

## Fukushima's impact

The appalling earthquake and tsunami in Japan have almost been forgotten in the subsequent crisis at the Fukushima nuclear power plant. The release of radioactive materials into the environment has sent shudders through the populations, and some governments, of the world.

Some have ordered safety reviews; some have shut down reactors; while others see commercial opportunities – for example, Britain, Germany and France, respectively.

The trouble with nuclear accidents is that they trigger fears that go way beyond the rational. And, as any green will tell you, even a rational view can be quite scary.

If you look at hard facts surrounding the number of deaths directly attributable to any particular power system, nuclear's tally per terawatt/hour is quite tiny. Over 4,000



times more people die coal-related deaths. Only wind and hydro experience fewer deaths than nuclear. (Stats here: [tinyurl.com/4bsmkbc](http://tinyurl.com/4bsmkbc))

So death is probably not a brilliant guide to the wisdom of nuclear power. Some will say that no risk is worth it. Others will say that science will find a way through. (See our news story on page 7 about thorium reactors that

can use conventional nuclear waste as feedstock.)

Bigger issues are probably timescale to service and cost – especially if a genuine lifecycle cost is taken into account, from design to decommissioning and long-term storage of spent fuel and other radioactive materials. Most renewable energy systems can be implemented very quickly.

## Alternative Vote

North Africans are dying, literally, for 'democracy'. What a contrast to the UK where many take it for granted. On 5 May we have the chance to give our view on the Alternative Vote. For Londoners, that's the only reason to turn out. If they don't the referendum will be skewed to the views of those who have other reasons for voting, be it at local council or regional government level.

Unless we all exercise our right (some, with good reason, call it duty) to vote, we must live with the outcome.

(More in *Thinking Allowed* on page 27.)

**Does sustainability really have anything to do with politics? Find out on pp. 16-17.**

**Confused about ethical investment? Check out our FAQs on p. 22. If you need more help, our independent advisers on pp. 20-21 are all experienced professionals - why not give one a call?**

**Green dragon Ben Goldsmith felt Nature calling from an early age. Find him on p. 19.**

## 65 no longer means 'the end'

While many men are happy to retire at 65, they no longer have to, thanks to the scrapping of the default retirement age in six months' time (the official retirement notice period). While employers who are afraid to confront problems can no longer rely on state-supported dismissal, others will welcome the opportunity to retain valued skills and knowledge for a bit longer.

The employee has more time to adjust to the 'worth something on Friday and nothing on Monday' syndrome and, for many, a mental and physical decline as they struggle to come to terms with unwanted retirement. Employees and employers are now able to plan an orderly transition to retirement. The employees also have the chance to improve their pension prospects.



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# EDITORIAL

## Why We're Optimistic...

Hello again. I hope you enjoy the magazine as much as we enjoy creating it for you. And I hope you'll tell us if you'd rather we cover more of some things and less of others. We know we won't satisfy everyone, but we'd like to have a jolly good try. This month we've popped a survey on page 31 to make it easy for you to share your thoughts. No need for a stamp, although we'll have to trouble you for an envelope.

What I find particularly exciting about *Blue & Green Tomorrow* is the absolute fire-hose of information and innovation that comes our way. We filter thousands of news stories each month, quite apart from all the emails that come in announcing this and that. It gives us a broad sense of what's going on and, it has to be said, an overall feeling of optimism about the chances of creating a better world for all the generations to come.

Not only that, but we meet people all the time, from business, from charities, from research organisations and from financial services. They all share their points of view. And, yes, we do listen to the deniers, the warmists and all manner of other 'ists' to keep ourselves as honest as we can be.

We don't like all we see but we do have an unashamed fondness for sharing the best stuff with you. This month, apart from the obvious political theme in the light of the upcoming referendum and elections, you'll find unpressurised nuclear reactors that use inert fuel, hydrogen capsules that behave like fluid at room temperatures, clever wave energy capture devices, new forms of investment and philanthropy, trips to Ethiopia... We run stories on all of these topics, and more, so that you can share in our enthusiasm for what we hope will be a bluer and greener tomorrow.



**David Tebbutt**  
Editor

[editor@blueandgreentomorrow.com](mailto:editor@blueandgreentomorrow.com)

## Why Blue & Green Tomorrow?

We're indebted to Douglas Adams for writing *The Hitchhiker's Guide to the Galaxy*, in which he describes Earth as "an utterly insignificant little blue-green planet". Now you know where the title comes from ...

Our magazine is for thinking people who'd like our planet to be as blue and green tomorrow as it was yesterday.

**Editor** David Tebbutt, [editor@blueandgreentomorrow.com](mailto:editor@blueandgreentomorrow.com); **Subeditor** Lori Heaford, [www.loriheaford.com](http://www.loriheaford.com); **Design** Dominic Kershaw, [www.inkengine.co.uk](http://www.inkengine.co.uk); **Publisher** Simon Leadbetter, [publisher@blueandgreencommunications.com](mailto:publisher@blueandgreencommunications.com); **Advertising** [advertising@blueandgreentomorrow.com](mailto:advertising@blueandgreentomorrow.com); **Production** Marcus Dobbs, BGP Limited – Bicester; **Distribution** Jan O'Shea, Jordan & Co. – Oxford.

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## YOUR SAY

**We love to hear from you, whether you're offering a brickbat or a bouquet; that's how we fine-tune your magazine. If something provokes you or inspires you, why not share it with other readers?**

### Forests for all

There is no case for the sale of British forests. This is not a sentimental or nostalgic point of view. There was a time when our high streets, woods and national infrastructure were owned by 'the people'. Successive governments have conflated public ownership with state ownership and sold back to us what we already own. Just look at the mess that has been made of our national energy policy, railways and the damage it will ultimately inflict on the Royal Mail and the NHS. Our high streets have been devastated by out-of-town, privately-owned and hermetically-sealed malls. I am neither a socialist nor an anti-capitalist but the overriding purpose of business is to make profit. I believe that what little of our national woodlands we still own we should damn well keep for the benefit of all and future generations.

**Jim West, Company Director, Cardiff**

### You're not neutral

I recognize that your agenda is to push ethical or sustainable investing but my concern is

return on investment. Many of these funds invest in basket-case economies and unproven business models putting people's hard-earned money at risk. Surely you need to present a neutral view about investment risk as you do about the causes of climate change. My investments give me a return, provide funds for companies that create jobs that pay tax, tax this country desperately needs right now. Putting money into hare-brained and idealistic funds is the privilege of those who have money to waste.

**Boris Thompson, Surveyor, Hampshire**

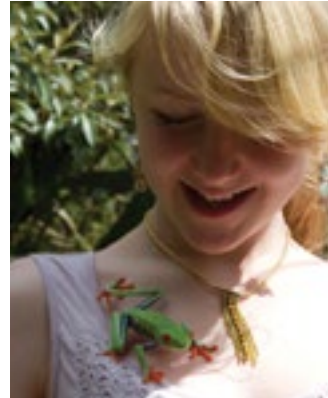
*Ouch! That hurt. We don't think of ourselves 'pushing' as much as 'focusing on'. But, we do see where you're coming from. We have encountered some of the kinds of funds you're talking about and have refused to countenance them. We try to apply an intelligent filter to what we choose to cover but, in the end, we have to make a judgement based on plausibility. Some readers can tolerate more risk than others, investment decisions are theirs alone. We do not advocate; we simply try to explain.*

### Costa Rica, costa lessa

I was interested to read the article on holidays in Costa Rica as we went there last Christmas as a major family holiday. I too have a concern about the carbon impact of our trip but considered the education of my children to be important – this was the farthest they have travelled and the first time they have

seen a range of tropical habitats and creatures.

We paid less than 2/3 the headline price you quoted, but we travelled by coach in a small group with two other families. The critical fact your contributor failed to mention is the cost of meals outside the package deal, as these added very significantly to the overall cost of the holiday. Meals in Costa Rica are not cheap – which is eco-friendly as you don't waste food!



The picture (that I've chosen from several) is Ellen, aged 13, with Penelope the tree frog.

**David Bradley, Property Manager, Hampshire**

*Thank you for your story, David. Just as restaurants vary in price, so do holidays. So much depends on the time available and the degree of luxury you seek. Your point about educating the children versus carbon impact is a very important one and we each have to settle that balance in our own minds.*

### The feel-good factor

You have convinced me. I have switched my funds to a more ethical portfolio and it feels good. What surprised me most is that the estimated

return is no different from the old 'dirty' portfolio I had. The IFA I spoke to was incredibly helpful and helped me ask questions and navigate through various options to find the mix of companies (after all that's what funds are made up of) I wanted to back. It felt so much more useful to invest in this involved way than simply giving my money to any old business – it's even tempted me to look at doing some trading myself to back the companies I really believe in, but not just yet.

**Simon O'Leary, Director, Rugby**  
**Our choice**

I agree that we have a choice (*We Have No Choice, March*). A choice between national bankruptcy or economic salvation. No one likes to cut valued services but, to quote the former Chief Secretary to the Treasury, "there is no money left". Yes we should sell the woodlands, allow private companies to provide health services, get rid of the Royal Mail and let the state do what it is good at: defence and providing a safety net. Margaret Thatcher dragged a failing nation, under the yoke of over-powerful unions, kicking and screaming into the modern age making us an independent and proud nation once again. The planet matters, obviously, as it's the only place we have to do business. Anyone who doesn't understand that yet is a fool. But, *B&GT*, less of the socialist mantra please.

**David Carruthers, Entrepreneur, Newcastle**

**Tell us what you think** (see page 31)



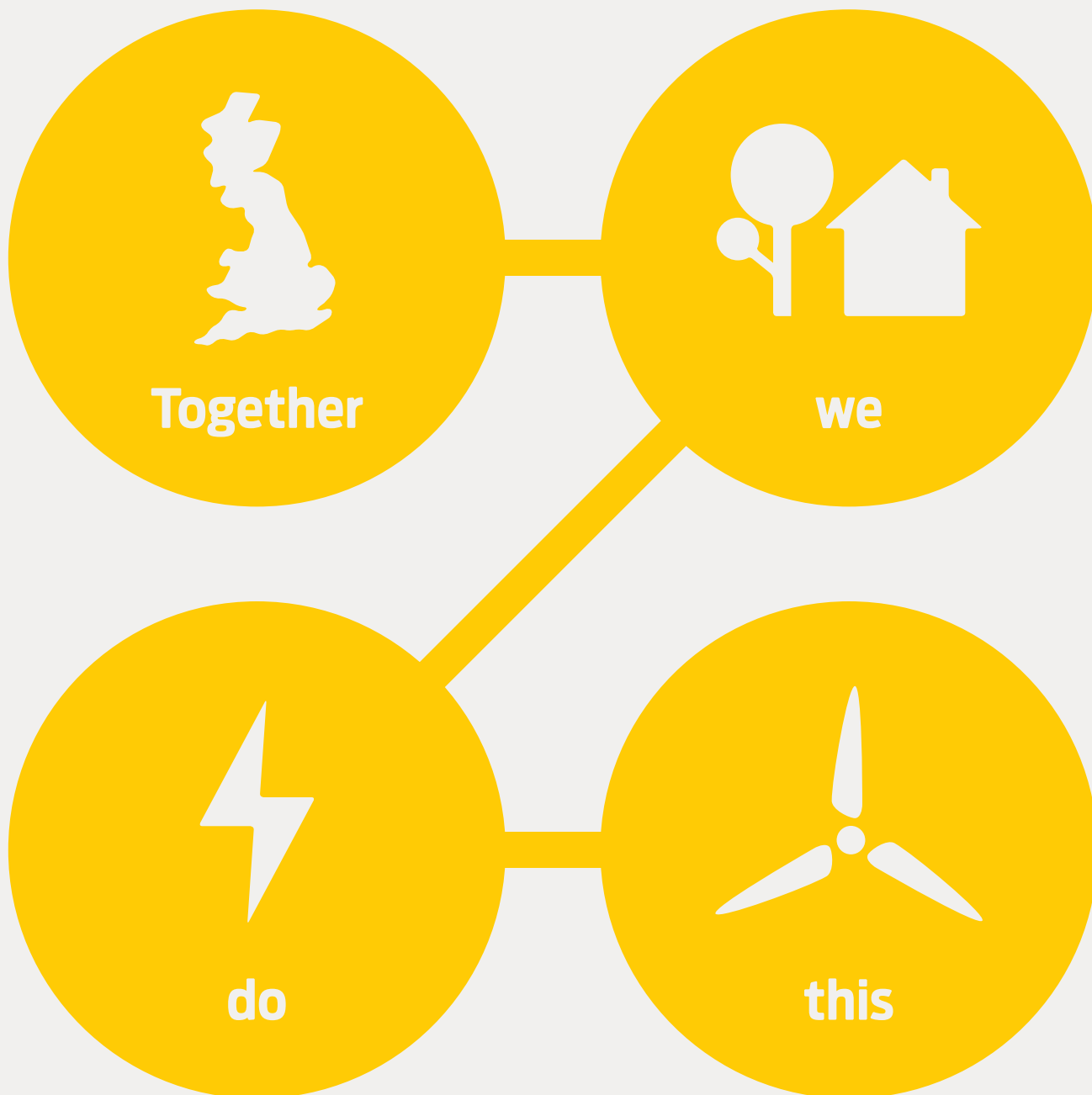
**Email:** [editor@blueandgreentomorrow.com](mailto:editor@blueandgreentomorrow.com)



**Visit:** [www.blueandgreentomorrow.com](http://www.blueandgreentomorrow.com)

The next issue of  
**B&GT** is out on  
**20 May 2011**

**blue & green**  
tomorrow



### Green electricity

Good Energy is leading the way towards a natural, local, renewable energy future - we're the UK's only dedicated 100% renewable electricity supplier. Our homegrown electricity comes from the wind, water, sun and sustainable biogeneration. Not only this, but our main electricity tariff is independently certified 100% green.



### Investment

This week, we're celebrating the launch of our new wind farm at Delabole, North Cornwall – the first of many planned new wind farm developments over the next five years; which should supply enough renewable energy to power a town the size of Weston-Super-Mare.

[www.goodenergy.co.uk/  
delabolecelebration](http://www.goodenergy.co.uk/delabolecelebration)

### Price Freeze

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## NEWS

**Hydro pump underground tube**

The main drawback of wind and solar energy generation systems is that they only work when the wind is blowing or the sun is shining. A common, but expensive way of storing that energy is to pump water uphill from one reservoir to another, releasing it back down in order to drive the turbines.



