



THE NEW ECO-WARRIORS

Can markets succeed where tree-huggers failed? **Geraldine Lambe** reports

When a failed US presidential candidate makes an environmental disaster movie, cynics may suggest it is an attempt to revive a flagging career by showing he is in touch with the zeitgeist. When investment banks show an interest in environmental, social and corporate governance (ESG), those same cynics will argue that there must be money to be made.

The banks are clearly interested. Many have signed up to the Equator Principles that embed sustainable and responsible investment (SRI) criteria in project finance, and nearly all of them are bringing SRI into their mainstream research process. Energy bankers are increasingly focused on alternative energy and fuel, and commodity traders talk about carbon emissions almost as much as they do about copper or oil.

Very senior personnel have been redeployed. At Lehman Brothers, the bank's senior policy adviser, Dr John Llewellyn, is a European policy heavyweight who spent 17 years at the Organisation for Economic Co-operation and

Development – the final five as chief of staff. A founding member of the European Central Bank shadow council, and a member of the president of the European Commission's group of economic policy analysis, Mr Llewellyn now spends all his time studying scientific evidence for climate change and looking at how investment banking technology can be applied to solve environmental problems. His thoughts and the bank's positioning paper are expected at the beginning of 2007.

Investment banks, from Goldman Sachs to ABN AMRO, have created specific business groups that draw together people from trading, structured finance, research, sustainable development and business development to identify the challenges and exploit the opportunities posed by ESG.

Environment in safe hands

What some see as opportunism, others see as evidence that such matters are finally falling into the hands of people who can make a difference. While tree-huggers and philanthropists have played an important role in highlighting such issues, and governments and multilateral organisations have tried to penalise irresponsible behaviour, collectively they

have largely failed to halt the destruction of the world's rainforests or cool the progress of global warming.

When big banks and big business get involved, market proponents argue, money moves and change happens.

"The environment has been in the hands of the wrong people. Environmentalists and bureaucrats are not the right people to solve the problems," says John Forgach, former banker and founding CEO of re-insurer ForestRe. "Long-term environment projects have been held hostage to the cycles of democratic politics. Multilateral organisations do not have the stomach to run the kinds of projects that such challenges demand. They are an excellent platform for debate but funding should come from the private sector and the capital markets: multinational companies' existence is dependent on their access to raw materials, and the global investor base has the capital needed for investment. Both are accountable [to shareholders and investors] in a way that multilaterals will never be."

Niall Cameron, global head of traded products at ABN AMRO and head of the bank's ecomarkets group, says the resolution of many environmental challenges is a logical extension of investment banking business. "When we began thinking of these things as risk management issues, we could see the opportunities for our business. Our clients may be affected by environmental change or water shortages, for example, and we can help to hedge those risks; or we can advise clients and help finance their transition to new business models as they adapt to regulatory demands."

Goldman Sachs also sees embracing such issues as a logical move for investment banks. Aside from investing about \$1bn in the clean/alternative energy space – including investments in wind, solar and cellulose – Goldman is focused on several key areas to address SRI and ESG. "First, as a natural adjunct to our trading and commodities expertise, we decided that we must play a key role in environmental trading markets, such as the EU's emissions trading scheme (ETS)," says Mark Tercek, managing director in charge of implementing Goldman's environmental policy and head of the bank's think-tank, the Centre for Environmental Markets.

"Second, we are in the process of rolling out worldwide SRI/ESG research that focuses on environmental risk and opportunities. We have also incorporated analysis of environmental and social issues into the core of our advisory business. Finally, our Centre for Environmental Markets is looking at markets-based solutions for environmental problems and collaborating with non-governmental organisations and academic institutions to identify opportunities and provide tools for policy makers."

