The Paradox of Green Keynesianism

Molly Scott Cato

Green House is a think tank founded in 2011. It aims to lead the development of green thinking in the UK.

Politics, they say, is the art of the possible. But the possible is not fixed. What we believe is possible depends on our knowledge and beliefs about the world. Ideas can change the world, and Green House is about challenging the ideas that have created the world we live in now, and offering positive alternatives.

The problems we face are systemic, and so the changes we need to make are complex and interconnected. Many of the critical analyses and policy prescriptions that will be part of the new paradigm are already out there. Our aim is to communicate them more clearly, and more widely.

We will publish a series of reports and briefings on different subjects. We do not intend to have a party line, but rather to stimulate debate and discussion.

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Green House Post-growth Project

Everyone agrees that we are in the midst of a massive financial and economic crisis. We have suffered the biggest crash since the 30s, and it may get far bigger yet. How ought this ongoing crisis to be understood, and resolved?

There is the mainstream view: we have vast government deficits, and stagnant economies. We have a dire need for economic growth – and a deep-set need for austerity, bringing with it massive cuts in public services.

But what if that diagnosis, which reflects mainstream wisdom, is all wrong? What if the crisis that we are currently experiencing is one which casts into doubt the entire edifice of capitalist economics that sets growth as the primary objective of all policy? What if the fight between those who say that without austerity first there can be no growth and those who say that we must invest and borrow more now in order to resume growth is a false dichotomy – because both sides are assuming 'growthism' as an unquestioned dogma?

The aim of the Green House Post-growth Project is to challenge the common sense that assumes that it is 'bad news' when the economy doesn't grow and to analyse what it is about the structure of our economic system that means growth must always be prioritised. We need to set out an attractive, attainable vision of what one country would look like, once we deliberately gave up growth-mania – and of how to get there. And we need to find ways of communicating this to people that make sense, and that motivate change.

Existing Green House Post-growth Project Reports

Green House's 'Post-growth' Project: an introduction' by Rupert Read.

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'Post-Growth Politics' by Andrew Dobson.

'A new Post-growthist Common Sense: Challenging the Hegemony of Growthist Discourse' by Rupert Read.

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Summary

The lesson economists learned from the last slump of the 1930s was that a capitalist economy will fail without sufficient demand, and that the social and political consequences of the failure of demand are insupportable.

While the UK Chancellor is still resisting viewing the economy as a system rather than a household or business, his refusal to acknowledge both the importance of multipliers in magnifying the impact of spending cuts and the potential for infrastructure investment to achieve positive multipliers is leaving him daily more isolated.

The Second World War, which was the outcome of the Depression of the 1930s, maintained demand superbly, but by the 1950s the economy began to flag again and so deliberate attempts were made to stimulate demand.

On the production side this meant designing short-life into products through methods such as constant changes in standards and death-dating, i.e. making products that would inevitably need frequent replacement.

On the consumption side it meant the deliberate use of psychological techniques to lure people into a status hierarchy based on conspicuous consumption. All these techniques seemed sensible if not humane in an era when the ecological limits to growth were not apparent, but now they are dangerous.

The persistent economic recession and the need for a transition to green infrastructure and industrial systems has led many environmentalists to call for a form of Green Keynesianism. But how can this co-exist with the fundamental commitment amongst green economists to an end to economic growth?

Four policy proposals are made to resolve this apparent paradox:

Transitional investment, where energy and money are only invested in infrastructure in the short term if it can be demonstrated that in the long term it will reduce demand for energy;

Substitution of local economic activity for global economic activity to build local resilience;

Ecological Enterprise Zones to enable experimentation with policies that would enable a transition to a post-growth economy in pilot areas; and

A sales tax related to energy and social necessity, determined by a deliberative and democratic process of consultation.

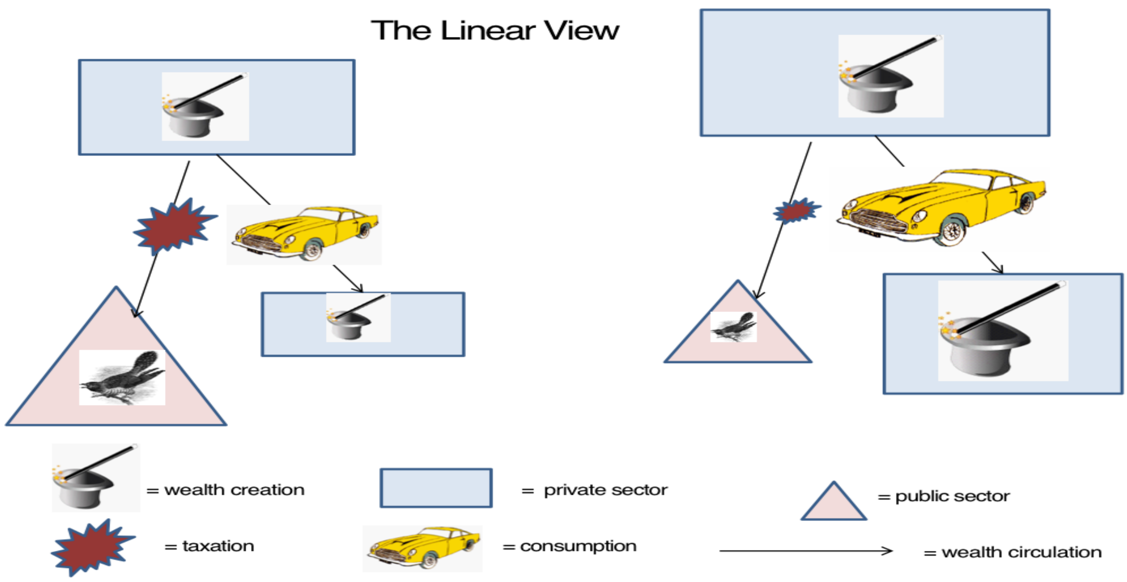
Keynes with his wife, the ballerina
Lydia Lopokova[1]

The Paradox expounded

John Maynard Keynes was a man with an aphorism for all seasons, and the most appropriate for today's economic crisis is his 'paradox of thrift'. Commenting on the horrifying consequences of the Depression of the 1930s, Keynes noticed that people's natural response to be cautious in times of crisis could actually make the problem worse. While saving at the individual level may be entirely noble, at the level of an economy as a whole, and especially one with insufficient demand, it can be devastating.

With an eye on the next election the current Chancellor of the Exchequer, George Osborne, is responding to continuing economic depression by attempting to use private finance to stimulate demand. This reflation of the finance bubble while starving the public sector of money demonstrates ignorance of the key lesson from the 1930s: that government investment is necessary to rebuild economies following a financial crisis, and that economies are complex systems. In this era of economic instability it is dangerous to have politicians who focus on the business, or sometimes the individual household, as the paradigmatic model of a national economy. This has led to an understanding of economies as exercises in book-keeping rather than as systems of interacting citizens: economising rather than economics. This is what we are suffering in the UK today, where Osborne maintains his determination to rely on finance to restart the economy and refuses to acknowledge the potential consequences of the multiplier effects of his policies, even when advised to do so by the IMF[2]

Figure 1. The Linear View of the Economy



For those who have not studied economics I will begin by swiftly recapping on this most significant contribution to economic theory: the idea of the multiplier. What was revolutionary about Keynes's way of looking at economics was that he was able to see the system as a whole, to explain, and even to influence the system dynamics.

Figure 1 above represents the Osborne view of economics. The first assumption is that wealth is only created in the private sector. Tax then removes this wealth and feeds it to the greedy public sector (the cuckoo in the graphic), which destroys it. What remains stimulates consumption-based economic activity. If the money paid via tax to the public sector could be shrunk, as in the right-hand panel, then the private sector would expand and the economy would be more successful.

