

INSIDE TRACK



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A BETTER ROUTE MAINSTREAMING THE GREEN ECONOMY

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COMMENT

We aspire to a low carbon economy, but we don't really know what it looks like. As a result there's a mismatch between the narrative and economic policy. This allows the UK government to be committed to a phase-out of the use of unabated fossil fuels at the same time as launching a red tape challenge which presumes environmental protection laws are a burden to business.

Many policy-makers have turned physics on its head and made the environment a wholly-owned subsidiary of the economy. This is why green growth is often considered a marginal addition to conventional economic development. In this view, held by the government's business department, green technology is an options play, making investment to improve the UK's chances of capturing a fraction of the intellectual property and business growth in a promising new sub-sector of a globalised economy.

At Green Alliance we think the framing needs to be simultaneously broader and more hard-edged, because the risks and opportunities are so much greater than the fate of the UK's short-run economic performance. We are persuaded that political and economic innovation will be as important as technological change in preparing Britain for the rocky road of resource shocks and increased energy price volatility. In an era of tight public spending and increasing international competition for investment it means revisiting the power of smart regulation to drive change.

On a small island with mature assets it's hard to see how deregulation can really change the fundamentals of the UK's economy, even if we are prepared to sacrifice further green fields to business parks.

But a zero carbon, zero waste trajectory fits well with a high wage economy, where the challenge is to maintain the high value of our goods and services by creating new opportunities to innovate and learning-by-doing. Squeezing higher levels of productivity out of a developed economy and raising investor expectations could be achieved through the single-minded pursuit of a green economy.

As the contributors to this edition of *Inside Track* demonstrate, the debate is not settled, but there are some strong arguments and compelling options available to policy-makers if they want to make green a driver of growth.



Tamsin Cooper, deputy director



GREEN GROWTH

INFRASTRUCTURE AND NATIONAL ACCOUNTS

Dieter Helm questions the assumption that investment in green projects will always lead to growth or create jobs. Savings should instead be channelled into infrastructure investment and, to understand the true economic position, environmental assets must be properly valued

Where will the growth come from? One answer from environmentalists is: from investments in energy efficiency and renewables, in other words from 'green growth'. It's treated as obvious, but it isn't. Simply conflating 'green' and 'growth' is at best naive and at worst it can be positively misleading.

So let's unpack it. First, there is what we mean by growth and what causes growth. Conventionally, growth is measured by GDP. Yet, changes in GDP tell us very little, since GDP does not distinguish between current income and asset appreciation or depreciation. For example, North Sea oil and gas has been depleted, but the income is simply added to GDP without any offsetting accounting for the running down of the reserves. GDP has no assets and no liabilities.

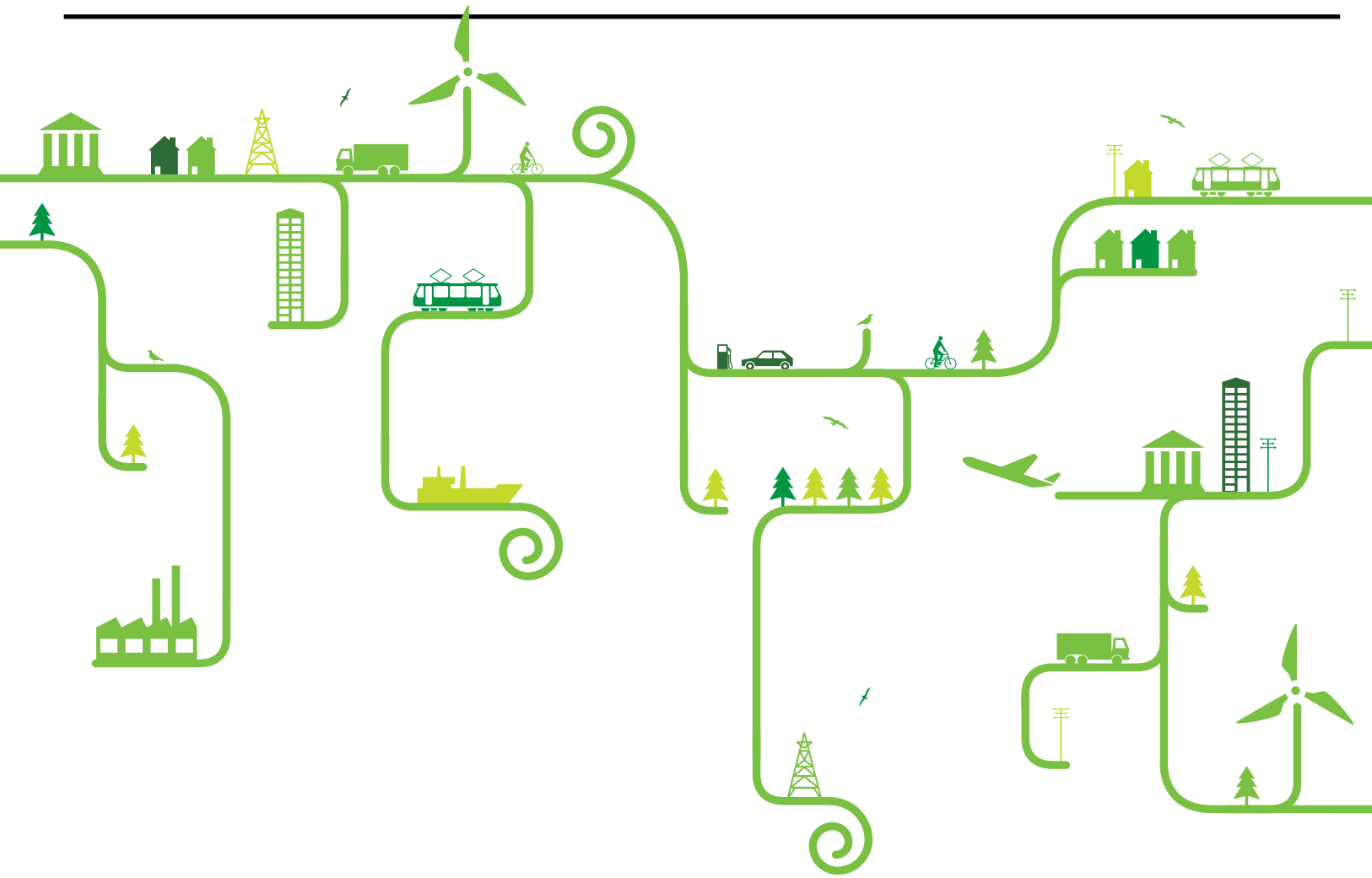
When it comes to the environment, which is very much about assets and liabilities, it tells us almost nothing.