Carbon market

The most obvious manifestation of the influence that markets can exert is the emergence of carbon emissions trading markets. The US has a voluntary market, the Chicago Climate Exchange, which aims to drive down emissions without government regulation. Europe, as a signatory to the Kyoto Protocol, operates the EU-mandated ETS, which imposes caps on emissions but also allows firms to trade their allocated pollutant rights to meet targets: the 'compliance' market.

To acquire additional trading rights, polluting companies can fund projects in the developed world to earn tradable

emissions reduction units (ERUs), or fund clean development mechanisms (CDMs) in developing countries to earn certified emissions reductions (CERs).

Many believe that this 'cap and trade' framework is achieving results where green-inspired government exhortation or penalisation did not, and banks are driving the market as risk takers and market makers.

Morgan Stanley, for example, announced last October that it will invest \$3bn over the next five years in carbon credits and other initiatives. It says the majority of the investment will purchase carbon credits from projects as its commodities trading department expands its existing carbon and emissions platform. The remaining investments will be in emission reduction projects, such as those certified under the CDM.

By committing risk capital to CERs, says Kevin Rogers, global head of currency and commodity complex risk at Deutsche Bank, investment banks are brokering a market in CERs in the same way as in FX or derivatives. "Six months ago, this market didn't exist, now million-tonne trades are pretty commonplace," says Mr Rogers. "The liquidity available in the CER market is approaching, if not exceeding, that in the ETS."

The emergence of a cash market – made up of hedge funds and traditional institutional investors – is deepening the compliance market. Financial participants provide additional liquidity and drive the creation of more sophisticated and structured products to suit their investment needs. That liquidity is helping compliance traders to hedge their exposures more efficiently, thereby encouraging greater use of the system.

For example, in the CDM space, banks are structuring projects with credit wraps that encourage greater participation by institutional investors and greater uptake by the compliance market. In September 2006, Deutsche Bank worked with specialist investment bank Climate Change Capital (CCC) on the largest ever private sector syndication of a CDM project in China for Chinese chemical company Zhejiang Juhua, which will generate the equivalent of 29.5 million tonnes in CERs over six years. CCC syndicated the funding out to a group of investors, including hedge funds, and Deutsche guaranteed the underlying payment structure.

"We ensure that each portion of funding is handed over as the CERs are generated, thereby credit wrapping the syndicate and eliminating the Chinese company's exposure to each syndicate member," says Mr Rogers.

Forest bonds

In Panama, an innovative plan is under way to fund an environmental project using the capital markets. In a project called Beyond Timber, ForestRe's Mr Forgach and the Smithsonian Tropical Research Institute are working with the financial markets to fund the reforestation that will solve the Panama Canal's problems. Reforestation of the surrounding watershed will improve regulation of the flow of water into the canal, trap sediment and nutrients, and thereby help prevent clogging and cut expensive dredging costs. With the country in debt, funding had to be found elsewhere.

An examination of the cash flows surrounding the canal's business revealed the enormous cost of insurance and suggested to Mr Forgach that a capital markets-based >>

solution was the logical solution. It also unearthed the 'natural' underwriters and investors. He has constructed a deal in which reinsurers will underwrite a 25-year bond to pay for reforestation, while heavy users of the canal (multinational companies such as Wal-Mart) and traditional investors (like pension funds) will buy the bond.

According to Mr Forgach, 40% of the US's products pass through the Panama Canal and the cost of insuring against losses is huge. A Panama Canal Authority report showed that two-thirds of the [insurance] risk is environment related – such as too little water or delays because of regular dredging.

"Reforestation will drastically cut insurers' exposure to environment-related risk, while users of the canal – who currently buy expensive insurance against the losses they would suffer if the canal were to close – will pay a reduced insurance premium when they buy the forest bond. For traditional investors, such as pension funds, the long-term nature of the forest bonds matches their need for long-term assets."

Mr Forgach says a European-based investment bank has designed an insurance wrap that will strip out the Panama country risk element and wrap the bond with an insurance obligation. "Essentially, the insurance premium pays for the coupon obligations and, net-net, the country risk is eliminated, leaving only straightforward business risk." This, he says, will help the product appeal to institutional investors.

