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# Insidetrack

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**The Great Acceleration**  
What should the UK do to protect  
natural systems?





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## Comment

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“  
The arguments for learning to work within, rather than against, natural systems are unassailable.”

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If tackling climate change is the most urgent environmental challenge of our time, then arresting the decline of the natural world is the most complex and difficult.

Avoiding dangerous climate change is a massive global task but it comes down to a clear goal: to switch to low carbon energy sources and keep warming below two degrees. Restoring the health of the natural environment, on the other hand, requires alignment of a multiplicity of activities, across sectors and nations, to manage impacts on water, soil, air, nutrient cycles and biodiversity, and keep them within safe limits.

The arguments for learning to work within, rather than against, natural systems are unassailable but, even when we know the solutions, it is not straightforward to act on them. It requires us to challenge long held assumptions about our relationship with, and attitude to, the natural world. Achieving this shift, and persuading governments, individuals and businesses to prioritise long term sustainability, may take a greater effort than any of the challenges embodied in learning how to work with natural systems.

The massive increase in the environmental impact of human activity since the 1950s has been called the Great Acceleration. In this edition of *Inside Track*, we explore what it means for the UK, and what the political, public and business responses should be. The introductory piece is by Professor Will Steffen, one of the architects of the work carried out by the Stockholm Resilience Centre to chart the impacts. Martin Nesbit, a former CAP negotiator for the UK government, gives his view of the political challenges; Professor Dieter Helm argues for the natural capital approach; and our new partners on our Natural Environment theme, the National Trust and Nestlé, provide perspectives on public and business action.

We're pleased to be launching this new theme as part of our new three year strategy. On page 14 I outline the major challenges we see on this agenda, and the impact we hope to make.

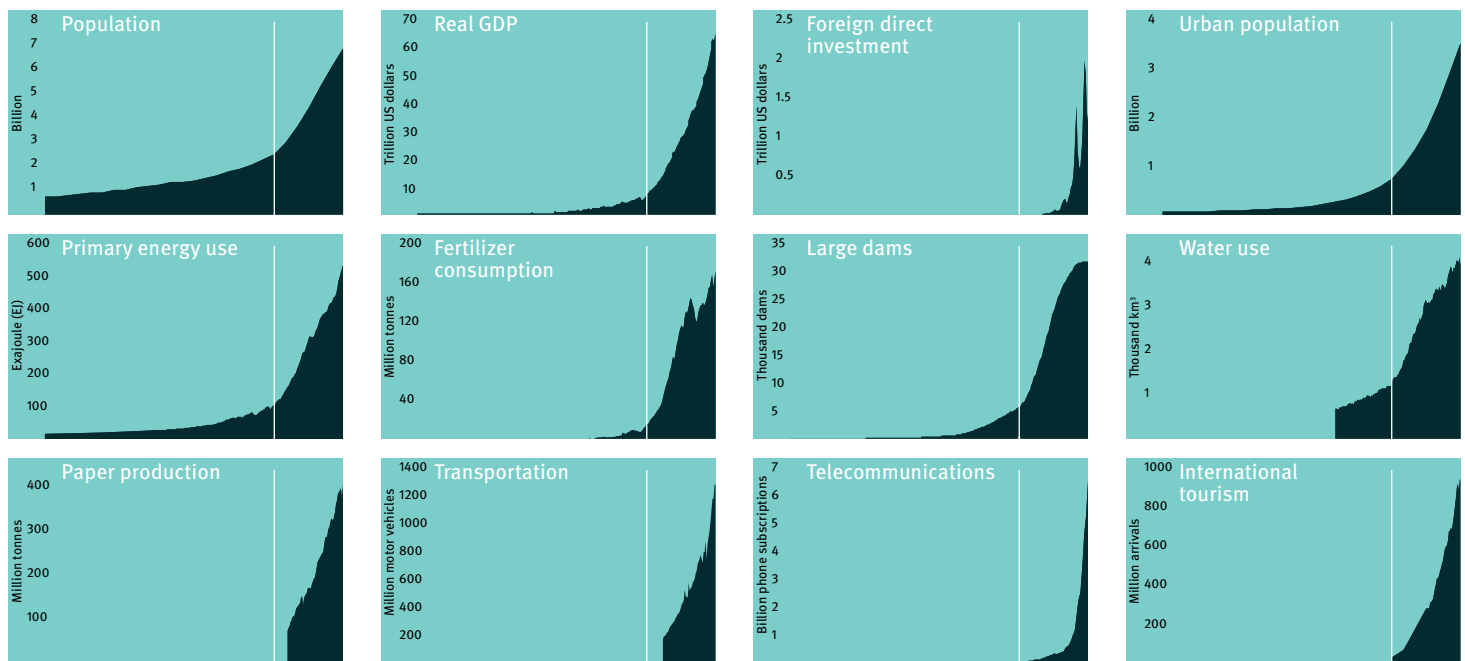


Sue Armstrong Brown  
Director of policy

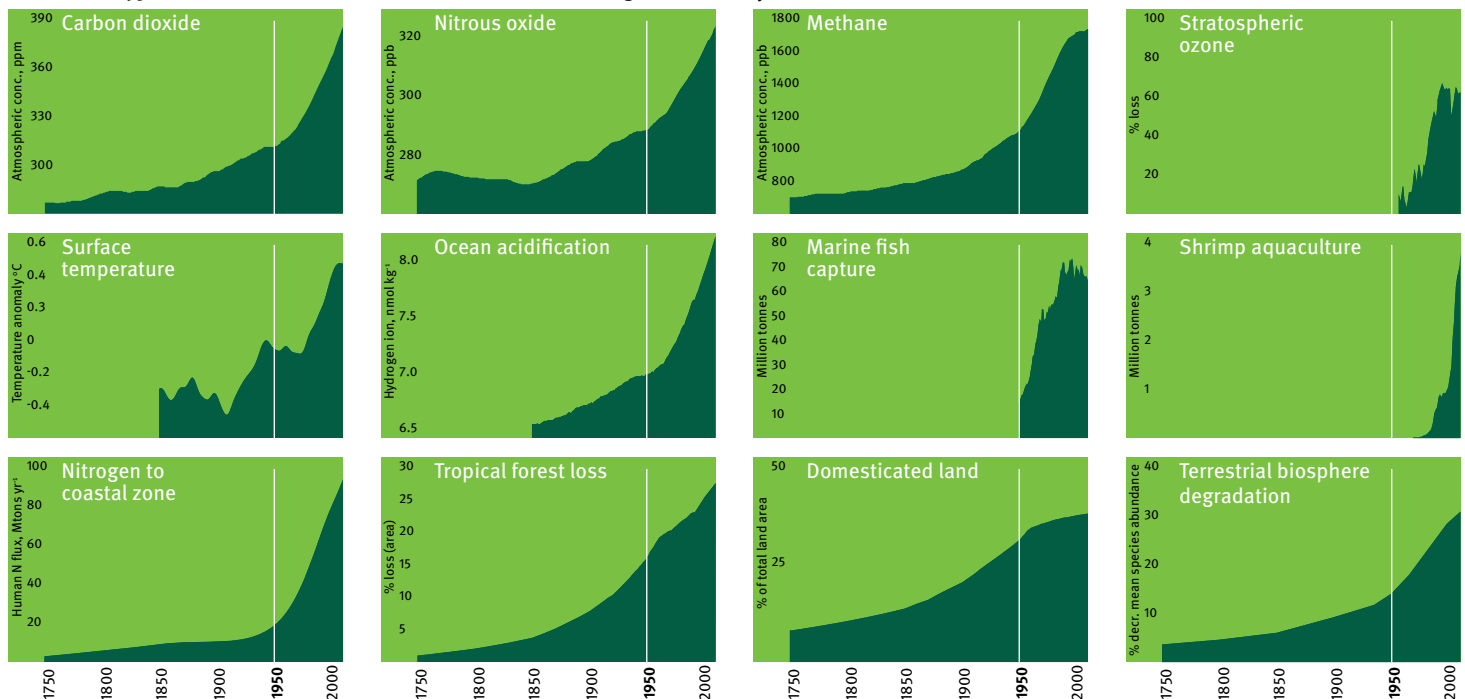
# The challenge of the Great Acceleration

The middle of the 20th century was a turning point in world history, says **Professor Will Steffen**

## Trends from 1750 to 2010 in globally aggregated indicators for socioeconomic development



## Trends from 1750 to 2010 in indicators for the structure and functioning of the Earth System



The Great Acceleration, a term first used about a decade ago, marks a unique point in human history and probably in Earth history as well. It refers to the enormous increase in human activity: economic, energy use, resource use, transport, communication, and so on, that began around the middle of the 20th century and has continued to now. The phenomenon first caught the attention of historians such as John McNeill, who described it in his book *Something new under the sun*.