Before we can debate the best way to enhance growth we need to sort out the starting line. We need a national balance sheet which includes the assets, so we can see if they are being enhanced, maintained or depleted. These include not just the manufactured capital, but also environmental assets, and human capital. To get a comprehensive picture is very demanding but, by ignoring classes of assets, we simply delude ourselves about the true national economic position. We don't even know what the deficit is, since we could be understating the deficit because we are consuming capital.

Making a start on a national balance sheet puts us in the right direction. The aim is to maintain the assets at least intact through time,

so that future generations get at least as good a set of assets as ourselves. Of all the assets which we might want to maintain, infrastructure ranks high on the list. It is a public good and so will be underprovided by private markets. It creates enormous positive externalities; infrastructure enters into the costs of every business and household, from energy to transport, water and communications. Most pollution goes through infrastructures and if it is not priced, there will be too much.

To cause growth, investment needs to take place. This investment in turn needs savings. The task of the financial sector should be to channel savings into investment. Infrastructure projects are likely to include amongst the highest net present value projects that government could support. Scarce financial resources should be going towards high payoff activities. →



Given that we have not been accounting for the depreciation of our assets, and therefore given that our true deficits are probably even bigger, the sustainable level of consumption may require a savings level of around ten per cent GDP, as currently measured. Consumption would have to fall significantly and investment go up correspondingly, into activities which improve productivity and competitiveness. That, much higher, level of savings needs to support current infrastructure investment and current asset depreciation.

Reducing consumption and increasing investment is not what the Keynesians argue for. Mr Balls, for example, would have us try to increase spending now, writing an ever bigger mortgage on the future, and it is a mortgage, even if the lending is internal rather than from overseas, since the funds could have been invested elsewhere. The difference between consumption-led deficits and investment-led spending is that the latter creates assets to set against the debt. Pure consumption spending *à la* Balls creates only

the spending and depends upon the dubious Keynesian concept of a multiplier. There is nothing 'green' or even 'growth enhancing' about running deficits and, indeed, the Keynesian idea is in stark conflict with the idea of sustainable growth. It is no accident that there are no assets or balance sheets in Keynesian national accounts.

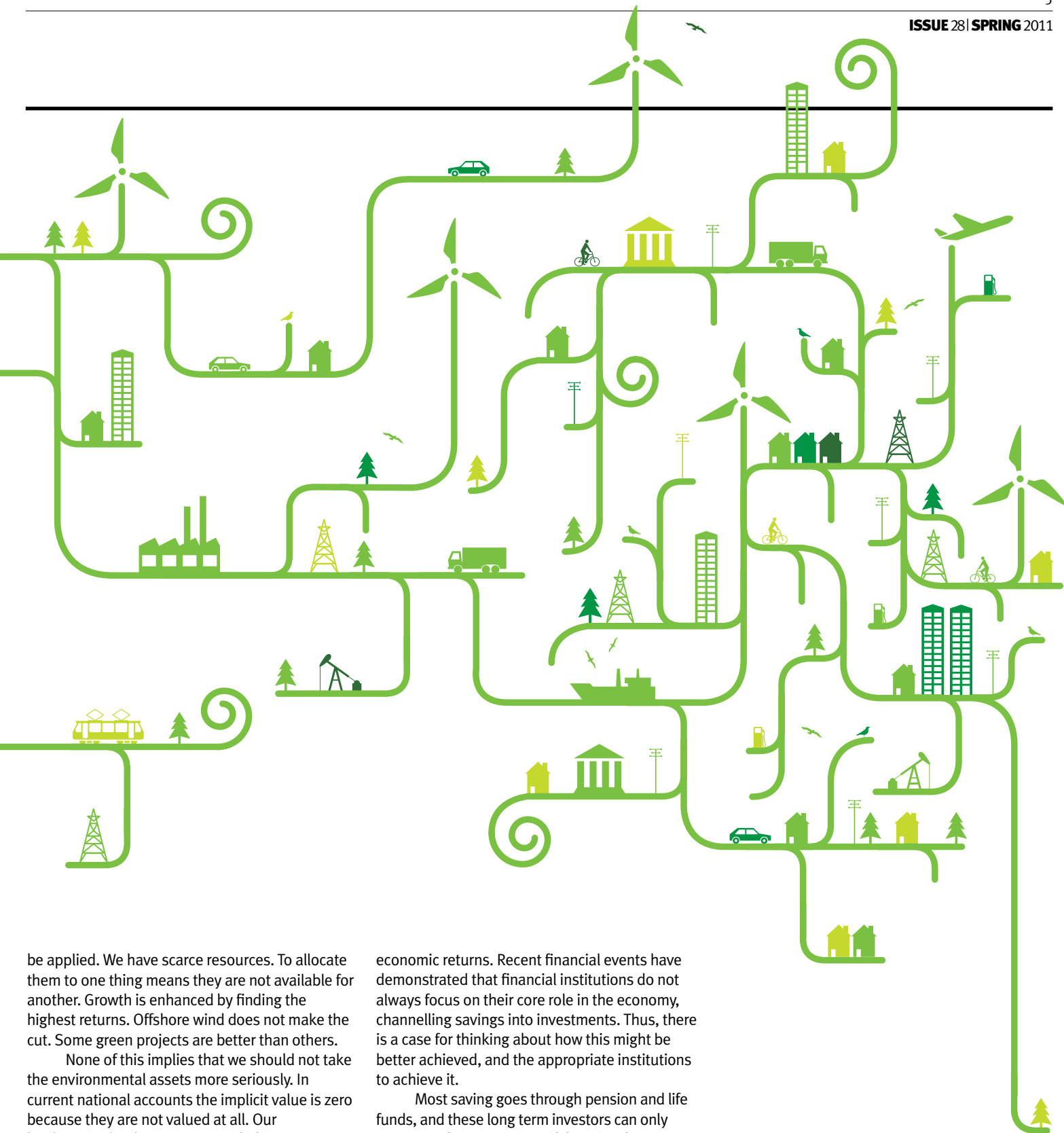
“offshore wind does not make the cut. Some green projects are better than others

What if this infrastructure spending is devoted to green projects? Contrary to many environmentalists' claims, it is not automatically obvious that they would always lead to growth or, indeed, that they would add more growth than other projects. Green projects add to growth if

they have higher returns than other projects. In many cases, even when carbon is properly priced, they do not.