Beyond Timber Corp is managing the project start-up and, when the funding has been raised, a special purpose corporation (SPC) will be created to start purchasing land, building infrastructure and buying equipment, etc. "There is talk of raising up to one-third of funds via a public equity issue in Panama, guaranteed by a multilateral agency," says Mr Forgach. "That way, Panamanian pension funds and banks could buy shares on the Panamanian market. They could, of course, also buy some of the bonds."

All funding, bonds or equity, will be used to finance the SPC's operations and carry out the project under the management of Beyond Timber. "On maturity, the SPC will pay back the bondholders – in cash or equity [if the project opts to use convertible bonds, and the bondholder wants the equity] – using the proceeds from the realisation of the assets purchased [timber, land, carbon credits and water

rights, etc] from the bond issue. The project's cash flow will service the bondholders' coupons."

The **Banker** was unable to get comment from the insurers, banks, corporates or investors involved in the Panama project; Mr Forgach suggests that it is "still too early" for participants to talk publicly. "We are only in the fourth year of a 30-year project [they are still deciding which pieces of reforested land would best 'feed' the watershed, and growing the necessary five million native trees from seed], but we are seeing huge appetite from insurers and investors," he says.

There are hopes that the Panama project principles will be applied elsewhere: to reforest areas devastated by hurricanes or to reforest 'depleted' land, such as the Congo Basin and the Zambezi River System. With increasing water shortages, the Zambezi river produces less electricity and feeds less power to smelting industries to the north. "In the same way as Panama, the river system could be vastly improved by improving the watershed through reforestation and there is a similar set of natural underwriters and investors," says Mr Forgach.

Valuing infrastructure

The Panama solution highlights one of the most topical and difficult debates in the eco-sphere: how to value forest beyond the value of the timber and the land? Just as carbon trading schemes aim to establish a market value for carbon emissions and, to a degree, to make the polluter pay, there is an argument that a price should be put on 'natural' infrastructure, such as forestry, fisheries and water supply; and ecosystem services, such as carbon sequestration, the maintenance of groundwater levels and the maintenance of habitat, soil health and fertility. Many believe that users, whether individuals or corporates, should pay for such services.

At last November's United Nations climate meeting in Nairobi, the subject of paying countries to prevent deforestation as a means of mitigating climate change was a hot topic. Since the 2005 UN summit on climate change, a coalition of more than 15 'rainforest' countries, the Rainforest Coalition, has been arguing that they cannot be held responsible for preserving the world's biodiversity.

Already battling to defeat poverty, the Rainforest Coalition says its members cannot be expected to forfeit

income from economic activities that result in deforestation, especially when other countries benefit from forest services. If global powers want to preserve the rainforests and the natural services they provide, they must pay. Last September, Brazil, which has the largest amount of tropical rainforest and the world's highest rate of forest loss, said it would promote a similar initiative.

The figures for avoided deforestation are persuasive. In 1997, New York City elected to spend \$250m on buying land and to pay farmers \$100m a year to minimise water pollution so that they could preserve the quality of New York's water by preserving the rural nature of the Catskill Mountains. It is estimated that the choice to protect the environment rather than build water filtration plants has saved the New York tax payer billions of dollars.

Monetary framework

A report published by the World Bank in October 2006 builds on the principle of putting the developing world's contribution into a monetary framework. *At Loggerheads? Agricultural Expansion, Poverty Reduction and Environment in the Tropical Forests* estimated that deforested land worth \$200-\$500 per hectare as pasture could be worth \$1500-\$10,000 if left intact and used to offset carbon emissions from industrialised countries, as well as earning other biodiversity goodies.

