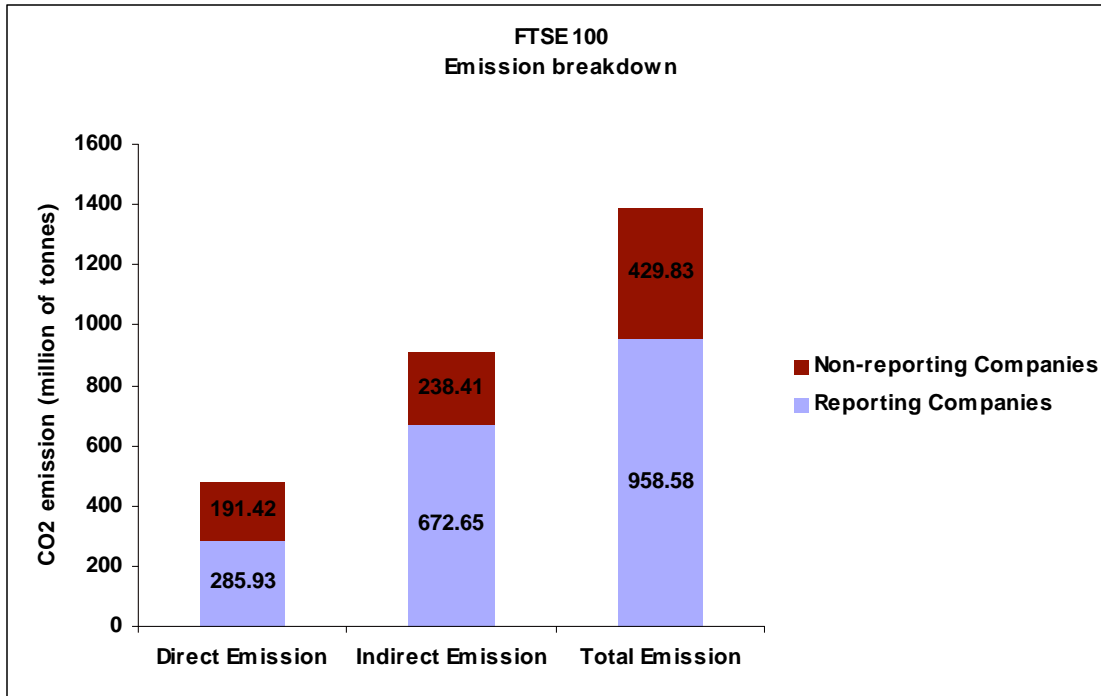
consumption of their products – is neither known nor, in the absence of such data, possible to calculate accurately.

The picture is no less confusing among the Financial Times 500 – the world's richest companies – of which only 246 reported actual emissions data to the CDP fourth report (fewer than in the previous year). While most of these companies are owned and headquartered in rich countries with emissions-reduction obligations under the Kyoto Protocol, more than one-third of their reported emissions took place in non-Annex B¹¹ countries, many of which are developing nations.

The total quantity of greenhouse gas emissions declared to the CDP by these 246 companies in 2006 was in excess of 3.3 billion tonnes, more than the combined emissions of India and the Russian Federation.¹²

Using data from Trucost,¹³ the environmental research company that compiles reports for the CDP, Christian Aid has analysed the reporting of the FTSE 100 companies and made its own estimates. Given the UK's rhetorical leadership, the collective performance of the companies listed in its flagship index – the heart of the City of London – is disappointing:

- Only 16 out of 97 companies report emissions in their annual report or parallel environmental report following DEFRA guidelines.
- In scope 1 – the direct emissions resulting from a company's own activities – less than 60 per cent of CO₂ emissions are reported, amounting to 285.93 million tonnes of CO₂.
- According to Christian Aid estimates this should be 477.35 million tonnes of CO₂.
- The 'missing' direct CO₂ emissions from the 80 FTSE 100 companies that do not report according to DEFRA guidelines total 191.42 million tonnes.
- Using Sir Nicholas Stern's US\$85 per tonne estimate for the economic and social cost of emitting, this quantity of CO₂ would have a value of US\$16.2 billion.
- An estimate of indirect emissions suggests that the FTSE 100 companies may be responsible for as much as 911.06 million tonnes of scope 2 emissions.
- Adding Christian Aid's estimated scope 1 and 2 figures together, FTSE 100 emissions total 1,388.41 million tonnes of CO₂ (1,574.77 million tonnes of CO₂e).



Source: Trucost. All indirect emissions are estimates.

This truly staggering quantity of CO₂ is more than five per cent of total global emissions. But scope 1 and 2 emissions are not the full picture. Scope 3, which encompasses supply chain, investment and consumption emissions (and inevitably involves some degree of double counting), also ought to be added to this.

With the current absence of government-set standards and hence publicly disclosed data, it is very difficult to estimate scope 3 emissions, but some of the large natural resource companies in the FTSE 100 make estimates of the consumption of their products and report this data to the CDP. Together, five of the largest FTSE 100 oil, gas and mining companies (Shell, BP, BHP Billiton, Rio Tinto and Xstrata) estimate that they account for a total of 2,219 million tonnes of CO₂e in scope 3, which is more than nine per cent of total global emissions.

As an indication of the scale of FTSE 100 emissions, if the scope 3 emissions of these five companies are added to the Christian Aid estimates of FTSE 100 scope 1 and 2 emissions (some double counting notwithstanding), a figure close to 3.8 billion tonnes of CO₂e emerges. This is more than 15 per cent of total global emissions.¹⁴

4. Banking on CO₂ emissions

'The direct environmental impact of financial services is relatively small compared, say, to mining or oil and gas, but we are doing what we can to reduce it further.'

