



‘JOBS IN EVERY CONSTITUENCY’

THIS TIME IT MUST BE DIFFERENT 10 years after 2008 economic crisisⁱ

September 2018

Introduction

The Green New Deal group came together in 2007 because its members were all convinced that a huge economic downturn was imminent and that one answer to it would be a Green New Deal to fund green infrastructure that could help tackle climate change and generate, jobs and business and savings opportunities in every constituency. How to achieve this was detailed in our first report in 2008.ⁱⁱ

International cooperation and a global reflation of national economies prevented the 2008 financial crisis turning into another Great Depression. However, now new threats are on the horizon. These include global debt being higher than in 2008ⁱⁱⁱ; low interest rates meaning central banks have little room to manoeuvre in terms of rate cuts to counter a new serious downturn; and government debt being at levels that are making finance ministries wary of borrowing more. Perhaps most daunting is the international community being increasingly divided with trade wars, Brexit, the election of President Trump and the rise of populism making the prospect of a common approach, as was seen in 2008, very much harder to imagine. It is therefore crucial that policies to counteract the potential of another serious economic downturn in the near future must become a political priority for politicians and the politically active everywhere.

In the UK three things have changed since the publication of the first Green New Deal report in 2008 that strengthen our original arguments. Firstly, the Brexit vote has begun to force politicians to at least talk about policies that could help the ‘left behind’. Secondly, there is now much more discussion of the state’s role in improving the UK’s infrastructure. And, thirdly the use of quantitative easing (QE) by the government to, in effect, bail out the financial services sector has proved the possibility of the use of such programmes. We believe that if QE was instead used to fund a Green New Deal it could help provide an answer to the first question always raised about any proposal for large scale change, which is ‘how are we going to pay for it?’

To build on this, on the tenth anniversary of the collapse of Lehman Brothers on September 15th 2008 this report has three aims. It says why another serious down turn is on the cards

now. Then it explains why a green infrastructure programme could generate economic activity in every constituency to mitigate this whilst also helping address the threat posed by automation. Finally, and crucially, it explains how such a Green New Deal could be funded.

Its purpose is to try and get the major political parties to make this approach central to their manifestos at the next general election. The proposals made can, therefore, be used either during a snap election campaign or to constantly interject into the debate about overcoming the UK's worsening economic situation should the present Government remain in power until 2022, as the law permits.

We are aware that the fight against austerity will be central to public debate between now and the next election. Inevitably this will mean politicians will tend to concentrate on the country's social infrastructure, provided by spending on issues such as healthcare, social care and education. These, however, are not the sole basis of our well-being. The purpose of this report is to show how the Green New Deal approach can also reverse the adverse effects of austerity via the generation of jobs and economic activity in every constituency in the UK. This would be the inevitable and welcome result of implementing a massive, environmentally sustainable and low carbon physical infrastructure programme.

Arguments for the Green New Deal

A huge advantage of such a Green New Deal approach is its prioritisation of labour intensive sectors that are both difficult to automate and which contribute to the other key considerations of improving the UK's social and environmental sustainability.

Face to face services, such as health care, education and elderly social care of course attracts most public and political attention when considering such issues. Equally important in our opinion is a climate friendly infrastructure programme. These are also labour-intensive, and have to take place where the services are supplied, meaning local employment is a key aspect of their provision. Crucial to this will be our suggested plan to make the UK's 30 million buildings super-energy-efficient. This will dramatically reduce energy bills, fuel poverty and greenhouse gas emissions.

This, however, is not all we propose. We also suggest that:

- the housing crisis should be tackled by building affordable, highly insulated new homes, predominantly on brown field sites ;
- transport policy must concentrate on rebuilding local public transport links;
- our present road system should be properly maintained as its existing degradation is deeply inefficient and harmful;
- electric vehicles should be encouraged for personal use and sharing;
- recycled materials such as plastic waste should be used in as many programs as possible e.g. for resurfacing roads and filling life threatening potholes.

This massive work programme in energy and transport would tackle many existing problems in our society. As importantly, they would provide a secure career structure for decades and should deliver a significant numbers of apprenticeships and long-term jobs as well as increased opportunities for the self-employed and local small businesses.

In terms of funding sources for the up front costs of this massive infrastructure programme, which is likely to eventually run into more than £50 billion a year, these could include traditional government borrowing at present low interest rate, plus the use of 'Peoples Quantitative Easing', which exploits the ability of the government to create money out of thin air, which is only being used to date to save the financial services sector.. Additional finance could come from fairer taxes and the creation of savings opportunities in local authority bonds and green ISAs, not least to create intergenerational solidarity between savers (who tend to be from older generations) and younger people who would benefit from the jobs created.

SECTION ONE

Why Another Serious Downturn Is Inevitable

It hardly seems possible but ten years have elapsed since the collapse of a medium-sized US investment bank in September 2008 brought the world economy to the brink of disaster. Nobody understood it at the time, but when Lehman Brothers went to the wall, it was the start of a domino effect. Within a month, the global financial system had seized up, governments were stepping in to save their banks and the world economy was on course for the deepest recession since the Second World War. What started in the summer of 2007 with a French bank, BNP Paribas, closing a couple of hedge funds which had lost a packet in bets on the US sub prime mortgage market culminated in genuine fears of a return to the dark days of the 1930s.

The good news is that a second Great Depression was averted, because policy makers finally grasped the enormity of what was happening. They responded swiftly, decisively and together as the crisis spread from the banks to the rest of the economy. They needed to. During the winter of 2008-09, trade and industrial production were collapsing more quickly than they had during the Great Depression.

But the collaborative mood did not last for long. Europe and the US went their separate ways over austerity; the G20 failed to live up to its early promise and even before the arrival of Donald Trump in the White House, countries had quietly been finding ways to defend the interests of domestic producers. Trump has, of course, taken isolationism to a whole new level^{iv} by picking trade fights not only with China but with the EU, Canada and Mexico as well. In the current beggar-my-neighbour environment, the chances of the world coming together in the event of a new crisis appear slim. And another crisis is entirely possible.

Recovery from the last recession has been slow, stuttering and incomplete. The world is ill-prepared – economically, politically or socially – to withstand another shock of the sort provided by Lehman's.

It wouldn't be US sub-prime mortgages this time, it would be something else that would expose the fault lines in the global economy: China's debt-fuelled economy coming to grief, a global trade conflict triggered by Donald Trump's tariffs; a crisis rippling out of a country like Turkey into the rest of the emerging markets: a catastrophic series of climate-related events. Equally, it could be that even a gentle increase in interest rates will expose the fragile nature of the recovery by pricking the consumer debt bubble. The Bank for International Settlements, one of the few organisations to predict the last financial crisis, is warning that with stock markets at record levels and houses expensive it wouldn't take much to bring things to a head.

So it is reasonable to assume that another crisis is lurking out there somewhere, and that when it hits the destruction will be terrible to behold.

This is the lesson from history. It was not the hyperinflation of 1923 that led to the rise of Hitler; it was the mass unemployment that followed as a result of the Wall Street Crash. It was not the first oil shock of the mid-1970s that sounded the death knell for post-war social democracy; it was the second bout of inflation that resulted from the start of the Iran-Iraq war at the end of the decade. Similarly, hopes that the unprecedented stimulus provided by central banks since the autumn of 2008 will be enough to restore the global economy to rude good health will be dashed. The problems that caused the financial crisis have not been solved. It is not a question of when not if there will be another severe global downturn.

In many respects, the situation is worse now than it was a decade ago. Back then, central banks had the scope to cut interest rates aggressively when trouble arose.

At its August meeting in 2008, the Bank of England left interest rates unchanged at 5%, which meant it had plenty of scope to cut when it finally woke up to the seriousness of the situation. Even after August's rate rise official borrowing costs are only 0.75%, providing much less room for manoeuvre.

What's more, central banks had yet to wake up to the fact that they could support their economies through the electronic printing press. They had yet to embark on quantitative easing, which involves boosting the money supply by buying bonds from the private sector. In the UK, this has amounted to £435bn in the past nine years.

Government deficits and national debts were relatively low, so finance ministries were able to cut taxes and increase public spending to support activity.

In Britain, the budget deficit ^{vi} – the gap between what the government spends and what it receives in taxes – expanded rapidly during the crisis from 2% of gross domestic product to a peacetime record of 10% of GDP. It has taken 10 years to bring the deficit back to where it started and meanwhile national debt as a share of the economy has more than doubled to over 80% of GDP. Despite a prolonged austerity drive, set to continue well into the next decade, the public finances are in worse shape than they were when Lehman's went bust.