The bank said that extending the concept of carbon finance is the best way to reduce deforestation and promote sustainable agriculture. "Compensation for avoiding deforestation could help developing countries to improve forest governance and boost rural incomes, while helping the world at large to mitigate climate change more vigorously," said François Bourguignon, chief economist at the World Bank.

The bank advocated the identification and guarantee of forest rights, and payment for environmental services. It also suggested that proposals such as use of tradable forest protection obligations in Brazil could increase the biodiversity benefits of regulation and make it easier for landholders to reduce deforestation. Essentially, these are 'transferable rights' that make economic development the vehicle by which greater environmental protection is achieved.

Such a system would compensate owners of land that is rich in biodiversity for the cost of not exercising their rights to develop their land. Land would be classified according to its conservation importance and development would be restricted in the areas of greatest importance to biodiversity, but it would require developers in other locations to offset their activities by purchasing development rights from those in restricted areas. In this way, demand for development

THERE IS EVIDENCE THAT THE EQUITY MARKETS MAY BE AS EFFECTIVE AS GOVERNMENT REGULATION IN CHANGING CORPORATE BEHAVIOUR

would create a corresponding demand for conservation and those with important biodiversity land would be compensated for their lost opportunities to develop.

The Nairobi meeting was the first time that avoided deforestation was tabled for official debate by the UN's Food and Agriculture Organisation, and much was expected from the talks. It was hoped that, in the spirit of the UK's Stern Report, the UN could foster at least the beginnings of a process that put an economic value on the destruction of the environment.

The meeting produced more discussion, not decisions.

Nobody underestimates the difficulty of putting a value on services that have public good characteristics and that cannot be subjected to clear property rights, but many believe Nairobi was a missed opportunity.

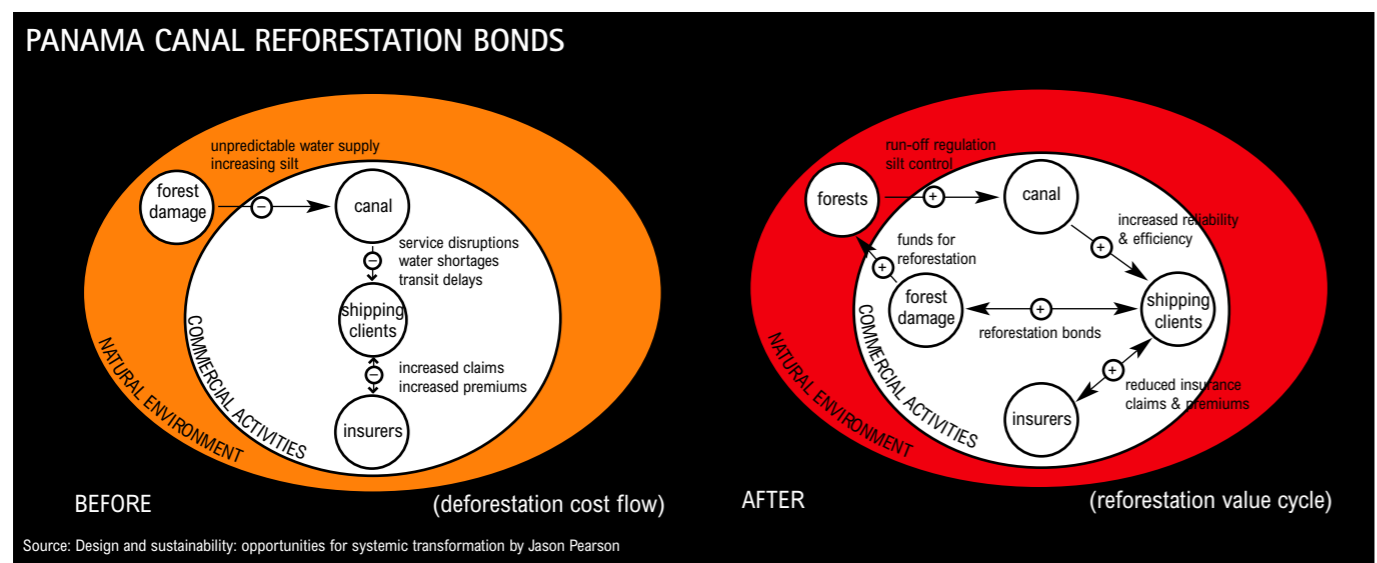
"There is still no consensus on how to begin valuing infrastructure services – even relatively straightforward ones like carbon sequestration; and, despite the World Bank report, old-growth carbon sequestration credits and deforestation emissions [currently responsible for 18% of global emissions, according to the UK's Department for Environment, Food and Rural Affairs] remain excluded from both the Kyoto Protocol and the fledgling global carbon emissions markets. Both of those things could have allowed us to begin developing markets in services and emissions trading," says one investment banker, whose firm is already working towards metrics on which to base values and how it could broker such markets.