Gravity Power LLC has come up with an interesting variation on the theme. It puts a vertical cylinder containing a piston into the ground, adds a pump-turbine, some pipework and some water and bingo! You have a sealed energy storage unit.

It works by using spare energy to pump water under the piston, causing it to rise. Then, when power is needed, the piston falls, forcing the water through the turbine and back into the space above the piston. Depth is expected to vary from 500 to 2,000 metres.

*gravitypower.net*

**Hydrogen balls**

Hydrogen fuel cells still haven't caught on. Nor have hydrogen fuel tanks and compression systems, although some trials are taking place. But, while hydrogen as a fuel is great in theory, it's always been tricky stuff to store and handle.

Until now, that is. Cella Energy (a spin-out of the STFC Rutherford Appleton Laboratory near Oxford) has

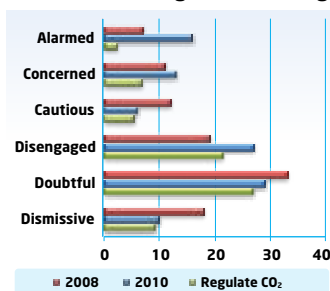
found a way of storing and handling the gas safely in the open air by encasing it in tiny beads. It can be pumped like a liquid and can be used in motor vehicles and aeroplanes with little engine adaptation. At the point of use, it emits zero carbon. The hydrogen is released by heating (after starting, the exhaust will do the job) and the empty beads are stored in a separate tank for reuse.

Initially the product will be rolled out as a fuel additive, enabling lower emissions with no change to the fuelling infrastructure or to regular vehicles. The second stage would require modest changes to vehicles to enable them to run on pure hydrogen with zero carbon emissions.

This looks like a low cost route to energy security and a cleaner atmosphere. What's not to like?

**Six Americas, trends**

When it comes to attitudes to global warming, Yale University divides the public into six categories: alarmed, concerned, cautious, disengaged, doubtful and dismissive. It tracks the change in attitudes and in its most recent survey finds that belief in global warming as a serious problem is on the wane in half of the six groups.

**US Attitudes to global warming**

The chart shows attitudes in 2008 in blue, 2010 in red and current desire for regulation of CO<sub>2</sub> as a pollutant in green. The alarmed are at the top and the dismissive at the bottom. Despite the falls in 'belief', the desire to regulate is moderate to strong in all groups save 'dismissive' one.

**Ten green (Pepsi) bottles...**

PepsiCo brings a whole new meaning to the old song. It's making some of its bottles entirely from bio-based raw materials, including switch grass, pine bark and corn husks. In the future, the company expects to broaden the renewable sources used to create the green bottle to include orange peels, potato peels, oat hulls and other agricultural by-products from its food businesses.

The molecular structure is identical to petroleum-based PET (polyethylene terephthalate), which means the bottle looks, feels and behaves exactly like its existing containers.

Pilot trials are expected to start next year.

**Canal turbine**

For the past few years, not-for-profit Imagine has been running its H2O Prize to recognise water-related innovations. This year, Hydrovolts Inc. won first prize for its hydrokinetic floating turbines, which work in slow-moving water systems, such as irrigation canals, dam tailraces, thermal cooling discharges, water and wastewater treatment plants, rivers and tidal channels, delivering clean electricity to farms, businesses and consumers nearby.

The device can be installed in an hour and its 'flip-wing' design reduces drag, maximising the power conversion. If you'd like to see how it works, you can download an .avi animation at [tinyurl.com/6alqtyv](http://tinyurl.com/6alqtyv).

Hydrovolts wins \$20,000 in cash from prize sponsors, and \$30,000 in professional services from the attorneys at Cooley LLP and the accountants at PwC. It is currently manufacturing a 25kW prototype for testing in the Chilla canal in India. It sees the potential for 400 turbines in this single canal.

**Norway wave capture**

The Norwegians have plenty of waves and a good idea for maximising their conversion into energy. A robust wedge-shaped breakwater is divided into three slotted compartments. Depending on the height of the wave, it will enter one, two or all three of them before running down through turbines to generate clean electricity.



With the catchy name of Sea-wave Slot-cone Generator, or SSG™ for short, its energy output is determined by how high above sea level the water is stored. The 'cone' part of the name comes from the fact that it can be installed offshore as a cone comprising multiple wave-capture elements. The design is clever and simple. This could catch on.

**EU's clean city aim**

The European Union Transport 2050 Roadmap white paper ([tinyurl.com/4gxgzgm](http://tinyurl.com/4gxgzgm)) wants to see all conventionally fuelled cars banned from city centres. If petrol prices keep going up the way they are, then there's a good chance this will happen with or without a plan.

But the proposals go further than this. They incorporate water, air and rail transport as well. The idea is to integrate the systems, migrating people and freight off the roads and out of the air for journeys of 300km (186 miles) or less and slashing the imports of fossil fuels and their associated emissions as a consequence.

Needless to say, the infrastructure changes have a price tag attached; £11.4 billion per year to 2050. When you compare it to Europe's current oil bill of £184bn it sounds quite cheap. Relatively speaking, of course.

## America's largest solar farm - USA

Copper Mountain Solar, 40 miles from Las Vegas, is the USA's largest photovoltaic solar plant. Starting at 48 megawatts (MW), Sempra Generation has plans to expand it to 200 MW.

Nevada governor Brian Sandoval said: "This project exemplifies my goal of making Nevada the renewable energy capital of the country. Projects of this magnitude provide hundreds of jobs and invest millions of dollars in our state."

The project used nearly 775,000 thin-film photovoltaic solar panels, which now generate enough emission-free electricity to power about 14,000 average homes. And that's American average, which, presumably, includes air conditioning at least some of the time.

## Iniquitous airline tax - Jamaica

Jamaica's tourism minister, Ed Bartlett, is very unhappy about the UK's air passenger duty (APD) and the proposals from the EU to bring aviation into its Emissions Trading System (ETS). He predicts that increasing levels of environmental taxes are likely to be applied by countries before any global approach is agreed.

His fear, of course, is that anything depressing tourism to developing countries will remove a major source of income. He asks: "Are we now to be told that we will have to pay the price of Europe's concerns about climate change through a tax on our industry's development, with no consequent support in our need to adapt?"

He reserves particular ire for the UK's APD, which places the Caribbean in a higher tax band than the whole of the United States, despite most US destinations being further from London than the tourism-dependent economies of his region.

## Chevron fights back - Ecuador

Following last month's piece about the Amazon pollution lawsuit against Chevron, you won't be surprised to learn that Chevron has appealed the ruling by detailing "the pattern of fraud by the plaintiffs' lawyers, supporters and others that has corrupted the trial, as well as the numerous legal and factual defects in the judgment". A New York court has issued an injunction to prevent the plaintiffs' enforcing any judgement until, and if, it is proved legal. The plaintiffs for their part are also unhappy with the original ruling, asking for the compensation amount to be increased.

This will run and run. And we'll stay out of it: probably for a few years, until the dust settles.

## Banana-based filter - Brazil

Minced banana peel has the curious effect of removing contamination of metals such as lead and copper from river water. Conventional remedies, such as aluminium oxide, are expensive and often come with their own side effects. Banana peels, on the other hand, appear to be benign. Gustavo Castro, an environmental chemist at São Paulo State University, says the banana mince outperforms its competition in industrial applications, being reusable up to 11 times.

It's not the sort of thing you'd use on your own tap water; but banana skins are good for cleaning silver, apparently.



## Bio-diesel boycott - Germany

A 10 percent bioethanol fuel arrived at German fuel pumps in February. The drivers didn't like it. Never mind EU mandates, what about our engines? The rumour gathered pace and an E10 Boycott campaign started. Car-makers made matters worse by claiming that 93 percent (reports vary) of cars can run quite safely on the new fuel mix. That wasn't good enough. Although the new fuel was the cheapest at the pumps, drivers still wouldn't play ball. Guess what? This led to shortages of regular fuel and a halt in production of the new mixture.

Part of the problem is the German drivers' love affair with their cars; part of it is that they don't like being pushed around; and part of it is that they prefer to use agricultural land for food, rather than fuel.

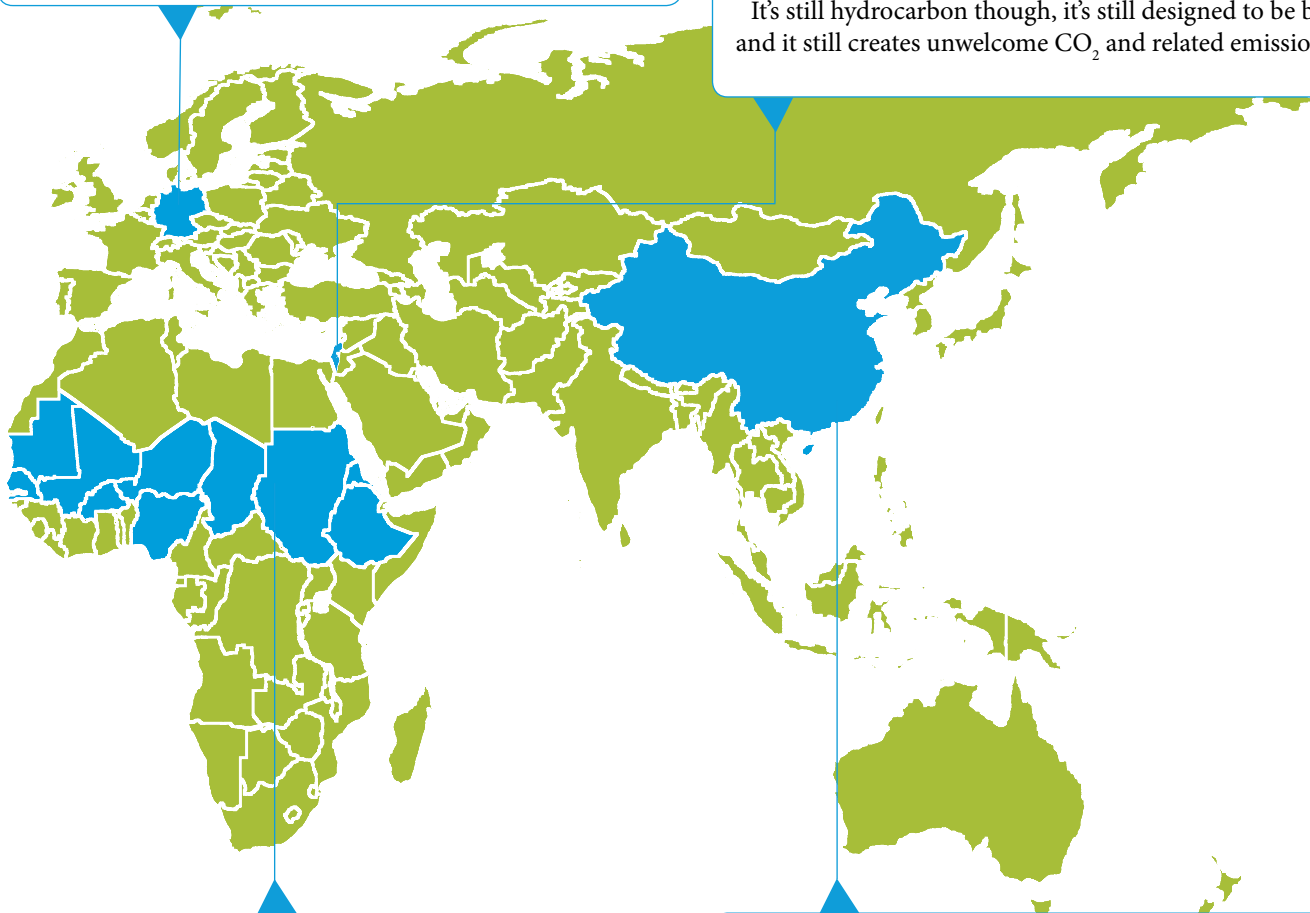
## Massive shale find - Israel

Harold Vinegar, the former chief scientist of Royal Dutch Shell and now the chief scientist of Israel Energy Initiatives, plans to extract oil and natural gas from shale in a 238 sq km area of the Shfela Basin. He believes that the field contains the equivalent of 250 billion barrels of oil. That compares with proven reserves of 260 billion barrels in Saudi Arabia.

The process uses electric heaters to extract the oil. An 18-month pilot will include an assessment of environmental issues, especially those pertaining to water and energy use and the impact on the local aquifer, which lies several hundred metres below the shale.

Commercially, Vinegar thinks he's on to a winner, estimating that by the year 2030 "we will be at around \$US200 per barrel".

It's still hydrocarbon though, it's still designed to be burnt and it still creates unwelcome CO<sub>2</sub> and related emissions.



## Green wall for desert - Africa

Nations in north Africa have dreamt for years of planting a green 'wall' across the continent from Djibouti to Dakar – 8,000 km in length and 15 km wide. Comprising trees and bushes, it is intended partly as protection for the savannahs in the south from the Sahara's encroachment from the north. The plan has been approved and, more importantly, so has up to \$115m of funding from the Global Environment Facility (GEF). Other pledges of up to \$3bn have been made by international development institutions.

Apart from stopping desertification and erosion, the wall is expected to protect water sources such as Lake Chad, which has been drying up for decades, and restore or create habitats for biodiversity. It will also provide energy resources (watch out for that black smoke though), food and support local economic development.

## Low-risk nuclear - China

Just as the world has been getting in a lather about the tragic events in Japan (of which the nuclear element was almost incidental), China's reminded us that it has a different approach to nuclear power, one that's inherently safer than traditional systems.

It is a thorium-based molten salt reactor, which, if it overheats, simply melts a plug and causes the active liquid to be dumped into a chamber. Because it is not a self-sustaining reaction, the material becomes inert. It also has the interesting property of being able to use waste from conventional reactors as feedstock.

The thorium process was invented by US scientists in the 1960s but was abandoned, possibly because it couldn't deliver plutonium for nuclear warheads as a by-product. The waste associated with the thorium system is 1,000th that of a uranium-based reactor.

# Tell us what **you** think



*Blue & Green Tomorrow* is a new magazine, a baby magazine, and we like to think we've done a good job. You might agree, you might not. Either way we'd like to know what you think. Tell us what you want more of, what you want less of, what you liked and what you hated. Ultimately this is your magazine and we want it to address the things that matter to you.