There is now very little conventional weaponry left in the arsenal. In the UK, Japan and the euro zone interest rates are at historically low levels. Only in the US have borrowing costs started to rise, and there only at a glacial pace. Despite savage austerity, the public finances of the leading industrial nations are in far worse shape than they were in the summer of 2007. Long since has quantitative easing been subject to the law of diminishing returns.

It would be nice to report that the deployment of all this monetary and fiscal firepower had done the trick, but it hasn't. The recovery from the recession of late 2008-09 is the weakest in living memory. Growth has not returned to pre-crisis levels. Businesses have hoarded profits rather than re-investing them in new plant and machinery. Productivity, which usually picks up sharply in the aftermath of recession, has remained flat – in part because companies have been able to tap into an unlimited global supply of cheap labour.

But that's by no means all. It was obvious to some of us during the boom years of the early 2000s that all was not well with the global economy. After the collapse of communism in the late 1980s, the market economy arrived in parts of the world where it had hitherto been off limits. This coincided with the victory in the developed world of capital over labour. It was also a time when (at least in the US and the UK) manufacturing was being replaced by finance at the heart of the economy. For a while, consumers were able to enjoy cheap goods from China and other emerging countries. But the cut-price imports meant inflation came down, allowing central banks to cut interest rates even when consumers were spending more than they were earning and when house prices were rocketing. The upshot was a colossal debt bubble. Low interest rates also meant that the returns on safe investments were poor, encouraging speculators to seek out riskier assets, such as US sub-prime mortgages.

It is equally obvious at the current juncture that nothing much has changed. Workers are still struggling to get a decent pay rise, with the result that personal consumer debt is rocketing. QE has not found its way into building new homes, schools, railways or hospitals: instead it has found its way into the asset markets, boosting the price of shares, houses and commodities. Studies have shown that the main beneficiaries of QE have been the better off. Finally, a long period of permanently low interest rates has encouraged another search for yield, investments that can only provide a higher return because they are riskier. Regulation has been tightened up on the big multi-national banks, but not on hedge funds and the rest of the shadow-banking sector.

Alarm bells have belatedly started to ring. Alex Brazier, an executive director at the Bank of England, warned last year of a looming “spiral of complacency” about excessive personal debt^{vii}. The fact is, however, that central banks including the Bank of England have encouraged the accumulation of personal debt through ultra-low interest rates and QE. If there is a spiral of complacency, then Threadneedle Street is very much part of it.

There is a worrying sense of déjà vu about all this. The Green New Deal Group was born out of the last crisis, and in particular what we saw as the lack of preparedness on the left for the events of 2007, 2008 and 2009. What we envisaged was that the collapse of the neo-liberal financial model would be the catalyst for the same sort of radical change that came about as a result of the collapse of Keynesianism in the mid-1970s, only this time with the alternative coming from the left rather than the right. Our starting point was that there was not one crisis to be tackled but three; a triple crunch that required the taming of finance, action against climate change and serious investment in green energy. Instead of the stimulus boosting share and house prices we wanted it to go into job-creation schemes that would cut carbon emissions.

The Green New Deal had its adherents but there was – to our regret – no lasting backlash against the failed policies that led to the crisis. Rather, those who were innocent – the poor and the weak – ended up paying the price via austerity for the mistakes of the rich and strong. The result is that the triple crunch has the potential to become a quadruple crunch: financial meltdown, global warming, too little investment in renewable energy, and profound political anger. The last crisis came at the end of a prolonged upswing, in which wages and living standards rose steadily. Britain went 16 years without a single quarter of falling output and in the latter part of this period, when Labour was in power, there was bountiful investment in the public sector.

Feast has been replaced by famine. Wage rises have turned into pay freezes; living standards have stagnated and the public sector bears the scars of a decade of cuts. Austerity fatigue has set in, making it nigh on impossible for governments to insist that voters endure a new round of sacrifices. The public mood is already sour.

So here's the position as we see it. The world had a near-death experience a decade ago and has never recovered. Stagnant wages, a lack of investment, flat-lining productivity, an ever-expanding debt bubble and excessive speculation are its economy legacy. Donald Trump's presidential victory and Brexit are its political legacy. The next crisis is getting closer all the time and when it arrives there needs to be a better plan than handing oodles of cheap money to Wall Street and the City. That idea didn't work last time and has even less chance of working next time. Our solution is simple and includes a different form of QE that creates well paid jobs and invests in a greener future. In the 1930s, it took the Great Depression, the rise of Hitler and the threat of a second war in a generation for the original New Deal to find its way into the political mainstream. It has always been our hope that it would not take a second deep recession to effect the same sort of change for our generation. Sadly, that does not appear to be the case.

SECTION TWO

How trends in the costs and availability of renewables in energy and transportation increase the feasibility of a Green New Deal

The impacts of climate change are now ominously clearer, but at the same time the clean energy revolution predicted ten years ago by the UK's Green New Deal Group and others is happening rapidly now.

The political response globally has mostly, despite President Trump, become more positive. When the G7 leaders agreed to push for a phase out of fossil fuels in June 2015, few suspected they could take the rest of the world with them.^{viii} But at the Paris climate summit six months later every independent nation on the planet agreed to join them. All 197 signatories of the treaty are now taking action, with more than 1,500 climate laws and policies in place.^{ix} These are not yet in sum enough to hit the Paris target, but governments have built a ratchet – a mechanism for racking up targets in the years ahead – into their agreement.

This has been made easier to achieve by the huge cost reductions and increases in availability of renewables, particularly solar, battery storage and wind in recent years. The International Renewable Energy Agency reports that renewable electricity prices will be consistently undercutting fossil fuel electricity by 2020. x Solar energy was the biggest single sector for new global electrical power capacity additions in 2016 and 2017.^{xi}

The potential for a growing UK green energy economy, and increasing jobs is significant, as other countries and cities have shown. All China's new electricity demand in 2015 was met with wind and solar.^{xii} In 2016, almost 90 per cent of new power in Europe came from renewables.^{xiii} In 2017, wind supplied a record 43.6 per cent of Denmark's electricity, with no grid problems. Denmark is targeting 50 per cent wind by 2020, with a further 30 per cent from solar, biomass and other renewables.^{xiv}

43 cities worldwide are already entirely powered by clean energy, and hundreds more intend to reach that target. 101 sourced at least 70% of their electricity from renewable in 2017. xv Much of the drive for climate action at city level in the past year has been spurred on by the global covenant of more than 7,400 mayors that formed in response to Donald Trump's decision to withdraw from the Paris accord.^{xvi} Large urban centres as disparate as Auckland, Nairobi, Oslo and Brasília are successfully moving away from fossil fuels. In Britain, 14 more cities and towns have signed up to the 'UK 100' local government network's target of 100% clean energy by 2050, bringing the total to 84. Among the recent local authority recruits are Liverpool City Region, Barking and Dagenham, Bristol, Bury, Peterborough, Redcar and Cleveland.^{xvii}

Moreover, 122 giant companies have now committed to 100 per cent renewable powering of their operations; and these "RE 100" targets have already procured renewable electricity on such a scale that, were they a nation, they would be a bigger consumer than Poland, and 24th in the world.^{xviii} One of them, Google, reached 100% renewables on 4th April 2018, despite the demand created by a host of energy-intensive data centres.^{xix} Apple joined them on 10th April.^{xx} Facebook, Citigroup and IKEA have set a deadline of 2020 for using renewable energy to cover 100 per cent of their electricity use.^{xxi}

In America, the first coal plant has been shut down to be replaced by solar simply because the cost of building new solar is lower than the cost of continuing to operate coal.^{xxii} Wind, solar, and storage companies are "recruiting coal miners for their work ethics & high-tech skills".^{xxiii} The workforce increasingly reflects the big switch underway. In 2017, 475,000 Americans were employed in the US solar and wind industries, more than in oil and gas, and many more than in coal.^{xxiv}

But the revolution isn't just about renewables. Battery and electric vehicle costs are tumbling, and sales soaring too.^{xxv} Germany has just fitted its 100,000th grid-connected home battery system, to add to the one million German homes with their own solar PV systems.^{xxvi} Solar and batteries, when deployed in harness, are already beating natural gas in some places, including California and Arizona.^{xxvii}