Figure 2. The Systems View of the Economy

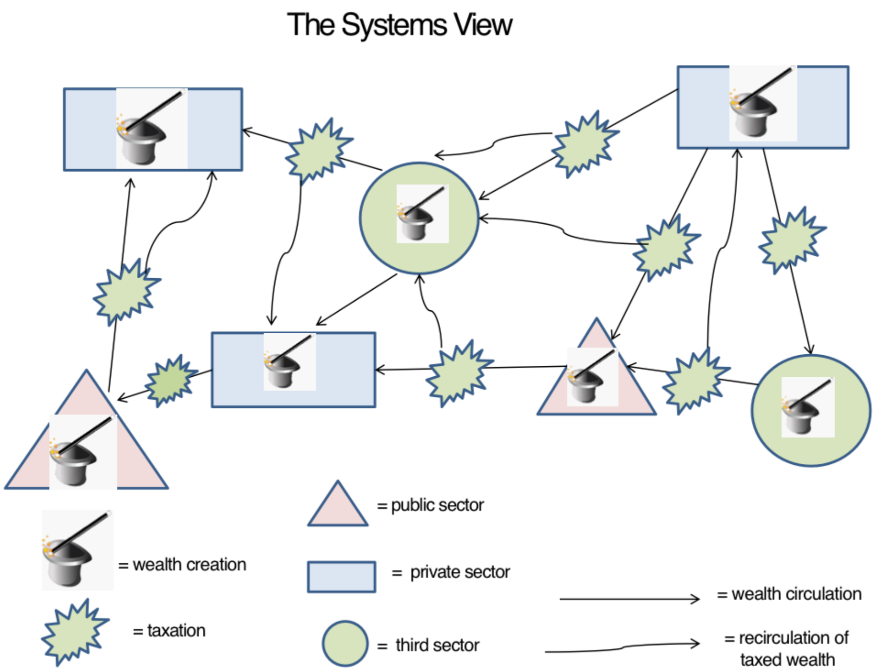


Figure 2 represents the economy as a dynamic system, with public, private and third (voluntary) sectors all interacting. Wealth is generated in private, public and third sectors. Taxation is paid on all economic interactions, and that taxation becomes investment in further activity in all three of the sectors. On this view, the view widely shared amongst economists, the way to revive the economy is to increase the circulation of wealth and stimulate greater activity.

It was because of the importance of flows rather than isolated transactions and of the economy as an interacting system that Keynes invented the term 'the multiplier' – government spending can stimulate activity, leading to more transactions in the economy, more money being raised in taxation, which can be re-spent into the economy, creating a virtuous circle. The austerity measures of the Coalition are achieving precisely the opposite: cuts are leading to economic shrinkage, lower tax revenues, and a growing deficit. This is the problem that Greece is facing, and is what Danny Blanchflower refers to as the 'death spiral'.

Keynes the Defunct Economist

Now we switch our attention to another of Keynes's ready aphorisms, in this case his suggestion that 'Practical men, who believe themselves to be quite exempt from any intellectual influences, are usually the slaves of some *defunct economist'*, because what he was really criticising was the tendency amongst policy-makers to always respond to the previous crisis and to ignore the facts that have changed. This is the failure of the socialist and even, to some extent, the New Labour left. Their focus is still on jobs and on growth, but a Keynesian stimulus on the 1930s pattern cannot be the solution this time. We are boxed in by an environmental crisis that, if unsolved, will cast our present economic woes into the shadows. We need to balance the economic system with the ecological system, and to recognise that there are ecological limits on what we can demand from our economy.

To support these claims I will report just a couple of pieces of evidence that the economy is not adjusting to the ecological crisis and which demonstrate clearly that we are not addressing the need to keep our economy within ecological limits. Although these both focus on attempts to reduce our carbon emissions, I should make clear that I am using the consumption of fossil fuels as a proxy measure of economic activity, rather than suggesting it is the only problem that we are facing in terms of failing to keep within planetary limits.

First we have the official government position: our carbon emissions are steadily reducing and are well within our Kyoto limits, as in Figure 3 below.

Figure 3. UK Greenhouse Gas Emissions Compared with Kyoto Targets: Official Version

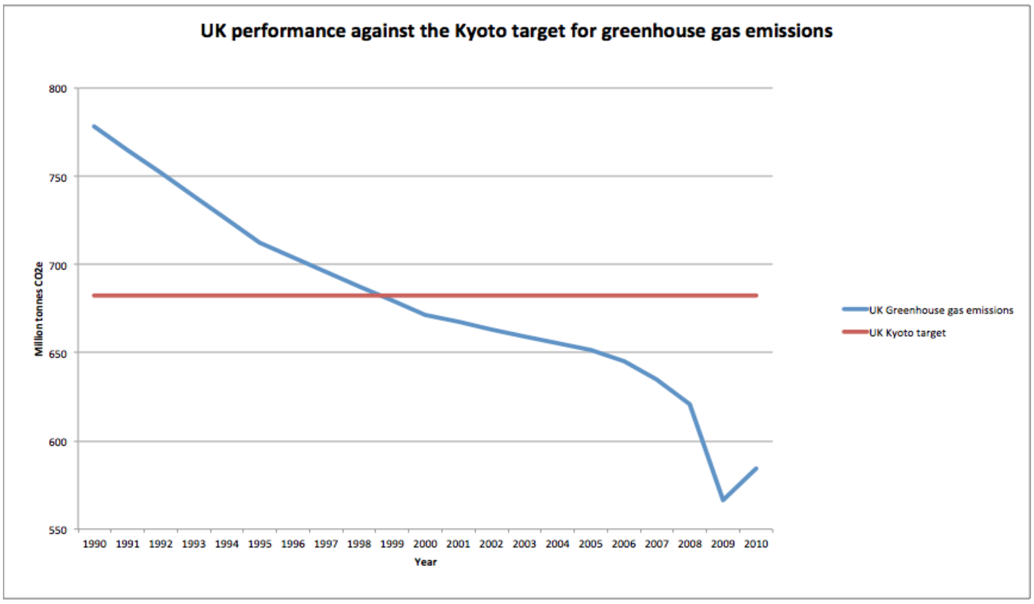
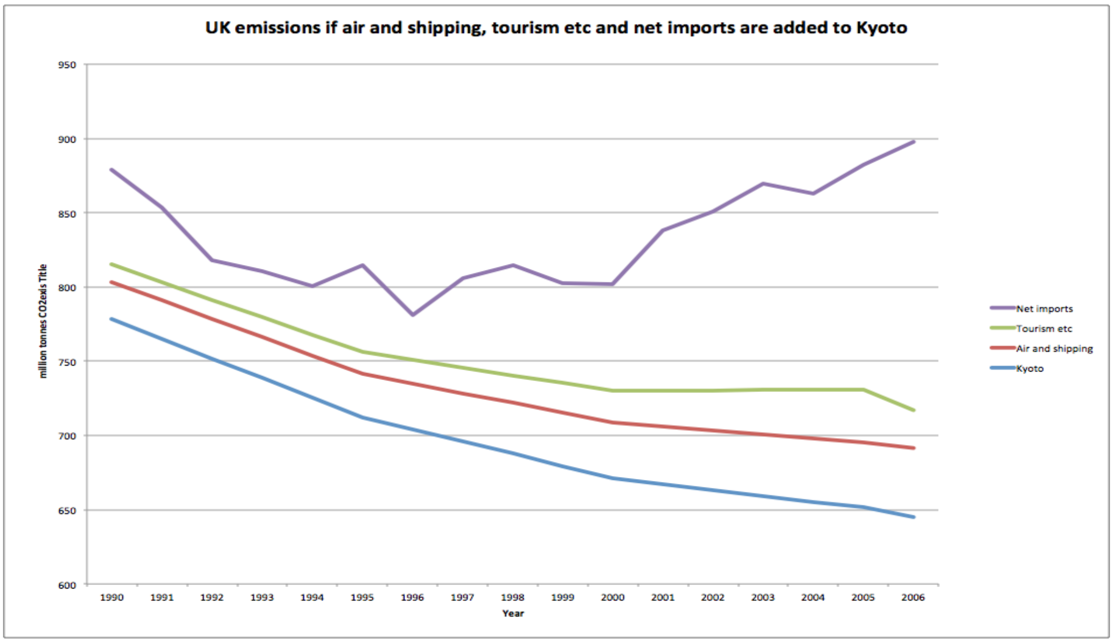