The most glaring example is offshore wind. It is repeatedly claimed that these sorts of projects create jobs and even that the exact number of jobs can be calculated. Now it is true that if an offshore wind farm is built, people will be employed to do the work. But the money spent on one activity, taken from household bills, is not available for another activity. If the economic returns are low, and offshore wind is about the most expensive deployable technology to reduce emissions, then the created green jobs will destroy more jobs elsewhere that would have been supported by the same spending resources. It turns out that for some green projects that is indeed very much the case. What's more, by increasing the costs of decarbonisation by more than necessary, competitiveness is reduced, and yet more jobs are lost in the wider economy.

The implication is that the boring conventional project appraisal techniques need to



be applied. We have scarce resources. To allocate them to one thing means they are not available for another. Growth is enhanced by finding the highest returns. Offshore wind does not make the cut. Some green projects are better than others.

None of this implies that we should not take the environmental assets more seriously. In current national accounts the implicit value is zero because they are not valued at all. Our biodiversity, landscapes, marine habitats, woodland and climate are in large measure simply ignored. That they are crucial parts of our infrastructure and sustainability means we should at least maintain them intact, and provide for their maintenance as a first claim on public expenditure through a capital maintenance charge. Externalities like carbon should be priced.

A consequence of looking at the national accounts in this way is to revolutionise the way we think about growth and its causes. We need then to think through how to effect the infrastructure maintenance and enhancement, assuming we have worked out which projects have the best

economic returns. Recent financial events have demonstrated that financial institutions do not always focus on their core role in the economy, channelling savings into investments. Thus, there is a case for thinking about how this might be better achieved, and the appropriate institutions to achieve it.

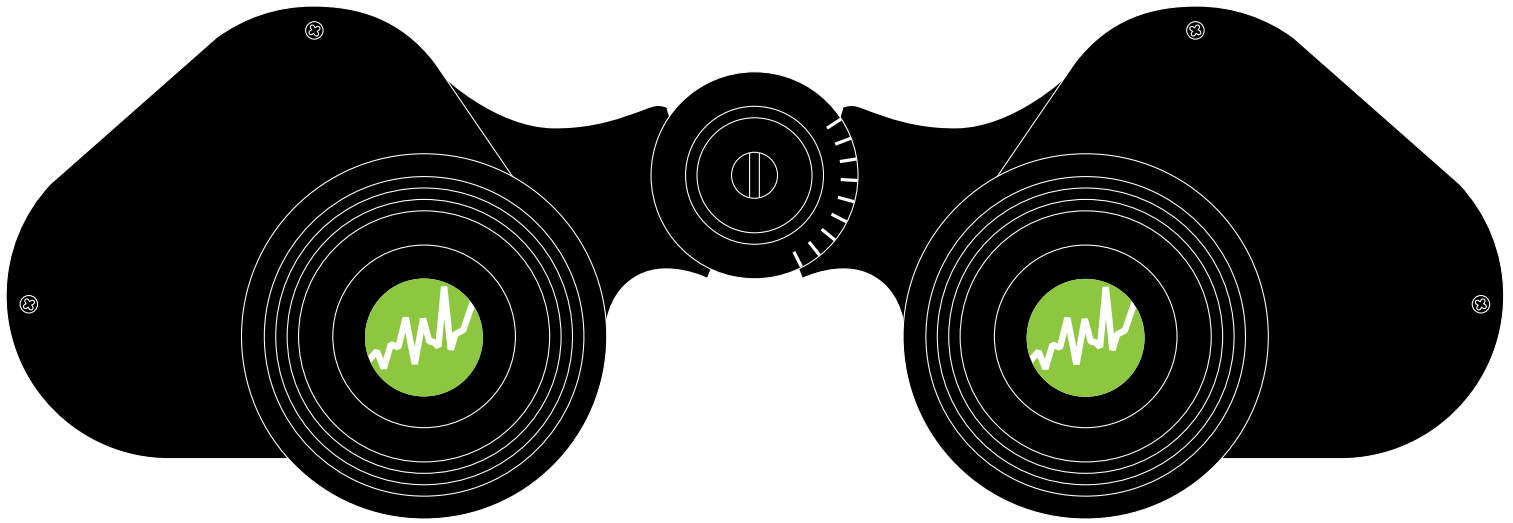
Most saving goes through pension and life funds, and these long term investors can only guarantee future pensions if there is a future economy on which to rely. That future economy is made up of the assets we bequeath to the future, including the infrastructure. Therefore, from the social welfare perspective, there is a strong case for channelling savings into infrastructure, both in the interest of sustainability and in the enlightened self interest of the pension funds themselves. That role is what an infrastructure bank would be for, not a sort of venture capital fund as some have proposed for the Green Investment Bank, but a proper infrastructure bank. Behind this should lie an extension of the utility idea of regulatory assets bases, but that is the topic for another article.



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TAKING THE LONG VIEW

The system has let us down, but there's no simple alternative to growth-based economics, says **Diane Coyle**, to be sustainable we need to measure wealth differently and morality must have a place in policy



These are strange days. There is a detectable widespread sense of unease about the state of the nation; certainly about the financial crisis and the effects of public spending cuts, while bankers give themselves multi-million pound rewards for being unable to stay in business without taxpayer support; and about this country's ability to run anything effectively, especially when the problems we face seem to be increasingly complex and intractable. There is unease of course about the unpredictable and unstable world around us.

One reaction, common to all times of uncertainty, is to seek out simplicity instead. One simple choice seems to be to turn away from the flawed economic system, to focus instead on 'happiness' or 'well-being'. It's hard to be against happiness. Even better, it's widely believed that

we don't need economic growth for a happy society because more GDP does not make people happier. In that case, why should we not have a happier society, opting out of the growth rat race and placing less pressure on the planet's resources? Ending the imperative for the economy to grow would be the surest route to limiting carbon emissions after all.

This train of thought has some policy traction, with the coalition government initiating the collection of official figures on well-being through the annual household survey by the Office for National Statistics. However, the government will also be well aware that its prospects in the next general election depend heavily on economic growth. When the economy is not growing, we call it a recession. No growth means unemployment, because organisations constantly improve their productivity and can

produce the same or less with fewer employees. The fact that unemployment makes people very unhappy and is bad for their well-being ought to give pause for thought about the whole notion that growth isn't necessary for happiness: isn't there a contradiction here?