Responsible Banking, CSR report, Barclays, 2005

Banking is right at the heart of the matter. The world is built on debt and the world's bankers own that debt. The lending decisions they make therefore shape the world. If those lending decisions concern hard infrastructure, such as power stations, then they may often be decisions that have long-lasting implications.

The fight against climate change is one so urgent that it ought to make reducing CO₂ emissions intrinsic to any commercial decision, not least because if governments respond to this urgency with necessary action, emitting may quickly become a prohibitively costly activity for businesses. Lending decisions by banks in particular need to be reviewed and screened for carbon emissions from now on. The longer this is not the case the more likely rapidly developing nations, in which much infrastructure is currently being built, are to be locked into high and rising future emissions.

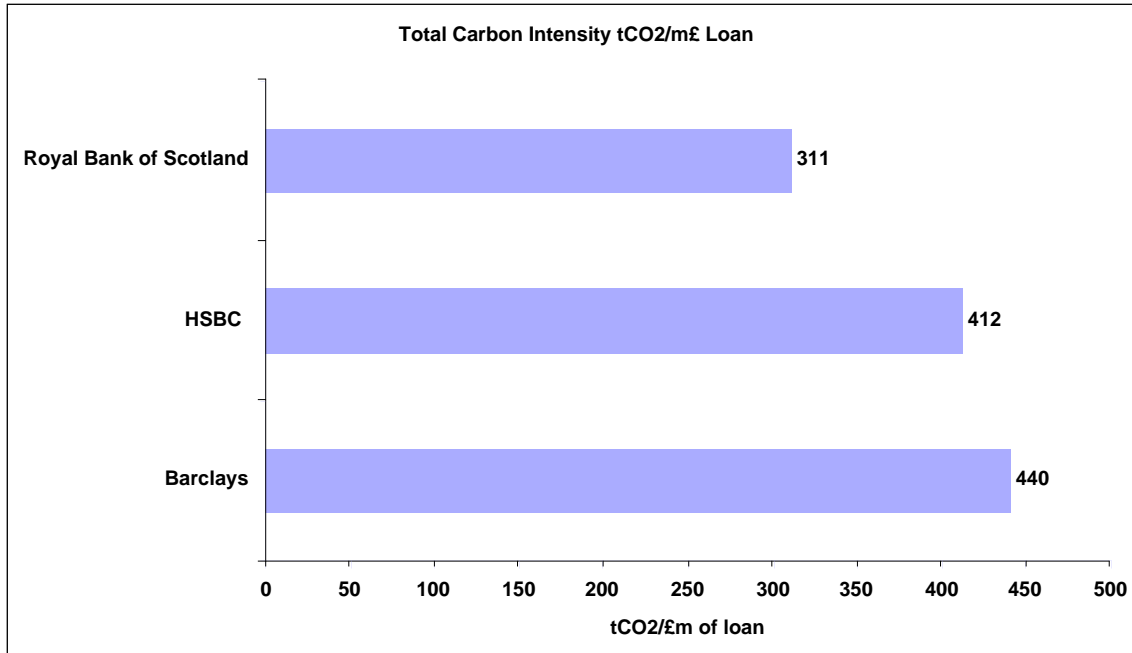
A look at the biggest banks registered on the UK stock exchange suggests that concerns over lack of screening of project lending and investments are justified. While most report well the CO₂ emissions associated with their offices, branches and staff travel in the UK, none reports the CO₂ intensity of their lending and investment portfolios.

All major banks are signatories to the Equator Principles, a financial industry benchmark for 'determining, assessing and managing social and environmental risk in project financing'. The financial institutions that have signed have, de facto, agreed not to provide financing for projects that do not meet the nine principles.

While there is no specific mention of climate change in the Equator Principles, there is clearly a mandate to address current carbon concerns. Principle 2 demands that borrowers address '... the relevant social and environmental impacts and risks of the proposed project'.

As the scientific evidence of climate change becomes more robust and the political rhetoric more urgent, most peoples' understanding of 'social and environmental impacts and risks' would include projects that either emit or might lead to the emissions of significant quantities of greenhouse gases.¹⁵

Using sectoral summaries of lending from the companies' annual reports and average CO₂ intensity figures for the direct and indirect emissions of each sector, Christian Aid has estimated the CO₂ intensity (tonnes of CO₂ per £1 million lent rather than absolute emissions) of the lending of three of the UK's leading lending institutions; HSBC, RBS¹⁶ and Barclays.¹⁷



Source: Trucost

While Barclays is the smallest of the three:

- the carbon intensity of its loans appears greater at 440 tonnes per million pounds sterling of lending¹⁸
- the total value of Barclays lending is in excess of £272 billion (US\$535 billion)
- the estimated CO₂ emissions from the bank's lending portfolio could therefore be 119.6 million tonnes.¹⁹

Using Stern's US\$85 price for one tonne of CO₂ would mean that the cost of Barclays estimated CO₂ emissions from its lending and investments would be US\$10.16 billion.

Absolute emissions for HSBC and RBS are, of course, very much larger. In general, it is absolute emissions rather than CO₂ intensity that are of greater importance; a company can pledge to reduce intensity figures and become more CO₂ efficient, but if that company is also growing, absolute emissions may still grow. But as a means of making a comparison of the relative CO₂ weight of a bank's lending decisions, intensity is instructive.

Barclays is to be congratulated for some of its existing work on climate change and its leadership in helping to develop the Equator Principles. The company has made a public commitment to reduce its absolute CO₂ emissions by 20 per cent by 2010, a commendable target, although one which relates only to its scope 1 and 2 emissions.