Figure 4 below is an illustration of the real situation with CO_2 emissions, based on work published by Green House to coincide with the Rio+20 conference last year. That report drew attention to the fact that some of the most important economic activities contributing to our emissions are simply not counted. They include emissions generated by UK citizens when they travel by air, the CO_2 emitted transporting goods to UK consumers and, most significantly, the emissions embodied in goods consumed in the UK but produced in other countries (the lines show cumulative emissions as the lines rise up the axis). If we include all these sources of emissions we arrive at the following rather different graph of the UK performance since 1990. This graphic is based on Defra data and shows the real impact of our consumption on CO_2 emissions and the contribution made by the emissions imported in products manufactured overseas. The graph makes clear that the reported reductions result from offshoring what remains of our manufacturing industry rather than changing our consumption patterns to reduce emissions.[3]

Figure 4. UK Greenhouse Gas Emissions Compared with Kyoto Targets: The Reality



The stereotypical response of the growth addicts at this point is to introduce the concept of 'decoupling', the idea that we can continue to have economic growth but to find ways of creating products with a much lower level of throughput of energy and materials. Figure 5, taken from Tim Jackson's book *Prosperity without Growth* illustrates the sort of progress we have made with this 'decoupling'. It shows the carbon intensity of production in a range of national economies, i.e. the amount of value in monetary terms that can be bought for a fixed amount of carbon dioxide emissions. Increases in carbon intensity would be achieved by more efficient production methods, or by switching from fossil fuel to renewable

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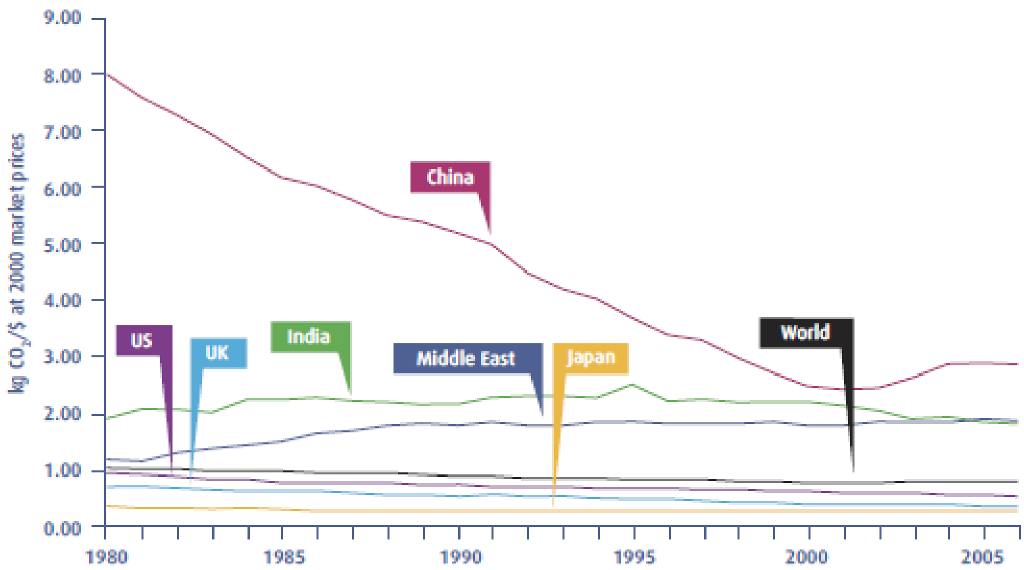
energy. The results are not that encouraging.

The global carbon intensity declined by almost a quarter from just over 1 kilogram of carbon dioxide per US dollar (kgCO2/$) in 1980 to 770 grams of carbon dioxide per US dollar (gCO2/$) in 2006. Again, steady improvements across the OECD countries were accompanied by a slightly more uneven pattern across non-OECD countries. Significant growth in carbon intensity occurred across the Middle East and during the earlier stages of development in India. China witnessed some striking improvements early on. But these have been partly offset by increasing carbon intensity in recent years. Worryingly, the declining global trend in carbon intensity has also faltered in recent years, even increasing slightly since its low point in 2000.

Figure 5. Improvements in Energy Efficiency of Production, 1980-2005

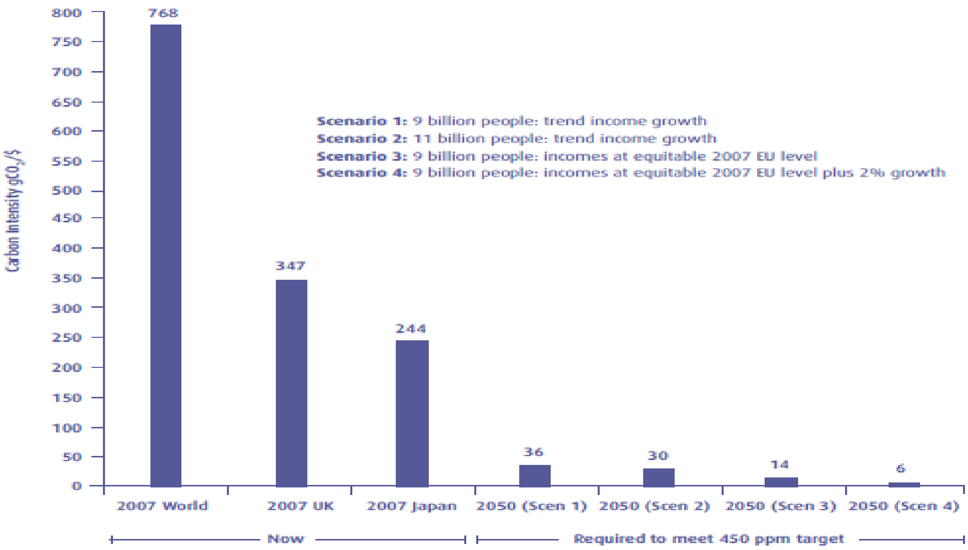


The latest evidence from the European Environment Agency supports Jackson's pessimistic conclusions. Figures for April 2012 show that between 1999 and 2009 total energy consumption in the EU-27 grew by 0.1% per year; energy intensity fell by only 1.6% per year during this period. Only the economic collapse has resulted in any reductions in energy use, while increases in the energy-intensity of lifestyles are offsetting gains from technological improvements. Gains in GDP per unit of energy input are largely the result of restructuring of industry and off-shoring of production.[4]

So what sort of improvements in productive efficiency do we need in order to be able to main our current lifestyles and the growth-based improvements that we have come to expect? Jackson also offers some help here by comparing a number of scenarios as illustrated in Figure 6. The three bars to the left provide data for the current emissions cost in grams of

CO_2 for producing one dollar's worth of output in the world, the UK and Japan. The bars to the right illustrate the number of grams of CO_2 we would be able to 'spend' for each dollar's worth of output to avoid exceeding the 450ppm concentration of CO_2 in the atmosphere that guarantees destructive climate change. They are based on a number of scenarios involving different assumptions about population increases and standards of living. Assuming that we believe global population rates will rise significantly and all these new citizens have a right to a lifestyle akin to our own requires us to make heroic assumptions about how much we can improve productive efficiency. To achieve these sorts of improvements in energy efficiency is simply implausible, given assumptions about population growth and if we share Jackson's commitment to equality, so that we cannot buy our continuously more energy-intensive lifestyle at the expense of those in poorer countries.