In 2017, global solar capacity grew faster than all fossil fuels and nuclear combined for the first time.^{xxviii} Renewable electricity is projected to be consistently undercutting fossil fuels by 2020^{xxix} and to be the cheapest form of power in almost every country by that year.^{xxx}

The UK is on track to phase-out coal by 2025 without the need for any new large gas plants, as offshore wind will provide most of the growth from 2017 to 2025.^{xxxi} The National Grid Future Energy Scenarios have shown that solar could be UK's 'dominant' source of power by 2030.^{xxxii} The UK's first ever National Infrastructure Assessment considered that at least half of UK power should be renewable by 2030 and at no extra cost.^{xxxiii}

Of course, none of this is to say that the global energy transition is going fast enough. The enormity of the climate-change threat means that we must go much faster. Renewables must be scaled up at least six times faster to meet the Paris Agreement target.^{xxxiv} Indeed renewables and energy efficiency can provide around 90% of cuts in energy-related CO2 emissions required.^{xxxv}

Given all these considerations, vast new opportunities are emerging for job creation as green energy industries tend to be more job-rich than other forms of energy production. Globally, more than 10 million people now work in renewables for the first time, with 3.4 million in solar alone.^{xxxvi} There were 500,000 new jobs in 2017, up 5.3%, with the potential for 28 million by 2050 if the global energy system is decarbonised.^{xxxvii}

In the UK 126,000 people were employed in renewable heat, power, and transport in 2015/16. This was a 2.5% increase in jobs compared to 2014/15. In addition there were over 16,000 jobs in electric vehicles and energy storage. The UK renewable energy industry is worth £17.4bn. However renewable energy jobs growth could have been greater without the "bonfire of the policies" which started in 2015. As a result jobs growth has significantly slowed from the nearly 9% of two years ago. All of which makes it extraordinary that the UK government has chosen to withdraw market support for the domestic solar industry, and for on-shore wind, now the cheapest form of new power plant.^{xxxviii}

The number of companies operating in renewable energy has fallen by 5%, largely due to a significant contraction in the solar PV market (turnover in which has fallen to 2011/12 levels).^{xxxix} The decline in the UK was the largest in the world, while the likes of China (up 24 per cent), Spain (up 36 per cent), Canada (up 45 per cent) and the Netherlands (up 30 per cent) enjoyed strong growth.^{xl}

While renewable electricity, heat and transport just about remain on track to meet the UK's '15% of renewable energy by 2020' target, the Renewables Energy Association states that "the UK's growth trajectory to meet this ambition for the next 4 years remains very steep and continues to be one of the highest of any EU member state".^{xli}

The UK is a laggard in this as in much else to do with the energy transition. The government's priorities are currently almost exactly the reverse of what is needed. Rather than investing in the relatively job-rich, money-making, money-saving industries of the

future, they are favouring the relatively job-poor, money-losing, money-wasting industries of the past. Other countries are doing a far better job of trying to act in the manner needed. The UK government needs to reverse course, admit it has got energy wrong, copy best practice overseas and then shoot for leadership by accelerating faster than others. That is what the UK economy, and the global environment, needs.

SECTION THREE

A Green New Deal Programme of 'Jobs In Every Constituency'

To return a sense of hope for the future and economic security for the majority, the government and all political parties needs urgently to consider embracing a 'jobs in every constituency' Green New Deal infrastructure programme.

There are only really two major labour intensive sources of local jobs: face-to-face caring in the public and private sector infrastructure provision and improvement. The Green New Deal group has focused on the latter. In the process it has stressed the importance of prioritising energy efficiency and the increased use of renewables in constructing and refurbishing every UK building. This programme would cover schools, hospitals and housing in the public and private sector, as well as offices, warehouses and factories. In transport, which is another form of infrastructure investment, the emphasis would be on increased provision of interconnected road and rail services in every community; encouraging electric vehicle usage; and proper care and maintenance programmes, which are themselves environmentally sound by preserving assets and because of their capacity to use recycled materials such as plastic waste in road resurfacing and to tackle the dangerously under resourced area of mending life threatening potholes.^{xliii}

Aside from the obvious advantages from such a large scale infrastructure programme for improving social conditions and protecting the environment, other gains arise from the fact that it will be hard to automate such work and these jobs cannot be relocated abroad.

The Green New Deal programme also has two very politically attractive effects. The majority of this work has to be done locally. As a result the programme will take place in every constituency, town, city, village and hamlet in the UK. Secondly, such is the extent of the demand for reform it will require a wide range of activities and skills to be involved in projects, and these projects are likely to last for decades. The result is that the programme would inevitably help improve job opportunities for the 'left behind' communities in the UK, with resultant knock on benefits for all in the communities where they live and work.

Reducing energy use in every constituency

'The most environmentally friendly form of energy is always the energy you don't use in the first place'

Andrew Warren, chairman of the British Energy Efficiency Federation^{xliii}

The UK's energy statistics for 2017 showed that the proportion of electricity delivered from renewable sources now stood at an unprecedented 30 per cent. The proportion is still climbing, The other welcome news is that the overall amount of fuel we consume is continuing to fall. Primary energy consumption in the UK has now fallen by 19 per cent since the start of the century and we are now using less electricity than we were in the mid 1990s.

These savings have been made mostly in the buildings sector, which is now responsible for 43 per cent of current energy usage. Housing is responsible for almost 28 per cent of total consumption. Of this much is gas: there is well over three times as much gas used in the average home as there is electricity. The good news is that gas consumption has fallen by nearly one-third since 2005. This is largely due to the replacement of old, malfunctioning, boilers with more efficient condensing ones. Despite this forty per cent of boilers in use are out of date and inefficient. Replacing them will cut gas usage even more.

However as Andrew Warren, chairman of the British Energy Efficiency Federation has perceptively observed: 'the most environmentally friendly form of energy is always the energy you don't use in the first place'. In this context the policies of the Government since 2010 have been counter-productive. For example, home insulation programmes have largely disappeared: the Committee on Climate Change has recorded a 95 per cent drop in insulation installations in the UK since 2012^{xliiv}. Although at present 83 per cent of homes have some double glazing and 69 per cent of homes with cavity walls have had those insulated, whilst 68 per cent of homes have 125mm or more of insulation placed in their lofts, there is still a long way to go to create energy efficient homes. Improving on these figures will require that future effort need to also focus on those homes with solid walls, since less than nine percent of these have ever been insulated, leaving a further eight million still without any effective insulation at all^{xliv}. Systematically helping those occupiers will generate jobs in every constituency and so drive down gas consumption still further.

With regards to electricity, almost three-quarters of usage in homes comes from appliances and lighting. There have been enormous improvements in these areas, practically all driven by the European Union. These have focused on the minimum energy standards required for most white and brown consumer goods. Again, this is a key reason why, despite the increase in electronic gadgets, overall electricity consumption in homes has kept falling. Further progress is, however, required. The use of effective smart meters in every home could also further reduce demand for both electricity and gas.

The government's smart metering programme is targeting a roll out of 50 million smart or advanced meters to domestic properties and smaller non-domestic sites by 2020, and so far

over 11 million smart meters have already been installed.^{xlvi} This, however means that nearly 40 million meters still need to be installed, which is a substantial nationwide work programme.

Transport is responsible for 40 per cent of energy usage. 73 per cent of this comes from motor vehicles, but just two per cent each for rail and water transport. In contrast, an ever-growing proportion (now 24 per cent) is due to air travel. Ninety per cent of this is down to international flights, with just five per cent each for domestic flights and flights for military purposes.

Transport's overall consumption has fallen by 7.2 per cent since 2000. This is due to significant improvements in car mileage per gallon, largely due to the swing away from petrol towards diesel fuels over this period. However the use of the latter is now likely to fall substantially due to new appreciation of the health threatening air pollution that it causes.

Critically, around two-thirds of transport energy usage is for personal rather than business travel. Despite this the crucial and necessary shift to electric vehicles in this sector has so far been insignificant in scale, with these vehicles making up less than 0.03% of the transport sectors energy use.^{xlvii} This will, then, require serious innovation. The funding of scrappage schemes and the provision of electric chargers so that they become more common than telephone poles is key to this: the latter would, once again, create jobs in every constituency.

Disappointingly, there has been a complete absence of any purposeful strategy for energy saving from the UK government since 2015. This coupled with the abolition of its Energy Efficiency Deployment Office, has meant that there are now few new initiative in the pipeline to ensure that the trend in energy consumption continues to fall. This is despite, as the International Energy Agency endlessly repeats, the fact that energy efficiency should be everyone's number one policy priority^{xlviii}.