It is also important to note that Barclays reports having provided long-term project financing for 2,500 megawatts of renewable energy, although the precise nature and the financial extent of the company's lending are not specified.²⁰ Barclays also says it is '...one of the largest financiers of renewable energy projects in the UK and Europe.'²¹

But the company is still investing in new, fossil-fuel heavy and CO₂-intensive business. For instance, in 2006, Barclays Capital, the investment banking arm of Barclays, acquired 40 per cent of the US private equity firm NGP Energy Capital Management, which is heavily committed to US oil, gas and power generation. Barclays Capital has also offered US\$3.4 billion to support the acquisition by Rosneft of the Russian oil giant Yukos.²²

In response to Christian Aid's research and suggestion that banks must report the CO₂ emissions associated with their lending and investments, Barclays says it recognises '... the importance of the issue and we are currently undertaking a comprehensive review to help determine our future stance'. The company points out that the questions raised by Christian Aid in respect of calculating and declaring these emissions are '... far from straightforward'.

According to the company '... the challenge is to develop a meaningful measure – in principle, our intention would be over time to calculate and publish details of CO₂ emissions from lending activity. But it is not a simple task.' In response to Christian Aid's call for companies to set annual emissions reduction targets, Barclays said: 'The challenge with targets based on absolute reductions is that they do not make any allowance for growth in the business which, in Barclays case, is substantial.'²³

Barclays says that it is not opposed to the notion of reporting standards being made mandatory. In correspondence with Christian Aid, Barclays said: 'Were the Government to introduce a mandatory, meaningful and practical approach to the reporting of carbon emissions, it is something that we would support. It would be important that this benefited from appropriate consultation with stakeholders, including from businesses...'²⁴

Both HSBC and Barclays have recently announced their intention to pursue carbon neutrality. Carbon neutrality does not mean that these banks will cease emitting CO₂ nor necessarily that they will even reduce emissions, but that they will purchase saved emissions from outside the company to balance their carbon books. These 'offsets' are generally bought in the developing world where there is currently no restriction on emitting.

HSBC has piloted carbon neutrality, offsetting the final quarter of its 2005/6 emissions. The company offset 170,000 tonnes of CO₂ (from scope 1 and 2 emissions only) at an average cost of US\$4.43 per tonne, which, compared to Stern's US\$85 per tonne or even to the DEFRA US\$35 per tonne, appears a low value. Out of the four projects from which it bought these offsets, one was in the developing world and the largest was a wind farm in New Zealand.²⁵

In correspondence with Christian Aid, Barclays confirmed that the company is '... on the point of being able to confirm that we have achieved the commitment we made last year that our UK operations should become carbon-neutral by 2007.' Barclays told Christian Aid: 'Part of our achievement of carbon-neutrality is being provided by the purchase of high-quality offsets, with a considerable portion coming from community-based environmental efficiency programmes in Africa and India, which also provide significant social benefit (another important objective of our strategy).'²⁶

While offsetting can play a role in helping fund worthwhile renewable energy projects in poorer countries, the irony of a bank pursuing this strategy while not reporting on the CO₂ emissions associated with its lending is inescapable. The sums of money lent by banks such as HSBC, Barclays and RBS are immense, and will be critically important in the fight against climate change. They can also help poor countries develop cleanly. But none of this will happen unless banks first declare and then commit to reduce the emissions associated with their lending portfolio.

5. Purveyors of CO₂ emissions

'We recognise that carbon dioxide (CO₂) emissions and their impact on the climate are the most significant environmental impact associated with our energy use.'

Morrisons, CSR report, 2005/6

As well as many energy intensive stores, the UK's supermarkets also have massive global supply chains, throughout which CO₂ is emitted. Many of these supply chains stretch back to poor and developing countries where hard bargains are struck over prices paid for produce, leaving little room for actions to reduce CO₂ emissions in their production.

The current debate about food miles – a legitimate if not straightforward one – masks another truth; if CO₂ emissions are incurred by developing countries in the production of goods for the UK market, then these emissions ought to count in the UK's carbon budget, as well as in the country in which they were emitted.

If this sounds outlandish or unfair, then it ought not to. The concept is gaining ground amongst regulators and even some of the more progressive retailers.

Both the Greenhouse Gas Protocol and DEFRA publish performance indicators to help companies assess supply chain emissions. Moreover, in its most recent CO₂ declaration, Marks and Spencer (M&S) has published an estimate of the emissions from its supply chain. More recently, Tesco has pledged to label 70,000 of its products with life-cycle CO₂ emissions data, although it described this process as 'a journey' and has yet to set a date when that journey might end.

In general, the supermarket sector is to be commended for taking a lead on CO₂ emissions declaration. M&S, with estimates in its declaration of CO₂ emissions of both supply chain and those associated with customers' travel to and from stores and their use of M&S goods, deserves special mention.

	General merchandise	Food	Management
Supplier transport	50,000 tonnes CO ₂	250,000 tonnes CO ₂	Under development
Production	600,000 tonnes CO ₂	1,500,000 tonnes CO ₂	Food & Drink Federation CCA for Foods
Customer travel	100,000 tonnes CO ₂	40,000 tonnes CO ₂	Greater number of 'local' stores.
Home deliveries	5,000 tonnes CO ₂	1,000 tonnes CO ₂	Under development
Customer use	2,000,000 tonnes CO ₂	360,000 tonnes CO ₂	Programme to reduce clothing wash temperatures implemented.