It was later identified by Earth System scientists trying to chart the course of the human enterprise and its influence on the planetary environment. They added the Earth System perspective to the socioeconomic understanding already well known to historians.

Graphically, the Great Acceleration is depicted in two sets of 12 graphs, shown left: one set of indicators for the human enterprise and the other for the structure and functioning of the Earth System. The graphs start at 1750, to capture the beginning of the industrial revolution and subsequent developments, and continue to 2010, the last time we had comprehensive datasets.

The graphs are remarkable in showing just how fast and how much human enterprise changed after the Second World War. It is also fascinating in that they show the strong coupling between human activity and changes in the structure and functioning of the Earth System. This data, along with much more, has prompted the suggestion that human activities have pushed the Earth into a new geological epoch: the Anthropocene. The term is still informal, and whether or not it is formalised is in the hands of the geological community.

The phenomenon of the Great Acceleration brings out many more important ideas, but two critical notions stand out. First, the enormous increase in connectivity in the human enterprise, as shown by indicators such as foreign direct investment, telecoms and international tourism. All ramp up sharply after 1950. In fact, for telecoms, nearly all of the increase since 2000 has occurred as mobile phone subscriptions and the vast majority of those were in the developing world. These, and other aspects of the globalisation process, have greased the wheels of the global economic machinery, leading to rapid increases in energy and resource use since the Second World War.

Second, the Earth operates as a system, a single interconnected system where changes in one feature or process, as the graphs show, influence many other processes. In fact, it can be best understood from complex systems theory, in which the system can exist in well defined states. Also, the Earth System displays emergent properties at the global scale, that cannot be predicted or understood simply by aggregating up constituent properties at smaller scales. Global atmospheric circulation is a good example.

Putting all 24 graphs together shows how the global socioeconomic system and the biophysical Earth System have increasingly moved in lock-step since the middle of the 20th century. It has become impossible to separate global socioeconomic change and global environmental change; we now have only 'global change'. So what does this mean for the UK and Europe?

The traditional way of dealing with environmental problems is often to devolve responsibility to lower levels, sometimes called downscaling. This often works well for the problems we are used to dealing with: local air and water pollution, for example. In these cases, problems and solutions are often able to be scaled up or down to fit with governance and management structures.

But this is a different beast. We are now dealing with our own life support system, a planetary scale environment that operates as a single,

complex system. There has always been variability in the global environment at various scales. We have learned to understand these patterns and have built our agriculture, infrastructure and economies around them. But, for the first time in human history, our own planetary life support system is being destabilised at a rapid rate and at global scale.

This entirely new situation puts enormous pressures on governance systems. National level governance will still be important but cannot operate in isolation. The climate change challenge is a well known example, but it is only one of many interlocking problems that are arising at the global scale. Perhaps an example of how humanity has dealt with a similar problem in its own sphere might be useful.



**Our own planetary life support system is being destabilised at a rapid rate and at global scale.”**

The global trade system is important for our economic well-being and increasingly operates as an integrated global network. Until a decade or two ago, governance of this system was handled by individual nation states, each pursuing its own interests. It became apparent, however, that this was not an appropriate way to manage a single, complex system at the global scale. The World Trade Organisation was a necessary development to manage the rapidly growing, connected world trade system, to achieve greater benefits for most countries. National governments had to give away some of their authority to govern trade across their borders, but they did so in the expectation of net benefits for their societies.

Perhaps we now need a similar organisation to manage our relationship with the Earth System?

The European Union may be another transnational organisation that provides insights into how we approach this. In some sense, the EU attempts to deal with Europe at a 'systems' level, ie there is more to Europe as a whole than the sum of its individual countries. As a Dutch colleague once said, "There is something more to being a European than just being Dutch." Perhaps he was referring to the fact that there could be some emergent properties at the European level, drawing on common strands of cultural heritage?

We can perhaps learn from the EU experience to inform how to deal effectively with a rapidly changing planetary environment. The real challenge is to move from embracing what is the commonality to being European, to what is the commonality to being human. And, very importantly, to recognise the dependence we all have on a well functioning planetary life support system.



**Will Steffen is senior fellow at the Stockholm Resilience Centre and adjunct professor at the Australian National University. He is a co-author of 'The trajectory of the Anthropocene: The Great Acceleration', which appears in *The Anthropocene Review*, 2015**

# What does the Great Acceleration mean to us and what can we do about it?



**Kate Raworth**  
Senior visiting research associate,  
Environmental Change Institute, Oxford  
University

No one can miss the global alarm signal that has been raised by the Great Acceleration graphs. But let's not forget the equally important acceleration in human well-being that has been achieved over the same period. Since 1950, many countries and communities have made unprecedented strides in life expectancy, literacy, nutrition, access to clean water and sanitation. The challenge from here is to decouple improving human well-being from ecological impacts so that we can meet the human rights of all, within planetary boundaries. We know many ways to do it, through renewable energy and the circular economy for starters, but have barely got moving. The next great acceleration must be in our drive to make this happen.



**Matt Shardlow**  
Chief executive, Buglife

The proportion of people living in cities has ballooned, and levels of connection with wildlife and our natural environment have plummeted. Farmers, whose fathers walked the ground and got their hands muddy, sit in air conditioned cabs listening to the radio, no longer able to hear birds calling or see the buzzing bees. Decisions about how land is to be managed are taken at national or continental levels, but our knowledge about the ecology of non-human species has not kept pace. Sustainable land management will require the effective combination of ethical principles, technological achievements and ecological knowledge. Unless the funding of ecological study is sufficient and independent, and unless legal frameworks provide explicit protection for wildlife, we risk allowing vested interests to dominate the decisions.



**Mark Avery**  
Author, blogger and former director of  
conservation at the RSPB

We pretend that the countryside is owned by farmers, and yet taxpayers, wherever they live, pour £3 billion a year into the English and Welsh countryside. We all have a financial stake in what happens there. We pretend that the countryside is for food, and yet farming delivers beauty, wildlife, clean water, flood alleviation and carbon storage, if done well. We need to give more attention to those aspects of policy and delivery. We pretend that it is the fault of the EU, the government or civil servants, but we are the voters who can demand a better and more sustainable deal in return for our taxes, a richer countryside for people now and a better future for generations to come. Let's do that.



**Stephanie Hilborne**  
Chief executive, The Wildlife Trusts

People are part of nature, not apart from it. Our health, well-being and prosperity depend on a healthy natural environment. But modern society is placing excessive demands on the natural world. Recent population growth, urbanisation, consumerism and economic globalisation have driven huge shifts in land use, land management and material consumption, pushing wildlife, wild places and natural processes to the margins of modern life and public policy. Most of the challenges that will be faced by a growing, aging, increasingly urbanised, consumer society can be addressed more easily and effectively by bringing more wildlife and wild places into our daily lives. As a matter of urgency, we need to help nature to recover and reconnect society with the natural world.



**Matt Adam Williams**  
Committee member of A Focus on Nature, a  
network for young UK conservationists

Shifting baseline syndrome: the dangerous misconception is that things were ever thus. But even our parents grew up in a world far richer in nature and wildlife than ours. It also risks making us forget that we owe a debt: to the naturalists, ecologists and campaigners who came before us, learning and recording, saving green spaces and creating the institutions we rely on. As we accelerate, nature is withering, and so is our connection to it. Wildlife, and the very experience of it, is being wrenched out of the hands of young people and future generations. Replying to this spur to action, a youth conservation movement is taking shape and speaking out, repaying that debt and calling for nature to be saved for the sake of future generations. The new government should put in place a generational strategy to save the natural world by 2050, based on young people's own vision for nature.