Figure 6. Improvements in Energy Efficiency of Production Required to Avoid Dangerous Climate Change



'Fighting the Last War'

So we have an indication based on our national CO_2 emissions that we are not learning to live within our means in an ecological sense. Our lifestyle is becoming more energy intensive, with more consumption of high-energy goods whether electronics or exotic foods, and perhaps especially the voracious demand for air travel. Meanwhile, on the production side we are deluding ourselves that we are achieving decoupling when in reality the falls in carbon dioxide emissions that we observe are the result of offshoring of production.

There is a tendency amongst environmentalists to critique the consumerist culture as though it was only designed to increase the profits of corporations. This may not be helpful in moving away from a growth-based economy, and I think it would be more useful to understand how the horror of the 1930s led genuinely well-meaning people to set in stone an economic dynamic that is driving us to the brink of extinction. First, we should acknowledge that the products brought by the post-war boom – such as washing-machines and deep-freezers – liberated many people (and especially women) from the drudgery of housework. Secondly, we should resist the impulse to demonise the pushers of demand and instead seek to offer an explanation of why people might use manufactured social dissatisfaction within an economic system which cannot survive without adequate aggregate demand. While the fiscal solution to the economic troubles of the 1930s may have been Keynesian, the cultural solutions were, at least indirectly, Freudian.

The Freudian concept in question is that of cathexis, defined as 'the concentration of mental energy on one particular person, idea, or object (especially to an unhealthy degree)' and is a translation of the German word *Libidobesetzung*, coined by Freud. This concept can support a critique of the way the consumerist culture focuses on selling objects apparently to satisfy a certain need when really they satisfy a deeper and perhaps even subliminal desire. Beautiful women draped over fast cars persuade young men that they will acquire sexual allure as well as a set of wheels. In this way our desires and needs are themselves distorted, ultimately leading us towards lives of dissatisfaction and longing. It seems to me that excelling in this process was at the heart of what is widely being called the 'genius' of Steve Jobs. Here is Julian Baggini writing in the Guardian:

'Jobs's success was built firmly on the idea that you should not give consumers what they want because they don't know what they want. No one thought they wanted the first desktop Mac, iPod, iPhone or iPad before they existed. Jobs repeatedly created things that people came to want more than anything else only by not trying to give them what they already wanted. This challenges the idea that consumer culture inevitably means pandering to the conventional, to the lowest common denominator. Markets are not necessarily conservative: truly great innovations can become popular.'[5]

A companion piece focused on the 'soft-machine aesthetic' that Apple pioneered, making what had seemed geeky and cold appear friendly and cool: 'instead of chilling you out' they 'glow like fireplaces and nuzzle like digital pets'.[6] Jones admits that he writes articles on an impractical machine that does not facilitate the process of typing because he is 'captivated by the beauty of this piece of technology'. Jones goes so far as to suggest that the way an Apple computer slowly lights up suggests that is it coming alive. Phones and tablet computers that need to be stroked also seem to me living proof of the power of cathexis.

In 1957 Vance Packard's book *The Hidden Persuaders* blew the whistle on how scientific developments in psychology were being used to manipulate US citizens to undertake mass consumption. What he called the 'depth approach' to advertising was based on insights from social psychology. It was, as he described it, 'impelled by the difficulties the marketers kept encountering in trying to persuade people to buy all the products their companies could fabricate' (p. 17). The role of Edward Bernays, Freud's nephew, was seen as central to this broader use of psychological insights (Tye, 2002), which he first described in his uncritical book on propaganda (1928).[7] In his own words he describes how he had no qualms in using such methods:

'If we understand the mechanism and motives of the group mind, is it now possible to control and regiment the masses according to our will without their knowing it . . . Mass psychology is as yet far from being an exact science and the mysteries of human motivation are by no means all revealed. But at least theory and practice have combined with sufficient success to permit us to know that in certain cases we can effect some change in public opinion . . .by operating a certain mechanism.' quoted in Ewen (2001: 83-4).

Packard expressed horror at what he called the marketing to 'eight hidden needs' which he identified as emotional security, reassurance of worth, ego-gratification, creative outlets, love objects, a sense of power, a sense of roots, and immortality. Although his work is now more than 50 years old, the routes advertising finds to exploit our psychological needs appear to be similar today. This use of scientific methods to uncover our inner needs and then to design products to meet them resulted in what Packard referred to as 'the packaged soul'.

Consumerism in this sense of a spiral of the creation of desire, its temporary satisfaction, before new desires are aroused, was created in the US, and was perhaps its most potent post-war export (Stearns, 2006). It was certainly in part a geopolitical as well as an economic strategy: establishing the superiority of the US way of life, which was based on the twin pillars of free-market capitalism and representative democracy. According to de Botton (2004) presidential candidate Richard Nixon made much play of the standard of living of the average American family during a visit to Moscow to open an exhibition 'showcasing his country's technological and material achievements' (2004: 33). At that time the level of material comfort enjoyed by US citizens was the envy of the world and it was also used as evidence of the superiority of the capitalist economic system: *'When Franklin D. Roosevelt was asked what book he could give to the Soviets to teach them* *about the advantages of American society, he pointed to the Sears catalogue'* (de Botton, 2004: 40). As de Grazia observes, the US operated as *'an imperium with the outlook of an emporium'* (de Grazia, 2005).

The migration of this cultural meme across the Atlantic caused consternation to the thrifty British housewife, who had been a heroine during the war years, and was now deliberately targeted by advertisers keen to expand consumption to ensure sufficient 'aggregate demand'. The careful housewife who insisted on durable fabrics, eschewed fashion and refused to take on debt was persuaded to become the spendthrift retail therapist, maxing out her plastic and buying shoddy goods imported from foreign sweatshops. The consumer, and especially the person who consumed on credit, was the only thing standing between our national economy and economic disaster.

We have a similar over-stimulation of activity on the production side. I should say at the outset that I do not believe that changing the sorts of light-bulb we use can save us from ecological catastrophe, but it may be that understanding the behaviour of the Phoebus cartel of light-bulb manufacturers just might. The group was made up of all the leading manufacturers of the day including General Electric, Osram and Philips (Monopolies Commission, 1951). At a meeting in Geneva in 1924 the Phoebus group decided to enforce a maximum life-time of the light-bulb at 1000 hours, eschewing the superior design already achieved by Edison around the turn of the century. A long-lasting light-bulb reduced their profits and so innovation was restricted. The oldest light-bulb in the world is still in place and casting light over the Livermore Fire Station in California: it is 110 years old.

The strategy of creating demand through the deliberate design of obsolescent or poorly made goods flourished in the years following the war. It was parodied in a 1951 film by Alexander Mackendrick called *The Man in the White Suit* (Street, 2008: 81). In the film Alec Guinness played Sidney Stratton, a research chemist working in the textile industry. Stratton undertakes expensive research to discover a miracle fibre that is not subject to the depredations of dirt or wear: he uses his material to make a luminous white suit. His moment of glory is short-lived, however, since both managers and unions recognise the dangers posed by a suit that does not need to be replaced: Stratton is sacked and pursued both metaphorically and actually by both sides in the age-old capital-labour battle. Eventually he discovers that his suit is vulnerable to sunlight, but he remains undeterred and we leave him in the final scene striding purposefully off to another research laboratory where his attempts to create genuinely sustainable products will doubtless be greeted with horror.