Extending the concept

Thinking more holistically about the real cost of ecological services could yield further targets for the imposition of market mechanisms. Last year, Fred Pearce, an environmentalist and writer for *New Scientist* magazine, published a book called *When the Rivers Run Dry: Water – the Defining Crisis of the 21st Century*; its take on the "virtual water trade" took a realistic look at the cost in water terms of manufacturing, agriculture and animal husbandry. Its conclusions were stark: it takes up to 4000 litres to grow the fodder that will deliver a litre of cow's milk, and up to 11,000 litres to make a quarter-pound hamburger. If the human race is not to run out of water, and fast, people need to understand (and, by implication, pay for) the water cost in everything they do, consume, wear or produce.

Redefining what we think of as a 'free good' and the experience of successful trading systems in other eco-assets could eventually lead policy makers to impose market mechanisms, such as permit trading, on fundamental necessities like water.

In view of regulatory pressure such as the European >>



Water Framework Directive, which requires countries to manage river basins in a more holistic way, such radical decisions may not be out of the question, says Julie Hudson, head of SRI, equity research at UBS Investment Bank. "Conversely, such an approach may also change the cost parameters of new developments, such as a river dam or a manufacturing plant, and potentially undermine their feasibility," she adds.

And as the world gets closer to boiling point, will any 'free goods' prove unassailable by the markets? Tradable development rights can be required before a development is approved, tradable quotas imposed on fisheries and ever tougher limits on corporate carbon emissions. Who is to say that, one day, bankers will not be brokering a market in certificates based on personal carbon quotas?

Eco-securitisation

If the political will (and pricing methodology) can be found to put a value on ecosystem services, then other market-based methodologies could seriously begin to reap benefits for the environment. For example, there are hopes that securitisation techniques could be used to protect and preserve the rainforest.

The EcoSecuritisation Project was established in mid-2006 in conjunction with organisations including the International Finance Corporation and the UK's Department for International Development. It is testing the feasibility of financing 'natural infrastructure', such as forestry, fisheries or water supply, by linking their sustainable management with the funding capacity and requirements of asset-backed securitisation.

It is already clear that forests appeal to institutional investors. Globally, more than \$30bn is invested in forest assets, although mostly through funds and largely in the US. Forest assets offer competitive returns with a low or negative correlation to traditional asset classes, making them a counter-cyclical hedge.

From an asset liability management perspective, a portfolio of timber assets of differing maturities may also be attractive to investors who need secure and stable long-term assets. "The financial profile of natural forestry is well matched to the liabilities that accrue over the active portion of pensions plans," says Simon Petley, a former bond broker and now CEO of EnviroMarket, the environmental markets consultancy firm that is leading the EcoSecuritisation Project.

Forest assets are also being used in asset-backed deals in the US, EU and Latin America to monetise forestry-related assets. Eco-securitisation is differentiated from conventional securitisation by its focus on environmental and social, as well as financial, returns. Mr Petley and his team aim to bring a new debt instrument into the financial mix that utilises the full asset range of a sustainable forestry business as security, including carbon sequestration, biodiversity and water management credits, and other ecosystem services.