Indeed there is. For the claim that happiness and GDP growth are not linked is incorrect, based on a statistical mistake. GDP is an artificial construction, a flawed but still useful measure of the capacity of the economy. In theory it can increase without limit. Happiness is measured by surveys usually offering a ranking from one to three. With the UK at around 2.6 on this scale, it can not increase by more than 0.4. Of course the two measures are not going to increase at the same rate; that would be like expecting people to grow to six feet, then seven feet, then eight feet in height as their incomes grow. Similarly, there is a

strong link between reported happiness and GDP when the statistics are compared properly, by using the logarithm of GDP instead of the absolute level.

The anti-growth argument, besides being based on a flawed use of statistics, makes the mistake of thinking that GDP reflects crass materialism: more handbags, consumer electronics and cars. In the rich economies more than two-thirds of GDP consists of services and, even in the case of the material goods, the valuable part is what's intangible, the creativity and design. What really drives growth is innovation. Rising GDP is a measure of how much choice we have more than how much stuff. Today's economy is characterised by an extraordinary diversity of goods and services. All the evidence is that this expanding variety greatly increases people's satisfaction. Even apparently trivial innovations such as zips instead of hooks, or new flavours of breakfast cereal, make people happier, not to mention obviously 'improving' innovations such as more effective medicines or low energy lighting.

So, although there is no harm in policy-makers thinking about happiness as well as growth, and positive merit in them thinking, as well, about non-economic quality of life measures, there is no simple alternative to growth-based economics. A government that abandoned growth would also abandon its hopes of re-election.

The environmental movement's obsession with GDP and growth is misplaced anyway. Growth matters if there is 'too much' of it. It should be sustainable. What does that mean? What is the point when we have reached 'enough'? Sustainability is about the legacy we leave, and a natural interpretation is that successive generations should be able to enjoy at least as high a living standard and quality of life as we have. The kind of statistics relevant to the idea of a legacy concern not income or GDP growth, ie the change in the economy's output from year to year, but assets or wealth. If a rise in GDP came at the expense of a decline in wealth, it would show us to be eating capital and diminishing our future prospects. Looking at measures of wealth would give policies the badly needed long term focus.

The concept of wealth required is called 'comprehensive wealth' because it includes not just financial investments and physical assets such as buildings and bridges, but also natural wealth, from clean air to natural resources to biodiversity, and human capital: the skills and capabilities of the people. It is a complicated measure but then so is any indicator of a complex economy. Economists have begun to build comprehensive wealth measures for a few countries, but much more work is needed. Any extra money being spent on improved statistics should be going into this area of work, and not surveys of happiness.



the government will also be well aware that its prospects in the next general election depend heavily on economic growth



Measuring the nation's wealth, broadly defined in this way, would prove a surprisingly powerful lever for shaping economic policies for the longer term. For example, it might start debates about whether the government should spend more on infrastructure even if it is cutting current expenditure and the deficit. It would expose the trade-off between higher GDP and lower wealth when it comes to activities with adverse environmental impacts: we would see the link between today's growth and the amount of carbon accumulating in the atmosphere. Ultimately, it would encourage a sense of responsibility and stewardship, which seems to have been absent in the management of the economy in recent decades.

Better measurement alone is not enough, however, to restore a long term perspective to

economic policy. There are two other keys to sustainability. Institutions are vital because the future is a collective endeavour. It has been somewhat unfashionable for the past generation or so to emphasise institutions rather than individuals. That has changed recently in economics, with institutions seen as fundamental to human and economic development, and the importance of their study recognised with the award of last year's Nobel Prize to Elinor Ostrom and Oliver Williamson. It needs to change now in practical politics, with a return to old-fashioned ideas such as loyalty and collegiality.

Finally, after the financial crisis and given the evident unsustainability of the economy's recent path, surely it is clear that morality has a place in economic policy. Behaviour in parts of the leading economies has been clearly immoral. Businesses will succeed in the long term, and serve their customers, only if they have a purpose and strong sense of ethical values. Economists have for decades shied away from talking about morality, but market capitalism only lives up to our claims for its advantages if it is infused with a wider sense of purpose. Individuals in business or in government are not absolved from personal responsibility for our joint future by being part of a system; they are the system, and too many of them have let us down.

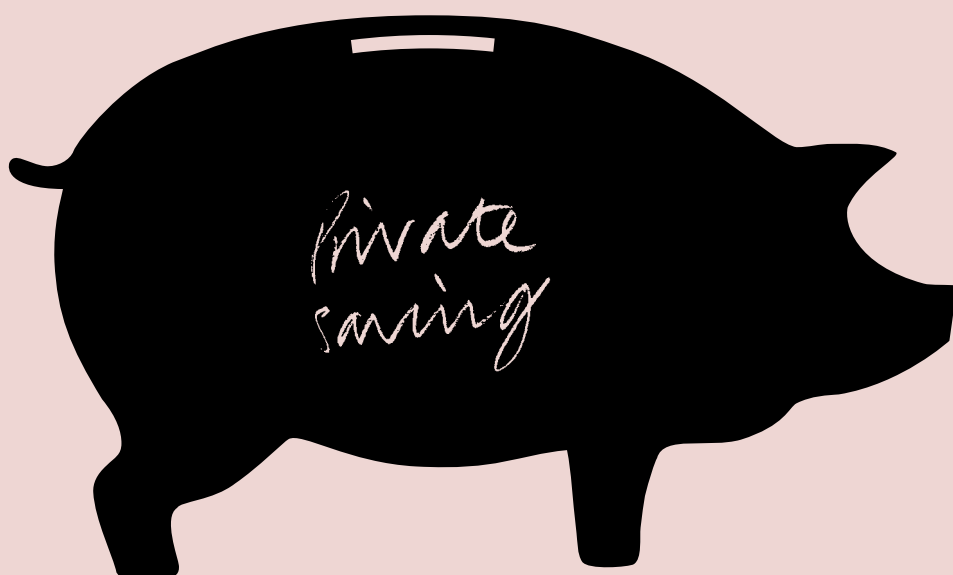
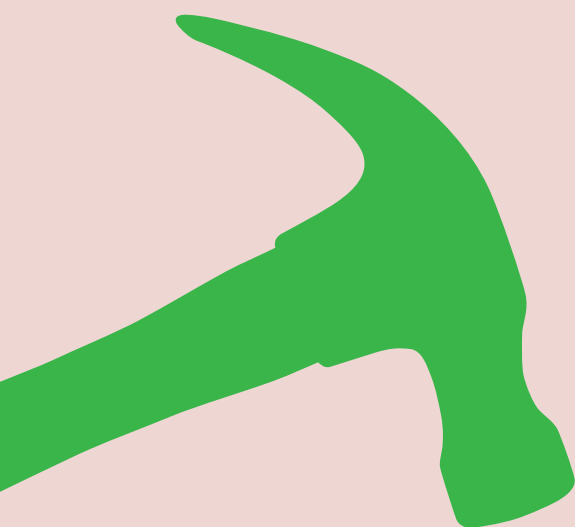