In the early days of the enthusiasm for creating demand its proponents were quite explicit about the various techniques that they used. King Camp Gillette, inventor of the disposable razor, argued that:

'We have the paradox of idle men, only too anxious for work, and idle plants in perfect conditions for production, at

the same time that people are starving and frozen. The reason is overproduction. It seems a bit absurd that when we have overproduced we should go without. One would think that overproduction would warrant a furious holiday and a riot of feasting, a display of the superfluous goods lying about. On the contrary, overproduction produces want.' (quoted at Slade, 2006: 10).

A McGraw-Hill executive writing in *Advertising Age* in 1955 was even more explicit:

'As a nation we are already so rich that consumers are under no pressure of immediate necessity to buy a very large share – perhaps as much as 40 per cent – of what is produced, and the pressure will get progressively less in the years ahead. But if consumers exercise their option not to buy a large share of what is produced, a great depression is not far behind.' (quoted in Packard, 1957, p. 23)

Karl Prentiss, another advertising executive, wrote in True Magazine in 1958 that

'Our whole economy is based on planned obsolescence and everybody who can read without moving his lips should know it by now. We make good products, we induce people to buy them, and then next year we deliberately introduce something that will make those products old fashioned, out of date, obsolete. We do that for the soundest reason: to make money.' (quoted at Slade, 2006: 153).

Techniques to reduce the life of products included death-dating, the practice of ensuring that products will break after a short period, which began with radios and led to furious arguments between engineers, aiming to build the best possible device, and executives, whose eyes were fixed firmly on the balance-sheets. The increase in range of scope of technologically sophisticated products has vastly increased the possibilities for generating demand through artificially limiting the life of goods. The star performer in this arena is certainly the mobile phone: by 2002 over 130 million still-working portable phones were disposed of in the United States alone. Mobile or cell phones have now achieved the dubious distinction of having the shortest life cycle of any electronic consumer product and their life span is still declining (Slade, 2006: 263)

It is in this sense of stimulating demand through both the production and consumption sides that we are finding ourselves 'fighting the last war.' Before the economy had reached the planetary boundary this stimulation of growth made sense, but it is now as dangerously obsolete as a death-dated printer or a cream stair-carpet. If the economy as presently structured cannot survive without constantly increasing aggregate demand then it must face structural change: the urgent need to address the ecological crises that over-exploitation of the environment gives rise to demands nothing less.

Green New Deals

Pro-environmental commentators have not been isolated from this tendency in a moment of crisis to attempt to fight the last war, to reach automatically and without reflection for the levers that successfully pulled us out of the economic slump last time around. Amongst mainstream economists and policy-advisers we have heard calls for what is called a 'green stimulus'. The idea is for the government to either borrow or leverage indirectly private-sector money to be invested in sectors considered 'green'. Since how we define green industry or even the green economy is contested this has been a process subject to considerable lobbying and tendentious argument.

The world leader in terms of green stimulus is South Korea, which according to a report from the UN's Environment Programme update on the Global Green New Deal has sent 79% of its investment money in the direction of green sectors, compared with 34% for China, 18% for France, 13% for Germany and 12% for the USA. Korea plans to invest the equivalent of US$83.6 billion by 2013 including US$44 billion on building energy security and US$22 billion building up its green production sectors. In absolute terms, China's green stimulus of US$218 billion is the largest of the G20 countries: China is investing massively in its railways (48%) and in energy efficient buildings (35%). The investment in Green Keynesianism from the UK is too small to feature in these comparisons.[8]

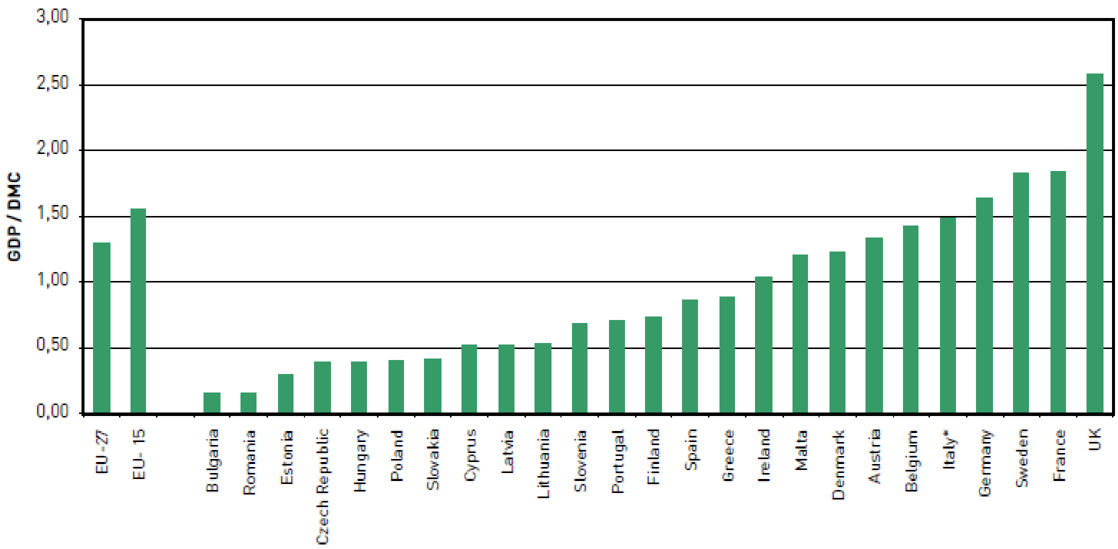
French energy journalist Yves de Saint Jacob describes how France's traditional commitment to a state industrial policy has been redirected towards apparently green sectors. In sympathy with the tone of this paper he raises the question: *'Is economic revival compatible with sustainable development, or, to turn the problem on its head, perhaps a little cynically, is recession the only effective means of reducing CO_2 emissions?'* before describing the really significant investments made since Francois Hollande's election in 2012. France is investing massively in its rail network and its canals with public finance of €8billion and the hope of leveraging in more from the private sector. The aim is to emerge from the recession with significant improvements to non-road transport including a new tunnel between Turin and Lyon and a new Seine-Nord canal linking Europe's northern ports to Mediterranean markets. In addition there are significant investments across the country's already impressive TGV network and significant investments in so-called green production sectors: €500m is being spent on incentives to encourage the development of greener cars, while consumers are being offered €1000 when they trade in their older car (at least ten years old) if they buy a lower-emission replacement. In the construction sector €850m is being spent on refurbishment to improve energy efficiency.[9]

Amongst pro-environmental economists and lobbyists the call has been for a Green New Deal, this time explicitly echoing the largest Keynesian response to the Depression: Roosevelt's New Deal programme of infrastructure investment and job creation. This call began in the UK with the report from the Green New Deal Group that grew out of Colin

Hines's work with the New Economics Foundation.[10] Rather than the flagship-style policies of Hollande and Obama, this group focused instead on the urgent need to ensure safe and warm homes for elderly people with energy prices rising rapidly. It was a form of human-scale development approach to Green Keynesianism that would have warmed the cockles of Schumacher's heart as much as the living-rooms of elderly pensioners. From an economic perspective it proposed a triple win: health for the vulnerable, jobs for the workless, and stimulus for the economy. In practice the more radical economic aspects of the Green New Deal were almost totally ignored, with the government instead proposing its Green Investment Bank, another example of using public money to leverage private money but socialising the risks and making no attempt to ensure socially beneficial allocation.