Exploration of structures

The sorts of structures and underlying assets that could be applied are still under discussion (and would probably be tailored to suit different investor bases), but Mr Petley says that for many of the countries with certified rainforest, carefully structured future flow transactions – possibly involving pay-

ments for carbon sequestration and avoided deforestation – have potential, as do structures that involve local government payments. "The willingness of multilaterals to provide credit enhancement is also seen as a key element in making these types of deals fly," he says.

One possible structure being explored by the team is based on the securitisation of state-owned rainforest. Payments for forest services, such as carbon sequestration, biodiversity, ecotourism and rural development, are captured in an offshore special purpose vehicle, which becomes the legal owner of a portfolio of rainforest assets, and used as the collateral to issue securities.

A senior tranche, perhaps credit wrapped by a multilateral, would capture the lowest risk payments; less certain revenue streams – say, anticipated future payments for biodiversity – would be assigned to a more junior tranche. The security would be sold according to investor appetite: the senior tranche would be aimed at mainstream institutional buyers, while the junior tranche would be marketed to buyers who are more in tune with the underlying sustainability attributes of the asset.

The key is that, instead of earning money by logging the forest, the government preserves the rainforest and raises money from the value of the ecosystem services the forest provides.

"What we need is to tap an investor base willing to pay for carbon sequestration and biological services," says Mr Petley. "At the moment, that is pretty much limited to non-governmental organisations through contributions from individuals who wish to offset their carbon footprint. The big question is to what extent corporates or other entities would be willing to pay for such services."

That is why the lack of any concrete decision or valuation methodology from the Nairobi meeting is a disappointment. "We were hoping for firmer direction on the value of and payments for avoided deforestation," says Mr Petley. "We can already see there is a big appetite for this kind of product in the voluntary market, from individual consumers and SRI investors, but clear policy direction could enable us to tap a broader, institutional investor base."

Equity markets

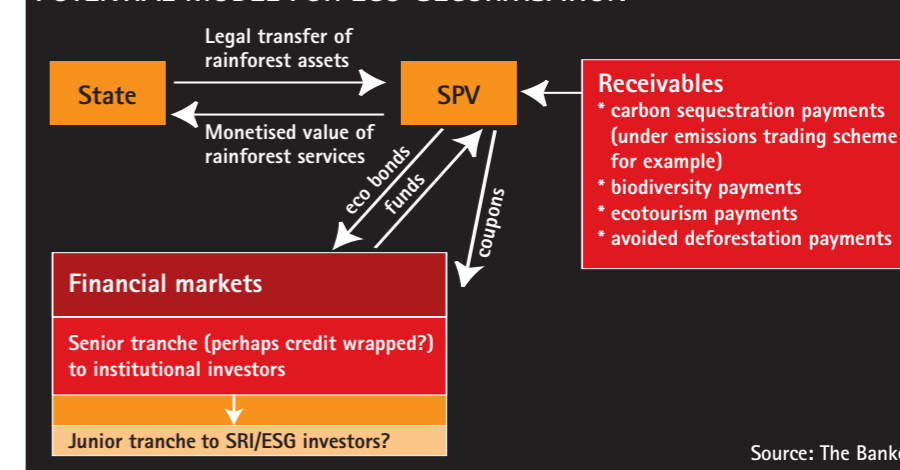
There is evidence that the equity markets may be as effective as government regulation in changing corporate behaviour to secure environmental benefits. When ESG affects share price, then boardrooms will take note. SRI is gathering momentum as a mainstream criterion in equity analysis, and several stock exchanges have launched tradable indices that track sustainability-driven companies (Dow Jones in 1999) or environmental and social governance alongside financial performance (Johannesburg Stock Exchange in 2003 and Brazilian exchange Bovespa in 2005).