# Government within limits

**Martin Nesbit** sheds light on why successive UK governments have struggled with the big questions involved in looking after the environment, and indicates where success might lie

**W**hy do governments have difficulty dealing with planetary constraints? I have my own ideas, based on my own experience of, well, failing to think about planetary constraints when I was working in government. But we need to think first about what making public policy decisions in the light of planetary constraints would really look like.

Although we can usually spot when governments are failing to act within planetary constraints (which is pretty much all of the time), and we can analyse the ways in which policies, strategies and paradigms fail to acknowledge the fragility of the world around us, it is much more difficult to describe what a functioning politics that genuinely does understand and respond to those limits should look like.

A better politics would mean a greater emphasis on finite resources, managing concentrations of greenhouse gases in the atmosphere, and protecting biodiversity; but at what point would those goods be traded off against, say, reduced infant mortality in developing countries, or even an increased sense of economic well-being for the populations of developed countries?

## Two major constraints for government

There are two major barriers to policy making that takes account of planetary boundaries. One is the intergenerational nature of the costs and benefits: action now is needed to protect the interests of future generations. And another is the global nature of many of the problems. As Will Steffen points out in his piece, the realisation that the Earth operates as a single, interconnected system is an essential first step.

Let's look first at the intergenerational problem. There were many stark messages in the 2006 Stern review, which shone new light on the societal choices available in the face of climate change, and created the space for positive institutional change in the UK. One of the messages which received comparatively little attention, however, was its implication that it was not in the narrow interests of current populations to take decisive action; the numbers only add up when you factor in the interests of future generations. But all of our systems are set up for managing conflicts of interest between the current participants in our economy; and democracy, fairly obviously, only grants votes to those who exist



now. Ministers, and the civil servants who work for them, are closely attuned to the signals they get from voters, and from the institutions likely to influence voters' understanding of their own well-being.

As Will Steffen makes clear, some form of global level governance is needed; for example, to allocate the costs and benefits of a shift to a more sustainable system. This not only runs against the grain of the localism that underpins much environmental thinking, but also looks increasingly challenging in the light of the rise of anti-EU parties across Europe, and the suspicions behind the recent US Congress decisions on the Transatlantic Trade and Investment Partnership.

### Looking for answers

So how do our policy makers currently deal with these challenges? Governments like getting rid of problems. You can do that the hard way, by solving them, or the easier way, by redefining them, or changing their ownership so that they become Someone Else's Problem. From a ministerial seat, the decision making landscape is dominated by issues which will cause people to blame you; occasionally (on a good day, or with a good minister) there will be a limited number of clear opportunities to make things better in the longer term. The ideal policy solution in terms of practical politics is one where you achieve the positives without angering people; or, at least, without their anger being directed at you.



**We have to start actively claiming problems, and finding big enough solutions.”**

But thinking in terms of planetary boundaries means we have to start actively claiming problems, and finding big enough solutions. This runs counter to habits now ingrained in the civil service. Bureaucrats like technocratic answers; for example, that we need to calculate and apply a value to the diminishing space for nature, or for the cost of greenhouse gas emissions. But pricing becomes increasingly difficult as we move away from analysis based on incremental change, to analysis which demands that we imagine step change catastrophes and start trying to value their risks.

Emissions trading is, of course, the great example of this approach. I used to be a true believer in its potential for tackling climate change. I still think it's necessary and a good answer; but it's an incomplete one. Carbon pricing can optimise the use of current infrastructure, but is unlikely ever to be strong enough to drive society level infrastructure changes. In the meantime, it gives policy makers a warm feeling that they have found the technocratic answer to the problem, and made it go away.

One attraction of technocratic answers is that they help to brush aside the, often complex, moral choices of long term decision making; which in turn reduces the risk of blame. For decisions to take the longer term into account, a genuine societal debate is needed. Governments then need to explain the long term benefits, which justify the precautionary decisions, often to voters who will lose out from them in the short term. And they are benefits which will often be intangible or uncertain: the avoidance of dangerous climate change, reducing the risk of catastrophic species loss, and so on.

Accepting sustainable choices will involve populations both trusting

governments to impose costs now for invisible benefits later; and accepting that current patterns of consumption are not sustainable, in other words persuading them that they are significantly worse off than they thought they were. Neither will be easy.

Without a serious societal reflection on the balance between growth and sustainability, environmental ambitions will depend on making the most of a failed model, and trying to limit its impacts. In a better version of the recent past, that reflection could have been triggered by Professor Tim Jackson's *Prosperity without growth* report for the Sustainable Development Commission; but its messages were too challenging for governments facing sharp electoral competition, and without the confidence to talk seriously about what societal well-being might mean.

In the UK, we now lack a Sustainable Development Commission to push that debate. But we need to keep pushing it; finding new ways round the vested interests of many traditional media outlets. And, in the meantime, we need to keep advocating structures which make it easier for governments to make the right decisions; despite the constraints on them, they occasionally show the strength to do so.

### Soft power can be impressive

I was initially sceptical, working on climate change in Defra, at the idea of a Climate Change Act. I didn't believe it would do what its advocates expected, and force government to manage sectoral emissions year by year to fit within an emissions limit; nor has it. What I missed was its potential to frame objectives in the longer term, through the 2050 target; and that the institutions to police those objectives could, indeed, have an impact on decision making now. The Committee on Climate Change wields impressive levels of soft power, pointing out that energy system decarbonisation demands radical choices, and will not be delivered by price signals alone.

There are other moves to set long term and global boundaries in the form of specific targets, and to create an institutional system that backs up those choices. Wales's new Well-Being of Future Generations Act, for example, which may be imperfect in some of its elements, but defines the problem in big and inspirational terms. The EU is often criticised for setting environmental objectives before it has the means to meet them; maybe we need to start recognising that this approach has some strengths.

Wherever we can secure public buy-in to the objectives – as was possible on climate change – we should seize the opportunity to nail them in place and give governments the structures they need to facilitate better long term choices. It isn't a substitute for a wider public debate, and it doesn't deal with global equity problems, but it's a start, and makes it more likely that answers to wider challenges can emerge.



**Martin Nesbit** is head of the Climate and Environmental Governance Programme at the Institute for European Environmental Policy. Formerly he was director for EU and International Issues at the Department for the Environment, Food and Rural Affairs



# Growing a public mandate for a healthy natural world

**Dame Helen Ghosh** explores how we can deepen people's connection to nature

**W**ithout a strong public mandate, it is hard to see the UK taking the bold and urgent action needed to address the speed and scale of environmentally damaging human activity. Engaged citizens give government and business reason and permission to act. They can also create wider demand for a healthy natural environment through the way they live.

The problem is that most people are not engaged. Why is this and what can we do about it? As Sir David Attenborough said, in his speech to the British Natural History Consortium Communicate 2010 conference, "No one will protect what they do not first care about."

This challenge isn't new. Raising the environmental consciousness of society through connecting people to nature has become a familiar mantra over the past five to ten years. This aim formed a whole chapter of the 2011 Natural Environment White Paper.

It is central to the strategies and campaigns of many environmental NGOs. From The Wildlife Trusts' My Wild Life and RSPB's Big Garden Birdwatch, to Friends of the Earth's Bee Cause and the National Trust's "50 things to do before you're 11¾", including outdoor adventures from building a den to catching a fish in a net, designed to reconnect children with the natural world.

What is interesting is how our approach has changed recently, informed by powerful insights based on social science, that have helped us to understand why we have not engaged the wider public beyond our core nature-loving supporters. See, for example, Tom Crompton's *Common cause: the case for working with our cultural values*, Futerra's *Branding biodiversity, a new nature message*, MINDSPACE by the Institute for Government and the Cabinet Office, or Chris Rose's *What makes people tick*.