The Green European Foundation has undertaken a thorough comparison of the progress of Green New Deals across the members of the EU. The research, conducted by the Wuppertal Institute, confirms the widely differing sizes of stimulus packages as well as the proportions directed towards green transitional investment. In both cases the UK is well towards the bottom of the rankings. In Figure 7 the UK is shown to be one of only two countries whose green economy actually shrank between 1999 and 2004 (the other being Greece). While Finland's eco-industry grew by 54% during this period that of the UK shrank by 18%. This is clear evidence of the misallocation of resources that results from an over-emphasis on finance. The country's reliance on the financial sector to gain foreign exchange also explains the UK's apparently positive performance in terms of the efficiency of its GDP in energy terms. If your wealth is earned through invisibles such as insurance and financial products and your production has been off-shored this can mask an underlying failure to invest in green transition which can threaten long term energy security and economic viability.[11]

Figure 7. Resource Productivity of EU-27 in 2005 (Eurostat data)



A mixture of motives appears to be driving the significant investments that make up these Green Keynesian initiatives. Some, such as the low-emissions vehicles and subsidies to renewable energy, are certainly the result of industry lobbying. The *grands travaux* we are seeing in France have more of the air of non-strategic job-creation policies. Perhaps the investments into fast-tracking the production sectors of the future, seen especially in China, Brazil and Korea, offer most promise. But all are resulting in economic growth in an era when the evidence of ecological crisis tells us that we have already over-grown the earth's capacity. So how are we to make these decisions about when investment in the green economy is justified? The transition to a low-energy economy will of necessity itself require the investment of energy. How can we judge whether investment now will ensure a sustainable future or merely lead to greater future consumption?

Some academic work from Australia can help to guide thinking about whether an investment is really green. Crowley attempted to divide the green economy into different 'shades of green'.[12] The lightest green she labelled 'accommodationist', meaning that it would remain within the business-as-usual paradigm. Her mid-green category would 'ecologise growth' but would not question whether growth is inherently green or not. Finally, her deep green category is focused on sustainability and aims to transform the economy, including by reducing consumption, a feature that is absent from mid and light green definitions of the economy. Her typology, which is reproduced in the table, will be taken up in the policy recommendations section.

Table 1. Shades of Green: A Typology for Assessing the Relative Contribution of Different Industries to the Green Economy

	Deep Green	Mid Green	Light Green
Mode	Proactive	integrative	reactive
Scope	long term	Intermediate term	short term
Nature	transforming	reforming	conforming
Objective	redefine growth	'ecologise' growth	enhance growth
Operation	rejectionist	reinventionist	accommodationist
Aim	ecological sustainability	ecological modernity	sustainable development
Jobs	preserving nature	greening industry	remedying ecological decline

A Negotiation between Generations

The 1987 Brundtland definition of sustainability implicitly relies on the inherent justice of a position that sees our economic relationship as a negotiation not only between the people who are alive today, but also with those from whom we have inherited this planet and to whom we will bequeath it. It is surely one role of an economist to mediate this exchange of resources between past, present and future generations. It was certainly a role that Keynes took seriously. In 1930 he published one of his most whimsical and speculative essays, 'Economic Possibilities for our Grandchildren'.[13] This essay makes it clear that Keynes was well aware that in the economist's favourite timezone, the long run, planetary limits would come into play in determining economic potential. As with much of Keynes's writing this article is remarkably prescient:

'We are suffering just now from a bad attack of economic pessimism. It is common to hear people say that the epoch of enormous economic progress which characterised the nineteenth century is over; that the rapid improvement in the standard of life is now going to slow down – at any rate in Great Britain; that a decline in prosperity is more likely than an improvement in the decade which lies ahead of us.
I believe that this is a wildly mistaken interpretation of what is happening to us. We are suffering, not from the rheumatics of old age, but from the growing-pains of over-rapid changes, from the painfulness of readjustment between one economic period and another. The increase of technical efficiency has been taking place faster than we can deal with the problem of labour absorption; the improvement in the standard of life has been a little too quick; the banking and monetary system of the world has been preventing the rate of interest from falling as fast as equilibrium requires.'

Keynes identifies the twin sources of capitalism's extraordinary success in enabling an impressive and rapid increase in material standards of living: the expansion of credit for investment and rapid technological innovation. These two interlinked forces (and, it should be noted, the central role played by two institutions founded in London in the last decades of the 17th-century: the Bank of England and the Royal Society) have encouraged each other to drive the production-and-consumption machine of capitalism at an ever-accelerating pace through the past three centuries. (The relationship between credit-debt creation and economic growth is addressed in the forthcoming Green House paper 'Why We Can't Be Green If We're In the Red: Debt, the Myth of Austerity and the Call for a Citizens' Audit').

Keynes had no children of his own, and hence no grandchildren. If he had had any they might have had grandchildren of their own by now. Keynes's essay is a message of hope and a warning. His promise is that the combination of technological advance supported by the dynamic of capital accumulation would enable us to harness resources so efficiently that we could achieve a high standard of living for all. His hope was that we would have the wisdom to recognise that standard of living to be bountiful and then to turn our attentions to the higher things in life – culture, sociality and the natural environment. This is the opportunity that awaits us now.

But why have we not long since accepted that consumption is now an exhausting treadmill that we should leave behind? Here I think Keynes underestimated the role of an economic system not in providing for our needs but in instantiating and reinforcing a system of power relations. While he recommends a point of material satiety after which we would indulge in gentler pleasures, he fails to note that it is the control that money offers rather than the material goods it gives access to that is the real driver of capitalism. His own interests tended strongly to the cultural and he seems incapable of understanding those who would not prefer attending the opera to spending longer hours in the office winning yet another takeover battle. His naive faith in the higher virtues is rather touching in retrospect:

'When the accumulation of wealth is no longer of high social importance, there will be great changes in the code of morals. We shall be able to rid ourselves of many of the pseudo-moral principles which have hag-ridden us for two hundred years, by which we have exalted some of the most distasteful of human qualities into the position of the highest virtues. We shall be able to afford to dare to assess the money-motive at its true value. The love of money as a possession – as distinguished from the love of money as a means to the enjoyments and realities of life – will be recognised for what it is, a somewhat disgusting morbidity, one of those semi-criminal, semi-pathological propensities which one hands over with a shudder to the specialists in mental disease. All kinds of social customs and economic practices, affecting the distribution of wealth and of economic rewards and penalties, which we now maintain at all costs, however distasteful and unjust they may be in themselves, because they are tremendously useful in promoting the accumulation of capital, we shall then be free, at last, to discard.'

This is clearly a project of moral rather than economic development, and one to which Green House earnestly hopes to contribute.

We should also bear in mind, of course, that many countries have not yet reached a level of material prosperity that might be considered even close to satiety. Green House's post-growth project focuses on the UK economy, on the basis that we need to take responsibility and set an example to countries which currently aspire to our lifestyle. I should make it clear at this point that, as implied by the data from Jackson's work presented above, we believe that global equity is a basic underpinning of a sustainable society on a global basis. The Contraction and Convergence model for sharing carbon emissions can help to establish the expansion possibilities open to countries whose material standards of living are still grossly inadequate.