Source: M&S response to CDP 4

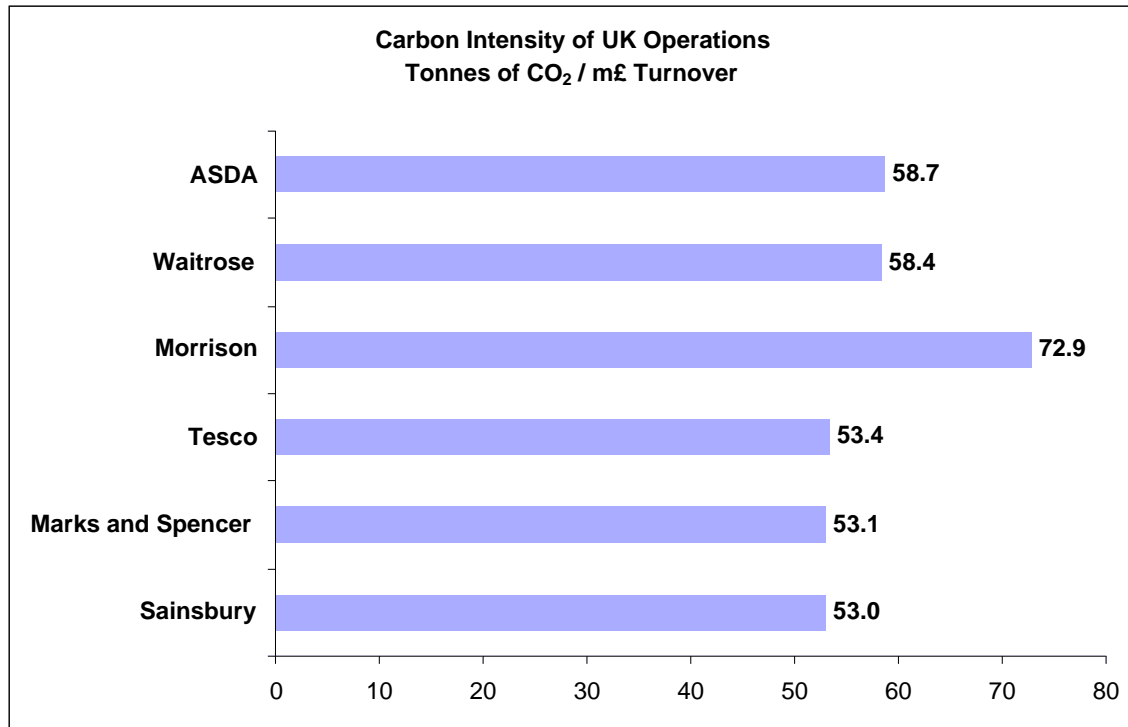
On 18 January 2006, in a speech at the Royal Society for the Preservation of the Arts in London, Sir Terry Leahy, Chief Executive of Tesco, announced a raft of new policies to address the company's impact on the climate. As the largest company in the sector and a powerful voice at the heart of corporate UK, Tesco is to be commended for its announcement. Many of the new measures, if achieved, will make a significant difference to the way the retail sector approaches the issue of climate change. Many will almost certainly save the company money through better energy efficiency too.

But Tesco's existing CO₂ emissions declaration is disappointing. The company currently only reports an aggregate sum for scope 1 and 2 emissions in the UK – DEFRA guidelines recommend reporting scope 1 and 2 separately for the sake of transparency. Unlike Marks and Spencer, Tesco does not report an estimate of its supply chain or consumption (scope 3) emissions. In correspondence with Christian Aid, Tesco pointed out that the company has been 'commended by the Carbon Disclosure Project for our reporting'. However, the company added '... what you see from a year ago is not an accurate representation of where we are now. We have moved a long way further forward, with ambitious targets and commitments in several more areas'.²⁷

Based on data currently reported by each company, while Tesco has 2,500 stores and M&S 600, declared CO₂ emissions for M&S are a little over 5 million tonnes whereas Tesco's are around 2 million tonnes. This amply demonstrates that an absence of mandatory standards can quickly create a perverse set of results as companies pursue different strategies – for example, Tesco does not currently declare scope 3 emissions, whereas M&S does so through estimates.²⁸ Comparing apples and oranges is never ideal, but currently, with regard to the way CO₂ emissions are declared, this is all that can effectively be done.

In future, as companies such as Tesco make changes and improvements, clear, mandatory standards will be even more critical to ensure customers and investors can make accurate comparisons.

For its part, Tesco is not opposed to the introduction of mandatory standards. 'We have no difficulty with a government standard,' the company told Christian Aid. 'Cross industry agreement is going to have to happen. But we hope government will seek to work co-operatively with retailers and experts, not rush such a standard out.'²⁹



Source: Trucost

Christian Aid has produced a comparison of leading supermarkets according to the carbon intensity of their business (see above). Morrisons appears to be the most carbon intensive of those compared.³⁰

Morrisons is also currently reporting in little detail. The company declares only its scope 1 and 2 UK emissions and does not break these down (i.e. it declares them as a single, aggregate sum). According to the DEFRA reporting guidelines, indirect GHG emissions should be reported separately from the GHGs that companies emit directly.

Using average carbon intensities of others in the sector, Christian Aid has added to this an estimate of emissions from Morrisons' fleet of vehicles, which it also does not currently report, and those from the company's supply chain (see table below).

Morrisons	Tonnes of CO₂
Fleet emission	99,241
Energy	764,221
Supply chain	3,597,800
Total emissions	4,963,462

These estimates suggest that, including an account of its supply chain but not of the emissions associated with customer travel or their consumption of its products, Morrisons emits 4.96 million tonnes. Using Stern's US\$85 per tonne would make the cost of Morrisons' emissions US\$421 million.

Morrisons did not respond to Christian Aid's letters and emails before the publishing deadlines for this briefing were reached. However, should Morrisons want to provide a response, Christian Aid will amend the briefing in order to accommodate it.

The importance of large and powerful retailers such as Morrisons cannot be underestimated. They increasingly drive a global production chain that could be significantly de-carbonised. Just as poor labour standards in supply chains have been highlighted and, in some cases, improved by pro-active and responsible behaviour, so can CO₂ emissions.