## **Nature makes us feel good**

People do care about nature, but not in the way environmentalists and policy makers have assumed. For most people, their interest isn't motivated by valuing nature for its own sake. It's what they gain for themselves through experiencing the natural world.

When the National Trust asked people what they wanted from a visit to our outdoor places, they spoke of feelings: happy, relaxed, free, healthy, fresh and alive. Feeling enlightened, intellectually stimulated or enchanted by wildlife barely came up.

There is strong evidence people need nature in their lives for their physical and mental health. As well as the benefits of exercising in green spaces, or from the air cooling and cleaning that urban trees provide,

there's something fundamental about natural environments that taps into our psyche and restores our minds.

The important Monitor of Engagement with the Natural Environment (MENE) survey found that, when asked why they were visiting natural spaces, almost half (45 per cent) of people cited health and exercise. Others said it was to relax and unwind, to enjoy the scenery and fresh air. The trend for health and exercise grows stronger with age. By comparison, only 13 per cent cited enjoyment of wildlife as the motivation for their visit and two per cent said it was to learn something.

People do have a connection to nature but it's emotional, not rational or intellectual.



**We must start with the connections people already have to their natural environment in the places they live.”**

### Local green spaces are vital

Most people think of the environment in terms of the place they live and the people they live there with, not climate change or biodiversity. Being in contact with nature day to day creates personal value and meaning. People are more likely to care and be motivated to act.

Local green spaces are popular. Parks were the most visited outdoor space last year, with an estimated 778 million visits. People are now more likely to visit green spaces in towns and cities than the countryside. The vast majority believe having green spaces close to where they live is important.

So let's focus on bringing nature to where people live and work.

### People's actions don't match their concerns

People are worried about the state of nature: 85 per cent say they are concerned about damage to the natural environment; and 48 per cent of those interviewed in a survey for YouGov and *The Times* in April, a fortnight before polling day, felt that the environment wasn't being discussed enough during the election campaign.

But this concern isn't leading to action. MENE found of nine pro-environmental behaviours, only recycling and buying seasonal or locally grown food are practiced by large numbers of people. Bigger commitments like giving time or money for the natural environment were bottom of the list.

For most people, giving them more hard hitting facts and information about the crisis facing the natural environment won't change this.

### How do we build a public mandate?

It sounds obvious, but we need to build a public mandate on terms that matter to people. We must start with the connections people already have to their natural environment in the places they live. Our approach must be based on empathy, relevance and hope.

That makes transforming the provision and use of high quality green spaces in and around our towns and cities a critical foundation. The potential could be huge and persuasive, especially to our health and well-being, and the resilience and competitiveness of our cities and towns.

It is a tantalising prize, but do we have the collective vision and political will to secure it? The government's interest in pocket parks is

a welcome start. However, the urgent test for us all is to find new ways to fund and manage publicly owned urban green spaces, as many local authorities can no longer afford to do so alone. The National Trust is committed to helping develop innovative and practical solutions that work at town or city scale.

Public support and community participation will be vital to success. It's a real opportunity to deepen people's connection to their natural world and give them a stake in it. City devolution and the public health renaissance also create fertile ground for progress.

But we also need to watch out for the risks. The Great Acceleration story is one of them. Like climate change, the rapid increase in environmentally damaging human activity should matter to people. But the likely truth is that it won't and for similar reasons.

It's too complicated, hard to understand how it affects you and too prone to evoke feelings of sadness, despair, guilt and loss, rather than the more active emotions of anger or awe, or positive feelings of love and hope. It might work for policy makers, but the public will tune out.

### What's the National Trust doing?

This spring, I launched the National Trust's new strategy for the next decade and beyond. It sets out the contribution we will make to help secure a healthy natural environment.

As a large landowner, we can innovate, share and scale-up practical solutions. This has exciting potential and we have asked Green Alliance to help us focus on the most promising areas for breakthrough, collaborating with others in business, land, civil society and the public sector.

However, it is our public reach, with over four million members and 200 million visits to our outdoor spaces, that gives us a real opportunity to stimulate people's passion and care for the natural environment.

Our starting point is to enable people to experience the awe, wonder and joy of the natural world that is also fun and great to share with family and friends. Our stories and campaigns will reflect this, inspiring children and adults alike to get outdoors and explore.

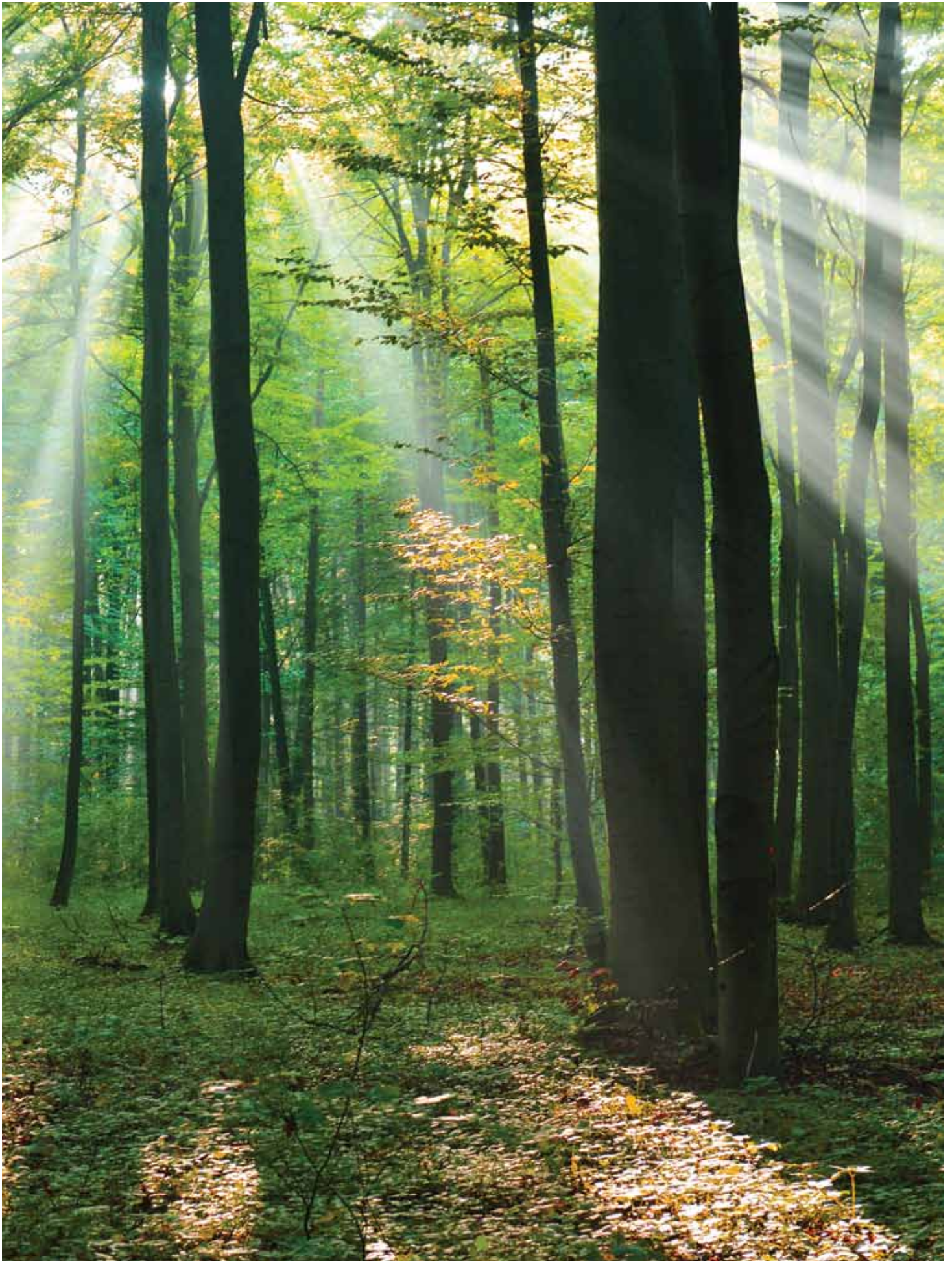
We hope to fire people's imaginations and optimism for the future with our partnership work to transform whole landscapes, showcasing what healthy nature does for Britain.