Indices provide additional tools to embed ESG into mainstream investment, to enhance transparency and liquidity. And they are an excellent platform on which investment banks can create new products to marry an ESG view with financial performance.

ABN AMRO, for example, plans to use the Carbon Disclosure Project's 'leadership index', created using the carbon footprint data from the top 500 companies in the FTSE index, as a basis for structured products. "Our analysis

IF GLOBAL POWERS WANT TO PRESERVE THE FORESTS, THEY MUST PAY

POTENTIAL MODEL FOR ECO-SECURITISATION



shows that the more environmentally friendly companies also perform better," says Dr Paul Thind, executive director in new product development at ABN AMRO. "We are creating structured products that mirror the share performance of those leaders. There is enormous appetite for products that perform well financially and enable investors to do something positive."

ABN has also partnered with Standard & Poor's (S&P) to create indices across eco-themes such as water conservation, solar power and other renewable energy. In the past year, it has raised more than €1bn from retail investors and the bank's target is to raise a further €2bn-€3bn in 2007.

"We will also use such indices to grow the institutional market in more sophisticated products, such as leveraged funds or capital protected products," says Dr Thind.

Ultimately, these kinds of products will encourage a link between share price performance and ESG and create a virtuous circle, says Richard Burrett, managing director in the sustainable development group at ABN. "As the range of products grows, and more and more investment is prioritised according to ESG, companies will take notice of investors' positive response to this kind of performance, and this will encourage broader uptake of ESG criteria."

Imperfect mechanism

Using market forces to promote change means submission to the laws of supply and demand, and reliance on the voluntary involvement of market participants. Neither is a perfect mechanism.

And there are many who do not subscribe to the view that the markets know best. Some argue that capitalism in 30 years has created most of the problems it is now charged with solving, while many environmentalists argue that carbon trading simply allows rich, dirty industries (or countries) to pay their way out of cleaning up. Members of organisations such as Friends of the Earth fear that environmental markets will impoverish the poor. Other critics have ridiculed the banks' Equator Principles, citing environmental damage caused by the projects they finance.

There are also structural problems, some of which only policy makers can fix. ABN's Mr Cameron says: "Carbon

credits need to be standardised and fungible, and there has to be a shortage of credits before the market can develop further or really begin to cut emissions. As importantly, we need long-term policies from government – saying what will happen after 2012 when the ETS finishes – so that the industry can invest in the market's long-term development."

Lehman's Dr Llewellyn agrees that policy must support and encourage market solutions. He says that market forces and relative pricing do not work in a vacuum. "In some instances, it is only when policy makers have established that the benefits of 'internalising the externalities' [in other words, incorporating the cost of what was once free] outweighs the cost of doing so that investment banks are able to apply financial technologies to a problem.

"For example, until recently the value of not cutting emissions was zero, because nobody was paid for not doing something. As soon as policy makers imposed a charge for CO₂ emissions, a market mechanism emerged."

In the words of Mr Forgach, the world is on the verge of something monumental: the coming together of policy, financial markets and business to secure real environmental progress.

The Stern Report and other government initiatives show that policy makers are beginning to bring ESG into the balance sheet. The Sustainable Agriculture Institute, founded by the producers of most of the world's food to examine their energy and carbon footprint, biodiversity and social impact, may be motivated by self-interest (what would Coca Cola do without access to the clean water that constitutes 95% of its product?) but the end result is positive: food and beverage companies (and, separately, the oil and gas industry) are pumping billions of dollars into biodiversity and water projects, and into clean technology and alternative energy.

Even ardent environmentalist Jonathan Porritt, former director of Friends of the Earth and co-founder of Forum for the Future, has come to the pragmatic conclusion in his book *Capitalism as if the World Matters* that capitalism is the only force left that is flexible and potent enough to make a difference to the world's ecological problems in time.

It may have taken them a long time to wake up, but can markets succeed where environmentalists failed? **TB**