The Green New Deal on the ground

An example of the scope for such work has been detailed by the Green New Deal group^{xlix}. We have emphasised the need to work towards making the UK's 30 million buildings super-energy-efficient, and, where feasible, fitted with solar photovoltaic panels to create generation capacity. The scope of this energy efficiency initiative would be huge, given that there are around 28 million dwellingsⁱ and 2 million commercial and public sector buildings in the UK.ⁱⁱ It has been estimated that nearly £500bn of investment in new low-carbon infrastructure is required over the next 10 years to transform the UK economy, of which £230bn will be required for energy efficiency alone.ⁱⁱⁱ This money could be used to fund a realistically timetabled, carefully costed, and hence non-inflationary, nationwide initiative to train and employ a fairly paid 'carbon army' to work on this nationwide infrastructure programme.

These measures would dramatically reduce energy bills, fuel poverty and greenhouse gas emissions. The programme would also help tackle the housing crisis by building affordable, highly insulated new homes, predominantly on brown field sites.

A new emphasis on prioritising infrastructure

“There are 19 million homes in the UK with needlessly poor levels of energy performance (below a C rating). Up to a quarter of the energy consumed in homes could be saved cost-effectively, with the technical potential for energy use in homes to be cut in half. Despite this, the level of funding for energy efficiency measures has been cut by 50% since 2012 and the number of major insulation and efficient heating measures being installed has crashed by 95%. The Energy Efficiency Infrastructure group, a business-led alliance, is calling on the Government to reverse that fall and to make buildings’ energy performance a capital infrastructure investment priority.”^{lviii}

The Energy Efficiency Infrastructure Group

The Energy Efficiency Infrastructure Group^{lv}, a business-led alliance, is developing comprehensive proposals for a residential and non-residential buildings energy infrastructure programme encompassing energy efficiency and heat decarbonisation. It claims that its proposals have been successfully reflected in the government’s overall ambition for home energy efficiency in the UK’s 2017 Clean Growth Strategy^{lv}, as well as in the priority given to energy efficiency in the National Infrastructure Commission’s 2017 interim infrastructure assessment.^{lvi}

However in reality there is a big gap between what the Government says it intends to do as compared with its actual achievements on the ground. The Committee on Climate Change’s response^{lvii} to the UK’s 2017 Clean Growth Strategy found that whilst the Government has made a strong commitment to achieving the UK’s climate change targets the policies and proposals set out would need to be enhanced considerably and therefore the risks of under-delivery must be addressed if carbon budgets were to be met on time.

Transport jobs in every constituency.

Energy efficiency in the transport sector demands a programme to transform and improve roads and to increase rail, bus and electric vehicle use. Just as is the case with energy efficiency in buildings, this would result in jobs being created in every constituency in the UK. This because the UK road network consists of around 30,000 miles of main roads, over 2,000 miles of motorways and over 200, 000 miles of other paved roads. The [National Rail](#) network covers over 10,000 miles and [urban rail networks](#) exist in [Belfast](#), Birmingham, Cardiff, Edinburgh, [Glasgow](#), [Leeds](#), Liverpool, London and [Manchester](#).^{lviii}

Improving local transport

Big transport projects such as HS2 are the focus of attention from the public, media and decision-makers. However, these are very expensive, threaten huge cost overruns and can take a long time to deliver. They are also of questionable desirability. Their adverse environmental effects frequently result in widespread opposition in the localities affected by them.

In contrast it has been shown that packages of small and relatively cheap transport improvement measures, which can be implemented reasonably quickly, can significantly help local economies. They obviously tackle traffic congestion and improve choices for transport users, but also have wider economic benefits too, notably in helping people into work and in contributing to regeneration and local economic development.

A large scale country wide programme of small scale transport measures would require a combination of programmes. Capital spending on infrastructure projects, such as new rail stations, park and ride facilities, bus priority and cycle lanes, would get the process going. Revenue spending on programmes such as marketing or start-up subsidies for bus and rail services, bus service improvements, car clubs and bike hire schemes would also be transformational. Targeted fare reductions, cycle training, travel planning at schools, workplaces and stations, and personal travel advice are also key.^{lix}

However, these smaller scale transport projects tend to be overlooked by policy-makers and the wider public who tend to focus on big infrastructure projects. Changes in regulations that could improve the availability and safety of such local transport systems include local or regional authorities ensuring that all settlements without rail stations are connected by bus to the rail network. They might also require that any development that encourages a large number of journeys should be accessible by a wide range of public transport. Car-free developments should be encouraged wherever feasible, and public transport would be made accessible to all members of the public, including disabled people.

In rural areas, apart from trunk roads, the maximum speed limit should be 40mph, with local communities encouraged to set lower limits on country lanes where pedestrians and cyclists are vulnerable.

Public transport in rural areas should be designed to meet the needs of those living in those areas, including by providing various forms of trip sharing and community transport provision, including post buses and taxis, especially in the more remote areas where a reliance on the provision of frequent bus services may be environmentally damaging and too expensive. Even regular bus services in rural areas will be under threat as cash-strapped local authorities withdraw subsidies, unless action is taken to protect them.

Traffic calming with 20mph limit in built-up areas, including villages, should be introduced.

Residential streets should be re-designed with resident involvement, to allow them to be used as outdoor living spaces. This could be by increasing pedestrian space, or by limiting vehicle speeds to 10mph, for example. This would make streets more inviting to pedestrians

and cyclists by giving them priority. On major roads outside built-up areas, the speed limit should be 55mph to maximise the efficiency of fuel use as well as improving safety.^{lx}

Large scale transport projects can be made to benefit local economies

Plans for the North of England

Transport for the North (TfN) has stated that investing between £60bn and £70bn in the north of England's antiquated road and rail network between 2020 and 2050 could add almost £100bn in real terms of economic benefit to the UK by 2050, along with 850,000 new jobs. It has identified several "strategic corridors" for investment. For example, the proposed Northern Powerhouse Rail – a fast line between Bradford, Leeds, Manchester and Liverpool would allow 1.3 million people in the north of England to reach four cities in less than an hour, adding billions of pounds to the local economy.^{lxi}

Reducing transport emissions

In addition to improving the network to serve more people efficiently and with greater personal convenience, serious and urgent measures need to be taken by national government and local authorities to reduce local transport emissions to help improve air quality. Outdoor air pollution is thought to contribute to about 40,000 early deaths a year in the UK^{lxii}. Much of this air pollution is from transport.^{lxiii}

Measures required to tackle this would include retirement of older, more polluting diesel buses, taxis and delivery trucks, as well as bus retrofitting to make them cleaner, and the purchase of less polluting vehicles. The Government should fund targeted local car scrappage schemes to get the most polluting vehicles off the road and in the interim introduce higher parking charges and permits for high emission diesel cars. Emissions conditions when licencing taxis is crucial, as is promoting freight consolidation centres to enable the use of electric vehicles for last mile delivery.^{lxiv}

Potholes in every constituency

Filling potholes is the classic example of a 'shovel ready' programme that can be implemented almost immediately, relatively cheaply, and can employ local workers with a range of skills and expertise.

It is estimated that 2.2 million potholes have been repaired in the year to March 2018 at a total cost of nearly £120 million. Contributing factors to this are old surfacing, challenging weather patterns, heavy usage and a general lack of investment.^{lxv}

In June 2018, a debate about potholes and road maintenance in parliament revealed the cross-party concerns of MPs. The full restoration of local roads to an acceptable quality, they warned, will now cost an estimated £9.3bn and will take 14 years. One in five of Britain's local roads are now in a poor condition because of potholes, and likely to become unusable

in the next five years if not repaired. Decades of under-investment by government is the main problem, as is highway authorities' reliance on private contractors always looking at bottom lines when doing maintenance work.

The government's pothole action fund, which has a total of £296m to spend between 2016 and 2021, is allocated to councils according to the size of their road network. After unusually poor winter weather, this help was boosted by £100m at the end of March 2018 (a figure described by the Local Government Association as "just over 1 per cent of what is needed")^{lxvi}.