**Complete the survey on page 31 or visit  
[www.blueandgreentomorrow.com/survey](http://www.blueandgreentomorrow.com/survey)**



## NEWS

**Solar fuels oil extraction**

GlassPoint Solar has installed the first commercial solar-enhanced oil recovery project for Berry Petroleum Company in Kern County, California.

It's enclosed in a glasshouse structure and is used to generate steam to force oil out of the ground. The structure protects the mirrors from dust, dirt, sand and humidity.



The system has all sorts of things going for it. Because it's protected it can be made of ultralight and low-cost materials. It has its own automatic cleaning system and it cuts the amount of natural gas normally used by 80 percent.

What a shame it's being used to recover more hydrocarbons to burn though. Still, that's the American way. It's sitting on the stuff and few people accept that burning oil is changing our atmosphere for the worse. They probably think that someone will invent

a way out of our polluting ways. But what if they don't?

**Fast track FiT review**

The Government claims to have been caught out by entrepreneurs and farmers who have realised that they can earn lots more by harvesting the Sun rather than crops. This turn of events is because of the lovely subsidies for generating green electricity. Little wonder, then, that they started queuing up for deals to exploit the FiT.

Cue the backlash. The Government has now decided it can't afford such largesse. It's planning to categorise generators in excess of 50kWh and slash their rates – pence per kWh. Above 150kWh, instead of 29.3p they're being offered 15p or 8.5p. The smaller installations will be offered 19p instead of 31.4p. While this may deter profiteering, it will do little to help us reach our clean energy targets and it looks very much as if it will mitigate against community-scale installations.

If you want to complain or make helpful suggestions, go to [tinyurl.com/4dm4h5r](http://tinyurl.com/4dm4h5r). You have until 6 May.

**Earth Day 22 April**

What will you be doing on Earth Day, 22 April? Most

people in the UK have probably never heard of it, yet it's been going for 41 years. The general idea is to help make the world a bit better and, if enough people do enough things, then we should wake up on 23 April to a better world. More importantly, though, it gives us an excuse to reflect on our lives, the way we're living them and what we can change.

We could switch off all unused or pointless devices – do we really need so many lights on and electronic equipment on standby? Could we walk to the restaurant instead of driving? Even better, could we talk to our children about Earth Day and remind them that cutting down on inessentials is no hardship and that the end result is a better planet and more money in our pockets.

**Japan converted Monbiot**

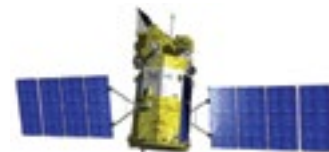
George Monbiot, well-known eco-warrior, has made an astonishing admission. In the light of the Japanese nuclear accident at Fukushima, he's decided that nuclear power is okay. Its environmental impact is small compared with the havoc wrought by coal extraction and burning, flooding valleys or growing

fuel crops.

Anyone who saw him confront Stewart Brand on television recently might think that he's raving mad but, through his writing (especially in *The Guardian*), he wields a lot of influence, and for him to say nuclear is okay is a big deal. It's going to irritate his normally deep green followers no end.

**An inglorious end**

Sadly, the Sun and atmosphere observation satellite we talked about so enthusiastically last month didn't even make it into orbit. Its nose cone failed to separate, making the assembly too heavy to reach the correct orbit.



The \$424 million satellite was intended to give us a more intimate understanding of the chemicals in our atmosphere and the Sun's impact on them and, for that matter, us. This isn't just a financial tragedy, though; we may have gained the genuine scientific understanding of the inputs and outputs of our complex atmosphere that we have been looking for.

**Here's a round-up of some of the more interesting stories around World Water Day, 22 March.****Kenya filter**

Imagine being able to chuck a pouch into any water source and pick it up between 8 and 12 hours later full of completely clean drinking water. Well,

not entirely clean, it contains nutrients and is flavoured as well. The makers, Hydration Technology Innovations, reckons that bulk orders of its HydroPack could get the price down to 75 cents but, without aid, this is still beyond the financial reach of much of the developing world.

**Food waste = water**

A report from WRAP and the WWF tells us that "UK households dispose of 8.3 million tonnes of food and drink waste every year, most of which could have been eaten". Or drunk, presumably.

Embedded in this waste is water, energy, emissions and money: "at least £12 billion". Frequently, the water component comes from countries that can ill afford to waste a single drop. Get the report from [tinyurl.com/49jtevz](http://tinyurl.com/49jtevz).

**Visualisation of water use**

Joseph Bergen and Nickie Huang, students at the Harvard Graduate School of Design, have just won \$5,000 (from GE) in a World Water Day visualisation competition run by [visualizing.org](http://visualizing.org) and [circleofblue.org](http://circleofblue.org). Their winning interactive infographics show water use by country and by product as you roll your mouse over them. Details and links at [tinyurl.com/4awg52n](http://tinyurl.com/4awg52n).

**Solar desalination in a box**

Researchers from memsys and the University of Singapore have teamed up to create a solar-powered water desalination plant that runs in a 20-foot shipping container. Ideal for disaster relief, it produces an average 1,000 litres of fresh water per day, depending on sunshine intensity. The solar panels (thermal and photovoltaic) flip up on the roof and the seawater is boiled then filtered to deliver fresh water. 🌍

# The Ethics of Tourism

*Nick Slawicz investigates the practicalities of eco-travel.*



For decades, the act of travelling around the world was held up as a virtue. The notion of jetting off to far-flung climes and experiencing foreign cultures was seen as a great way to broaden your horizons – figuratively as well as literally – and improve your outlook on the planet as a whole. It didn't need to be sightseeing on the other side of the world, though. A week in Benidorm represented a well-earned break in the sun – something both to strive for and to enjoy.

However, it couldn't last. As global warming and carbon control became pressing issues, anything that was considered a 'non-necessary' use of the Earth's resources was deemed wasteful and contrary to the aims of the green movement. Whereas, once, the airlines had opened up new frontiers for the man on the street, they became irrevocably linked with pollution, noise and ecological damage, not only at home but also abroad.

“tourism is still big business - and it's only getting bigger”

Despite calls from the green lobby, though, tourism is still big business – and it's only getting bigger. In 2009 it was estimated that over 9 percent of global GDP came from tourism, with 8 percent of the world's people dependent on the industry for their employment (MercoPress) – everyone from the concierge at a fancy Las Vegas hotel right down to the man running local tours for visitors to a village in Thailand. When we talk about cutting back on tourism for the sake of the planet, the side effect is always going to be that some people lose their livelihoods, including those who have few other options when it comes to work. In many ways, it's the ultimate case of being stuck between a rock and a hard place: the choice between responsibility to the environment and helping people trying to earn a living from your business.

Thankfully, the twin notions of eco-tourism and sustainable tourism set out to help both sides of the problem. Eco-tourism is generally defined as travel that directly supports local regional economies while striving to have a minimal negative impact on the destination or on the environment during the journey. It's this sense of responsibility that helps to ensure (as far as is possible) that harmful effects on the planet are kept to a minimum,

balanced with creating the most good for the local population.

Practically by definition, you're unlikely to see an eco-tourism travel agent on your local high street. They tend to be small, independently-run organisations that make provisions for clients to visit very small regions its workers know personally (often a single city). Such experiential knowledge means they are best able to provide information about how to travel responsibly without damaging the local equilibrium. Additionally, many sustainable eco-tourism agencies take great pains to ensure the cost of offsetting a holiday's carbon footprint is included in the price, helping your trip to remain carbon-neutral (and, in some cases, even carbon-negative, taking more CO<sub>2</sub> out of the environment than it puts in). This can include planting new trees around the world, or helping to shift to more renewable sources of energy where appropriate. Buying carbon offsets can be a surprisingly cost-effective way of preventing your holiday from doing undue harm to the world around you: a round-trip from Heathrow to Bangkok airport might be almost 13,000 miles and releases two tonnes of carbon dioxide, but the cost of offsetting it can be as little as £20 per person.

“it's far from impossible to find a holiday package that will allow you to do the least harm”

Whether you make it or not, the choice to be economically responsible – to ensure that your money goes to those who need it while helping to promote and preserve sites of geographical importance without polluting excessively – is always going to be better than having no choice at all. It's a (perhaps uncomfortable) truth of progress that we can't uninvent the atom bomb, and we'll never be able to get toothpaste back in the tube. People are always going to want to explore the wider world, and, as the situation stands, that's often going to involve the use of airlines and fossil fuels. However, it's far from impossible to find a holiday package that will allow you to do the least harm – it just needs a little more work on your part than slapping down a debit card at your nearest high street travel agent and hoping for the best. Instead, consider checking out a responsible, sustainable alternative, and ensure that your time abroad isn't at the cost of the planet as a whole. ●



# Greening the High Street

*High street stores are increasingly crowing about their green credentials.*

*Nick Slawicz digs deeper.*

You may have seen them as you drive along the motorway: green and white Marks & Spencer lorries with curved roofs, proudly exclaiming that they're 'streamlined to save fuel'. Other, boxier vehicles state quite clearly: 'This vehicle has switched to electric.' Both form a small but integral part of 'Plan A' – the company's much-lauded push in recent years to become more ecologically friendly – and in both cases the text is larger, more prominent and easier to read even than the shop's own logo. The message is clear: M&S is putting the environment first. And it's not just Marks and Spencer, either – the vast majority of high street stores are now making an effort to convince their consumers they're taking a pro-environment view of business.

To paraphrase Gordon Gekko: green, it seems, is good – not just for the environment, but also for business as a whole. That would certainly explain why a veritable rogues' gallery of companies has decided to become friends of the Earth, taking the extra steps to push this new agenda.

## Cleaning up their acts

One of the most prominent of these is Wal-Mart, the American chain of supermarkets (and current owner of UK favourite Asda). Its past reputation when it came to the environment was less than stellar, culminating in a \$1.5 million lawsuit in 2005 after 22 of its stores in Connecticut were found guilty of a slew of offences against the local ecosystem. The year before, it had been hit with a \$3.1 million suit after similar violations in Utah and Tennessee. Fast-forward a year, though, and the company found itself picking up an award for its contribution to the environment. What happened in the interim? By all accounts, Wal-Mart cleaned up its act, quite literally, committing to reducing the energy consumption in its stores by 30 percent over three years, to employing trucks with a higher fuel-efficiency rating, and to cutting down on packaging and encouraging carrier-bag recycling; and all this to resounding scepticism from the environmental community. Could it really be possible for the biggest leopard to change its spots so quickly? More importantly, did that excuse past (mal)practice?

Questions about the ecological soundness of many UK

“ **But do companies really care about the environment, or are they just jumping on the green bandwagon?** ”

companies have been rumbling away for years; but it is only comparatively recently that people have begun to take notice. In the past few years, the 'big four' – Tesco, Asda, Sainsbury's and Morrisons – have all rolled out impressive new environmental campaigns, promising everything from an increase in local produce and sourcing responsible and sustainable suppliers through to ensuring their company cars are eco-friendly. But do companies really care about the environment, or are they just jumping on the green bandwagon? Do they see it as just a popular fad that's likely to impress potential buyers?

## Working in sync

The truth is that it doesn't matter. What it demonstrates is not the fickleness of big business – far from it – but the importance of customer opinion. As more and more corporations find their



users walking out of their automatic doors to find a greener shopping experience, it's no wonder that they're scrambling all over themselves in order to promote this as their new positive selling point. Whether they're doing it to keep money in their pockets or out of sheer altruism, the fact remains that they're doing it – for once, it seems that the free market and the environmentally-minded consumer are working in sync. Let them profit from their lowered carbon footprints. Let them sing their recycling and fuel emissions policies from the rooftops. As long as consumers demand improvement, it seems improvement is likely to keep coming.

Of course, it has never been as easy as a simple right versus wrong split, despite a lot of the dogma. Companies are beginning to recognise the immense difficulties of switching to a greener model – Tesco's own webpage on the topic of eco-sustainability questions whether or not the environmental costs of importing fresh flowers from Kenya are outweighed by the social benefits of trading with underdeveloped economies. So why can't we?

To expect these behemoths to shrug off decades of often shaky environmental practice overnight is dangerous, and to fail to applaud the progress they make while simultaneously berating them for dragging their feet on some issues is to entirely miss the point of the green movement. Change will come – is coming, in fact, if we're willing to believe high street sustainability reports – but there is no magic bullet, and it will take patience and support as well as protestation and complaint.

As marketing juggernaut Tesco has reminded us for years, 'Every little helps.' 🌍

# What's the Government's Game?

*Recent graduate Hayley Moy explains how she sees the world she and her peers are inheriting from us.*



The UK Government seems to be wavering over its plans to meet its carbon emissions targets despite committing to a 34 percent reduction by 2020, and at least 80 percent by 2050 (against 1990 levels). The targets are encouraging, but meeting them is a challenge that will involve drastic changes in our lives. Decisions on how to achieve these targets need to be made now; otherwise future generations will have to deal with the consequences.

Helped by the recession, the UK is on target to surpass its Kyoto targets to cut greenhouse gas emissions by 12.5 percent of 1990 levels by 2012.

DECC's 2050 Pathways analysis presents a framework of the choices and trade-offs we will have to make in the years up to 2050, showing that it is possible to meet the targets. The report encompasses all parts of the economy and all greenhouse gas emissions in the UK, examining possibilities in each sector based on scientific and engineering realities.

The UK Government has been relatively slow to consider the choices and make the necessary decisions. Young people in 2011 are questioning why. Perhaps it's because the general population hasn't prioritised green issues until recently.

However, there are signs of change. The Green Deal, due in 2012, will provide a method for every household to benefit from energy efficiency measures. The Renewable Heat Incentive is also being introduced, Phase 1 later in 2011 and Phase 2 with the Green Deal. Similar to the Feed-in Tariff (FiT), this will provide a rate for every unit of energy produced for sources of energy not covered by the FiT, i.e. solar thermal and biomass.

Recycling is another area where progress is being made. A wider range of recycle bins for homes should mean less waste going to landfill. And moves towards using less packaging and more biodegradable packaging should reduce landfill. Landfill waste contributes to greenhouse gas emissions, since both methane and carbon dioxide are emitted.

Despite all these positive steps forward, young people wonder why these measures weren't introduced sooner and, more importantly, whether they are enough.

A major concern is that the UK Government seems to be reversing some of its previous decisions. This has created uncertainty in young people's minds about how sustainable the Government really wants the UK to be.

It was late implementing a FiT scheme for micro-renewables compared with other countries, such as Germany (1990) and the USA (1978).