Diane Coyle is a freelance economist, her latest book is *The economics of enough: how to run the economy as if the future matters* (Princeton University Press, 2011)

GRASPING THE OPPORTUNITY

With the right backing from government, the Green Investment Bank has the potential to unlock huge opportunities for investment and innovation, to drive a greener economy.

Dimitri Zenghelis makes the economic case



The establishment of a Green Investment Bank in the UK was the centrepiece of the 2011 budget's green policies. This welcome and long-anticipated move will lever £15 billion of private sector investment into green projects, according to the UK Treasury, on the back of a public capitalisation of £3 billion.

However, by not allowing the bank to borrow until 2015-16, and even then only if public debt targets are met, the government risks missing a unique opportunity to tap into much larger flows of private investment and innovation without large public expenditure. This would create viable new markets that would boost the economy and provide a home for record levels of private saving seeking higher risk-adjusted returns.

The UK Treasury's reticence to extend public borrowing at this time is understandable. Contingent liabilities generated through Green Investment Bank lending push up measures of public sector indebtedness. There is legitimate concern that markets may react negatively to such figures by raising the costs of financing UK debt. But without covering policy and regulatory risk, the impact of the bank on private sector investment is likely to be severely curtailed. This is, after all, the single most important role that a public bank can play.

The bank can enhance the credibility of current policies by offering a clear signal to the private sector. By tying in its own fortunes to the success of green investments, the public sector can show itself willing to cover some of the policy and regulatory risk under its control. The private sector is highly unlikely to take on policy risk it cannot control, if the public sector is unwilling to take on policy risk it can control.

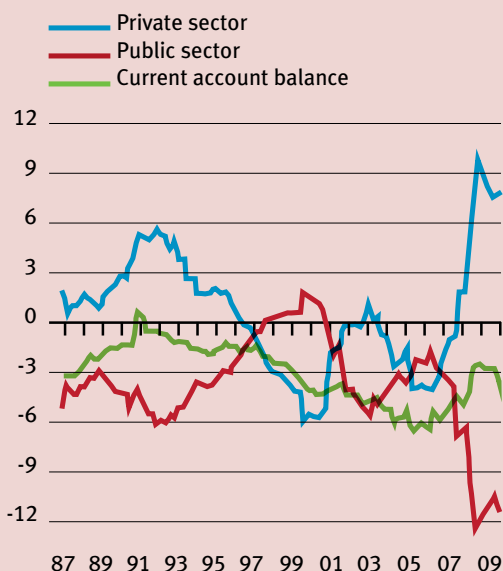
The purpose of the Green Investment Bank is not to borrow to finance current spending, but to build up productive assets. A more consistent accruals approach to public accounting ought to assess its impact on public sector net worth through its investment in productive green assets.

The lessons from the UK can be applied globally. Governments across the world stand to gain through the creation of institutions that cover policy risk in markets which, for the most part, rely on policy action to be commercially viable. Together with market-based instruments, involving long term carbon pricing, standards and regulations and carefully designed technology support. This has the potential to unlock private investment in renewable energy, energy efficiency, smart connected technologies and low carbon vehicles. Most importantly, they would do so by utilising the record pool of available private saving.

The opportunities afforded by current macroeconomic conditions should not be missed. In the UK and the US, the present excess of desired saving over desired investment has pushed real interest rates close to or below zero. The availability of underemployed human and capital resources offers policy-makers great

Figure 1: Sector financial balances, % of GDP

United States



potential to lever private investment into green markets productively.

Some of this saving stems from Asian countries running current account surpluses. For over a decade these flows have helped to raise the price of developed country assets and to keep interest rates low, playing a part in initiating the recent housing boom which underlay the financial crisis (see *Global imbalances: the perspective of the Bank of England* by Mervyn King, Banque de



the availability of underemployed human and capital resources offers policy-makers great potential to lever private investment into green markets productively



France, 2011). The G20 has long been committed to enhancing exchange rate flexibility to address such “persistently large imbalances”.

But, since 2008, these flows have been swamped by a far larger wave of surplus saving, this time generated domestically in the developed world. After the financial crash, businesses and households in the rich countries have responded to falling asset values by spending less while saving more to pay down outstanding debt. The combined effect has been a massive surge in global liquidity – the cash, or assets that can be converted into cash quickly and without any price discount – available to fund investment (see *A macroeconomic plan for a green recovery* by Dimitri Zenghelis, LSE 2011).

United Kingdom

Source: BEA/ONS

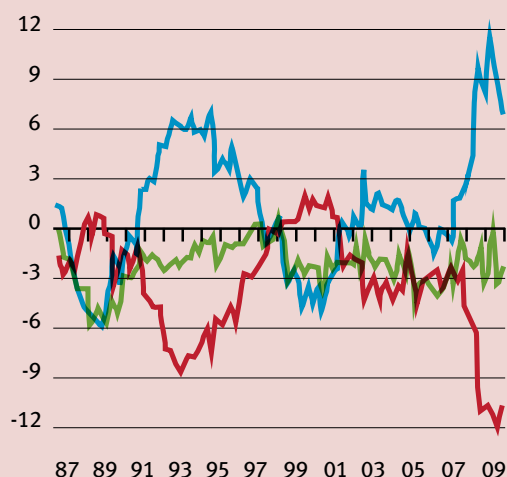


Figure 1 above shows net borrowing – the balance between investment and saving or, equivalently, income and expenditure – for the private and public sectors. The current account aggregates both balances and measures the excess of saving over investment – income over spending – for the whole economy.