Drivers aren't the only ones suffering from inadequately repaired roads; the number of cyclists killed or injured on poorly maintained roads has tripled in a decade. At least 390 cyclists were killed or seriously hurt between 2007 and 2016 because of potholes. In one case the coroner warned that the relaxed national guidelines regarding pothole repairs could lead to more cyclists being killed.^{lxvii}

Recycled plastic used in new road surfaces and filling potholes

Partially "plastic" roads are being introduced around Cumbria following a successful trial by the county council. The authority was the first in England to incorporate a plastic-based material made from recycled waste into the standard asphalt used in the recent £200,000 resurfacing of the A7 in Carlisle and in the filling in of potholes.^{lxviii} For the A7 works, the recycled plastic material used was calculated as the equivalent of off-setting 500,000 plastic bottles and more than 800,000 one-use plastic carrier bags. The council said it was "very pleased" with the results and would be rolling it out in a number of other locations^{lxix} This is a programme that needs to be extended.

Government failures

To achieve the massive job creating and low carbon programme will require much more than the present Government's recently released plans for 'A Green Future: Our 25 Year Plan to Improve the Environment'.^{lxx} This plan has been criticised because although it made the right noises about how our environment could be protected in the coming years, it made no solid commitments to new law and it lacked any detail about how the Government would enforce environment laws should we leave the EU.^{lxxi}

Indeed the reality is that a number of the Government's recent announcements since the 25 Year Plan was launched will actually increase carbon emissions. These include:

- Announcing that the drilling of shale wells in England will be considered permitted development, meaning no planning application is required and fracking sites could be classed as nationally significant infrastructure, meaning approval would come at a national rather than a local level^{lxxii},

- Rejecting the plan for the £1.3bn tidal lagoon in Swansea claiming the project is too expensive,^{lxxiii} whereas it could have generated jobs and prioritised the use of UK steel.^{lxxiv}

Add to this that before the announcement of the government's 25 Year Plan:

- The government cut subsidies to householders installing rooftop solar panels by 65% with a projected loss of almost 17,000 jobs, just days after agreeing to move swiftly to a low-carbon energy future at the climate change conference in Paris.^{lxxv} In the two months after this announcement the amount of household solar power capacity installed plummeted by three quarters.^{lxxvi}
- The 2017 budget announced that there will be no new support for feed-in tariffs to support small-scale take-up of renewable energy generation until at least 2025;
- £227m was spent during 2017 on independent renewable energy projects, a fall of almost 20 per cent from the £280m spent in 2016, and down more than 45 per cent from the peak of £418m invested in 2014.
- In the same year and the government closed the Renewable Obligation Scheme to new projects. This scheme encouraged renewable energy generation by forcing energy suppliers to source a proportion of their electricity from renewable sources.^{lxxvii}
- In 2015 the Zero Carbon Homes policy was scrapped, which would have ensured that all new dwellings from 2016 would generate as much energy on-site, through renewable sources, such as wind or solar power, as they would use in heating, hot water, lighting and ventilation. This would have been supported by tighter energy efficiency standards that would have come into force in 2016.^{lxxviii}
- In 2015 the 'wanton abolition' of the Energy Efficiency Deployment Office, charged with making the strategic case for energy efficiency investment within government has meant that since there have been few new initiatives^{lxxix}.

The reality is that the government needs to move away from making a few steps forward with rhetorical flourishes about future intentions whilst in practical terms taking many steps backward through the introduction of measures that reduce the potential for low carbon initiatives.

A change in direction for government

A Green New Deal Infrastructure Plan for Jobs in Every Constituency

The first step if a Green New Deal was to be adopted would be for the government to make public its plan for dealing with any future global economic downturn whilst also meeting the UK's obligations under the Paris Agreement to curb carbon emissions.

The second such step would be for the government to say how it is planned to generate jobs in every constituency in the UK using the ideas inherent in the Green New Deal.

To do this would require consultation with local government, businesses and communities on what such a programme should look like on the ground.

Once this is agreed upon, there would be a need for a massive training programme to provide the 'carbon army' of workers needed to bring about a low-carbon future. To reduce carbon use dramatically will require a range of expertise, not all of which is available now. This training programme will, in itself be a major generator of new employment.

A carbon finance sector would also be needed to publicise, advise and put into practice the range of funding packages inherent in the Green New Deal programme. The skills of the UK's financial services sector need to be refocused on this task.

But if all this could be done every constituency in the UK will see more jobs being created. In addition thousands of new and existing businesses and services will benefit, and a large increase in tax revenue will be generated from this new and nationwide economic activity.

As a result the Green New Deal should not only inform and influence the debate on a new direction for a more regionally balanced future for the UK economy, but in the run up to the next election this approach should be made a central plank of parties' manifestos, which would in turn inevitably influence its result.

Summary of the GND spending proposals

Project objective	Who has prepared the estimate of cost	Total estimated cost £'bn	Number of years over which expenditure will be incurred	Likely annual cost £'bn	Likely benefit
Energy efficiency	E3G ^{lxxx}	230	10	23	Creating a sustainable UK
Other low carbon infrastructure	E3G ^{lxxxi}	270	10	27	
Carbon neutral house building	Green New Deal estimate ^{lxxxii}			60	300,000 ^{lxxxiii} houses at £200,000 each a year
Improving local transport links	Green New Deal estimate and Transport for the North ^{lxxxiv} – estimate tripled for the whole country			6	Creating a sustainable transport system
Local road repairs and pot hole fixing	Green New Deal estimates based on data in this report	6.5	10	0.7	
Total possible annual spend				117	

The projects suggested are, of course, only suggestions. And as is clear, there is a great deal to do. Choices would still have to be made when establishing the priorities for the Green New Deal. The issue is not a shortage of demand or ideas: the issue is a shortage of willing to deliver what is necessary and desirable.

SECTION FOUR

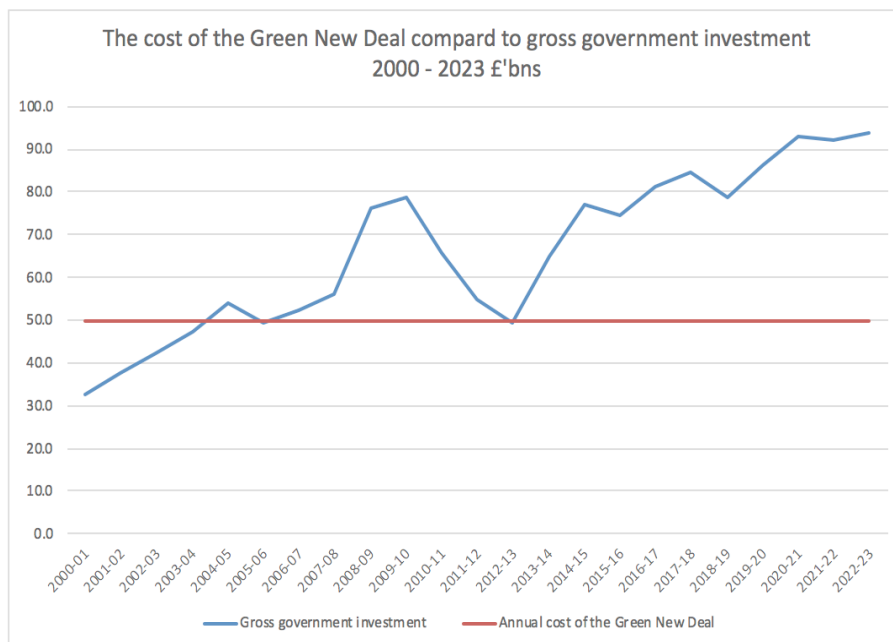
Paying for the Green New Deal

The Green New Deal promises to transform the UK economy with a policy based on the creation of environmental sustainability that creates jobs in every constituency within the UK. There is no other economic programme that anyone is offering for the UK with greater ambition than that. Such economic transformation is, however, based on a programme of investment, as outlined in this report, and such programmes have a cost. In that case those proposing the Green New Deal have thought it appropriate explain how that funding will be raised.

The cost of the Green New Deal

It is estimated that delivery of the Green New Deal will cost approximately £50bn per annum for a period of at least a decade, or at least £500 billion in total. To put this sum in context, total UK annual income now exceeds £2,000 billion per annum and government expenditure amounts to more than £800 billion a year. The Green New Deal will, then, cost about 2.5% of the UK annual income a year and if entirely funded by the UK government would increase its expenditure by more than 6% a year. To provide further context, the average sum (in 2017-18 prices) expended on investment in all assets, from transport to housing, roads schools, and so on, by the UK government per annum over the last 18 years has been £59.9bn per annum, but this sum has varied considerably over time and is on a rising trend, which is currently forecast to continue:

Figure 1



Source: HM Treasury data, authors' calculations

There should, then, be no doubt that what the Green New Deal is proposing is significant, but given that at least part of it refocuses existing policy it is within the boundaries of possibility.