But the lesson of labour standards, where still there is a miasma of voluntary standards but little regulation, offers insight into a potential parallel effort to prevent rising emissions in developing countries through supply-chain initiatives. Clear, government-set standards – from the start – would save time, money and, hopefully, emissions.

A final word of caution on supermarkets' supply chains ought to be reserved for the potential for CO₂ savings becoming a further cost-cutting exercise. With the support of retailers and with proper investment, an effort to reduce emissions through supply chains could help countries develop cleanly. But much of the upfront cost of this must be borne by those with the highest ability to pay; the supermarkets.

6. The power to cut carbon

'We do not think specific targets [for reducing CO₂ emissions] are meaningful at this stage. We are very aware of our environmental obligations, balanced with the need to ensure security of [energy] supply and an economic return for our shareholders.'

Phil Cox, CEO International Power, letter to Christian Aid, 2007

At the other end of every light switch and power socket is a power station. The indirect or scope 2 emissions for which every individual, organisation and company are responsible are, of course, the scope 1 emissions of the power generation industry. In an industrialised world where emissions of CO₂ must be reduced by five per cent per year, and by perhaps as much as 90 per cent in 50 years time, it is this sector that is arguably the most critical. Power companies ought now to be offering new, innovative, low-carbon projects to the market as it grows more sensitive to the potentially high future cost of carbon.

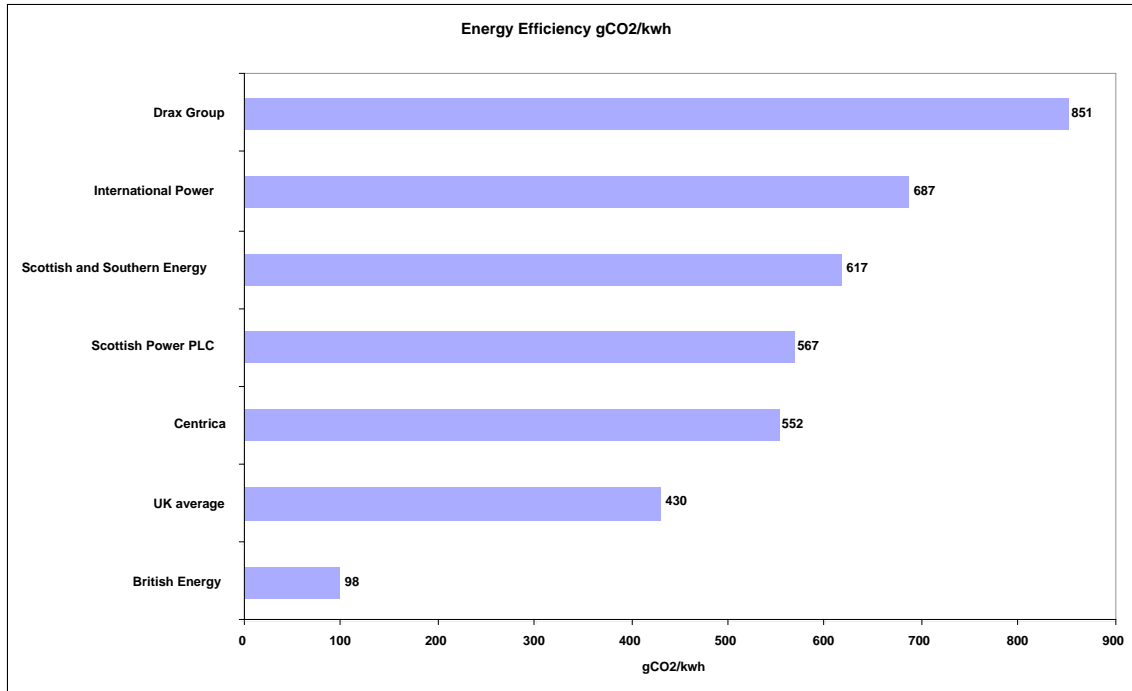
Decisions taken today about tomorrow's power infrastructure will be one of the most significant ways in which catastrophic climate change will either be avoided or triggered. This is doubtless the rationale behind including the sector as the central pillar of the European Emissions Trading Scheme. Applying this discipline to the sector, which is not voluntary but mandatory, also means that the companies involved have had to report their emissions to an agreed standard.

Focusing on this sector as the final part of this briefing knits together both the banking and retailing sectors. Banking is the sector that, along with the wider investment community, lends money to power companies to build power stations or other generation facilities. Retailing involves the big sectors that buy power and, through clear messages, can heavily influence the future behaviour of power companies.

Much attention has, in the past 12 months, been focussed on the mighty Drax power station, a coal-fired plant in Selby, North Yorkshire, which generates a massive 4,000 megawatts of electricity and supplies seven per cent of the UK's electricity needs. Drax's annual CO₂ emissions in 2005 were in excess of 21 million tonnes.

Drax's emissions from one power plant are huge and, of seven companies in the sector compared by Christian Aid, Drax has the highest CO₂ intensity per kwh supplied. As such, it is worthy of special mention. But while Drax's emissions merit note in the UK context, the company only emits in the UK.

In an era of increasing global economic integration, however, it matters less where power is generated – and therefore from where emissions physically emanate – and more where the financial and political power rests to influence what happens. Of the seven companies for which Christian Aid analysed data, International Power – with headquarters in London but with plant worldwide – had both the highest total emissions and the second highest CO₂ intensity to Drax (which was excluded because it is UK only).³¹



Source: Trucost

International Power is listed among the FTSE 100 and has several installations in the UK, including the 1,000 megawatt Rugeley gas-fired power station. The company, which has been growing significantly in recent years, either owns or has interest in power stations with a gross capacity of 28,800 megawatts.³² According to its annual report, International Power generates only one per cent of its power from renewable sources, although during the past year the company has acquired Levanto, a wind energy company operating in Germany and France, adding a further 286 megawatts of renewable power to its existing portfolio.³³

In its annual report, the company lists as assets under construction five new coal- and gas-fired power stations with a combined gross output of 5,562 megawatts.³⁴ Three of these are in the Middle East and one is in Thailand. The company points out that these projects are highly efficient, harnessing both the heat and power generated. The fifth is a large coal-fired power station in Malaysia, in which International Power has an 18 per cent stake.