But we still have many questions on how to deepen this connection. Can tools like citizen science help people notice and communicate the changing natural world on their terms? How do we give individuals and communities a real stake in the solutions, a chance to participate? How do we tackle the tricky and sensitive issue reducing the impact of the food we eat?

The National Trust is committed to playing its part. But growing a public mandate for a healthy natural environment requires leadership, bold action and a collaborative attitude from us all: government, business and civil society.



**Dame Helen Ghosh is director-general of the National Trust**



# Valuing nature for sustainable growth

Putting natural capital right at the heart of the economy would lead to more sustainable growth, says **Professor Dieter Helm**

If GDP continues to grow at the current three to four per cent, the world economy will be around 16 times bigger by 2100. By that time, global temperatures might be a lot higher, and up to half the species may be gone. Nobody can think this is sustainable.

Yet, contrary to much green thinking, it does not follow that growth needs to be abandoned. Rather, what is needed is a greener sort of growth that puts natural capital at the heart of the economy.

“**Economic growth cannot simply carry on without regard to preserving and enhancing the aggregate natural capital stock.**”

Natural capital is all the stuff that nature provides for free, the stuff that is at the core of all economic activity. Some of this natural capital can only be used once: the non-renewables, like minerals, oil and gas. If we use it, then future generations can't, and so we need to compensate them, rather than pretending that economic growth has gone up. North Sea oil and gas is a classic example: it flattered the growth figures, but left nothing for the future.

The natural capital which really matters is the renewables: natural assets which nature will go on producing for free forever, provided we do not deplete them below critical thresholds. The value is open ended and vast, yet it is valued at little or nothing because the short term costs are low. This is the stuff developed economies have decimated, and developing countries are following fast.

To stop this disaster, the starting point is to recognise that economic growth cannot simply carry on without regard to preserving and enhancing the aggregate natural capital stock. Natural capital has to be maintained. But our national income accounts are all about cash: money in and money out. What is needed as a first charge against the national

budget is a deduction for this capital maintenance (and indeed for maintaining the other hard infrastructures in energy, transport, water and communications). Instead of eating up our capital inheritance, we need to make sure that we don't undermine future economic potential.

Once the aggregate rule is in place: no net loss of natural capital, the policy and funding follows. Short of going back to the Dark Ages, there will be further damage to natural capital. It is inevitably going to happen. But the rule says that any damage must be compensated for and, if there is no possible compensation, then the damage should not be permitted.

Compensation is a very radical idea and, unsurprisingly, farmers, developers and industries resist the idea that they should have to pay for the damage they cause. Yet it is just a generalisation of property law: harm dictates remedies.

The sums involved are big, but they are not the only funding source for nature. If the depletion of non-renewables necessitates compensation to future generations, and if polluters should pay for their pollution, the totals would create a nature fund which would be more than needed just to hold the line. There would be scope for a major restoration programme, a great prize, making growth sustainable.



**Dieter Helm** is professor of energy policy at the University of Oxford, and fellow in economics at New College, Oxford. His new book *Natural capital – how to value the planet* is published by Yale University Press

# Making natural capital our business

**Dame Fiona Kendrick** describes how Nestlé is developing partnerships and policies to protect natural capital



Since 1950 the world's population has tripled. Coupled with an explosion in the global economy, the consequence has been that consumption of the world's natural resources: agricultural output, water, ocean produce, timber, fuel, land and minerals, has grown beyond sustainable limits. By 2050 the world's population will be nine billion. A 'business as usual' trajectory means the impact on the world's resources will be substantial. Food output alone will need to double, according to The Global Harvest Initiative. Given that the Food and Agriculture Organisation calculates that agriculture alone contributes over 5.3 billion tonnes of CO<sub>2</sub> equivalent emissions per year, with a

forecast rise of 30 per cent by 2050, it is clearly in all our interests to effect change.

The two engines of change are public policy and business. Operating independently of each other, neither can deliver the right level of change consistently, effectively and across the entire globe. Public policy is often focused on the short term, linked to the electoral cycle and, except for the few world spanning organisations like the UN and the WTO, it is confined to national borders. Businesses like ours also focus on the short term issues of cost to price ratios, yet also need to take into account the long term, through investments of capital expenditure.

The solution is to catalyse the two parties and bring business and public policy together. For this to happen a third party agent is needed. These are many and varied, it may be an NGO, or an idea whose time has come. One example is that, in September last year, 130 companies and governments signed a historic declaration at the UN to halt deforestation and to restore 350 million hectares of forest.

## “ Every aspect of our business is subject to scrutiny through the lens of environmental improvement.”

For its part, Nestlé was the first company of its kind to commit to zero deforestation in its supply chain, so this wider move was an encouraging sign of collective action. We are also active participants in the Cambridge Institute for Sustainability Leadership, chairing the Leaders Platform and contributing to its 2015 report *Doing business with nature*.

The Natural Capital Committee's recent report crystallises thinking on valuing natural capital, a key step for businesses, enabling them to convert those assets of nature that they use into balance sheet tangibles. While we support this theory, it must be remembered that a full and overnight internalisation of costs would immediately lead to an unacceptable rise in the price of products. There is also a question about on which balance sheet the intangibles should sit.

Part of the solution to this lies in what companies like ours are already doing unilaterally: taking action through our own supply chains to ensure they are not drawing down more capital than nature's balance sheet can stand.

We have published very specific commitments on natural capital. There are four top-line strands to this. First, we commit to acting as a responsible steward, which means every aspect of our business is subject to scrutiny through the lens of environmental improvement. Second, we report on risks and responses, which means we integrate externality values into our operations, supply chains and business planning, as well as communicate them to stakeholders. Third, we work to help consumers make informed choices so that they can contribute to the lowering of environmental impact, and we work with government and civil society to deepen the debate and improve biodiversity. And fourth, we work with a wide range of stakeholders on environmental policy, and the introduction of systems that lead to the equitable sharing of the benefits of sustainability.

These commitments are not mere words. We have worked for decades at making our manufacturing sites more efficient (461 in 83 countries) including the widespread installation of renewable energy supply, often using waste, often reducing waste to landfill to zero, and limiting energy usage. We have reduced water withdrawal by 28 per cent; greenhouse gases by 17 per cent; helped farmers all over the world through a network of 1,000 agronomists; eliminated deforestation from our entire supply chain and taken action to reduce wastage and cost from our key commodity supply chains, at the same time as increasing yields and farming communities' welfare and living standards. We call this process 'Creating Shared Value', and we report openly and clearly on it every year.

The other part of the solution, though, lies in business enabling policy focused on two things: first, to cement the concept of natural capital into a nation's fiscal thinking; second, to facilitate business focused policy that makes it more rational, and easier, for a company to absorb the real cost of nature into its balance sheet.

In 2011, the UK's White Paper *The natural choice* set an objective for this to be the first generation to leave the environment in a better state than it found it. The Natural Capital Committee recommended that the government should set out a 25 year plan to achieve this. For our part, we have stated the following publicly: "Nestlé recognises that the long term success of the company is dependent on the products and services provided by natural capital. . . Nestlé is committed to develop its business in a way that safeguards natural capital, and in particular biodiversity and ecosystems services."

In particular we set out to work with others to remove policies that are harmful to natural capital, eg subsidies that don't work, and to reframe them so that they work for nature and sustainability, and not against them. One example of our initiative in this area was our chairman, Peter Brabeck-Letmathe, leading the 2030 Water Resources Group at the World Economic Forum which sought new insights into water scarcity. The outcome was the establishment and successful testing of the water cost curve which gives policy makers a clear guide on balancing supply and demand in any given watershed. What began as a private sector initiative is now being adopted widely, with a multi-stakeholder approach at its heart.

## “ We set out to work with others to remove policies that are harmful to natural capital.”

Working with third parties, as has been shown with the water cost curve, is a prerequisite to success in aligning business and policy in the interests of the environment. So, alongside our work with others, we are embarking on a project with Green Alliance to catalyse better UK policy for natural capital. Our intention is that this two year programme will widen and become a true alliance to mobilise a broad spectrum of business, policy makers and facilitating third parties to achieve the very worthwhile objective of ensuring, as the headline objective of the 2011 White Paper states, that the next generation inherits nature at no net loss.