Resolving the Paradox

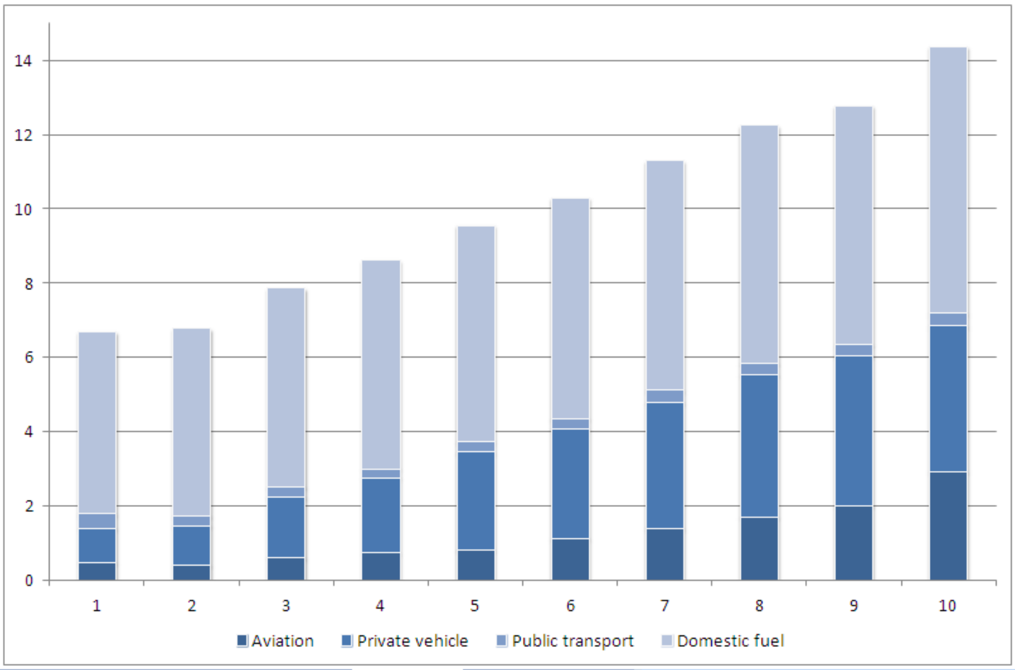
So how can we resolve the tension between knowing that to address the problems caused by the global recession 'requires' a return to economic growth, while also understanding that this growth threatens the future of our species? Where does this leave green economists with Keynes's paradox? The resolution, it seems to me, relies on seeing the economy not as a global monolith but as a number of interacting local economies. Part of our problem with being able to redesign the economy so that it is both stable and sustainable requires a radical adjustment of scale. We can resolve the apparent paradox by focusing our attention first on local rather than global economies. I am also going to argue that we need to adopt an attitude of boldness and experimentation, the very sort of impulse that first made capitalism such a dynamic and successful system. Later, I am going to suggest that we use the concept of transition to help us make the difficult judgements about which investments that we make now can help us on our journey towards sustainability and which are merely continuing the addiction to growth that is the source of our troubles. And finally I am going to propose a new sales tax, determined by a deliberative process, which varies depending upon the energy intensity of goods and services and the extent to which they are socially valued.

Enhance Local Multipliers

An acknowledgement of the ecological limit to economic activity means rethinking the wastefulness of the global economy, but encouraging the health of local economies, in particular reducing the energy inefficiency of lengthy global supply chains. In Keynesian terms we might think of this as working with local rather than global multipliers. It may seem paradoxical but in fact it is entirely consistent to pursue an economic strategy that acknowledges the paradox of thrift while simultaneously arguing that we should learn to flourish within ecological limits. What a green economist would aim for is the substitution of local economic activity for global economic activity. This is the sort of economy I argue for in my book *The Bioregional Economy*.[14] A system of self-reliant local economies would also increase resilience and allow for enhanced accountability for both resources and wastes.

This is not to abandon our global perspective; rather, as I have argued earlier, we need to establish that many countries in the world still have a long way to go before the majority of their populations have reached the standard of satiation that Keynes hoped for his grandchildren. However we need to bear in mind a theme that recurs throughout the papers that make up Green House's No Growth project: if sustainability requires us to limit growth then the product of that growth needs to be fairly shared. Those who would defend their right to continue to enjoy aviation-based mini-breaks in Vienna or Venice will have to find a way for the inhabitants of Accra and Chongqing to make similar journeys, with similar frequency, without us frying the planet we share.

Figure 8. Mean annual total CO_2 emissions by equivalised household income decile (UK households; metric tonnes; direct energy use only)



The data shows that the production of CO_2 is already closely linked to income: the richer you are the higher-energy is your lifestyle likely to be. Evidence for this claim comes from a creative piece of research into the social impacts of policies to address climate change carried out by Dr. Eldin Fahmy and his team at the School for Policy Studies, Bristol University and supported by the Joseph Rowntree Foundation. The research indicates that it is those in high socio-economic groups are more responsible for CO_2 emissions. Using a dataset comprising 24,207 private households drawn from the Expenditure and Food Survey (EFS) for the period 2004–2007, with additional data imputed from the English House Condition Survey, the Annual Passenger Survey, and the National Travel Survey, the researchers analysed CO_2 emissions by income decile. The most striking finding of this preliminary report is that

'Mean average CO_2 emissions are strongly correlated with income: households within the highest equivalised income decile have mean total CO_2 emissions more than twice that of households within the lowest equivalised income decile. Emissions from private road travel and aviation account for a high proportion of this differential: aviation emissions of the highest income decile are more than six times that of the lowest income decile.'

The relationship between income and carbon emissions is illustrated in Figure 8.

Establish Ecological Enterprise Zones

In making the transition towards a green economy we have to begin by admitting that we have not so far found policies to achieve this transition or even initiate it. As indicated earlier, reductions in carbon emissions are more apparent than real, and are largely achieved through poor systems of accounting and off-shoring production. To achieve real progress towards a green economy we need policy-makers to be bold and experimental. To this end we would propose the introduction of a number of Ecological Enterprise Zones, in areas where the resources necessary for a sustainable economy to succeed are present, but which have not thrived in the competition for financial investment. These EEZs would be supported by government grants to become hot-houses for the innovation of green technologies and sustainable lifestyles. In return, they would be expected to achieve significant cuts in carbon emissions, resource usage, and levels of waste production. Government should enable local authorities in such areas to experiment with policy tools, such as carbon taxation and import and export duties. The aim would be for the EEZ to become a prototype of the self-reliant local economy that a green economy requires.

We propose these EEZs by analogy with the special enterprise zones that have emerged alongside globalisation. These havens for the corporations are permitted varied taxation rates and ecological conditions. Conversely Ecological Enterprise Zones would be permitted to vary taxation, perhaps introduce a carbon tax while setting standard corporation tax at a lower rate. In another EEZ a decision might be taken to maximise the carbon sequestration potential of land by introducing a land value tax and setting it at zero for forestry or organic farming. A third might introduce a tariff on goods coming into its zone in order to encourage local production. The over-arching idea is to allow experimentation with a range of fiscal and other incentives to facilitate innovative responses to the need to achieve a post-growth economy. It is important to make explicit that, unlike the Special Enterprise Zones that use WTO rules to make an exploitative bridgehead into vulnerable peripheral economies, these EEZs would place social and ecological benefit ahead of 'free' trade and would work directly against the influence of the WTO in the post-war period.

Target Transitional Investment

In an earlier section we saw the great variety of economic activity that has been funded under the banner of 'green stimulus'. For many firms the green economy has encouraged opportunistic behaviour without any serious commitment to sustainability. In most cases investment has been intended to encourage economic growth, while ignoring the necessity of accepting planetary limits. To ensure that investment is genuinely moving us towards sustainability I would propose we follow and develop the concept of 'transitional investment', defined in energy rather than financial terms. Investment can be justified as 'transitional' if, although requiring the use of more energy in the short-term, in the long run it would ensure greater well-being with the investment of less energy. By this definition the insulation of homes is clearly transitional investment, whereas the installation of a system of recharging points for electric vehicles would be much harder to justify.