In February 2011, only 10 months since its implementation in the UK, the Government began reviewing the tariff rate of solar photovoltaic (PV) projects larger than 50kW in the FiT scheme. The proposed tariffs have now been announced, and the DECC is seeking comment until 6 May 2011. These tariffs pose a threat to community solar projects and industrial units that could've benefited from the scheme, but now won't find it as financially viable. Surely, a possible solution is to link the FiT to site consumption. Such an approach could prevent the growth of solar farms relying on government largesse for their profits. In last October's Spending Review, the Government also changed its stance on the Carbon Reduction Commitment scheme. It announced it wouldn't return the capital large energy-gobbling companies put into the scheme to the leading achievers, thus removing some of their incentive to become carbon neutral.

From a young person's perspective, financial incentives appear the best way to encourage companies and people to change behaviour. Although they can be costly, drastic measures need to be taken if only 40 years from now, in 2050, we want to demonstrate our commitment to sustainable living and our determination to better the lives of future generations.

A catalyst incentive may be required to help bring about changes in environmental behaviour. Once the capital cost reduces sufficiently or the savings become self-sustaining, it can be withdrawn. Another approach could be to increase taxes on inappropriate behaviour or products that harm the environment. However, it would take a brave government to introduce such measures owing to the potential loss of votes. A change in people's consciousness with respect to sustainability is certainly needed, but it is clearly no easy task.

The young person's view is that the Government is sending out mixed messages. It claims to be committed to reducing carbon emissions, but its actions raise questions about its real intentions. Resources need to be invested in now, so that 2050's 80 percent reduction can be achieved. On current form it does appear that time is slipping by and that the UK is too slow in changing its habits to meet the targets enshrined in law. 🌍



# Ethiopia? Gedday...

**Ethiopia's unexpected treasures are revealed by Tom Barber of tailor-made travel company Original Travel.**

Ethiopia? Yes, Ethiopia. On holiday? Yes, on holiday. So goes a conversation I have with remarkable frequency. Many people associate Ethiopia with famine and poverty. In fact there is so, so much more to this truly original destination. Nowhere else still uses the 13-month Julian calendar, so its dates are totally out of sync with ours. It's great if you want two Christmases, two Easters or two New Years, but it also means it's only 2003 there. Even more surprisingly, this is one of the best places for the responsible tourist to spend his or her *birr*.

## Culture

What can you expect? Ethiopia is a country of big landscapes and an absorbing cultural heritage. The north is a treasure trove of historical capitals where religious customs from the Middle Ages continue to thrive. 'Must visits' are Lalibela, with its 13th-century rock-hewn churches, and Gondar, the 17th- and 18th-century capital. Outside Gondar, perched on a little hill, is Debre Birhan Selassie, 'Trinity at the Mount of Light'. It's a gem of a church, the entire beamed ceiling of which is hand-painted with the winged heads of angels. Then there's the Queen of Sheba's Axum, allegedly the last resting place of the Ark of the Covenant – which neatly explains what happened at the end of *Raiders of the Lost Ark*. Here too is Lake Tana, home for hundreds of years to several island monasteries and also the source of the Blue Nile, which makes its way over the nearby Tissisat Falls to the White Nile at Khartoum.



Mountains in Ethiopia's northern highlands make up one of Africa's most beautiful ranges. Trekking in the Simiens is a wonderful experience, one of the main draws being that it is still comparatively underdeveloped. There are few visitors and even fewer distractions from the breathtaking scenery. The area is also known for its wildlife, from the thousands of Gelada baboons roaming the park to the Lammergeyers, which soar on the mountain thermals among hundreds of other bird species.

The place to stay here is northern Ethiopia's first eco-lodge, Simien Lodge, opened in 2006. It promotes sustainable development and encourages guests to help with charity work in the nearby town of Debarq (with its decidedly eco-unfriendly name). The thatch-roofed *tukuls* are very comfortable and benefit from solar-powered under-floor heating – a much appreciated luxury as this is also one of Africa's highest hotels and, consequently, is pretty parky at night. All the stones for the construction were collected from the Simien Mountains. No excavations were made and no stones were imported from outside the area; they were simply picked up and carried by truck to the site. The bamboo for the ceiling was brought in from the Lake Tana area.

Further south is another excellent eco-venture, Bishangari, surrounded by fantastically tall trees filled with monkeys and amazing birdlife and set in an eco-reserve near the shores of Lake Langano. The *godjos* (cabins) have solar-powered hot water and light, and the food is cooked using biogas from a large biodigester filled with food waste. The lodge has been constructed using natural materials and traditional techniques. One particularly impressive activity of the lodge workers is gathering farmers from the surrounding area to teach them about conserving the value of the surrounding woods and grazing land, and they are making real headway.

Is there still poverty and hunger in the country? Undeniably, but rather than donating to a faceless charity with no idea of where your money is going, why not visit the country in person and put money directly into the pockets of people determined to make a difference in their local communities? 🌍

*Original Travel (020 7978 7333, [www.originaltravel.co.uk](http://www.originaltravel.co.uk)) has tailor-made two-week trips to Ethiopia from £2,450 per person (based on two sharing) for international and domestic flights, a private English-speaking guide, accommodation on a full-board basis including two nights at the Simien Mountain Lodge, a full day trekking in the park, and one night at Bishangarion Lake Langano and a tour to the neighbouring Abiata Shalla National Park.*



## Nature

The Great Rift Valley to the south of Addis Ababa is to the nature lover what the northern areas of the country are to the culture vulture. In the Bale Mountains are the endangered Ethiopian wolf and the Rift Valley is punctuated with a series of lakes, many of which are bordered pink with thousands of flamingos. Continuing south, Nech Sar National Park near Arba Minch has gazelle, zebra, hartebeest and baboons roaming freely, and in the Omo River Valley of the southwest live more than 50 tribes, from the Mursi people with their giant lip plates to the Dorze people and their tall beehive-esque homes.

## Responsible tourism

There's an awful lot to see and do, but the responsible tourist might choose two particular highlights. Once described as the 'chess pieces of the Gods', the towering spires, volcanic pinnacles, huge gorges and vast rock formations of the Simien





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# Lake District Hydro Energy

**Hugo House takes a close look at profitable hydro microgeneration.**

Hydro microgeneration is a fantastic example of how centuries-old technology can be updated to provide a 21st-century solution to meeting energy needs. And, with the Government's new Feed-in Tariff (FiT) payments rewarding independent generators, generating electricity from water can also be profitable.

Hydro technology has always relied on harnessing the kinetic energy produced as water flows downhill via rivers and streams. Flowing water is used to drive a small turbine that generates electricity. The faster the flow and the more water there is, the more energy can be produced.

## Helping preserve Nature's assets

One of the generators Good Energy works with is Docker Nook hill farm in Cumbria. The sheep farm is a great example of how home-grown power can change the energy landscape in the UK – making the most of natural assets while preserving them. The 14kW hydro generator is run by Mark Cropper, Managing Director of Ellergreen Hydro. After three years in development and costing £85,000, funded by a loan, Docker Nook's hydro generator started turning in February 2010. It has a life span of around 50 years and, thanks to Good Energy's SmartGen FiT scheme, Mark can earn around £12,000 a year in payments for the green energy he generates.

The installation also saves the farm around £250 to £350 in electricity bills a year. When the hydro scheme isn't running – around 30 percent of the time – Mark buys electricity from Good Energy. Thanks to some high-tech additions, such as a self-cleaning intake (where the water enters from the source), Mark's scheme demands minimal maintenance. He can monitor the generator's performance remotely via the internet. A weather station, also connected to the internet, indicates when the turbine should and shouldn't be generating electricity. As Mark says: "It's just so simple once everything is in place. All you have to do is wait for rain!"

Installing modern technologies in an environment as natural, beautiful and rugged as the Lake District – an area that relies on tourism for much of its income – could be cause for concern. But, says Mark, "you can see almost nothing of the equipment". Usually tucked up inaccessible hillsides, the concrete intakes are rarely visible from any distance. At Docker Nook, 200m of buried pipelines fall a total of 30m leading to a holding shed, which Mark has taken pains to ensure blends perfectly with the surrounding buildings.

**“Installing hydro... ensures an income regardless of how the farm performs...”**

For hill farms like Docker Nook to remain financially viable, diversification through other forms of income is urgently required. "Installing hydro is one of the best options to consider. It has been absolutely key to securing the future of Docker Nook," says Mark. "It ensures an income regardless of how the farm performs and means that I have the finances to reinvest in preservation and conservation – maintaining traditional stone walls and SSSI [site of special scientific interest] woodland, as well as bringing back heather and other wildlife."



## How the FiT works

The Feed-in Tariff (or FiT) is a payment made to those choosing to generate their own renewable electricity. Once registered, generators are entitled to a sum of money for every unit of electricity they generate – even if it is used on site – and a further sum for the units they export to the grid. This makes investment in hydro very attractive because there is a guaranteed financial return as well as the savings made on electricity bills. A 15kW hydro system will earn at least 20.9 pence per kWh in 2011/12 under FiT, plus more for exported electricity – that translates to around £12,000 a year.

Hydro can be a constant, long-lasting and reliable way to generate energy, so landowners who have a fast-flowing stream or river on their land, particularly if there is a history of even small-scale hydro power generation, such as an old water mill, may wish to look into the possibilities. Around 17 percent of the renewable electricity Good Energy sources on behalf of its customers comes from hydro power, and, because it recognises that preservation of the natural environment is a key issue, the company has its own strict environmental criteria for considering any hydro development.

Costs for installing a hydro system are variable, depending on the location and the amount of electricity it can generate. According to the Energy Saving Trust a typical 5kW scheme suitable for an average home might cost £20,000 to £25,000 including installation. Thanks to the guaranteed income provided by the FiT, hydro can be a good investment. 🌍

To find out more, visit [www.goodenergy.co.uk](http://www.goodenergy.co.uk)

# Beyond Politics: The Forces of Sustainability

*Caroline Rennie identifies the forces that will determine whether mankind has a promising future.*

There are moments when we forget the daily jockeying of self-interest and come together as one to solve something that affects us all. Natural disasters galvanise not only those populations involved, but also the sympathetic world: think of the hurricane in New Orleans, the tsunami in Thailand, the earthquake in Haiti and now the two disasters in Japan.

The recent financial crisis demonstrated that banking activities in a single country can threaten banking systems globally. The crisis in Japan shows how a paralysing shock in one area can so limit parts supply that it shuts down manufacturing facilities globally. And China's hold on rare earth metals, which it qualifies as a 'strategic reserve', enables it to hamstring manufacturing globally, as does Arab countries' hold on oil.

So our interconnectedness ties us together as a global community. And nowhere is this more critical than in dealing with the environmental problems that threaten our ability to feed ourselves, live safely and ensure we bequeath a fruitful and healthy planet to our children. No country is independent of the economic and environmental effects of other countries' actions. It seems evident that governments globally should be coming together to manage these issues.

But they are not. Or at least not successfully. Remember the climate change negotiations in Copenhagen? Failed. The follow-up in Cancún? Failed again, in the sense that events in the real world move faster than the negotiations.

If our governments fail us, are we doomed? To answer this, we'll consider the various forces of sustainability.

## Business opportunities

When the world's largest conglomerate, General Electric, states that it wants its 'green' business to grow at twice the rate of its conventional business, and applies investment to that end, Big Money is talking Big Time. Ten years ago there was one electric car at the auto shows and General Motors was making derisory remarks. Today every company has at least one electric model, and most have more. The organic/health food sections of shops that used to be relegated to dark corners now represent the only growing segment of the grocery sector.

## Insurers

Companies that insure insurance companies, like SwissRe, have been involved in sustainability and climate change issues for over 20 years. They calculate that, while average insured losses owing to natural catastrophe were \$5 billion/year between 1970 and 1989, they increased five-fold between 1990 and 2009 to \$27.1 billion/year. And last year they doubled to well over \$50 billion/year, thereby substantially raising the costs of doing business for those organisations affected by climate change. Such companies are also hosting conferences and representing governmental delegations to sustainability summits, because they understand that feedback loops and longer timescales are beyond our political cycle's ability to manage.

## Investors

Investors face the same issues. Many of the world's largest banks and investor groups have come together to understand the impacts of climate change so that they can price investments accurately. The Carbon Disclosure Project (CDP) represents "551 institutional investors, holding US\$71 trillion in assets

under management and some 60 purchasing organisations such as Cadbury, PepsiCo and Wal-Mart". Over 3,000 organisations report their impacts on the climate and its impact on their business, and increasingly their supply chains are reporting too. The CDP has broadened its reporting to include water and stimulated an equivalent forum for forests.

## Transparency

Reporting improves performance. The US Toxics Release Inventory required companies to report on their emissions and effluent in every factory. They weren't required to limit or clean up those emissions, but the information enabled local community groups, national NGOs, the government and investors to see what was happening. Companies were embarrassed and reduced their toxic releases voluntarily.

Today's international equivalent – the Pollutant Release and Transfer Register (PRTR) – includes Europe, Canada, Australia, Japan and Chile.

Transparency can be involuntary – think back to Nike and the sweatshop accusations or Greenpeace finding unusable electronics from Hampshire being shipped illegally to markets in Nigeria. Think of WikiLeaks!

But increasingly it is *voluntary* as brands use traceability to build trust and confidence. Examples include Timberland, which allows you to see online where your garments were made and how they were transported, and M&S, which guarantees customers its beef and lamb were reared by specific suppliers to exceptionally high welfare standards.

## Brand value

Brand value has driven most of the sustainability changes to date – first through marketing and talk (exposed by NGOs) and now through genuine action. Retailers like M&S, Tesco and Sainsbury's are racing to 'outgreen' each other. They ask suppliers to provide products and services that lower climate impact, waste and toxics, while improving logistics, savings and efficiency. Key examples are detergents: now increasingly concentrated, in reduced packaging, refillable and effective with cold water.

## Activism and goodwill

Brand value is a terrific lever for NGOs. Linking a particular brand (KitKat) to a particular effect (rainforest destruction and the extermination of orang-utans) is emotive, compelling and newsworthy. Greenpeace was successful in getting Nestlé to overhaul its procurement policy to ensure sustainable sources of forest products. Hugh's Fish Fight has used this sensitivity to advantage by consistently naming names, ensuring accountability and exerting pressure.

Brand value also drives goodwill. Roberto Goizueta, former CEO of Coca-Cola, described goodwill as the key to ensuring he could afford to rebuild if every one of his plants burned down.

And we mustn't forget the important role of staff, customers and labour organisations in influencing organisational behaviour.