Background to funding the Green New Deal

It is important when discussing how spending of this sum is funded that some basic principles be understood. The first is that there is no prospect of this sum being expended if the resources to expend it upon are not available. In other words, there is no chance of the Green New Deal happening if there aren't the resources available within the economy to be put to use to achieve it. In our opinion those resources exist. That is because, despite the government's claim that the UK economy is at or near full employment, this is not true^{lxxxv}. This claim is mainly supported by the growth in the number of self-employed people working in the UK. It is also supported by an assumption that the UK economy needs between 4 and 5% unemployed people to prevent inflation. The reality that is for long periods in the 1950s and 1960s unemployment was as low as 2% and there is no reason why this could not be the new normal again. If it was, and people shifted from unproductive self-employments with marginal income to full time employments in the Green New Deal, productivity would increase considerably and so all the resources required to deliver the required transformation of our economy could be found within the UK labour force.

We argue then that there is a whole army of people who would, no doubt, love to have regular employment in which they had long-term prospects with a good chance of earning a living wage, or more. This is what the Green New Deal offers.

Second, we suggest that if tens of thousands of people across the UK were offered such employment a number of things would happen. Skills would improve for a start. Confidence would rise as well. But most importantly, so too would those people's incomes. And as a result many of them would pay substantially more tax. What it more, because they would spend what they earn (because most people on median income or less spend the vast majority of their pay) these people earning more would not just result in more tax being paid, it would also provide a boost into the local economies where those new Green New Deal employees would be working. And that would mean others would earn more. And the increased demand would also mean that more jobs, beyond the Green New Deal, would be created. This is what an economist calls the multiplier effect.

On average a person in the UK pays more than a third of their income in tax, overall. This is true whatever their level of income, unless they are in the top 1% or so of income earners, when the overall rate paid may well be lower. This is because some in that group are likely to be taxed at lower rates because part of their income is in the form of company profits, or it is considered to be capital gains. The Green New Deal will not be employing many people in that situation. But what that means we can say, with some confidence, is that maybe one

third of the cost of the Green New Deal will be paid for out of the taxes paid by those working for it. What is more, because many of those working on the Green New Deal will enhance their skills by doing so it is likely that they will see their incomes rise as a result, and so they are likely to claim fewer benefits. In combination we can confidently suggest that whilst not all the costs of the Green New Deal will be incurred on labour, up to one third of the cost of the Green New Deal will be paid for out of the taxes of those engaged to work on it.

Most of the work to be undertaken by the Green New Deal is on investment for the future. This is important to state, because what we know about government funded investment is that it has what is called a very high multiplier effect. There is much technical and academic debate on the size of these multiplier effects^{lxxxvi}. The evidence is that direct spending has higher multiplier effects than tax cuts if a stimulus is required; that multiplier effects are (unsurprisingly) bigger when there is less than full employment than when the economy is booming, and that in situations of less than full employment when the government spends £1 on investment then the national income goes up by at least that amount, and the same sum again i.e. the multiplier effect may be at least 2, and could be higher¹. We use the lower figure. In that case the economy will grow in total by twice the amount spent, and if 35% or so of this is paid in tax then about 70% of cost of the Green New Deal will be recovered from additional taxes paid as a result of the additional income that it will generate in the economy.

In this case as much as £35 billion of additional tax could be generated in the UK as a result of spending £50 billion on the Green New Deal, assuming that there are enough people willing and able within the UK economy to undertake the work. That leaves just £15 billion to find. However, given that growth takes a little while to kick in, let's assume that for the first couple of years it may be higher, and be at least £30 billion a year. How might this be paid for?

The Green New Deal group has now, as it has always had, a range of suggestions to raise these funds. We are not prescriptive as to which should be chosen. We think it our job to make clear to politicians who will have to make that choice that they have such options available to them.

Deficit funding

The first such option is to simply run a deficit. There is nothing that says a government should not do so, The UK has almost continually run government deficits since 1694, when the national debt was first established. It has done so for good reason. All the money that exists in the UK was ultimately created by the UK government, and its promise to pay that is still written on bank notes. That promise now means that the government guarantees that it will accept the money it creates in payment of taxes owing. This is essential to our well-being. Making that promise gives money its value and makes our modern economy possible.

¹ For a longer discussion see here <https://touchstoneblog.org.uk/2017/07/why-multipliers-matter/>

But it also, necessarily means that spending has to precede the payment of tax: the government has to create the money that will be used to pay tax by spending it into existence before anyone can pay their taxes that are owing. As a result, and inevitably, any government that wants to have its own currency has to run a deficit most of the time. That's as much a fact as night following day. And since economies that are growing, either because of real growth of the type the Green New Deal would create, or that are growing because of even the modest inflation that is good for most economies, require a continual supply of new money it follows that in a modern economy deficits are required most of the time because that is the way a government spends into existence the new money that an economy needs to keep it functioning. The Green New Deal could then be funded by running a deficit and borrowing the funds in question.

There will be four ways in which such a deficit can be funded. The first way is that the government could simply run an interest free overdraft with its own bank, which is the Bank of England. This is illegal under present EU law but if we leave it could become an option. It may be that no UK government would want to do this, but it is a possibility, nonetheless that has to be acknowledged.

Second, the government could issue conventional government bonds to cover this deficit. There would be no problem in raising those funds from borrowing. On average at present, when the UK government puts debt on sale (which it usually does every week) the amount available is several times over-subscribed. To put this another way, there are many more people wanting to buy government debt than there is debt available to sell. This is despite the fact that the interest rate the government pays is currently less than the UK inflation rate. What this means is that people do now, in effect, pay the government to provide a secure place to deposit their money. But this is not surprising. A government bond is, in effect, little more than a fixed term deposit account that you can happen to swap into someone else's name during the course of its life. It says something about people's perception of the limited opportunities for saving with banks and other financial institutions that they will effectively pay the government to save.

Third, it would be possible to issue more specific bonds to cover the deficit spending. These might come in one of two broad types. The first, which appears to have quite widespread support, would involve the creation of a government owned National Investment Bank that would then issue bonds to cover the cost of investment in socially and environmentally valuable projects, of which we hope the largest would be the Green New Deal. Alternatively, devolved governments, authorities with mayors, county councils' health trusts and other bodies could issue the bonds to fund development in their areas so long as a revenue sharing mechanism was available to compensate them for the costs of interest (which would be low) and eventually capital repayment (which might be at least 30 or more years in the future). These revenue streams would come from rents of infrastructure and equipment or a share in the benefit of energy saving as a result of smart metering assessing the benefits, for example. The Green New Deal is not intended to be a money sink: it is intended to create new infrastructure that generates a financial, return and simultaneously creates employment and a more sustainable economy.

Last, the debt issued by the government, a National Investment Bank or other authorities, might be bought back by the Bank of England in exactly the same fashion as it has bought £435 billion of government issued bonds under its quantitative easing programme over the last decade. This QE programme has been deployed to increase the funding available to the banking and finance sector to date but there is no technical reason at all why it could not be used to fund the Green New Deal. It is, however, stressed that the need for this may not arise precisely because it seems likely that the public's appetite for buying government backed bonds is unlikely to be quenched any time soon.

Additional taxation

It should also be said that a government need not deficit fund the Green New Deal. It could, if it wished, cover the cost with taxes. This would make sense if and when the Green New Deal did drive the economy towards full employment, for example. Full employment would not, of course, remove the need for the Green New Deal: it would instead mean that it was then competing with other activities for the necessary resources within the economy. Without additional taxation at that time inflation would result. Since this is not the desired outcome of the Green New Deal, additional taxes to prevent this would make sense because tax does, in that situation, strip excess demand out of the economy.

We stress, there are some quite specific conditions to attach to this possibility. It would make almost no sense to create a stimulus for the economy using a Green New Deal and to simultaneously seek to increase tax on those who might spend the additional income they received as a result of that stimulus. To do so would kill the multiplier effect of the spending on the Green New Deal and so both increase the cost of the Green New Deal and cancel many off its economic benefits all at the same time. For that reason any tax settlement used to pay for the Green New Deal has to meet some fairly specific conditions to be appropriate for this purpose.

The first such condition is that it should not reduce the income of those who spend most of their incomes. In other words, this tax must not be charged on earned incomes, or at least the earned incomes of those on median pay. Inevitably this means that basic rate income tax and national insurance have to be kept out of any tax increase being considered. Any tax change that is favoured is, then, one that is going to make the UK tax system more progressive.