Serious work needs to be done here, both in avoiding rebound effects (the increase in demand that is often caused when products begin to be produced in a more energy efficient way[15]) and in determining which sectors will really form part of a sustainable economy. We may begin this process by using a typology such as Crowley's (above), and by making what she defines as 'deep green' sectors our objective. We will need to concede that in some cases this will result in economic contraction rather than economic growth. In recent evidence to the Environmental Audit Committee's inquiry into Green Finance we have proposed that the Green Investment Bank should be required to include an Energy Return on Energy Invested measure to ensure that its investments meet the 'transitional investment' criterion.

Another important initial task to ensure that our infrastructural investments are energy-reducing in the long term is to assess the existing Standard Industrial Classifications in terms of their potential contribution to a post-growth economy. While this calls for a substantial piece of research (and one immune to industry lobbying) we can find some obvious candidates for contraction – in view of what was written above, perhaps especially the advertising industry. Once this designation of SIC codes in terms of the depth of their green hue were complete, we could assess our progress towards sustainability in terms of the relative contribution to our economic output from sectors of various shades of green.

Incentivise Ethically Sustainable Consumption

In the market economy, focused towards growth, the advertising industry has grown strong on the basis of selling dreams and manufacturing desires. Those desires have been met by grateful industrialists who welcomed the boost to aggregate demand. The aim of the consumption has not been to create well-being or satisfaction but rather to support an economy that needs to grow. In response to the recognition of a planetary limit we need to move towards a more consensual and less individualist approach to consumption. We need to understand how needs, satisfiers and goods are related, using the sort of model developed by Max-Neef, which enables us to meet human needs directly, in many cases without the need for energy-intensive production and consumption.[16] There is an urgent need for research to explore how citizens assess the value of their energy expenditure; such research could inform decisions about the introduction of a system of sales tax proportional to the energy content of various goods. Thus an energy-intensive but highly valued service like heart surgery would not attract such a tax, whereas activity such as multiple short-haul flights would attract the highest rates of taxation

The Opportunities of Low Growth

The impulse for Green House to launch the Post-Growth Project was the understanding that the hegemonic idea that has dominated post-war capitalism – that Growth is Good – is being challenged both by the ecological crisis and by the stubborn unwillingness of the economies of advanced industrialised economies to demonstrate sustained growth. While to a conventional economist this is a disaster, it is only so within the existing economic structure, and surely the planet at least is breathing a sigh of relief.

But to merely accept the unemployment and reduced living standards brought about by the end of growth within the existing economy would be callous and unjust. Rather we need to use the opportunity offered by the end of growth to rethink our economic priorities: to move away from quantity towards qualitative criteria of what constitutes success; and to substitute stability, sustainability and equality for the growth imperative. This report offers some suggestions as to first steps we might take along the path to achieving that.

Endnotes

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[1] Downloaded from http://www.dailymail.co.uk/home/books/article-1017464/Beauty-Brain.html
[2] 'Britain must ease off on austerity, IMF warns', 15 Oct. 2012: http://www.telegraph.co.uk/finance/economics/9608859/Britain-must-ease-off-on-austerity-IMF-warns.html
[3] The primary source is Wiedmann, T.; Wood, R.; Lenzen, M.; Minx, J.; Guan, D.; Barrett, J. *Development of an Embedded Carbon Emissions Indicator - Producing a Time Series of Input-Output Tables and Embedded Carbon Dioxide Emissions for the UK by Using a MRIO Data Optimisation System*, Stockholm Environment Institute, 2008, available at http://www.sei-international.org/publications?pid=831. For full details of how the data were derived please see the Green House gas at http://www.greenhousethinktank.org/files/greenhouse/admin/greenhouse_gases_gas.pdf.
[4] The full report can be found here: http://www.eea.europa.eu/data-and-maps/indicators/total-primary-energy-intensity/total-primary-energy-intensity-assessment-1. I am grateful to Benoit Lechat of the Green European Foundation for bringing this report to my attention.
[5] Both this and the following gushing tribute can be found by grief-stricken reporters at the *Guardian*: Julian Baggini, *'How Steve Jobs Changed Capitalism'*, http://www.guardian.co.uk/technology/2011/oct/06/steve-jobs-changed-capitalism?newsfeed=true and Jonathan Jones, *'How Steve Jobs Made the World More Beautiful'*, http://www.guardian.co.uk/technology/2011/oct/06/steve-jobs-world-more-beautiful (both published on 6 October 2011).
[6] See http://www.theguardian.com/technology/2011/oct/06/steve-jobs-world-more-beautiful.
[7] References for this section are as follows: Packard, V. (1957//1981), *The Hidden Persuaders* (Harmondsworth: Penguin); Tye, L. (2002), *The Father of Spin: Edward L. Bernays and the Birth of PR* (Greenwich, NY: Owl Books); Ewen, S. (2001), *Captains of Consciousness: Advertising and the Social Roots of the Consumer Culture* (New York: Basic Books); Stearns, P. N. (2006), *Consumerism in World History: The Global Transformation of Desire* (London: Routledge); De Botton, A. (2004) *Status Anxiety* (Harmondsworth: Penguin); de Grazia, V. (2005), *Irresistible Empire: America's Advance through Twentieth-Century Europe* (Cambridge, Mass. Harvard UP); Monopolies Commission (1951), *Report on the Supply of Electric Lamps* (London: Competition Commission), downloaded from the website 3 February 2012; Slade, G. (2006), *Made to Break: Technology and Obsolescence in America* (Cambridge, Mass.: Harvard UP); Street, S. (2008). *British National Cinema* (London: Taylor & Francis). Two films have also been particularly useful in developing ideas for this section: *The Light-Bulb Conspiracy* by Cosima Dannoritzer (http://www.imdb.com/title/tt1825163/) and Adam Curtis's series *The Century of the Self* (http://vimeo.com/24959321).
[8] *Lessons from the Implementation of the Republic of Korea's Green Stimulus*, World Bank, 2009: http://siteresources.worldbank.org/INTSDNET/Resources/5944695-

1247775731647/INFRA_Korea_Newsletter.pdf; *Global Green New Deal: An Update for the G20 Pittsburg Summit*: http://www.unep.ch/etb/publications/Green%20Economy/G%2020%20policy%20brief%20FINAL.pdf

[9] Yves de Saint Jacob, European Energy Review: http://www.europeanenergyreview.eu/site/pagina.php?id=623.

[10] Original Green New Deal report 2008: http://www.neweconomics.org/sites/neweconomics.org/files/A_Green_New_Deal_1.pdf

[11] Wuppertal Institute report on green economy: http://www.gef.eu/fileadmin/user_upload/GEF_GND_for_Europe_publication_web.pdf; on the point about the distinction between real and virtual economic product see Hugh Small: *'Solving the Productivity Puzzle'*: http://www.matureeconomy.org/?p=189.

[12] Crowley K. (2009) "Jobs & Environment: the Double Dividend of Ecological Modernization" *International Journal of Social Economics*, Vol 26, No. 7/8/9, pp. 1013-1026

[13] John Maynard Keynes,*'Economic Possibilities for our Grandchildren* (1930), Scanned from John Maynard Keynes, Essays in Persuasion, New York: W.W.Norton & Co., 1963, pp. 358-373. The essay is available in various places online including here: http://www.aspeninstitute.org/sites/default/files/content/upload/Intro_Session1.pdf

[14] The book, subtitled *'Land, Liberty and the Pursuit of Happiness'*, is published by Earthscan: http://www.routledge.com/books/details/9780415500821/

[15] See Horace Herring and Steve Sorrell (2009), *Energy Efficiency and Sustainable Consumption* (Houndsmill: Palgrave Macmillan).

[16] Max-Neef, M. (1987), *Human Scale Development*. Retrieved September 2010, from http://www.max-neef.cl/download/Max-neef_Human_Scale_development.pdf