## Competitors

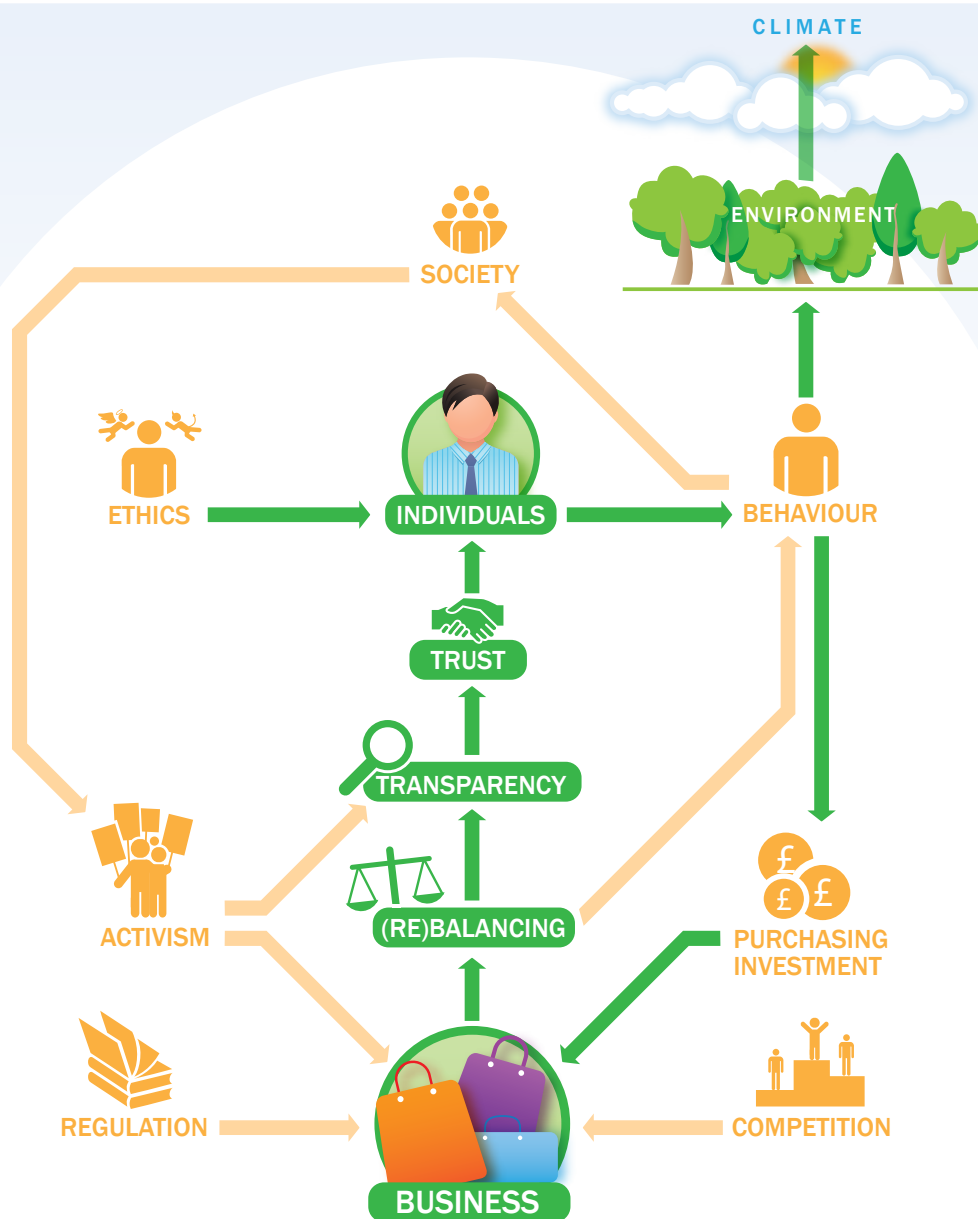
Nothing focuses the attention like a successful product launch from a competitor. Industry leaders in particular can get paralysed by success. When Ecover was launched, Unilever laughed. Now Ecover is a global brand and Unilever is trying to copy it. The



same goes for hybrid electric cars, 'slave-free' chocolate and most fair-trade products.

Loss of market focuses even more. When a disruptive technology like the iPod eliminates the need for thousands of CDs, entire industries are wiped out. Shai Agassi is introducing a 'battery-swapping' system so charging an electric car will take 30

operations, industry rewrites specifications for recycled materials, and materials travel across borders safely and legally. Twenty years ago recycling quantities were laughable. Today they represent a source of materials so important that even household names like Coca-Cola are investing in recycling capacity – to get material for their packaging.



seconds rather than hours. This applies to countries too: investing in infrastructure that decreases costs and increases efficiency makes them more competitive to talent and companies.

**Ethics**

Let's not forget the powerful drive of ethics, religion and morality. Humans typically respond extraordinarily well to a call to a higher purpose. Sustainability represents such a call – but the call has been muddled by contradictory claims and advice. Some religious leaders have taken to asking congregations and followers to steward the Earth in the name of social justice, future generations and caring for creation (Tearfund, Muslim Green Guide, Jewish Climate Initiative). Leaving the world better than we found it is a powerful idea.

**Joined-up thinking**

To get sustainability right requires joined-up thinking – among sectors and countries. Recycling proves this can happen – local authorities work with collectors, investors support recycling

So could it be that NGOs, businesses and citizen-consumers are sufficient to create a sustainable world? We're strongly on the way. Ten years ago, the CDP didn't exist. Today over 75 percent of its 3,000+ respondents have climate change strategies. Companies have moved beyond reporting on operations and are reporting on full supply chains. The transparency created by the web and projects like MIT's TrashTrack increasingly enables us to follow where our stuff comes from, how it was made and where it ends up. So it's no longer just government ministers who are building accountability – it's us too.

We behave as if whoever has the most toys wins. But competing for increasingly scarce resources (a stable climate, oil, phosphorous, clean water, fertile and safe land) is too short-term a proposition to enable any single country to 'win'.

*Caroline Rennie is founder and managing partner of ren-new, working with people in organisations to make sustainability profitable. ren-new.com*



# Green Dragon: Ben Goldsmith

*David Tebbutt meets the environmental entrepreneur.*

What if we dug out and burned all the hydrocarbons buried in the ground? “Then we’d be toast.”

Thus ended a conversation with the delightful Ben Goldsmith, a man with remarkable clarity of thought and purpose. At thirty years old, he is already a veteran in philanthropic ventures, the environment and making money.

He sees the green industrial revolution as a fantastic opportunity, not only financially, but also for the good of the planet and the people on it. He owes a lot of his outlook to his family, especially his older brother Zac, who encouraged his love of nature. As boys they used to roam the woods and fields around their Ham home, learning about the wildlife, especially the birds. They used to watch mothers going back and forth, feeding their young, and they’d often ring birds to see which ones came back.

His uncle Teddy – founder of the Green Party and *The Ecologist* magazine – pointed him towards several business opportunities. And it’s very likely he inherited some of his business sense from his financier father, Sir James, who himself realised that “there’s no business to be done on a dead planet”.

## The entrepreneur

The home he grew up in backs on to Richmond golf course and, when he was nine, Ben used to collect lost balls, clean them up and sell them back to the golfers. To get a better price, he offered to clean up the changing rooms so he could lay his hands on discarded ball boxes. Golfers would ring the bell at the gate and down would trot Ben to sell them for £15 a box.

Nowadays his business interests centre on WHEB Partners, which he co-founded in 2002, and its associated investment businesses. WHEB Partners invests in fast-growing businesses that focus on helping companies across all industrial sectors to improve their resource efficiency, thus saving money and benefitting the environment. Using resources more efficiently reduces a company’s exposure to commodity price increases and regulatory changes. In pragmatic terms, keep costs down first, conform to regulations second and be green third.

WHEB Partners’ two associated investment businesses are WHEB Asset Management, which runs a listed green equities fund with exposure to some of the world’s largest companies that are at the forefront of the green industrial revolution, and WHEB Infrastructure Partners, which invests in renewable energy infrastructure projects across Europe and is largely backed by pension funds. In total the WHEB Group has around €350 million under management today.

But Goldsmith’s time is spent primarily within WHEB Partners, which involves itself in venture and growth funding, as well as buy-outs within the so-called cleantech theme. Its first fund was launched in 2004 and WHEB Partners now manages £130 million in long-term investments.

Goldsmith is modest about his achievements, but points out that off-market deals in the private fund are showing a decent premium on the buy-in price and the 18-month track record for the public fund is showing 20 percent growth. He is proud that he and his colleagues have created a multi-faceted green investment platform. He says: “We have built a nice solid foundation. We have a long way to go. We can’t claim any success yet.”

## The environmentalist

His commercial activities are driven by an underlying commitment to the environment. He describes himself as “an




environmentalist by the age of 13”. He is utterly anti-nuclear, citing massive taxpayer subsidies in construction, insurance, waste management, security and decommissioning. Not to mention straightforward risks, the proliferation of nuclear weapons and the fact that we probably can’t wait 10 years for each one to be built.

He also rails at the fact that agrochemicals are responsible for the loss of 97 percent of British wild flowers. He owns a farm on the Somerset/Wiltshire border and, while the land is not particularly good for anything other than pasture, he is proud that it has never been artificially fertilised and so contains sites of special scientific interest.

He likes nothing better than taking his wife and three children there, where they can all get close to nature. They swim in the pond and delight in catching crayfish, “an invasive species”. When they’ve caught 20 to 30 of them, they take them back to the farmhouse and cook them in a pasta sauce.

Goldsmith is involved in a number of philanthropic activities but one of the most important is the Environmental Funders Network, which he co-founded in 2003. It comprises approximately 100 trusts, foundations and individuals making grants on environmental and conservation issues, providing them with a platform to exchange information. By collaborating informally they are able to learn from each other, pool their talents and generally be more effective than they could be if they were all merely acting alone.

So there we have it. At just thirty, Ben Goldsmith has achieved much already. He’s optimistic that the world will come round to his way of thinking and that we will probably wean ourselves off of hydrocarbon burning. “After all,” he says, “the Stone Age didn’t come to an end because we ran out of stone.” 



# Good Advice

Your guide to finding an ethical financial adviser in your area

Getting good independent financial advice can be hard. Whether you rely on friends and family, banks and building societies, financial professionals, websites, or the media in general, how do you know you're getting good and independent advice? With the current financial uncertainty the answer matters more than ever.

**Firm:** The GÆIA Partnership   
**Coverage:** Four Heaton, Stockport  
Postcodes: SK4  
**Contact:** Helen Tandy, Olivia Bowen,  
Brigid Benson  
**Address:** 1 The Arcade, 829 Wilmslow Road,  
Manchester M20 5WD  
**Phone:** 0161 434 4681  
**Web:** [www.gaeia.co.uk](http://www.gaeia.co.uk)  
**Email:** [office@gaeia.co.uk](mailto:office@gaeia.co.uk)

STOCKPORT

**Firm:** Lighthouse Impact   
**Coverage:** Derby  
Postcodes: DE3 & DE22  
**Contact:** Ash Rawal  
**Address:** Station Road, Mickleover,  
Derbyshire DE3 9FN  
**Phone:** 01332 517 120  
**Web:** [www.ethicalinvestments.uk.com](http://www.ethicalinvestments.uk.com)  
**Email:** [arawal@lighthouseifa.com](mailto:arawal@lighthouseifa.com)

DERBY

**Firm:** Barchester Green Investment   
**Coverage:** Salisbury & Andover  
Postcodes: SP  
**Contact:** Bernard Lovesy, Tim Bradford or  
Andrew Faulkner  
**Address:** Barchester House, 45-49 Catherine St,  
Salisbury, Wiltshire SP1 2DH  
**Phone:** 0800 328 6818  
**Web:** [www.barchestergreen.co.uk](http://www.barchestergreen.co.uk)  
**Email:** [info@barchestergreen.co.uk](mailto:info@barchestergreen.co.uk)

**Firm:** Equity Invest   
**Coverage:** Wimbledon  
Postcodes: SW19  
**Contact:** Richard Hunter  
**Address:** 60 High Street, Wimbledon  
Village, London SW19 5EE  
**Phone:** 020 8879 1273  
**Web:** [www.equityinvest.co.uk](http://www.equityinvest.co.uk)  
**Email:** [advice@equityinvest.co.uk](mailto:advice@equityinvest.co.uk)

**Firm:** Green Financial Advice   
**Coverage:** Putney  
Postcodes: SW15  
**Contact:** Ian Green  
**Address:** Erico House, 93-99 Upper  
Richmond Road, Richmond,  
London SW15 2TG  
**Phone:** 0800 170 7400  
**Web:** [www.iangreen.com](http://www.iangreen.com)  
**Email:** [iangreen@iangreen.com](mailto:iangreen@iangreen.com)

**Firm:** Stewart Investment Planning   
**Coverage:** Bristol & North Somerset  
Postcodes: BS8 & BS48  
**Contact:** Martin Stewart  
**Address:** 1 The Courtyard, Leigh Court, Abbots  
Leigh, Bristol BS8 3RA  
**Phone:** 01275 371900  
**Web:** [www.stewartinvestmentplanning.co.uk](http://www.stewartinvestmentplanning.co.uk)  
**Email:** [sip@stewartinvestmentplanning.co.uk](mailto:sip@stewartinvestmentplanning.co.uk)