Thankfully, this is not a matter that should be of undue concern. The UK tax system is not at all progressive at present. As the Equality Trust reported in 2017, the poorest 10% of households in the paid on average 42% of their income in tax in 2015/16 whilst the richest 10% of households paid on average just 34.3% of their income in tax^{lxxxvii}. Those on incomes in between those groups paid tax at rates broadly between these two parameters. It is quite reasonable as a result to think that there might be ample scope to raise the £25 billion or so a year that the Green New Deal might cost for each of its first few years of operation after

tax paid and early multiplier effects are taken into account. It is important to remember that total UK tax revenues now exceed £700 billion a year^{lxxxviii}.

The first way to do this would be by restoring parity between the income tax and capital gains tax rates in the UK. By definition, capital gains tax is paid on the sale of capital assets. It is not a tax on consumption. There is no evidence at all that capital gains tax has ever deterred a single person from starting a business. Even some in the tax profession say that the 10% entrepreneur's tax rate is the most ludicrous tax anomaly in the UK tax system. There will be squeals of protest at this change, but by definition capital gains tax is paid by those who already have enough to live on as it is, in effect, a tax on wealth. It is always hard to be precise about revenues raised by significant changes to any tax rate, but it is likely that this change would double revenues from this tax and so raise £10 billion a year.

Second, no one in the business community really understands why it was necessary to align the large and small companies tax rate at 19% when there used to be a 10% difference between them. The average rate of corporation tax in countries equivalent to the UK is now about 25%. If that rate was to be used in the UK the additional tax raised would be approximately £7bn a year, given that about half of all corporation tax is paid by large companies.

There has been considerable discussion about simplifying the UK's system of tax allowances and reliefs in recent years because so many of these supposed incentives either do not work to deliver the intent of those who first introduced them, or encourage abuse or are simply unfair in the way that they operate. Beyond the personal allowance the most expensive relief in the UK tax system is that provided for pension contributions. The combined cost per annum of this relief is now some £54 bn a year^{lxxxix}. Whether there is any economic logic to subsidising saving in the UK is open to question when the main benefit goes to those already better off and wealth inequality is exacerbated as a result, but there is no prospect of that relief being abolished in its entirety at present. However the relief given at higher rates makes no sense: why those on high income deserve double the tax relief on each pound they save than do those who pay basic rate tax is very hard to justify. It is thought that 50% of all pension tax relief goes to higher rate tax payers who make up the top 10% of income earners in the UK – providing them with an extraordinary subsidy each year^{xc}. Abolishing higher rate tax relief on pensions would remove this obvious injustice. It is likely that at least £13bn a year could be raised by abolishing this relief.

There is another anomaly in the UK tax system that generously benefits those who can live off investment income rather than work for a living. It is often said that national insurance should pay for either pensions or the NHS, although the truth is it would be pushed to do either and National Insurance is, in fact, just another tax in all but name. But it is still an unfair one. That is because it is not levied on those who have significant investment income and as a result their overall tax rate is very often much lower than that of people who obtain all or most of their money from paid employment. The so-called 'dividends tax' that has been introduced in recent years has done little to alter this. As a result it would be entirely reasonable to introduce a tax to ensure that those living off unearned income are on a level

tax playing field with everyone else. Such a tax existed until abolished by Margaret Thatcher in the 1980s. It would be reasonable that pensioners be exempted from this charge, as they are from national insurance. That makes it a little harder to be sure quite how much tax such a surcharge would generate but a cautious estimate might suggest £6bn a year^{xcii}.

There are other changes that could be made which overall are only likely to impact those already well off. Examples would be the abolition of VAT exemption for education and health care. Most such services are, of course, provided free by the state and so are not subject to VAT for that reason anyway. But to charge VAT on private school fees and private medicine would be possible and makes complete sense since there is no gain to society at large from these exemptions when most will never benefit from them. These could raise £7bn a year according to HMRC estimates^{xcii}.

Finally, of the options we present (and we make clear that there are others) the number of council tax bands could be increased to reflect the fact that in London (for example) approximately half of all houses are in the top band now and are clearly undertaxed as a result. We suggest that the council tax yield might increase by more than £5 billion a year as a result, which would (of course) be substantially more than local authorities and devolved governments would require to service Green New Deal debt if they were to issue it².

In summary these changes might raise the following revenues if and when that option was considered desirable as an alternative to deficit funding or quantitative easing:

Tax	Change	Revenue raised £'bn
Capital gains tax	Charge as income	10
Corporation tax	Increase rates	7
Income tax	Restrict pension tax reliefs	13
Income tax	Investment income surcharge	6
VAT	Remove exemptions	7
Total		43

Note that all these changes are progressive: they will have little or no impact those on basic rate taxpayers. This is deliberate: there is no point creating an economic stimulus and then charging extra tax to those who are intended to benefit the most as a consequence. Also note that by no means all those changes are required to fund the Green New Deal that we propose.

In conclusion, many might think it ambitious to lay out spending plans of £50 billion a year to transform the UK economy, and at the same time improve the job prospects of many hundreds of thousands of people living in the country. We do not. That is, firstly, because we

² We recognise the issue of 'asset rich, cash poor' elderly people and think they should have the chance to roll up their council tax liabilities and settle them on sale of the property.

believe that the human and physical resources required to deliver this programme exist and are simply waiting to be put to use. And as we also show, funding this programme can be achieved in a number of straightforward ways that would not place any undue stress on any part of the economy. As a result the Green New Deal is deliverable. What is required is the political will to deliver it.

ENDNOTES

- ⁱ This report was predominantly the work of Larry Elliott, Colin Hines, Jeremy Leggett and Richard Murphy with input and support from Caroline Lucas, Tony Juniper, Charles Secrett and Andrew Simms
- ⁱⁱ https://s.bsd.net/efoundation/default/page/-/files/A_Green_New_Deal_1.pdf
- ⁱⁱⁱ <https://www.theguardian.com/business/2018/apr/18/global-debt-now-worse-than-before-financial-crisis-says-imf>
- ^{iv} <https://www.theguardian.com/business/live/2018/may/31/market-rebound-italian-fears-ease-business-live>
- ^v <https://www.theguardian.com/business/2018/aug/02/bank-of-england-raises-interest-rates>
- ^{vi} <https://www.theguardian.com/business/budget-deficit>
- ^{vii} <https://www.theguardian.com/business/2017/jul/24/bank-of-england-household-debt-bank-credit-card-car-loans>
- ^{viii} <https://www.ft.com/content/ec2c365a-0ddf-11e5-aa7b-00144feabdc0>
- ^{ix} https://www.businessgreen.com/bg/news/3031265/paris-agreement-all-197-signatories-now-taking-national-climate-action?utm_source=Greenhouse+Morning+News&utm_campaign=63f4d809db-Greenhouse_Morning_News_April_30th_2018&utm_medium=email&utm_term=0_990f8eae78-63f4d809db-123979689
- ^x http://irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018_summary.pdf?la=en&hash=6A74B8D3F7931DEF00AB88BD3B339CAE180D11C3
- ^{xi} <http://fs-unep-centre.org/sites/default/files/publications/globaltrendsrenewableenergyinvestment2017.pdf>
- ^{xii} <https://data.worldbank.org/indicator/eg.use.comm.fo.zs?end=2015&start=1960>
- ^{xiii} <https://www.theguardian.com/environment/2017/feb/09/new-energy-europe-renewable-sources-2016>
- ^{xiv} <http://www.rechargenews.com/wind/1406023/wind-supplies-record-436-percent-of-denmarks-electricity>
- ^{xv} <https://www.theguardian.com/cities/2018/feb/27/cities-powered-clean-energy-renewable>
- ^{xvi} <https://www.theguardian.com/environment/2017/jun/28/global-covenant-mayors-cities-vow-to-meet-obama-climate-commitments>
- ^{xvii} <https://www.theguardian.com/cities/2018/feb/27/cities-powered-clean-energy-renewable>; <https://www.uk100.org/>
- ^{xviii} https://www.theclimategroup.org/sites/default/files/re100_annual_report.pdf
- ^{xix} <https://www.ft.com/content/3f259ae2-381a-11e8-8eee-e06bde01c544>
- ^{xx} <https://www.ft.com/content/3f259ae2-381a-11e8-8eee-e06bde01c544>
- ^{xxi} <https://www.ft.com/content/e8f703ba-aabd-11e8-94bd-cba20d67390c>
- ^{xxii} <https://www.pv-tech.org/news/wec-energy-group-to-replace-wisconsin-coal-plant-with-350mw-of-solar>
- ^{xxiii} <https://www.bloomberg.com/news/articles/2017-04-23/republican-cracks-emerging-in-trump-s-coal-heavy-energy-plan>
- ^{xxiv} <https://www.bloomberg.com/news/articles/2017-04-23/republican-cracks-emerging-in-trump-s-coal-heavy-energy-plan>
- ^{xxv} <https://www.bloomberg.com/news/articles/2017-12-05/latest-bull-case-for-electric-cars-the-cheapest-batteries-ever>
- ^{xxvi} <https://www.energy-storage.news/news/germany-reaches-100k-home-battery-storage-installations>
- ^{xxvii} <https://www.bloomberg.com/news/articles/2018-02-12/a-powerful-mix-of-solar-and-batteries-is-beating-natural-gas>
- ^{xxviii} <https://www.carbonbrief.org/global-solar-capacity-grew-faster-than-fossil-fuels-2017-report>
- ^{xxix} http://irena.org/-/media/Files/IRENA/Agency/Publication/2018/Jan/IRENA_2017_Power_Costs_2018_summary.pdf?la=en&hash=6A74B8D3F7931DEF00AB88BD3B339CAE180D11C3
- ^{xxx} <http://www.independent.co.uk/environment/renewable-energy-cheapest-power-form-country-2020-paris-agreement-climate-change-us-donald-trump-a7844671.html>
- ^{xxxi} <https://sandbag.org.uk/wp-content/uploads/2018/05/Coal-To-Clean-May-2018.pdf>
- ^{xxxii} https://www.solarpowerportal.co.uk/news/national_grid_future_energy_scenarios_solar_could_be_uks_dominant_source_of
- ^{xxxiii} https://www.solarpowerportal.co.uk/news/grab_the_golden_opportunity_to_go_green_uk_urged_to_ditch_nuclear_in_favour
- ^{xxxiv} <http://www.irena.org/publications/2018/Apr/Global-Energy-Transition-A-Roadmap-to-2050>
- ^{xxxv} <http://www.irena.org/publications/2018/Apr/Global-Energy-Transition-A-Roadmap-to-2050>