Ambitious? Yes. But absolutely essential, for business, humanity and the planet.



**Dame Fiona Kendrick is CEO and chairman of Nestlé UK and Ireland**

# New political leadership for the natural environment

**Sue Armstrong Brown** outlines the new projects kicking off Green Alliance's Natural Environment theme

The UK has comprehensive legal protection and an array of policy mechanisms aimed at conserving the natural environment. This is a record to be proud of, as are the country's environmental achievements to date: cleaning up industrial pollution of watercourses, a network of protected sites, red kites brought back from the brink of national extinction and a sophisticated green component to agricultural payments.

And our country is almost uniquely blessed with public support for the natural environment. With the membership of conservation organisations now topping seven million. However, we have not been able to arrest significant falls in species numbers and diversity. Sixty per cent of UK species are in decline and ten per cent are threatened with extinction. In the face of intensifying flood and drought cycles, mounting water treatment costs, collapsing fish and pollinator stocks, and what has been called the nature deficit disorder of society, it is time to refresh our strategy. And there is even some erosion of the existing protection, with the application of longstanding environmental laws proving contentious in recent years.

During the previous parliament, an era dominated by concerns about the economy, the natural environment receded to become a secondary issue. But the evidence that our future well-being and prosperity rests on respecting environmental limits has never been stronger, and

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**We will use a fresh exploration of perspectives and policy to seek renewed political leadership for the restoration of natural systems.”**

we have learned important lessons from the fight to tackle climate change. Environmental organisations have a vital job to do, to give voice to civil society's rising concern about the health of the natural environment.

Our new Natural Environment theme will bring expertise on business and politics to this important agenda. We will use a fresh exploration of perspectives and policy to seek renewed political leadership for the restoration of natural systems.

An essential element of our work will be building powerful new alliances, involving key players, from land managers to water companies to food manufacturers, giving the private sector an important voice and a role in new policy development. We are delighted to announce a partnership with Nestlé, with whom we will be convening an array of business and land management expertise to progress the debate on conserving natural capital. The work will include the development of a policy framework that enables businesses to help





protect and restore the natural capital of productive land.

And, in an exciting collaboration with the National Trust, Britain's largest conservation NGO and manager of over 250,000 hectares of land, Green Alliance will explore new thinking on markets and practices to improve the state of the UK's natural environment. We will work with a number of partners to develop private and public market mechanisms, to support the restoration of nature through beneficial land management, learning from practical experience and encouraging new practices.

A renaissance of green thinking in Conservatism is overdue. The Conservatives have had a decent track record in the past: for instance the 1981 Wildlife and Countryside Act; introducing the first conservation grants for farmers; and, perhaps most famously, Margaret Thatcher's leadership on climate change. A priority for us will be to work with key thinkers of the right to inject new impetus into their green agenda.

The new government already has some good manifesto commitments to act on, notably the pledge to set out a 25 year plan to restore nature. In promising to give the Natural Capital Committee a future, it is also backing a big new thrust for conservation: with the prospect of natural assets being recognised for the first time, if not directly in the nation's balance sheet, at least in their own account. And the return of Liz Truss to the role secretary of state for the environment is a promising sign of heavy weight political backing.

But, if a week is a long time in politics, five years is a short time for nature. New political leadership for the natural world does not only rest on backing from those in power, essential though it is. To achieve the long term thinking needed, there has to be broad consensus around strategic goals across all the parties.

Arresting decline and restoring the health of natural systems depends on recognising the usefulness of the tools available: like the natural capital approach and regulation. It also depends on more holistic and accountable decision making, which weighs the longer term and public benefits against shorter term and private ones.



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# How the need to decarbonise industry could revive UK CCS

Using CCS for energy intensive industry as well as power is the obvious way to make the technology viable and reap maximum benefit, says **Dustin Benton**

After nearly a decade of discussion, carbon capture and storage (CCS) is in a quixotic state. The new government is championing it, with David Cameron declaring it “absolutely crucial” and new energy minister Amber Rudd saying the need for CCS is “absolutely clear.” At the same time, progressive oil and gas companies like Statoil have publicly committed to keeping global temperatures below two degrees above pre-industrial levels, which they recognise will need CCS.

Yet CCS has had limited public support and deployment is five years behind schedule. Both of the UK’s two demonstration power plants are expensive ‘first of a kind’ projects, so it would be unreasonable to expect them to be cost competitive with more mature low carbon technologies. But pressure to cut emissions as cost effectively as possible might tempt politicians and civil servants to further delay CCS.

This would be a mistake. Whereas CCS is one, rather useful, option amongst many in the power sector, for energy intensive industry it is the lead technology for carbon mitigation. Decisions about the future of CCS for power will have knock on effects on industry.

Our recent analysis, *Decarbonising British industry*, shows that using the infrastructure developed for power sector demonstration projects to create wider industrial CCS clusters would bring the cost of CCS in line with other large scale low carbon technologies. For instance, creating a cluster to capture the large volume of relatively low cost industrial CO<sub>2</sub> near the proposed White Rose power plant on the Humber could cut the cost of CCS per tonne by nearly two thirds; it could also increase the amount of

carbon abated nearly nine-fold, compared to the power plant demonstration project on its own.

Equally importantly, this would help industry to compete in a much lower carbon economy. The alternative is to continue to subsidise carbon emissions from energy intensive industry, and make larger CO<sub>2</sub> cuts elsewhere in the economy. This would be bad for industry and bad for the Treasury. The good news is that industry is keen to use the technology, with Teesside leading the way.

But there is a catch. Building a CCS cluster would cost around £20 billion, compared to £5 billion for the power project alone. This isn’t a uniquely large amount of money: other low carbon projects, like Hinkley C or large offshore windfarms, are comparable in cost. Unfortunately, current grants, EU funds and

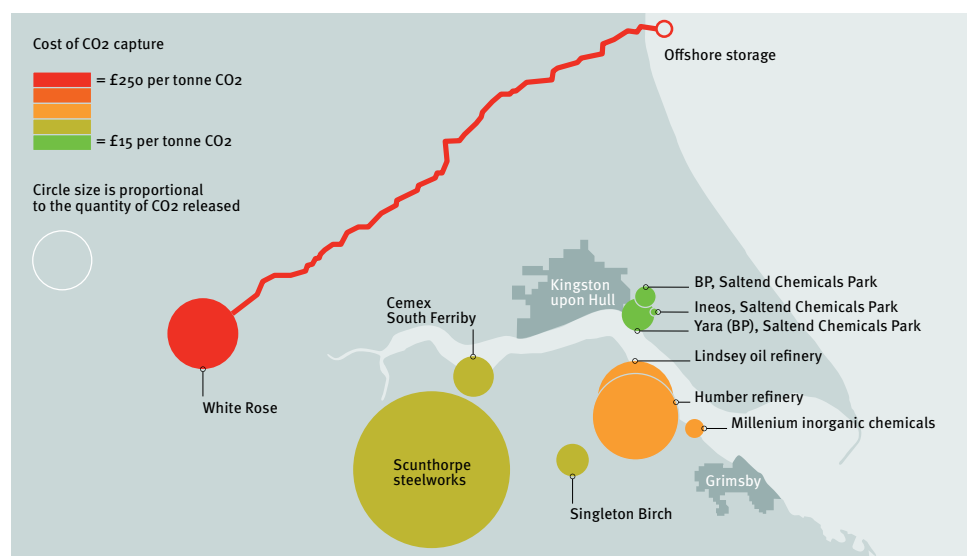
electricity contracts for difference won’t be able to support a cluster.

Our conclusion is that the government should find new funding for industrial CCS, as spending more on CCS looks very likely to reduce the cost of decarbonisation. The key questions will be how to allocate the costs across the electricity and industrial sectors, and how to refocus policy to foster competition between different means of capturing CO<sub>2</sub> to drive down the cost for industry.