BRISTOL

SALISBURY

LYMINGTON

LONDON

SEVENOAKS

FOREST ROW

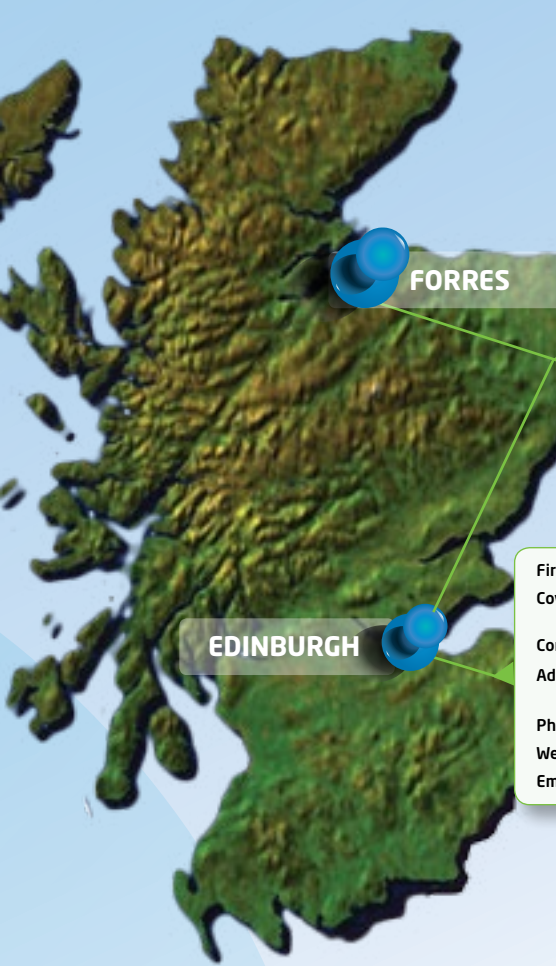
CANTON

**Firm:** The Ethical Partnership   
**Coverage:** Lymington  
Postcodes: SO41  
**Contact:** Jeremy Newbegin  
**Address:** 180 Woodlands Road,  
Southampton SO40 7GL  
**Phone:** 0845 612 3411  
**Web:** [www.the-ethical-partnership.co.uk](http://www.the-ethical-partnership.co.uk)  
**Email:** [jeremyn@the-ethical-partnership.co.uk](mailto:jeremyn@the-ethical-partnership.co.uk)

**Firm:** Bromige   
**Coverage:** Forest Row  
Postcodes: RH18  
**Contact:** Christian Thal-jantzen  
**Address:** 22 Hartfield Road, Forest Row,  
East Sussex RH18 5DY  
**Phone:** 01342 826703  
**Web:** [www.bromige.co.uk](http://www.bromige.co.uk)  
**Email:** [invest@bromige.co.uk](mailto:invest@bromige.co.uk)







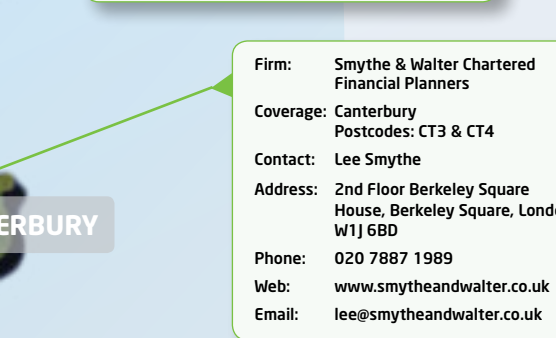
**FORRES**

**Firm:** Virtuo Wealth Management   
**Coverage:** Findhorn & Edinburgh  
 Postcodes: IV36 & EH3  
**Contact:** Scott Murray  
**Address:** 9 Clerk Street, Loanhead,  
 Midlothian EH20 9DP  
**Phone:** 0131 440 9888  
**Web:** www.virtuowealth.com  
**Email:** ask@virtuowealth.com



**EDINBURGH**

**Firm:** Ethical Futures   
**Coverage:** Edinburgh  
 Postcodes: EH9 & EH10  
**Contact:** Julian Parrott  
**Address:** FREEPOST NAT 1867Z,  
 Edinburgh EH3 6BR  
**Phone:** 0845 612 5505  
**Web:** www.ethicalfutures.co.uk  
**Email:** invest@ethicalfutures.co.uk



**BERKELEY SQUARE**

**Firm:** Smythe & Walter Chartered  
 Financial Planners   
**Coverage:** Notting Hill, Kensington & Chelsea,  
 Chiswick  
 Postcodes: W11, W8, SW3 & W4  
**Contact:** Benjamin Walter  
**Address:** 2nd Floor Berkeley Square  
 House, Berkeley Square, London  
 W1J 6BD  
**Phone:** 020 7887 1989  
**Web:** www.smytheandwalter.co.uk  
**Email:** ben@smytheandwalter.co.uk

**Firm:** Smythe & Walter Chartered  
 Financial Planners   
**Coverage:** Canterbury  
 Postcodes: CT3 & CT4  
**Contact:** Lee Smythe  
**Address:** 2nd Floor Berkeley Square  
 House, Berkeley Square, London  
 W1J 6BD  
**Phone:** 020 7887 1989  
**Web:** www.smytheandwalter.co.uk  
**Email:** lee@smytheandwalter.co.uk

**Firm:** Smythe & Walter Chartered  
 Financial Planners   
**Coverage:** Sevenoaks  
 Postcodes: TN13  
**Contact:** Lee Smythe  
**Address:** 2nd Floor Berkeley Square  
 House, Berkeley Square, London  
 W1J 6BD  
**Phone:** 020 7887 1989  
**Web:** www.smytheandwalter.co.uk  
**Email:** lee@smytheandwalter.co.uk



# Do you know where your money is being invested?



## FREE investment health check

Many mainstream funds invest in companies involved in tobacco and alcohol manufacture, pornography, gambling, weapons production, the exploitation of children and animals, nuclear power and regular human rights abuse and environmental damage. Whatever your personal views on these activities would you like to know what your money is doing?

**Yes, I would like a FREE, no-commitment, financial and socially responsible investment health check. Please contact me  \***

Simply complete this form today and return it to the FREEPOST address below (no stamp required). One of our panel of independent and ethical financial advisers will be in touch through your preferred method of contact.

**Title**

**Forename**

**Surname**

**Address**

**Town**

**Postcode**

**Phone number**

**Email**

Tick your preferred method of contact (post, phone, or email)

**Return this slip to: Blue & Green Tomorrow, FREEPOST RSRH-RZBK-GCBG, 6 Peal's Court, 9-10 Colville Terrace, London W11 2BE**

\* Your privacy is important to us. Your details will be passed to a qualified and experienced financial adviser listed on this page who specialises in ethical, sustainable and/or socially responsible investment. We will use your data only for this purpose with your explicit permission. We do not sell or pass on data to any other third party.

I/we expressly consent to be being contacted via the details I/we have provided on the form.

# IFA Q&A

*We asked Ben Walter of chartered financial planners Smythe & Walter what questions are asked most commonly and what his typical responses are.*

## Q1. Where should I invest my money?

This depends on your time horizon and whether you have any liabilities, such as a mortgage, to pay off.

## Q2. If I can invest five years plus where do I invest?

This depends on risk, which is one of the most important things to determine when looking at investing via a pension or an ISA. We will assess your attitude to risk and make a recommendation in line with your responses.

## Q3. Can I do any planning for my children?

Yes, you have a number of options. One is saving on a regular basis – after seven and a half years from the start of a plan its value can be taken without liability to income or capital gains.

## Q4. What are ethical investments?

This is a very diverse area that has detailed criteria. Some clients do have a preference in terms of what to invest in (industries for the good of our children's future) and what not to (tobacco and child labour etc.). However, most investment funds do hold tobacco companies so it is important to discuss fully what is and what is not important to you.

## Q5. Why do I need a will?

To ensure your assets are passed to those you want them to go to on death and, more importantly, to declare who you want to look after any children you have.

## Q6. I don't have a pension yet, so how much should I put in?

A rule of thumb for a 30-year-old is approximately 15 percent of salary to retire on approximately two-thirds of current salary.

## Q7. How do I go about getting a pension? Do I invest in my company's scheme?

If your company matches your contribution you should maximise this as you won't pay immediate tax on the contribution or National Insurance. You should also have a private plan, which is usually more flexible. You can move your existing company plan into your private plan at a later date.

## Q8. How much do you charge?

We are fee-based as we want to be totally transparent and independent. We have a minimum initial fee, which can be paid directly from the provider or on a retainer basis. The important thing is that it is completely transparent to you.

## Q9. Will you review my affairs?

Absolutely! Most of our clients want and should have their affairs reviewed at least annually. Again we charge a minimum fee, which can be taken monthly or annually.

## Q10. What is retail distribution review?

This comes in two years' time and basically ensures that the advice and product costs are separated so that the consumer knows what they are getting. We welcome this transparency – it is part of why we set up our firm last year.





## Looking Ahead and Around

**Lee Smythe considers the budget and the wider world.**

It is difficult to predict accurately what impact successive governments and their policies will have on individual long-term financial planning, which is why a holistic approach to your finances is better than just an occasional look. This allows you to adapt and take advantage of new opportunities so that you stay on track.

The importance is particularly evident at this time of year as we digest the effects of the Budget and the impact it will have on us, although thankfully there were no bombshell announcements for individuals.

Most difficult to gauge, of course, is the unpredictable. The tragic aftermath of the tsunami that struck north-eastern Japan is being somewhat overshadowed by the uncertainty surrounding the fate of the nuclear facility at Fukushima. The short-term impact of the disaster on investment markets is largely dependent on sentiment driven by the length and severity of the nuclear crisis, although we have already seen markets rebound strongly from the initial falls.

Whatever the outcome, it is certain to further fuel debate regarding the benefit versus the risk of nuclear power. The result, whilst unlikely to spell the end for nuclear power, will probably favour increased development of other clean energy solutions, such as wind and solar.

Individuals investing in these areas have so far found it possible to do so via a number of tax efficient options. It was suggested that such tax perks could be lessened. However, in the Budget the tax relief available on Enterprise Investment Schemes was increased to 30 percent (from 20 percent). With a minimum holding period of only three years, expect some attractive investment options to arise.

We extend our thoughts to the people of Japan at this difficult time. Whilst it may seem a long way away, the world is a small place and we mustn't ignore the impact such events have on every single one of us.

*Lee Smythe is Managing Director of financial planners Smythe & Walter [www.smytheandwalter.co.uk](http://www.smytheandwalter.co.uk)*



## Cool Brands vs Hot Brands

**Mark Robertson checks the climate commitments of top brands.**

EIRIS's latest research scrutinises the world's 100 top brands to see if brand strength is backed up by real commitments to tackle climate change. To be blunt, a mismatch threatens their reputation and profitability. Yet 69 percent of the top brands lack the necessary minimum policies, management and reporting/disclosure mechanisms.

Gillette achieves the highest overall climate change rating. Its owner, Procter & Gamble, has established long-term targets on emissions reduction and displayed strong reporting against those targets. Porsche, on the other hand, achieves one of the lowest scores. Unlike rivals such as Toyota, Mercedes-Benz, BMW and Honda, Porsche still fails to publish emissions data and report its results against published standards. The company also lacks targets to reduce the carbon emissions its cars and other business activities produce.

Among technology brands, Dell has linked executive remuneration to climate change performance, established both long- and short-term targets to reduce greenhouse gas emissions and taken steps to reduce product-related emissions. Apple does not implement any of these programmes. It has, however, shown some improvement in reducing its overall greenhouse gas emissions, while Dell's have increased.

Coca-Cola achieves an assessment of 'intermediate' with a number of unidentified or unmanaged risks, whereas PepsiCo scores 'good'.

Attitudes to climate change and sustainability are increasingly important in determining brand value. Lagging behind can mean productivity loss and business interruption.

Early adopters of cleaner technologies have the opportunity to reap the benefits of an enhanced reputation and lower the risk of falling foul of current and future regulation.

And it doesn't need me to point out the potential impacts on your share portfolio.

*Mark is editor of EIRIS's [www.YourEthicalMoney.org](http://www.YourEthicalMoney.org)*



## Our Precious Planet

**Simon Leadbetter believes the planet deserves better than simplistic political posing.**

Is it possible to be apolitical about something as hotly contested as the future of the planet and our species? *Blue & Green Tomorrow* aspires to be as apolitical as possible, because issues of sustainability transcend the definition that most people apply to Western politics, i.e. party politics. Out-dated notions of left and right have been superseded by divergent attitudes – towards the environment, ethics and civil rights, the role of the state, our nation's global power – that cross party boundaries. Parties have always been loose coalitions. They've never slotted easily into binary tabloid taxonomies that pander to a simplistic, unrealistic view of the world and its governments.

Regardless of where your political soul lies, we all share a small island on a lonely blue-green planet. The air we breathe and the land and sea we take our food from are common to us all, and our recklessness, both individual and company, can

have widespread public consequences. Whether you believe the people wearing the red, yellow, green, purple and blue rosettes, or simply think the state is too small/big\* and taxes are too high/low\* (\* delete as appropriate), we can be apolitical about two simple facts. It is clearly madness to:

1. pollute the air, land and sea we depend on; and
2. waste scarce resources when we have only the one planet.

Is that political? Do you find *Blue & Green Tomorrow* apolitical or political? Let us know.

*If you're interested in finding where you stand on the political spectrum we recommend the excellent Political Compass, which empirically scores your left-right bias but also scores how libertarian or authoritarian your attitudes are relative to major political thinkers and statesmen. <http://www.politicalcompass.org>*



# Chemistry of the Earth's Atmosphere

*Richard Wayne and Ann Holloway examine the basic principles of our atmosphere's chemical make-up and the role and impact of biological processes.*

About 99 percent of our atmosphere consists of nitrogen (78 percent) and oxygen (21 percent). The remainder is a mixture of literally hundreds of different chemical species, mostly gases, the most important of which are shown in the table. Particles of aerosols and cloud droplets are also present. Despite their tiny absolute abundances, they not only have obvious meteorological effects, but also provide surfaces and droplets on and in which important chemical reactions can occur.

Atmospheric constituent	Source	Mixing ratio (ppm)	Percentage
Nitrogen (N <sub>2</sub> )	Prebiological Microbiological	780840	78.08
Oxygen (O <sub>2</sub> )	Photosynthesis	209460	20.95
Argon (Ar)	Mainly radiogenic	9340	0.93
Carbon dioxide (CO <sub>2</sub> )	Prebiological	350	0.035
Water (H <sub>2</sub> O)	Prebiological	0-40000 <sup>a</sup>	
Neon (Ne)	Prebiological	18	
Helium (He)	Mainly radiogenic	5.2	
Methane (CH <sub>4</sub> )	Microbiological	1.7	
Hydrogen (H)	Some volcanic (birth)	0.53	
Nitrous oxide (N <sub>2</sub> O)	Microbiological	0.3	
Carbon monoxide (CO)	Microbiological Oxidation product	0.04-0.2	
Ammonia (NH <sub>3</sub> )	Microbiological	<0.01	
Hydrogen sulphide (H <sub>2</sub> S)	Microbiological	10 <sup>-4</sup>	
Sulphur dioxide (SO <sub>2</sub> )	Volcanic	10 <sup>-4</sup>	
Ozone (O <sub>3</sub> )	Photochemical production from O <sub>2</sub>	0-10 <sup>b</sup>	

<sup>a</sup> The amount of water varies considerably according to climatic conditions.

<sup>b</sup> The value for ozone varies principally with altitude.