The private sector in the United States alone generated a record surplus of \$4.8 trillion in 2009. By comparison worldwide investment in clean energy by both the public and private sectors totalled just \$162 billion, according to a report by Pew Charitable Trusts.

This money, in many cases, has had nowhere productive to go as investors and banks remain insufficiently confident in future markets to extend lending. Consequently, short and long term interest real rates have fallen to near or below zero, despite billions of dollars of public sector borrowing.

This flood of liquidity creates a policy problem. Normally, when recession threatens, central banks respond by cutting short term policy rates to stimulate private spending. But when rates are close to zero, this vital mechanism is no longer available because no one will lend at negative rates.

The limitations of monetary policy have begun to be matched by limitations on fiscal policy. As private spending collapsed, so too did tax revenues, while welfare spending accelerated. Additional economic stimulus measures exacerbated the resulting deterioration in global public deficits. As a result, record private sector surpluses have been offset by record public sector deficits.

Had the public sector not borrowed to offset the reduction in private spending out of income, demand in the economy would have fallen further with dire consequences for output and jobs. But, accumulating public debt has raised questions about the ability and willingness of future taxpayers to pay it off.

The cost of such uncertainty has been a loss in investor confidence and much higher bond rates in vulnerable countries such as Greece, Ireland and Portugal, exacerbating debt servicing costs and further straining fiscal deficits.

A better approach might be for governments to create profitable private sector opportunities. Public intervention is required if the optimal level of green investment is to be attained, as there have been numerous market failures, stemming from the failure to cost the damage from pollution and greenhouse gas emissions, coupled with the lack of upfront incentives for energy efficiency and research, development and deployment investment.

Investors rely on policy-makers to define the nature and scope of such markets. If the government can send credible and transparent signals, in the form of clear, market-based policy instruments and appropriate shouldering of risk, it could unlock private investment in green technologies, utilising the vast pool of private saving. This would involve long term carbon pricing, standards and regulations, and carefully designed technology support.

By being open and non-discriminatory, such frameworks also reduce incentives for wasteful ‘rent capture’, ie monopoly profiteering by powerful industrial lobbies and other influential vested interests who are allocated grants, subsidies or contracts with limited competition by government. This would unleash sizeable macroeconomic benefits, by boosting private spending, creating jobs and generating tax revenues. With output remaining below capacity and the cost of capital historically low, there is very little fear of crowding out alternative investment, or displacing jobs.

There is no lack of private money in the current market. However, there is a perceived lack of opportunity. All that is required is for governments to grasp the green opportunity to unleash huge private investment and innovation opportunities. If governments fail to act, not only do they risk missing an opportunity to lock in to low carbon infrastructure, they also risk unnecessarily extending the present economic crisis.



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Far from creating extra costs, shifting Europe's emissions reduction target from 20 to 30 per cent would set the EU economy on a new, ambitious growth path, say the authors of a new report

A NEW GROWTH PATH FOR EUROPE

“Make no mistake: a new world order is emerging. The race for leadership has already begun. For the winners, the rewards are clear: innovation and investment in clean energy technology will stimulate green growth; it will create jobs; it will bring greater energy independence and national security.”

Josef Ackermann, CEO of
Deutsche Bank, December 2010

Europe can revitalise its economy by tackling the climate challenge. Raising its climate target from 20 per cent to 30 per cent emissions reductions can open the way to higher growth and increased employment. The financial crisis has reduced European GDP by several percentage points; if business as usual prevails, EU growth will proceed at a lower level than before the crisis. What is more, under business as usual it will be hard to maintain the growth of pre-crisis times. As a result, unemployment across Europe is likely to stay high, with major disparities between different regions. Sticking to the 20 per cent target in a situation where it has become too weak to mobilise innovations and stabilise political will is the equivalent of digging deeper while being stuck in a hole.

It's time for boldness. Clear policies associated with a decisive move to a 30 per cent target, can be doubly beneficial for the climate and the EU economy. The climate target must not be pursued in isolation, but embedded in a comprehensive range of measures, setting expectations for growth of the European economy at a more ambitious level. What matters is to declare an ambitious growth target in the aftermath of the financial crisis and to pursue this target on a variety of fronts, including incentives for additional investment, growth-oriented fiscal policy, public procurement, and, of course, climate policy.

With this strategy, Europe can define its role in the global economy, by focusing on high quality products where stable unit costs do not depend on low wages but on continuous learning-by-doing. European industry can then maintain and enhance its competitiveness by developing the low carbon materials, technologies and infrastructures that will shape the future.

In the coming decade, Europe will need to accept the challenge of increasing economic growth while reducing both unemployment and greenhouse gas emissions. New model results show that these three goals can reinforce one another. Raising the EU's climate target to 30 per cent could foster the following outcomes by 2020:

- increase the growth rate of the European economy by up to 0.6 per cent per year;
- create up to six million additional jobs;
- boost European investments from 18 per cent to up to 22 per cent of GDP;
- increase European GDP by up to \$842 billion;
- increase GDP by up to six per cent both in the old and new member states.

This new model's simulations assume European reductions of 30 per cent and no global climate agreement, beyond the modest pledges made in 2009 at Copenhagen. If more ambitious goals were pursued by major economies, the positive impacts for Europe would be even larger.

On the new growth path, all broad economic sectors: agriculture, energy, industry, construction and services, increase production, with the largest

increase in construction. It implies a major effort to retrofit buildings and enhance the built environment. This is advantageous in view of employment because people with very different skills can operate in these sectors and largely improve their productivity after a few months of training.

Emissions are reduced by increasing energy efficiency and shifting from coal to renewables and gas. Energy efficiency is mainly, but not only, a matter of buildings. Over the next decade, renewable energy will be mainly wind. Carbon capture, photovoltaics, and nuclear cannot make much of a difference over this time span. Nevertheless, it will be important to prepare for the longer term too. The shift towards gas can raise concerns about energy security. European imports of natural gas, however, are reasonably diversified. The largest supplier, Russia, delivers just one third of total imports. However, Eastern European countries need improved transport and infrastructure for gas imported into Western Europe, and storage facilities need to be improved.

The key for this revitalisation is a substantial increase in investment. Building wind turbines, implementing cogeneration of heat and electricity,



Europe can define its role in the global economy, by focusing on high quality products where stable unit costs do not depend on low wages but on continuous learning-by-doing



insulating houses and modernising the power grid all require substantial investment. If this simply displaced investment in other sectors, growth would not speed up and employment would only be reallocated between sectors, without reducing the number of unemployed. However, in the coming years green investment can be part of a broader surge.