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Read *Decarbonising British industry* at [www.green-alliance.org.uk](http://www.green-alliance.org.uk)

Heavy industry in the Humber could use the White Rose CCS facility



# High hopes for the EU's circular economy plan

**Jonny Hazell** hopes the EU's new plans to develop a circular economy will live up to expectation

All eyes are on the European Commission as it develops its new roadmap for a circular economy. Last autumn it scrapped its previous proposals and promised to replace them with something 'more ambitious'.

This is significant because EU legislation is crucial to developing a single market in circular economy goods and services that British companies are well placed to capitalise on. So what are we hoping to see in the long awaited draft?

Many want to see design standards for longer lasting, easily repaired and recycled products, eg vacuum cleaners were recently required to have motors that last at least 500 hours under the ecodesign directive. Similar regulations for smart devices to make components readily separable and repairable would go a long way towards keeping products and materials in use for longer. This is good for both consumers and the environment.

Knowing what materials are in a product is important for successful recovery. So items that include critical materials or exceed an agreed value should have a 'product passport' with details about how to take the product apart and what it contains.

We also need to measure what counts as recycling, based on quality rather than just quantity. Too often quantity only measurement leads to 'downcycling', where higher value items are turned into low value products, eg turning glass bottles into road aggregate.

Measuring quality would encourage changes in how materials are collected, to ensure they meet the standard required to turn them back into high value usable materials. This would increase the reliability of secondary material supplies for manufacturers. The efforts of manufacturers



who adapt their products and processes to make use of second life components and materials should be recognised, by offsetting recycled content against their producer responsibility obligations.

Finally, the new package should support innovation, both in how businesses work together on common design challenges and in solutions for hard to treat materials. Rival companies are currently deterred by competition law from discussing common design standards to improve the recyclability of their products. The commission needs to clarify the law to reinforce exemptions for environmentally beneficial co-ordination, and support neutral brokers in delivering innovation. It should also direct finance to developing alternative materials or technologies for

materials that are currently unrecyclable.

Green Alliance, with the Circular Economy Task Force, will be engaging with the commission on their proposals, to support it and advocate changes where necessary.

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# Cutting the cost of water

We're not acting fast enough to protect our water resources and cut costs to consumers, says **William Andrews Tipper**

UK households use huge volumes of water, over 50 per cent more than the average used in some other northern European countries. This is creating environmental challenges. Over abstraction is a significant underlying cause of the deteriorating condition of our aquifers and rivers. It is also contributing to rising water bills, as water companies invest in new infrastructure like reservoirs to avoid the prospect of shortages.

These problems will get worse as the UK's demand for water increases, due to population growth and climate change (by 2050 the total annual river flow in England and Wales could decrease by up to 15 per

cent). Regulators have estimated that, if unchecked, demand for water in England could increase by as much as 49 per cent by 2050.

Water efficiency is an alternative approach to meeting this challenge, avoiding the need for new infrastructure and protecting current resources. But limited progress has been made so far. For instance, simple reduced flow showerheads that use 25 per cent less water have only been fitted in a quarter of suitable homes. And less than half of households currently have a water meter. While considerably more activity is planned to improve water

efficiency over the next five years, it is not projected to continue beyond 2020, in spite of the huge potential for improvement across the UK.

We calculate that the average household with a water meter could save as much as £78 per year across their water and energy bills. Under the right conditions, retrofitting thousands of homes could meet water demand more cost effectively than new supply schemes such as expensive sea water desalination.

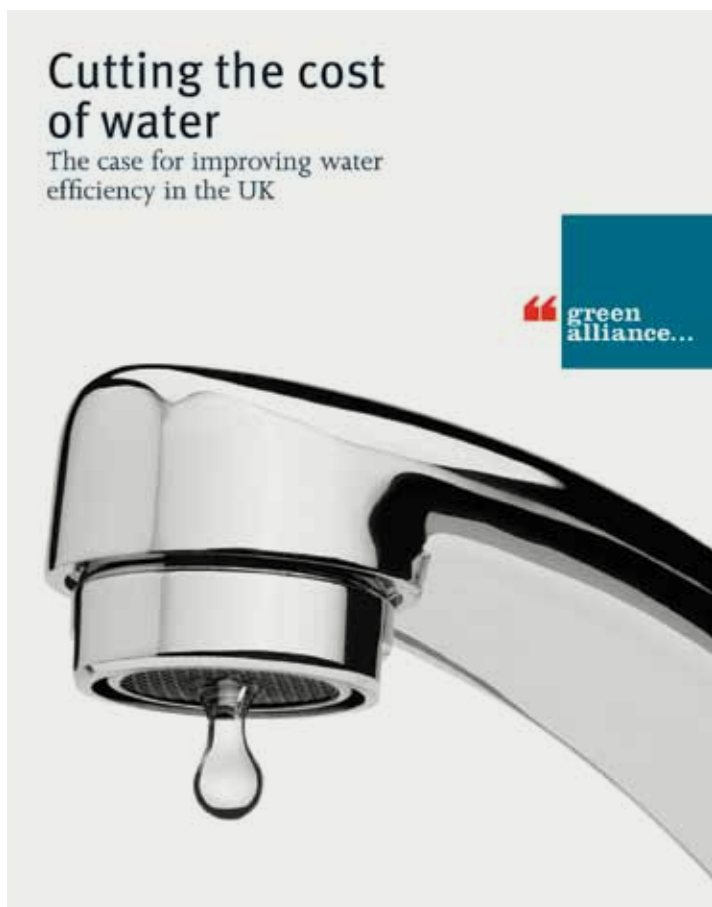
We propose four main ways to address this:

1. price water according to its true environmental value;
2. ensure householders pay for the water they use, supported by social tariffs to protect low income or vulnerable households;
3. build new housing developments to stringent water efficiency standards;
4. encourage greater innovation by water companies in meeting demand (there's a lot they can learn from energy demand reduction programmes).

The new government has plans to improve the health of the natural environment, eg by directing agricultural subsidy to clean up rivers and lakes. This is a prime opportunity to act now to protect our water resources and reduce future costs for households.

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 @AndrewsTipper

Read *Cutting the cost of water* at [www.green-alliance.org.uk](http://www.green-alliance.org.uk)



# Give the public a say

**Amy Mount** outlines our recommendations for better public engagement in major infrastructure decisions

A wary, sceptical public is a good thing for democracy. But the government does not fully trust the public's capacity to understand the country's problems and involve it properly in designing the right solutions.

This is the case with major infrastructure planning. Our research has identified real problems with the way the public is involved. A perceived urgent need for new infrastructure shouldn't be an excuse to compress or limit debate.

Public engagement should happen, not only at the stage when developers are designing specific projects, but when national and local governments are making their plans and strategies. The results can then provide greater clarity for the developers to design appropriate projects. This should reduce the likelihood of costly delays caused by appeals, judicial reviews or civil disobedience once a project is underway.

We've made three recommendations:

1. For a more long term, strategic approach to infrastructure planning at national level there should be an evidence based assessment of needs, considering demand side along with supply side options and carbon budgets. A civil society council should advise on this strategy, including a diverse set of interests such as conservation organisations and consumer groups.
2. Spatial planning should happen at city region or county region level, like Greater Manchester. This would be the ideal scale, as it fills the gap between abstract national policies and finer grained local planning. It should be informed by local infrastructure dialogues, with discussions grounded in place so they're tangible. These dialogues should look at the outcomes from different

types of infrastructure, and where to locate it.

3. There should be an impartial facilitator, as a source of engagement expertise, available to local authorities to support infrastructure dialogues. This body would ensure the involvement of a cross section of society, not just interest groups. And it could also facilitate the civil society council at national level, and promote the sharing of lessons at different levels.

The government should act on these recommendations to build proper public engagement into its infrastructure decision

making. Not to eliminate controversy, but to build understanding between all parties: government, business and the public. This doesn't mean taking decisions out of politicians' hands, but facilitating a broad conversation with a cross section of society and creating more opportunities for compromise.