The gases themselves turn out to be a rather peculiar mixture, because several of them are combustible in the presence of oxygen. Chemists would say the mixture is not at equilibrium. The Sun provides the energy required to drive this disequilibrium, but it's the living organisms on our planet that bring about the remarkable separation of the chemical species. Our lifeless neighbours Venus and Mars possess atmospheres made up of 95 percent or more carbon dioxide. The early atmospheres of all three planets were probably very similar, but life (and liquid water) on Earth have resulted in almost all of our carbon dioxide being converted into carbonate rocks or transformed into buried *fossil carbon*. Man is determined to get the carbon out of the ground again and let it react with oxygen, thus leading to the small but inexorable rise in atmospheric carbon dioxide levels that's behind present-day worries about global warming.

## Chemical make-up

Where do the myriad constituents of the atmosphere come from? We probably lost the planet's original remnant solar atmosphere. Quite early on, however, gases trapped within the planet, in particular nitrogen, carbon dioxide and water, began to escape to form an early atmosphere. Continuing emissions from the planet's interior, most spectacularly from volcanoes, yield a rich variety of gases and particles. Living organisms generate enormous quantities of gaseous material, a subject we examine later in this article. Mankind is a special case, because we deliberately extract Nature's products and even manufacture

gaseous chemicals not found in Nature at all: chlorofluorocarbons (CFCs) are a well-known example of the latter. Added to these inputs of new material to the atmosphere, chemical changes resulting from reactions between the species already there are continually transforming their identity and concentrations. Some of these reactions convert the gases to new particles that, if they remain suspended in the atmosphere, are *aerosols*. Balancing the input are *sink* processes such as deposition to solid surfaces (and possible reaction with them) and dissolution in cloud droplets that are subsequently 'rained out'.

## Atmospheric layers

One exceptionally important minor atmospheric constituent exemplifies the formation of new species by chemical reaction. Ozone (O<sub>3</sub>) results from the addition of oxygen atoms (O) to oxygen molecules (O<sub>2</sub>). Ozone itself absorbs solar ultraviolet radiation and warms the atmosphere. Most of the ozone is found in a 'layer' at altitudes of about 25km, and so causes warming in that region. Simple physics dictates that temperatures fall with increasing altitude. The colder (and thus relatively denser) air lies on top of the warmer portion, and convection currents are set up that are the source of winds and 'the weather'. The atmosphere is turbulent – we are in the region called the *troposphere* (from the Greek for 'turning'). But when ozone warming is encountered, the temperature trends are reversed (an *inversion*) and a region of vertical stability is found. The atmosphere can be regarded as 'layered' (Greek stratos) and the region is the *stratosphere*. Roughly 90 percent of the atmospheric ozone is found in the stratosphere, with most of the remaining 10 percent in the troposphere. Figure 1 shows in diagrammatic form where these two atmospheric regions lie.

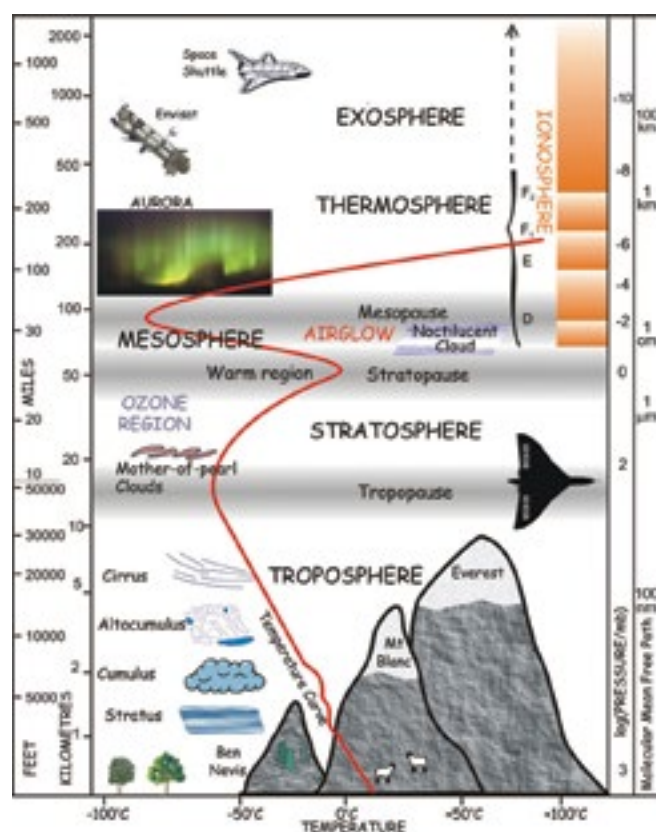


Figure 1 Atmospheric temperatures and pressures. © P. Biggs.



## Ozone

Quite apart from the dramatic effects it has on the temperature structure and meteorology of the atmosphere, stratospheric ozone has another very important role to play. Because it absorbs ultraviolet radiation it is a key part of the atmospheric system that shields living organisms on the surface of the planet from lethal wavelengths in the Sun's rays. For this reason, there has been great concern about the damaging effects of CFCs on the ozone layer, as demonstrated most strikingly in the polar (especially Antarctic) 'ozone holes' that were discovered in about 1978. Ozone in the troposphere is also vital, but for a different reason. It is responsible, by one mechanism or another, for the *initiation* of much of the oxidation that leads to the removal of other trace gases entering the atmosphere that could otherwise build up and have noxious or toxic effects. This 'cleansing' of the atmosphere is, indeed, an important aspect of the science of atmospheric chemistry.

## The biological contribution

The biological generation of atmospheric constituents is shown most clearly in the case of oxygen, one of the 'major' gases. Photosynthesis by plants is responsible for virtually all the oxygen in our atmosphere. Carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) are converted by plants' chlorophyll-based system into oxygen and carbohydrate. Before the evolution of plants, micro-organisms such as *cyanobacteria* were responsible for the gradual build-up of oxygen.

## The natural cycle

At present, all the oxygen in the atmosphere passes through a *cycle* of consumption and regeneration in a period of about 3,000 years, astonishingly short on geological timescales. We can now illustrate the closure of the oxidation cycle by invoking another microbiological process. One source (out of many) of atmospheric methane is the fermentation of carbohydrate (grass) in the stomachs of ruminant animals such as cows, as illustrated in Figure 2. Despite cows' protestations to the contrary, they release significant quantities of methane to the atmosphere from each extremity of their anatomy. It's said to be dangerous to strike a match near either end of a cow! Once in the atmosphere, the methane is oxidised in stages, with the end products being CO<sub>2</sub> and H<sub>2</sub>O. The H<sub>2</sub>O becomes rain, and it and the CO<sub>2</sub> are converted by photosynthesis in the grass to carbohydrate. The cow eats the grass, the carbohydrate ferments, and so the cycle begins again.

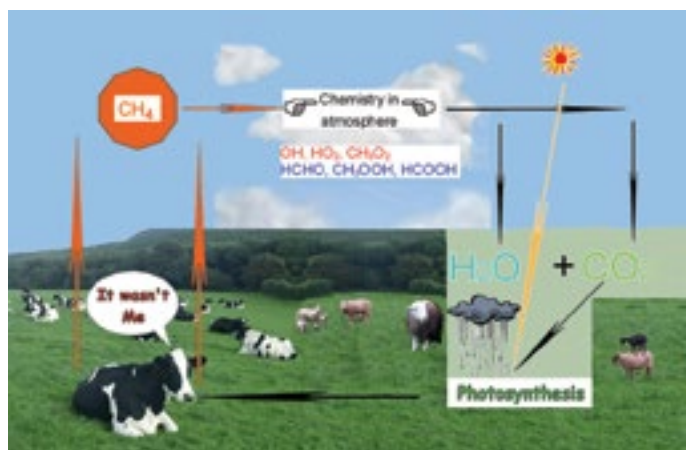


Figure 2 Atmospheric chemistry exemplified by the oxidation of methane from a ruminant animal. © R.P. Wayne.

## Oxygen

What purposes do the atmospheric constituents serve? Oxygen might be regarded by organisms that respire, including us, as essential to life. However, there are plenty of anaerobic microbes that do as well, or better, without oxygen. On the other hand, oxygen is certainly an essential component of the oxidising chemical system that ultimately degrades many other chemical species released to the atmosphere. Perhaps most importantly, it's the precursor of ozone. Oxygen and ozone, between them, remove from the Sun's rays the shorter wavelength radiation that would make life impossible on the planet's surface.

## Carbon dioxide

Carbon dioxide is the 'feedstock' for photosynthesis; without it neither carbohydrates (and thus fossil fuels) nor oxygen could be formed. Carbon dioxide and water vapour are *greenhouse gases* – they 'trap' solar infrared radiation and act as a blanket to keep our planet warmer than it would be otherwise. With too little carbon dioxide, Earth would be much colder than it is, water would be frozen, and life would not evolve. Of course, the corollary is that too much carbon dioxide might lead to too much warming, a truly serious concern in the 21st century.

## Nitrogen

The nitrogen in the atmosphere should not be regarded merely as 'filler'. For example, it is used by bacteria in the root nodules of leguminous plants to produce nitrate ions that are plant nutrients. Some nitrogen is converted by lightning to nitrate in the atmosphere that is rained out, again fertilising the ground.

## The right balance

The quantitative composition of the atmosphere seems curiously 'right' for us. Just a little more oxygen and all vegetation would burn up. Just a little less or more carbon dioxide and it would be too cold or hot (for us, at least), and so on. Many of the trace gases found in the atmosphere influence aspects of the relatively hospitable environment in which we and all living creatures exist. Greenhouse gases control temperatures, and have conspired to keep some water liquid ever since life first emerged. Different trace gases (methane, oxides of nitrogen, halogens) can modulate the concentration of stratospheric ozone and thus modify the spectrum of solar radiation reaching us. Yet others such as dimethylsulfide are believed to be able to influence cloudiness, and thus the total intensity of light reaching the surface. The chemical species involved act in some way like 'messengers'. What's more: most are produced by the biota, and at the same time affect the living conditions of organisms. These are examples of *biogeochemical feedbacks*. The *Gaia Hypothesis* proposed by James Lovelock sees these feedbacks and interactions as so intense that the entire system of atmosphere–geology–biology is to be regarded as a single entity. Trace gases become analogous to the blood in a body: not in itself alive, but essential to the life system and for conveying information chemically around it. ●

Richard P. Wayne is Emeritus Professor of Chemistry at the University of Oxford. Ann M. Holloway is an Oxford chemist by background and she is now a teacher of mathematics at a secondary school. They co-authored the book *Atmospheric Chemistry* published by the Royal Society of Chemistry (Cambridge, 2010). ISBN 978-1-84755-807-7 Pbk. Further details can be found at [tinyurl.com/5vsz4k2](http://tinyurl.com/5vsz4k2). The publisher has permitted us to reproduce illustrations from the book.

# Green Review: Films & Books

*If you're anything like us, which we believe you are, these films and books will appeal to you.*

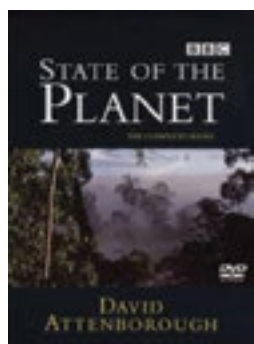


**Inside Job** (2010)

**Director:** Charles Ferguson

Rated 4.3/5 on amazon.co.uk

This is a film for those who like gripping drama, don't mind a bit of bias and are intrigued by the 2008 financial meltdown. It's a story strung together with interviews of people who lived through and, in some cases, caused a lot of the problems. You'll come away having watched a good film and having learned something too.

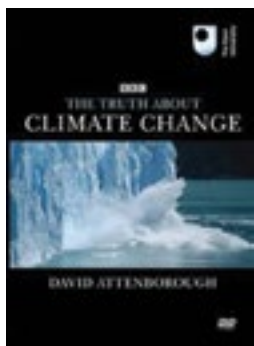


**State of the Planet** (2000)

**Director:** Sir David Attenborough

Rated 4.3/5 on amazon.co.uk

As you'd expect, this is a beautifully produced and narrated three-part documentary. Sir David asks if we have a problem, what the causes are and what of the future. He talks about the impact of humans on other species, even when we're trying to be helpful. And it might dawn on you that we're a species, like any other....



**The Truth about Climate Change** (2008)

**Director:** Sir David Attenborough

Rated 3.3/5 on amazon.co.uk

Not so well received as State of the Planet above, but equally well produced, is this explanation of what's happening to our world. Maybe the words 'climate change' coaxed the deniers out of their hidey-holes to give the documentary a drubbing. Or maybe the warmists are correct. Watch the film and draw your own conclusions.

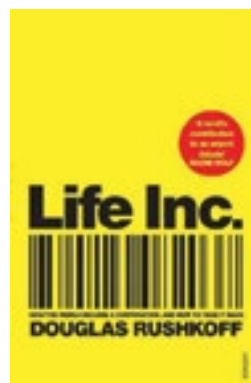


**Flow** (2009)

**Director:** Irena Salina

Not yet rated on amazon.co.uk

Subtitled 'For the love of water', this documentary gets close up to major water issues, namely scarcity, pollution, suffering and profit. It pulls no punches, and it's not just about water-starved countries. Some of the film is about tap water and bottled water in the USA. Every one of us has a vested interest in water. If you don't know why, watch this film.

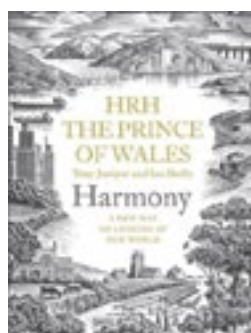


**Life Inc.** (Vintage, 2010)

**Author:** Douglas Rushkoff

Rated 3.7/5 on amazon.co.uk

We buy stuff we don't need to impress people we don't care about, encouraged by giant corporations that have come to equate quarterly returns with all-round success. The author does a good job of laying out the fracture lines in society and explaining how they came about. He also has views on what to do about it, not all of them very popular.

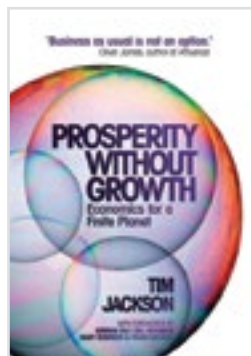


**Harmony** (HarperCollins, 2010)

**Author:** HRH The Prince of Wales

Rated 4.3/5 on amazon.co.uk

With the help of Tony Juniper and Ian Skelly, Prince Charles has come up with his 'new way of looking at the world'. You won't find it new if you believe we have become too divorced from Nature because that's the principal 'harmony' to which he refers. The book seems a bit self-indulgent, although it will make you think.