After the global crisis of 1929, a surge of investment was initiated by the perspective of military armament. Nowadays, this is obviously not an option. However, after the financial crisis of 2007–08, the perspective of sustainable development can mobilise investment in a similar way for a worthier purpose. The new model results show that it is possible to increase the EU climate target to 30 per cent while achieving investments 25 per cent higher than business as usual. The basic mechanism creating this opportunity for a new growth path is the mobilisation of a virtuous circle of additional investment, learning-by-doing and expectation formation.

The experience of the global financial crisis shows that existing economic models are seriously limited. To identify and assess options for climate policy we need models that meet the challenges exposed by the financial crisis. For example, the models that were state of the art before the crisis assumed that economic systems have a single stable equilibrium. Studies based on this imply that reducing greenhouse gas emissions creates extra costs in the coming years to avoid damages in the distant future, thereby win-win strategies are excluded by construction.

A key problem of climate policy is to balance the short term business view with the longer term view required by policy-makers. The financial crisis has exposed the fact that different expectations can lead to different investment behaviours, turning those expectations into self-fulfilling prophecies. This is starting to be taken into account in models used for policy advice. For the first time in the academic climate-modelling field, a model of climate economics has been enhanced along those lines, to include:

- investments depend on subjective expectations, not on correct previsions of whatever future possibilities may arise;
- higher investments trigger higher learning-by-doing, thereby reducing unit costs;
- the resulting existence of different possible equilibria with different growth paths.

The results show that 30 per cent is achievable and can be economically beneficial by shifting the European economy towards low carbon growth. This is consistent with green growth scenarios of previous studies. Europe is in danger of falling prey to a self-fulfilling prophecy of low growth, but the 30 per cent reduction target offers the opportunity to break out of this predicament.

A new challenge can mobilise capabilities that could not be tapped without it. Similarly, economic systems have different possible regimes that can be activated in the face of different challenges. To realise the win-win opportunity that comes with the 30 per cent reduction target requires consistent policies and both macro and micro economic measures that redefine expectations in a broader framework of low carbon growth.

This is an edited version of the executive summary of *A new growth path for Europe. generating prosperity and jobs in the low carbon economy – synthesis report* by Carlo C Jaeger, Leonidas Paroussos, Diana Mangalagiu, Roland Kupers, Antoine Mandel and Joan David Tàbara (European Climate Forum, 2011). It is available to download at www.european-climate-forum.net

It's time for those focusing on sustainability to review their strategy. With the ecological system groaning under the strain of an economy too big for the planet, we have to face the uncomfortable truth: the time to act preventatively has passed.

The coming years won't be pleasant, as our society and economy hits the wall and realigns around what was always an obvious reality: you cannot have infinite growth on a finite planet. We can, however, get through what's ahead, if we prepare. Not only can we make it through, we can come out in better shape.

There are countless analyses and metrics that describe what is happening. One is oil prices, again on the way up. Peak oil, long considered a fringe theory, is now widely acknowledged as inevitable, if not underway.

An even more obvious concern is food. More than anything else, food will come to define our entry into this period because it integrates the full range of sustainability impacts. Food prices, after hovering around long term highs for several years, are now passing the extreme peaks of 2008 as climate chaos takes hold.

With our population growing and our diets changing, supply was already tight. So, when record heat waves and drought hit Russia, crashing its wheat harvest and leading to an export ban, the global price response was rapid.

Next was Brazil. Soon after the 2005 'one in one hundred-year' drought in the Amazon, came

another in 2010, but this time worse. It appears the Amazon, last year, was a dramatic net emitter of greenhouse gases rather than an absorber. An unprecedented 19 countries broke temperature records in 2010.

Experts from a variety of fields are waking up. Commenting on rising food prices, Nobel Prize-winning economist Paul Krugman wrote in *The New York Times* recently: "The evidence does, in fact, suggest that what we're getting now is a first taste of the disruption, economic and political, that we'll face in a warming world. And given our failure to act on greenhouse gases, there will be much more, and much worse, to come."

We will all wake up soon, but not because the ecosystem is showing signs of major breakdown. Something much more important to us is threatened. In trying to create infinite growth on a finite planet, only two things can change: either the planet gets bigger or the economy stops growing. It's the end of economic growth that will really get our attention.

There is good news. Humans are very good in a crisis. We respond to problems late but dramatically and, crucially, effectively. This is a positive attribute, given what's coming. We're going to have to transform our economy rapidly, including our energy, transport and agricultural systems. This transition to a zero net CO₂ economy will soon be underway and the business and economic opportunities for those who are ready, and risks to those who aren't, are hard to overstate.

There's more to this than technology, with some exciting cultural and political challenges ahead. In a growth-constrained world, our current central economic policy of 'keep calm and carry on shopping' is looking increasingly wrongheaded. It's certainly insufficient for continued human development.

As crisis hits, change will come thick and fast. Change in our economy, in our politics, and in our lives. Change that will be challenging, but it will ultimately lead us to a better place.



Paul Gilding is an independent writer and advocate and former global head of Greenpeace. He is the author of *The great disruption: how the climate crisis will transform the global economy*, (Bloomsbury, April 2011) a major analysis and action plan to deal with the two linked challenges of climate change and the world economic crash.

THE GREAT DISRUPTION

The time to stop the effects of climate change has passed, says **Paul Gilding**, as we wake up to its effect on our economies, we will finally take action and the changes will be dramatic

SENDING THE RIGHT SIGNAL

An EU budget for a low carbon economy



We are witnessing a shift in perception about how the EU should address the challenge of climate change. While the end goal of securing a stable climate remains the same, recent assessments of the costs and benefits of actions to accelerate the transition to a low carbon economy provide a more hard-headed calculation of European self interest. Gone are the days when an appeal to international leadership could be the central motivating theme for climate policy.

Recent analyses, such as the European Climate Forum's *A new growth path for Europe* featured in this issue, show that a 30 per cent EU emissions reduction target for 2020 could set in motion a virtuous circle that would increase economic growth in the EU and reduce unemployment. The challenge facing EU decision-makers is to create a set of strong policy drivers that increase investments in the technologies and infrastructures to make the shift to a low carbon economy possible. These policies must have a robust credibility if they are to succeed.