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Read *Opening up infrastructure planning* at [www.green-alliance.org.uk](http://www.green-alliance.org.uk)



# A UK climate plan 2015

**Alastair Harper** sets out the plan for the PM to deliver his climate pledges this year, proposed by our unique initiative with environment and development organisations

Many didn't believe the Prime Minister would ever sign an agreement on climate change. Not in the middle of a general election. And not when Lynton Crosby was so busy getting the barnacles off the boat. Colleagues inquired what we would do when he didn't sign. Had we got a backup plan?

But, in February, he did sign, saying: "Climate change poses a threat not just to the environment, but also to poverty eradication abroad and to economic prosperity at home."

It made a big impression. From Al Gore to Michael Howard, from Unilever to Aviva, the great and the good said why it was a welcome move. It was also global news. My favourite was probably the piece in the Washington Post which argued how tough it normally is "to get politicians from opposing parties to agree on the colour of the sky, much less the future of the planet."

Under the agreement, David Cameron made three pledges: to seek a fair, strong, legally binding, global climate deal which

limits temperature rises to below 2°C; to work across party lines to agree carbon budgets in accordance with the Climate Change Act; and to accelerate the transition to a competitive, energy efficient low carbon economy, ending the use of unabated coal for power generation.

Now comes the hard part, actually delivering on the pledges. 2015 is the biggest year for climate change in a generation but, because it's also a year when the new government is still finding its feet, there's a risk the UK will punch below its weight at a crucial time.

With a group of leading environment and development NGOs we've put together a plan to help avoid this. For instance, to achieve a global climate deal at the UN climate conference at Paris in December, the PM will need to appoint a senior sherpa working out of Number 10, to make sure that the UK is making the impact it should on these negotiations.

On the second pledge, to deliver carbon

budgets, things are trickier but possible if the government returns to a technology neutral approach to energy policy, and finds a new way to support energy saving.

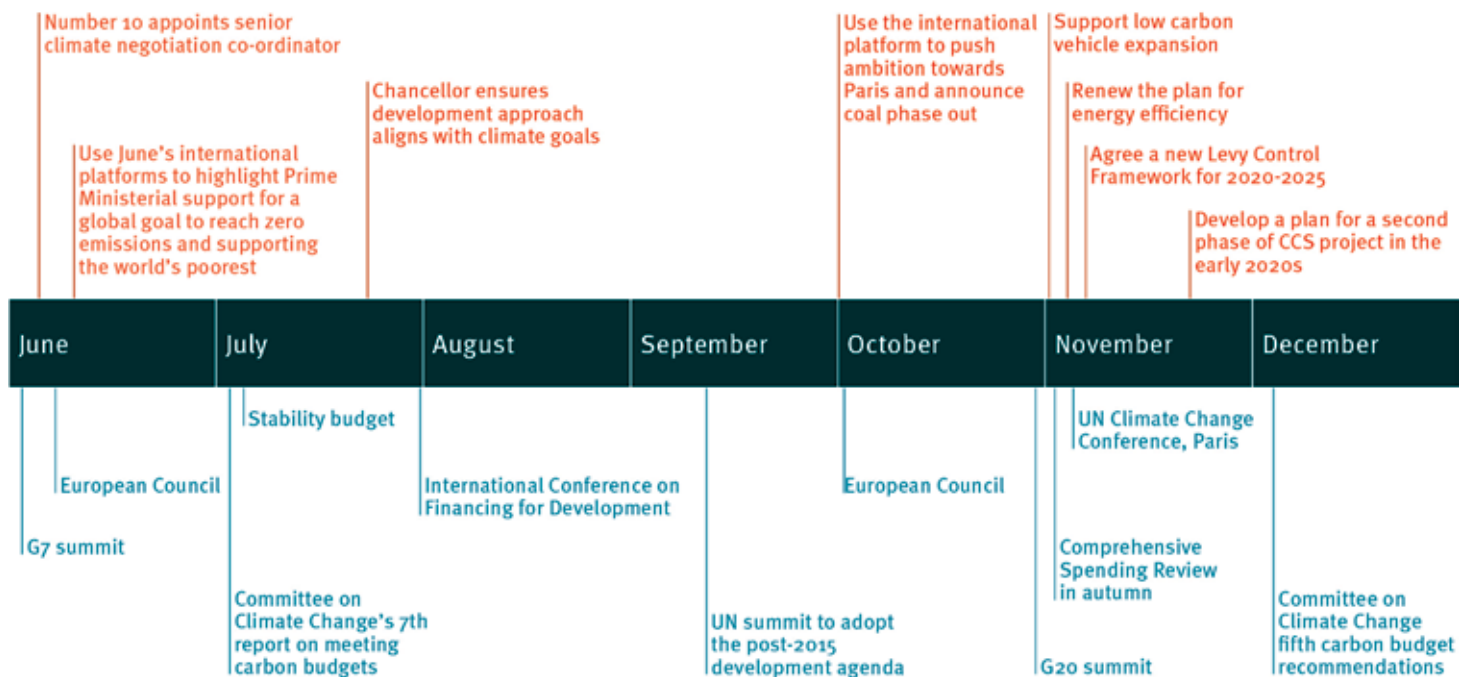
Finally, hastening the end of unabated coal is the one pledge that should deliver itself, but will be messy without greater clarity from government. If it sets a clear end date for ending unabated coal, the remaining coal plants won't crowd out investment in other forms of power generation, including carbon capture and storage.

**Alastair Harper, head of politics**  
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**A UK climate plan 2015: delivering the Prime Minister's climate pledge is a collaboration between CAFOD, Christian Aid, Green Alliance, Greenpeace, RSPB and WWF UK. You can read it at [www.green-alliance.org.uk](http://www.green-alliance.org.uk)**

## The timeline for 2015, setting out the key opportunities and decisions

### Decisions



### Opportunities

## New economist



**Julian Morgan** is taking up a new post in Frankfurt with the European Central Bank. We have benefited greatly from his expertise and influential economic analyses over the past two years.

We are pleased to welcome **Angela Francis** as our new economist. Angela was most recently the regional economist for the Caribbean at the UK Foreign and Commonwealth Office, where she was responsible for policy and projects to support low carbon development and the deployment of renewable energy, as well as leading on climate change diplomacy. She is providing economic and quantitative analysis across all our themes.

## Unique post-election business insights

Through our Business Circle we organise events for company leaders with senior decision makers in politics, business and environmental NGOs. In May 2015, shortly after the general election, we held a debrief where members discussed, with a Conservative MP and a former prime ministerial adviser, what the election's outcome would mean for business and the environment.

## Five new Green Alliance business partners

We are delighted to welcome two new companies to our Low Carbon Energy consortium: E.ON and Statoil, who join long standing partners Siemens and National Grid. We are also pleased to welcome Kingfisher to the Circular Economy Task Force, and Dong to our Business Circle. And Nestlé has become a founding partner of our new Natural Environment programme, alongside the National Trust.

## Our strategy 2015-18

Our new strategy includes aims to address the failure of politics to arrest the decline of the UK's natural environment, discussed in this *Inside Track*, improve public participation in policy making and focus on the next generation of environment leaders.

You can read it at [www.green-alliance.org.uk](http://www.green-alliance.org.uk)

## New members

### Welcome to:

Jasmine Arnould

Alison Cairns

Sara Giorgi

Hannah Hislop

Jana Hofmann

Gemma Kirk

Adrian Newton

Dileimy Orozco

Robyn Pearce

Julia Seewald

Stephen Tindale

Marco Trombetta

Dr Michael Warhurst

Andrew Warren

Adrian Whyte

## Graduate Scheme begins September 2015

We recently launched our new Graduate Scheme and are recruiting for four 12 month, full time assistant positions. There are three posts in policy and one in communications.

Paying the London Living Wage, the scheme offers training and mentoring throughout the year. Our aim is to provide valuable hands-on experience to those new to the sector looking to gain understanding and skills in environmental policy or communications.

Green Alliance is a charity and independent think tank focused on ambitious leadership for the environment. We have a track record of over 35 years, working with the most influential leaders from the NGO, business, and political communities. Our work generates new thinking and dialogue, and has increased political action and support for environmental solutions in the UK.

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