It is a company that appears to be investing in growing CO₂ emissions while holding a very small percentage of renewable energy assets, although the Levanto deal also includes 126 megawatts of wind power under construction and 24 for which permission to construct has been granted. International Power says this is a 'very important part' of its business strategy.³⁵

In total, International Power's global operations accounted for a little short of 84.5 million tonnes,³⁶ roughly equivalent to the annual emissions of Chile or Austria. Priced according to Stern's US\$85 per tonne, the company's emissions cost US\$7.18 billion.

In correspondence between Christian Aid and International Power, the company said it recognises 'the importance of developing and implementing a low-carbon strategy over

both the medium and long-term'. The company points out that as it has grown, it has reduced its carbon intensity – from 0.794 kgCO₂/kwh in 2004 to 0.687 kgCO₂/kwh in 2005.

In response to Christian Aid's challenge to report to an agreed standard and to commit to annual reduction targets, International Power says that it does 'not think that specific targets are meaningful at this stage', but emphasises its commitment to new technology, including carbon abatement (such as carbon capture) in the long term. 'These new technologies are currently not competitive with conventional generation...' the company says.³⁷

However, International Power says it is not opposed to the call for mandatory reporting standards for CO₂ emissions. 'We would have no issue in principle with mandatory reporting standards, but would recommend detailed consultation with the power generation (and other) sectors to ensure standards are relevant and consistent, both in this country and internationally.'³⁸

Conclusions and recommendations

'For tackling climate change – the world's biggest market failure – is not just an environmental and economic imperative, but a moral one: as much an injustice between generations as it is between nations, with the poorest people in the world suffering worst.'

Gordon Brown, speech to launch the *Stern Review*, October 2006

CO₂ emissions lead to global warming and climate change that threaten millions of poor people in the developing world. Cutting emissions wherever they occur is a must if the process of human development is to continue. Christian Aid is concerned that the developing world may be left locked into carbon-emitting technologies unless investment and other business transactions between rich and poor are not cleaned up. It is not in the interests of poor people for developing countries to repeat the same, dirty and inequitable process of development that has taken place in the rich world.

The UK bears a significant responsibility for climate change as it is one of the most sustained high emitters in the world, and is still churning a significant quantity of CO₂ into the atmosphere. But the shocking reality behind the frequently incanted 'two per cent of global emissions' figure for UK CO₂ emissions is that not only is it a false figure when companies are taken into account, but that we don't even know how much of an under-estimation this will prove to be. The main reason for this ignorance of the UK's real carbon footprint is that the majority of the largest companies listed in the FTSE are reluctant even to respond to voluntary carbon disclosure – and of those that do, only ten per cent declare to an acceptable standard.

The inconvenient truth lurking in the shadows of globalisation is that the UK and its multinational businesses are responsible for a much greater share of the world's CO₂ emissions than two per cent. As has been outlined in this briefing, the extent of carbon emissions is not currently known, but estimates here and elsewhere suggest a share of global emissions that could dwarf the contribution of the UK's domestic economy.

The first step in taking account of the global carbon footprint of the UK is a common, mandatory reporting standard. Such standards already exist – the Greenhouse Gas Protocol and DEFRA's Key Performance Indicators. At present, whether or not these are adhered to is left to the discretion of company directors, producing a perverse range of incomparable declarations.

Christian Aid has sought the advice of company lawyers regarding the paucity of company declarations of their CO₂ emissions. The question asked was a simple one: with the increasing liability posed by the pricing of carbon emissions, are company directors operating outside of the new Companies Act by not giving a full account of their CO₂ emissions?

'The directors' duties and reporting provisions of the Companies Act 2006 recognise that environmental and social matters are important factors to be addressed when considering a company's business and its true value,' says Nick Flynn, environmental lawyer at Weil Gotshall and Manges. 'They represent an important clarification of UK law by explicitly acknowledging that such matters are relevant alongside issues of pure profit.'

'Any reputable company is likely to have been taking account of such issues already and the new law should not represent a significant additional burden for them. Indeed, the government's preference for DEFRA voluntary guidelines on reporting rather than mandatory statutory guidance means that companies retain a considerable discretion in how to present relevant environmental information in their business reviews. As the Environment Agency's 2006 report on Environmental Disclosures by FTSE companies confirms, there is a lack of consistently transparent and comparable data with which to judge companies' relative performance, and it may be argued that an opportunity to address this was missed when the government shied away from mandatory statutory guidance on the content of key performance indicators.

'It remains to be seen how practical it will be for companies, in the absence of a clearer steer from the government, to take heed of the Environment Agency's urging of them to follow the DEFRA guidelines and examples of best practice, and "set high standards for others to follow".³⁹

While regulation is often instinctively resisted by business and invariably appears onerous, it is worth remembering that financial markets work on transparency of key data using comparable measures. As CO₂ becomes a significant, material issue, investors will need a clear standard by which to make informed choices. Misplaced investments made today could, if the world takes effective action on climate change, become stranded (economically unviable) assets in the future.

Transparent emissions declaration is, of course, only a first step. The ultimate aim is the reduction of CO₂ emissions, which must now decline across the industrialised world by an average of five per cent per year for the next five decades. But as poorer countries develop, they will need access to clean technology and investment that is focussed on low-carbon projects. Under current arrangements, where there is little transparency in emissions and not much incentive for investors wishing to avoid putting their money into carbon-heavy operations, poor countries may lose out in finding funds for vital low-carbon projects. Without the transparency that mandatory disclosure would bring, the big money will remain in carbon-intensive programmes.