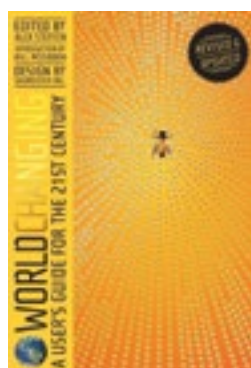


**Prosperity without Growth** (Earthscan, 2009)

**Author:** Tim Jackson

Rated 4.2/5 on amazon.co.uk

Professor Tim Jackson has concluded that growth predicated on ever-growing consumption is mad and unsustainable. Everyone's caught up in it and we need to get ourselves off the habit if we want to leave a planet worth living on to our descendants. If his book just gets us to start accounting for 'externalities' it will have done a good job.



**Worldchanging** (Abrams, 2011)

**Authors:** Alex Steffen

Not yet rated on amazon.co.uk

Hat tip to Blue & Green Tomorrow reader Marjolein Hoekstra who spotted that a new edition of the Worldchanging sustainability 'bible' has just come out. Green is no longer the destination, it's the start point. The new book talks about new tools, models and ideas for building a better future – and 50 percent of it is new since the original edition five years ago.



# Is a 'Minority Mandate' Ethical?

**Simon Leadbetter considers the case for the alternative vote.**

We live in a democracy. Right?

Ignoring the fact that half of our legislature is unelected, the elected chamber increasingly resembles a mess. A quarter of the Commons members sit on the payroll of the Government and the rest are whipped into line from fear of losing party patronage and future goodies.

Demos kratias, or 'rule by the people', is a great idea but the British execution of it leaves a lot to be desired. A majority 52 percent of the population are women, yet only 22 percent of MPs are women; 8 percent of the population are from ethnic minorities, yet just 4 percent of MPs are from ethnic minorities; 34 percent of MPs went to private school, though private school alumni constitute only 7 percent of the population; and some of the fewer than 1 percent of the population who are millionaires make up a staggering 80 percent of the Cabinet. If these are 'the people', they are not the people the majority would recognise.

Similarly, no government since 1945, of whichever hue, has enjoyed the mandate of more than half of the electorate or even of those who voted, despite securing thumping majorities in the Commons. It is dishonest of any politician to claim a 'popular' mandate to do something when fewer than half of the voters and far fewer than half of the electorate have supported their party's manifesto. The winner in elections since 2001 has effectively been 'none of the above'. This coalition can claim to have the votes of more than half of the voters, despite one part of that coalition gaining votes on a well-intentioned but ultimately false prospectus.



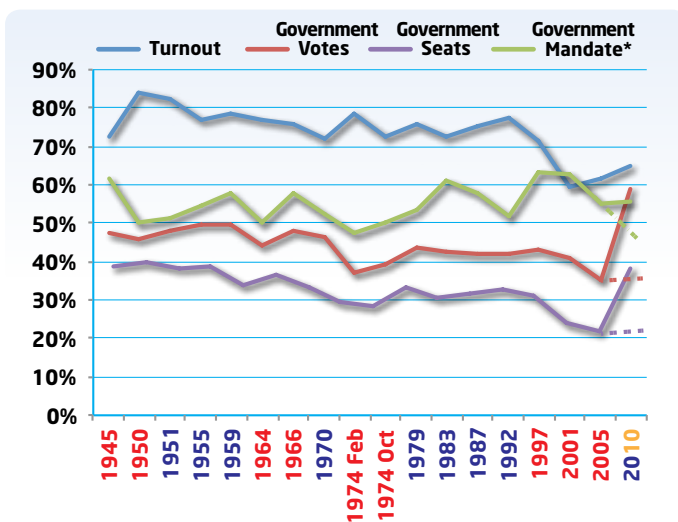
The great unwashed masses, the deserving poor, the uneducated, the lazy, the youth of today, pesky small parties; all those groups of 'them' who might challenge the freedom of 'us'.

Surely we should give voice, through fair elections, to the people who educate our children, heal our sick, protect our streets and borders, and tend to the poor and old? They have more accurate impressions of the plight of the majority than the person who has had every advantage in life, has gone to the best schools, made all the right connections, secured a well-paid job in the city and then helped to crash the global economy.

Democracy is messy, but a vibrant democracy that engages all of the people is an effective democracy. If you don't believe in a full democracy what you probably want is an elected dictatorship of a narrow elite who agrees with you, where power is passed between people who share very similar views and backgrounds and nothing really changes for the vast majority. People have died and are dying around the world because various autocrats agree with that point of view.

On 5 May 2011 we have the chance to make a small change to our voting system. It falls well short of the reform that the 'mother of all Parliaments' needs. A party's seats in the democratic chamber should be proportional to the votes gained. Single transferable vote is the only system that delivers true proportionality, but we will still have a more proportional system than we have currently with the alternative vote. That said, something as precious as voting should also be compulsory with one important twist: ballot papers should have a 'None of the above' option. If the majority of an electorate say they want none of the candidates, that is the will of the people. We'd certainly start to get MPs who are more responsive to the people than to their paymasters in the media, the unions and the corporations.

Our parents and grandparents died for democracy, the common will of the people, in WWII. If the sacrifice of millions during that appalling conflict shows anything it is the triumph of democracy over tyranny. Our current undemocratic settlement brings shame to their memory. 🌍



\* Mandate: share of electorate, not just those who voted  
The dashed lines show the share gained by the Conservatives alone

And don't let's get started on the West Lothian question where an MP from Scotland, whose own constituents remain unaffected, can help push through legislation that affects only English people. English MPs have forced through legislation that affects Scots, which a majority of Scots opposed, for years.

David Cameron may choose to argue that Britain's society is being broken, but society holds up a mirror to Parliament. Putting your own House in order seems like a good idea. Britain's Parliament is broken.

It is a truism that people who passionately argue for the status quo tend to be those who benefit from it most. These are the people who hate the idea of 'the people' using their vote because 'they' might not agree with 'us' on how best to run the country.



# Where Did I See...?

*As you've whizzed through the magazine, you might have thought, "I must remember that." But as real life gets in the way, we thought you'd like a reminder of all those references and links buried in the news and in our articles.*

To visit a website, just prefix the given code with [www.tinyurl.com/](http://www.tinyurl.com/) so the first link, to the Cabinet Office AV explanation, would be [www.tinyurl.com/68ynezm](http://www.tinyurl.com/68ynezm)

## News

p.1	Cabinet Office AV explanation	<a href="#">68ynezm</a>
p.1	Energy generation related deaths	<a href="#">4bsmkbc</a>
p.1	About thorium reactors	<a href="#">cwqkwd</a>
p.1	DirectGov on Retirement Age	<a href="#">62zef5w</a>
p.5	Hydro pump	<a href="#">66elj5l</a>
p.5	Hydrogen beads	<a href="#">5ua64wp</a>
p.5	Global Warming: Six Americas report	<a href="#">4att5kb</a>
p.5	Canal turbine	<a href="#">6alqtyv</a>
p.5	EU Transport Road Map	<a href="#">4gxgzgm</a>
p.9	Have your say on the FiT review	<a href="#">4dm4h5r</a>
p.9	Earth Day explained	<a href="#">dml8ch</a>
p.9	WRAP/WWF report on food waste	<a href="#">49jtevz</a>
p.9	Water footprint animation	<a href="#">4awg52n</a>

## Travel

p.10	MercoPress Tourism Report	<a href="#">5sed6ec</a>
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## Spotlight

p.12	DECC CRC Energy Efficiency Scheme	<a href="#">co7jqq</a>
p.12	DECC 2050 Pathways Analysis	<a href="#">2v48tnh</a>
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p.17	Muslim Green Guide	<a href="#">6yw8t9</a>
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## Money

p.23	EIRIS report: Cool Brands vs Hot Brands	<a href="#">49eyxd3</a>
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# GREEN BENCHES

WRITTEN BY SEAN MICHAEL WILSON  
DRAWN BY CARL THOMPSON



Tell us what you think (see page 31)



Email: [editor@blueandgreentomorrow.com](mailto:editor@blueandgreentomorrow.com)



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The next issue of **B&GT** is out on **20 May 2011**

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# Reader Survey

**Blue & Green Tomorrow reader surveys are opportunities for you to have your opinions heard.**

As a *Blue & Green Tomorrow* reader, you have direct access to our editor either by emailing him at david@blueandgreentomorrow.com or by completing these regular surveys. You can complete this survey online at [www.blueandgreentomorrow.com/survey](http://www.blueandgreentomorrow.com/survey).

All of your comments will help us ensure that *Blue & Green Tomorrow* continues to satisfy your requirements with its news and content, and enable us to keep abreast of our readers' views.

As special thanks for your participation, *Blue & Green Tomorrow* will make a £1 donation to UNICEF for every completed survey.

**About you** (these fields allow us to ensure we have a representative sample of our readership)

Age 18-24  25-34  35-44  45-54  54-64  65-74  75+   
Gender Male  Female   
Occupation   
Postcode

## 1) We'd like you to tell us about the current issue of *Blue & Green Tomorrow*.

How enjoyable did you find *B&GT*? Very enjoyable  Enjoyable  Not enjoyable

Which of the sections did you enjoy most?

Which of the sections did you enjoy least?

How long did you spend reading it?

Didn't read it  0-10mins  11-20mins  21-30mins  30+mins

How many people did you share *B&GT* with?

No one  1 person  2 or more people

Will you keep any of it for reference? Yes  No

On a scale of 0-10 how likely is it that you would recommend *Blue & Green Tomorrow* to a friend or family member?

(Where 0=not at all likely and 10= extremely likely)

1  2  3  4  5  6  7  8  9  10

## 2) We'd like you to tell us what topics you'd like us to cover in our magazine. Number 1-4 in order of preference, i.e.

Very interested  1 Interested  2 Don't mind  3 Uninterested  4

Arts and culture	<input type="checkbox"/>	Personal finance	<input type="checkbox"/>
Business and economics	<input type="checkbox"/>	Science and technology	<input type="checkbox"/>
Energy and climate change	<input type="checkbox"/>	Shopping	<input type="checkbox"/>
International news	<input type="checkbox"/>	Sports and leisure	<input type="checkbox"/>
Local news	<input type="checkbox"/>	Travel and holidays	<input type="checkbox"/>
National news	<input type="checkbox"/>	Other <input type="text"/>	

## 3) On the subject of environmental and ethical reporting, which of these topics would you be interested in hearing about? Number 1-4 in order of preference, i.e.

Very interested  1 Interested  2 Don't mind  3 Uninterested  4

Alternative fuels	<input type="checkbox"/>	Green business	<input type="checkbox"/>
Animals, plants and wildlife	<input type="checkbox"/>	Green investments	<input type="checkbox"/>
Building sustainability	<input type="checkbox"/>	Green transport	<input type="checkbox"/>
Charity work	<input type="checkbox"/>	Green-washing	<input type="checkbox"/>
Clean technology	<input type="checkbox"/>	Politics of green	<input type="checkbox"/>
Climate science	<input type="checkbox"/>	Pollution, toxins and waste	<input type="checkbox"/>
Eco-tourism	<input type="checkbox"/>	Population	<input type="checkbox"/>
Ethical business	<input type="checkbox"/>	Renewable energy	<input type="checkbox"/>
Fair trade	<input type="checkbox"/>	Resource depletion	<input type="checkbox"/>
Food and its production	<input type="checkbox"/>	Other <input type="text"/>	
Fossil fuels	<input type="checkbox"/>		

What newspapers do you read on a regular basis?

Please tick	Daily	At least once a week	Less Often	Never
<i>The Financial Times</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Daily Telegraph/Sunday Telegraph</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Times/Sunday Times</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Guardian/Observer</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Independent/Independent on Sunday</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Daily Mail/Mail on Sunday</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Express/Sunday Express</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Sun/News of the World</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>The Mirror/Sunday Mirror/Record</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<i>Daily Star</i>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 4) How do you manage your wealth?

Do you have a financial adviser/planner or wealth manager? Yes  No

## 5) Which of these areas would you avoid investing in? (Please tick all that apply.)

Tobacco production	<input type="checkbox"/>
Nuclear power generation	<input type="checkbox"/>
Alcohol production	<input type="checkbox"/>
Poor environmental practices	<input type="checkbox"/>
Gambling	<input type="checkbox"/>
Human rights abuses	<input type="checkbox"/>
Pornography or violent material	<input type="checkbox"/>
Poor relations with employees, customers or suppliers	<input type="checkbox"/>
Manufacture or sale of weapons	<input type="checkbox"/>
Unnecessary exploitation of animals	<input type="checkbox"/>
Other (please specify) <input type="text"/>	

## 6) Would you be interested in discussing ethical investment with a specialist independent financial adviser? Yes No

If you have ticked yes to request a free and independent consultation about ethical investment, please complete the details below and we will pass them to our panel of independent financial advisers. Your privacy is important to us. We will use your data only with your explicit permission. We do not sell or pass on data to any third party.

Title   
Forename   
Surname   
Address   
Postcode   Tick your preferred method of contact  
Phone number    
Email

If you would like to register for our fortnightly e-newsletter tick this box

**Many thanks for completing the survey. Please put your completed survey in an envelope and send it FREEPOST (no stamp required) to:**

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London  
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# Living, without costing the Earth

## Four small steps to help our planet, protect our children's future and keep money in your pocket



**Support independent business, shop locally, shop ethically, shop fair trade** (p. 11).



**Switch to renewable energy. Switching means greater energy security for the UK** (pp. 4, 15).



**Holiday in the UK, use the bus or the train or travel to countries that need your help** (pp. 10, 13).



**Invest for all of our tomorrows. The FTSE100 of the future will be made up of the most ethical and sustainable brands. High net worth individuals are flocking to sustainable opportunities. Follow the money** (pp 20-21, 22, 23).

### The basic steps

Turn down your heating by 1 degree to save 10 percent on your annual bill.

Hang clothes outside or on an airer to dry and resist the urge to use a tumble dryer.

Replace your lights with energy-saving bulbs – and always remember to switch them off when not in use.

Turn appliances off at the wall instead of leaving them on standby, which continues to drain electricity.

Boiling a kettle is very energy-intensive. Only heat enough water for your needs; don't fill the jug.

Insulate your loft and lag your boiler to avoid wasting valuable heat.