Citizens understand public spending on a personal level because it has parallels with their own lived experience, something that cannot be said of more esoteric issues like 'saving the Euro'. In an age of austerity it is crucial to demonstrate that the EU budget is not being wasted but is, instead, being invested well, for example to fuel future low carbon growth.

As a political signal of the EU's collective will to catalyse a new low carbon economy the EU budget is unparalleled. The upcoming negotiation of the next multiannual financial framework (MFF) will provide the most visible demonstration of the EU's priorities for the remainder of the decade. As a policy instrument, the EU budget can orientate spending decisions and provide leverage for member state financing and private capital in

ways that complement existing carbon pricing and regulatory instruments.

Around five to eight per cent of total EU budget spending currently goes to environment and climate outcomes. This must substantially increase if Europe is to commit to a low carbon trajectory. Decisions taken in the MFF will therefore provide a visible benchmark as to whether the EU will be putting its resources behind its policy priorities on climate change.

However, the politics of budget reform are always difficult. The best chance of success will come through the development of coalitions of member states who share an interest in low carbon outcomes, and who can agree that increased investment in areas such as energy infrastructures, transportation technologies, research and development and digital services can provide a means of improving the quality of spending of the EU budget.

There will need to be a popular mobilisation that can engage different stakeholder interests to secure a future-oriented budget. This must be at the heart of the success criteria for the decisions taken by heads of state and government. The UK has taken a significant step forward on this via its commitment in the March 2011 Carbon Plan to "Complete negotiations on the next EU budget spending period, including agreement to increase the share of EU budget allocations for low carbon investment within a reprioritised budget". More member states will need to follow this lead. Over the coming months civil society and the private sector must step up the pressure for a reformed EU budget. This once in a decade opportunity should be seized.

Over recent months Green Alliance has visited Budapest, Warsaw, Madrid, Paris and Brussels to listen to member state concerns and engage in debate about how the EU budget can be reformed. Reports and presentations from our recent Budapest conference can be viewed on our website dedicated to EU budget reform (www.LowCarbonBudget.eu). This also features news, analysis and commentary on EU policy developments.

For more details about our work on EU budget reform and how you can be involved in supporting it, please contact **Chris Littlecott**, senior policy adviser, clittlecott@green-alliance.org.uk

Chris Littlecott is senior policy adviser leading Green Alliance's European work. clittlecott@green-alliance.org.uk

RISKS AND RESILIENCE

The growing challenge of resource security



The UK economy is heavily reliant on resources from elsewhere in the world. We import half the biomass and a quarter of the minerals we use. This means we are vulnerable to resource risks, both short term shocks and longer term trends. But it is not easy to work out exactly kinds of risks we are facing. Should we be concerned about running out of certain resources, the environmental impact of mining or growing them, their escalating or volatile prices, or just getting hold of them?

Rare earth metals have captured the headlines for understandable geopolitical reasons. Ninety seven per cent of the specialist metals that are considered crucial to green technology, such as wind turbines and electric cars, are currently mined in China, and recent restrictions on the export of these metals to Japan and the West have caused jitters. But recent research by Oakdene Hollins concludes that the current situation should be characterised as a period of adjustment rather than a crisis. Where materials can be considered critical to low carbon energy generation, substitutes exist, although technologies and industries that rely on one particular metal may face future supply challenges.

For many other resources, however, the issues are different. Ironically, concerns about running out focus more on supposedly renewable but over-exploited resources, such as fish and timber, than on finite ones, where price more closely reflects scarcity. The use of some resources is considered risky not because of access or scarcity, but because of the considerable reputational risk to companies involved, as has happened with palm oil from unsustainable sources.

For other resources, the main risk is simply the increasing affluence of the world's growing population: the shift towards more meat-based diets in China and India has contributed to a

spectacular increase in the price of phosphate rock over recent years. Phosphate is crucial to global food production, and some predict peak phosphate as early as 2030. There are no substitutes.

Green Alliance is exploring issues of resource security as part of our Designing Out Waste theme, through which we are developing and advocating policies for a more circular and resilient economy. We know that both using less, ie resource efficiency, and getting valuable resources back, ie recovery and recycling, are important strategies. But they aren't yet incentivised strongly or effectively enough by current policies. We are holding a major conference in the autumn to plan a better approach.

Hannah Hislop is leading Green Alliance's Designing Out Waste theme. For more information contact Hannah Hislop, senior policy adviser, hhislop@green-alliance.org.uk



GREEN ALLIANCE NEWS

EXPERT GUIDANCE

We recently welcomed two new trustees to our board, bringing with them a range of valuable new skills and expertise:



Leo Johnson is a partner in PricewaterhouseCoopers' sustainability and climate change team, and co-founder of Sustainable Finance Ltd, now part of the PWC Group. He is a business fellow of the Smith School of Enterprise and Environment at Oxford, and a lecturer for Cambridge University's Programme for Sustainability Leadership. He has hosted the BBC World show Down to Business and writes on best practice in sustainable finance and banking.



Sir Graham Wynne was chief executive of the RSPB from 1998 to 2010. He is a member of the UK Climate Change Adaptation Sub-committee and is special adviser to the Prince of Wales Charities' International Sustainability Unit. He is also chair of a foundation responsible for the Harapan Rainforest project in Sumatra, Indonesia. He was a member of the Policy Commission on the Future of Farming and Food, the Foresight Land Use Futures High Level Group, and of England's Wildlife Network Review Panel.

2011 DEBATE

Our annual debate on 30 March launched our new report *Bringing it home*. Minister for government policy Oliver Letwin and Ben Page of IpsosMori were among our guests on the panel.

We debated the role of government in helping people towards more sustainable lives, particularly in the context of coalition policy and the imperative for action on climate change. Our research has focused on the contribution that behavioural sciences can make to policy design. At the debate we premiered a short film to support the conclusions of our work, which can be viewed at www.green-alliance.org.uk/annualdebate2011

Bringing it home is available from Green Alliance for £5 or read it free on our website. You can also follow the continuing debate at www.greenlivingblog.org.uk



NEW INDIVIDUAL MEMBERS

welcome to:

Gayle Burgess
Laura Jackson

Green Alliance is an influential, independent organisation working to bring environmental priorities into the political mainstream. We work collaboratively with the three main parties, government, the third sector, business and others to ensure that political leaders deliver ambitious solutions to global environmental issues.

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