Of course, Christian Aid is under no circumstances suggesting that all this could or even should happen immediately. It will take time to shift business away from carbon-intensive activities and towards clean development. But given the scale and urgency of the climate crisis, no time should be wasted in beginning this very significant and important programme of work.

It is Christian Aid's view that cutting off the supply of money to big coal and oil projects and encouraging the mainstream markets to move towards renewable energy and other low-carbon technologies is critical. So too is ensuring that there are opportunities to invest in projects that are of genuine benefit to poor people.

Recommendations

To companies

Long experience of corporate social responsibility initiatives has taught Christian Aid to temper its enthusiasm for voluntarism, although when companies willingly clean up their act, it is to be applauded. The arrival of the likes of Tesco and HSBC into the climate change debate with concrete proposals for measuring and reducing emissions does signal a seriousness of intent.

Christian Aid is challenging companies – large and small, private and publicly listed – to do three things:

- calculate all scope 1, 2 and 3 CO₂ emissions
- declare these to an agreed standard, such as the Greenhouse Gas Protocol
- commit to reducing emissions by five per cent per year.

Clearly, each of these three challenges requires work and while scope 1 and 2 emissions may already be easy to reduce and to report to an agreed standard, scope 3 involves more technical work and may require dialogue between companies and other stakeholders in order to establish key principles.

One incentive for all companies in the short term is that they can probably make easy, 'no regrets' reductions, which may save money as well as energy and emissions. Longer term reductions may be more difficult and require greater investment, but as the price of polluting increases, either through more green taxation or through carbon trading with an increasingly limited supply of permits, it is to be hoped that the cost of investing in doing business more cleanly will be lower than the cost of emitting.

There also ought to be some degree of differentiation between small, medium and large businesses, the extent to which they declare and the speed with which reporting requirements are phased in. The larger the business the less onerous calculating and reporting on emissions should be. Nevertheless, scope 1 and 2 declaration ought to be a relatively simple matter of converting existing data on fuel and electricity usage into CO₂ emissions.

To government

The great failure in the current confusing, opaque picture of CO₂ emissions declaration is one of political leadership. For all its posturing on the international stage, the UK government is not taking the required, cohesive action at home.

Added to the prime minister's rhetoric on the unimportance of the UK as an emitter, by down-playing our own contribution to global emissions as 'only two per cent', the UK begins to emerge as anything but the good global citizen. Not only must Mr Blair and his successor be encouraged to consider 552 million tonnes of CO₂ as significant, they must be shown how this is only the tip of the iceberg and how the UK's responsibility for reducing emissions extends way beyond its own shores.

Christian Aid is part of the coalition of organisations that called for the climate change bill, which will be debated in the current session of parliament. The government is to be applauded for bringing the bill into parliament, but is also intent on watering it down by

not setting clear, annual targets for reducing emissions across the UK's economy. Along with other members of the coalition, Christian Aid is committed to campaigning for the bill to have such targets at its heart.

But while carbon transparency in the City of London is reliant on a variety of measures being introduced, such as a proper accounting standard for carbon (something that ought ultimately to have a global appeal), the climate change bill is clearly the best existing opportunity for the government to act on company emissions declarations. So the main ask of government is simple:

- incorporate in the climate change bill mandatory carbon calculation and reporting standards for all companies operating in the UK.

This briefing is a call for very practical, down to earth action to confront the great crisis of global warming. For millions of poor people the climate has already changed and further changes will bring greater misery and loss. It is time to get to work on solutions.

Endnotes

1 Christian Aid has included these two sources in its methodology because, while the annual report and accounts have hitherto been the main source of legally required and independently verified information, with the Business Review requirements of the 2006 Companies Act, the environmental or broader corporate social responsibility reports of companies may increasingly become of material interest to investors. Principle 2 of DEFRA's guidelines on environmental reporting also states clearly the desirability of having environmental information of this sort in annual reports and business reviews. See *Environmental Key Performance Indicators*, DEFRA, 2006.

2 It has only been possible, using data from Trucost, to estimate what these remaining companies' direct CO₂ emissions may be by converting declared fuel use into CO₂, using piecemeal declarations made elsewhere (ie not in the annual report or parallel environmental report) or averages for each sector. Christian Aid included data from 97 of the FTSE 100 companies in its research. One company, Shell, is counted only once but has two listings and two others were newly listed in 2006 and are yet to publish accounts as FTSE 100 companies.

3 CO₂e is shorthand for CO₂ 'equivalent' (CO₂e), which is an internationally accepted single measure for CO₂ and the five other Kyoto Protocol greenhouse gases. Comparability between sectors is made more difficult by the use of CO₂ data in some and CO₂e in others. In this briefing, all company emissions are CO₂ only. All national emissions statistics are for the year 2003 and are for CO₂ emissions only. The UK is the seventh largest emitter, excluding the EU as a whole, which is a double count. The UK's percentage of total greenhouse gas emissions (CO₂e) was 1.95 in 2000 – more recent data for CO₂e is not available, which is why in this briefing we have chosen CO₂ only data from 2003 for government emissions data, all of which is drawn from the World Resources Institute's Climate Analysis Indicators Tools database, see <http://cait.wri.org>

4 *The Carbon 100: Quantifying the carbon emissions, intensities and exposures of the FTSE 100*, Trucost and Henderson Global, 2006.

5 See *The Shirts of their Backs*, Christian Aid 2005.

6 Christian Aid is not, within the scope of this report, querying this model and is itself involved through its employees' pension.

7 In his review of the economic costs of climate change, Sir Nicholas Stern suggests the economic and social cost of a tonne of CO₂ unmitigated is US\$85.

8 See: *Greenhouse Development Rights*, EcoEquity and Christian Aid, November 2006.

9 Scope 1 emissions, according to the Greenhouse Gas Protocol, are those over which the company has direct influence, such as its own, on-site power plants and travel in company-owned vehicles (see 'direct' emissions, endnote 2).

10 *Carbon Disclosure Project report 2006*, FTSE 350, CDP 2006.

11 Annex B of the Kyoto Protocol lists those countries that have taken on targets for greenhouse gas emissions reductions.

12 *Carbon Disclosure Project Report 2006*, Global FT500, CDP 2006.

13 All emissions data in this briefing is provided by Trucost unless otherwise stated.

14 Calculations are based on a global emissions figure of 24,102 million tonnes of CO₂e, IEA Global 2002. Double counting occurs because some of the direct and indirect emissions of the FTSE 100 companies will result from the consumption of fossil fuels purchased from the five companies. This is unknown and therefore we cannot adjust for it. It is important to note that estimates by BP of the company's consumption-related emissions more than halved in 2004 because of a change in the methodology the company was

using. This meant that its estimate of end use emissions in 2004, by the old methodology 1,376 million tonnes, was revised to 606 million tonnes. Christian Aid has used BP's most recent estimate – 570 million tonnes of CO₂e for 2005 – but if we were to use the figure produced by the previous methodology (not available for 2005) the consumption emissions estimates of the five companies added together would clearly be significantly higher.

15 Principle 2 concerns lending for projects in categories A or B of the principles – those with significant or limited social or environmental impact. Principle 3 concerns similar projects in non-OECD countries. See www.equator-principles.com

16 HSBC and RBS' lending portfolios are larger than Barclays' and hence their absolute emissions are too, but using the same methodology, their carbon intensity is lower. It is for this reason that Christian Aid chose to focus on Barclays rather than on HSBC or RBS, although the same arguments in effect apply to all three.

17 Emissions data should always be declared in absolute terms and not using measures of intensity. However, Christian Aid has used intensity figures to make comparisons in each of the three sectors featured in this briefing. Throughout, estimates of overall CO₂ intensity of companies, and of emissions in scopes unreported by the companies, are arrived at using data from Trucost and Trucost's methodology. See www.trucost.com/howtrucostanalyses.html

18 Estimates of the CO₂ intensity of the three banks have been made using the same methodology in each case. This involved using sector averages and details of lending in each sector, as reported by each bank.

19 These figures are, of course, extremely speculative estimates in the absence of actual carbon emissions declared by the companies. It is important to note that as such they merely represent the scale of the issue (ie that emissions associated with Barclays' lending dwarf those of the company's offices, electricity use and staff travel). Christian Aid urges the banking sector and the UK government to focus on the issue at hand – the carbon intensity of lending – rather than debate the accuracy of this estimate.

20 See *Responsible Banking*, Barclays Corporate Social Responsibility report, 2005, p35 and 23.

21 Letter to Christian Aid from Alastair Camp, Corporate Responsibility Director, Barclays, 13 February 2007.

22 See: www.ngpenergycapital.com/ngp_capital_news/NGP%20Barclays%20press%20releasefinal-LP-835pm.pdf and [/www.gasandoil.com/goc/company/cnr64729.htm](http://www.gasandoil.com/goc/company/cnr64729.htm)

23 Letter from Alastair Camp, Corporate Responsibility Director, Barclays, 13 February 2007.

24 Ibid.

25 See: HSBC Carbon Neutral Project report. See http://a248.e.akamai.net/7/248/3622/d591a64b87c83c/www.img.ghq.hsbc.com/public/groupsite/assets/csr/carbon_neutral_brochure_oct05.pdf

26 Letter from Alastair Camp, Corporate Responsibility Director, Barclays, 13 February 2007.

27 Email from Tesco to Christian Aid, 13 February 2007.

28 Marks and Spencer does not provide an explanation of the methodology it uses to arrive at these estimates.

29 Email from Tesco to Christian Aid, 13 February 2007.

30 Intensity was derived by dividing CO₂ emissions by each £1 million of turnover. To obtain a common ground between different companies, the following assumptions had to be made:

- we considered only UK-based activities
- for CO₂ emissions we considered: vehicle fleet emissions, emissions linked to electricity use and emissions linked to natural gas use

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- for Sainsbury's, the carbon intensity includes fleet emission as of 2003/04 as it is the latest information available
 - for Marks and Spencer, the carbon intensity includes Republic of Ireland fleet emissions
 - for Morrisons, fleet emissions have been estimated using an average carbon fleet intensity based on the figures of Sainsbury's, Marks and Spencer and Tesco.
 - for ASDA, fleet emission has been calculated using a total truck mileage figure provided by ASDA and an engine emissions factor provided by the truck manufacturer.
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31 International Power's CO₂/kwh figure is disclosed by the company, and it is not clear from this disclosure how it has been derived. As no figures about total generation have been found, it has been impossible to derive a better estimate.

32 The net capacity, taking into account the percentage of ownership of International Power in specific installations around the world, is 16,642 megawatts.

33 The company reports that it generates one per cent of its power from wind and water in its annual report and two per cent on its website.

34 The net capacity, adjusted to take into account the percentage of International Power's ownership or level of involvement is 1,729 megawatts.

35 Letter responding to queries from Christian Aid, International Power, 12 February 2007.

36 The net emissions, taking into account the percentage of ownership of International Power in specific installations around the world, are 68.5 million tonnes or US\$5.82 billion.

37 Ibid.

38 Ibid.

39 Quotation from Nick Flynn, environmental lawyer at Weil Gotshall and Manges, and director of Advocates for International Development.