- xxxvi <http://www.rechargenews.com/wind/1486824/more-than-10-million-people-now-work-in-renewables-irena>
- xxxvii <http://www.rechargenews.com/wind/1486824/more-than-10-million-people-now-work-in-renewables-irena;>
http://irena.org/-/media/Files/IRENA/Agency/Publication/2018/May/IRENA_RE_Jobs_Annual_Review_2018.pdf
- xxxviii <https://www.independent.co.uk/news/business/news/renewable-energy-electricity-new-record-uk-wind-solar-a7972266.html>
- xxxix <https://www.r-e-a.net/news/new-report-shows-nearly-126000-employed-in-growing-renewables-industry-but-growth-slowing>
- xi <https://www.independent.co.uk/news/uk/politics/wind-power-solar-investment-drop-uk-government-funding-environment-figures-budget-a8162261.html>
- xii <https://www.r-e-a.net/blog/political-uncertainty-and-brexit-challenging-renewables-growth-08-08-2018>
- xiii [https://www.zdnet.com/article/plastic-roads-surface-in-the-uk/;](https://www.zdnet.com/article/plastic-roads-surface-in-the-uk/)
<https://www.newstatesman.com/politics/uk/2018/06/crumbling-britain-uk-s-pothole-plague-sign-national-decline>
- xliii <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>
- xliii <https://www.theccc.org.uk/wp-content/uploads/2018/06/CCC-2018-Progress-Report-to-Parliament.pdf>
- xlv <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>
- xlv <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>
- xlvi <https://www.moneysupermarket.com/gas-and-electricity/smart-meters/>
- xlvii <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>
- xlviii <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>
- xlix <http://www.greennewdealgroup.org/wp-content/uploads/2013/09/Green-New-Deal-5th-Anniversary.pdf>
- i <https://www.ukgbc.org/wp-content/uploads/2017/09/UK-GBC-Aldersgate-Energy-Efficiency-Briefing.pdf>
- ii <https://www.fgould.com/uk-europe/articles/uk-building-stock-carbon-reduction-commitments/>
- iii [https://www.e3g.org/docs/Accelerating the transition to a low carbon economy The case for a Green Infrastructure Bank.pdf](https://www.e3g.org/docs/Accelerating%20the%20transition%20to%20a%20low%20carbon%20economy%20The%20case%20for%20a%20Green%20Infrastructure%20Bank.pdf)
- liii <https://www.e3g.org/news/media-room/call-to-government-to-back-infrastructure-plan-to-de-carbonise-uk-buildings>
- liv <https://www.theeeig.co.uk/>
- lv <https://www.gov.uk/government/publications/clean-growth-strategy>
- lvi <https://www.nic.org.uk/publications/congestion-capacity-carbon-priorities-for-national-infrastructure/>
- lvii <https://www.theccc.org.uk/publication/independent-assessment-uks-clean-growth-strategy-ambition-action/>
- lviii https://en.wikipedia.org/wiki/Transport_in_the_United_Kingdom
- lix <https://bettertransport.org.uk/sites/default/files/research-files/Improving%20local%20transport%20helps%20the%20economy%20-%20experience%20from%20the%20LSTF.pdf>
- lx <https://bettertransport.org.uk/sites/default/files/research-files/Improving%20local%20transport%20helps%20the%20economy%20-%20experience%20from%20the%20LSTF.pdf>
- lxi <https://www.theguardian.com/uk-news/2018/jan/16/four-cities-1-hour-13m-people-northern-powerhouse-rail-plan-revealed>
- lxii <https://www.bbc.co.uk/news/health-35629034>
- lxiii <https://www.london.gov.uk/what-we-do/environment/pollution-and-air-quality/health-and-exposure-pollution>
- lxiv <https://bettertransport.org.uk/sites/default/files/research-files/Tracks%20Air%20Quality%20Report%202017%20Artwork%20V3%20LR.pdf>
- lxv <https://www.autocar.co.uk/car-news/industry/potholes-how-much-they-cost-uk-and-how-they-are-fixed>
- lxvi <https://www.newstatesman.com/politics/uk/2018/06/crumbling-britain-uk-s-pothole-plague-sign-national-decline>
- lxvii <https://www.newstatesman.com/politics/uk/2018/06/crumbling-britain-uk-s-pothole-plague-sign-national-decline>
- lxviii <https://www.zdnet.com/article/plastic-roads-surface-in-the-uk/>
- lxix <https://www.bbc.co.uk/news/uk-england-cumbria-41459480>
- lxx <https://www.gov.uk/government/publications/25-year-environment-plan>
- lxxi <https://www.clientearth.org/25-year-plan-environment-full-empty-promises/>
- lxxii <https://www.theguardian.com/business/2018/may/17/fast-track-fracking-plan-by-uk-government-prompts-criticism>
- lxxiii <https://www.theguardian.com/business/2018/jun/25/government-rejects-plan-for-tidal-lagoon-in-swansea>
- lxxiv <https://labour.org.uk/press/bring-energy-jobs-contracts-back-britain/>
- lxxv <https://www.theguardian.com/business/2015/dec/17/uk-solar-panel-subsidies-slashed-paris-climate-change>
- lxxvi <https://www.theguardian.com/environment/2016/apr/08/solar-installation-in-british-homes-falls-by-three-quarters-after-subsidy-cuts>
- lxxvii <https://www.independent.co.uk/news/uk/politics/wind-power-solar-investment-drop-uk-government-funding-environment-figures-budget-a8162261.html>
- lxxviii <https://www.theguardian.com/environment/2015/jul/10/uk-scrap-zero-carbon-home-target>
- lxxix <https://www.businessgreen.com/bg/opinion/3036752/so-much-for-predict-and-provide-uk-energy-use-keeps-on-falling>

lxxx

https://www.e3g.org/docs/Accelerating_the_transition_to_a_low_carbon_economy_The_case_for_a_Green_Infrastructure_Bank.pdf

lxxxii

https://www.e3g.org/docs/Accelerating_the_transition_to_a_low_carbon_economy_The_case_for_a_Green_Infrastructure_Bank.pdf

Estimates vary between 250,000

http://www.shelter.org.uk/_data/assets/pdf_file/0019/802270/Building_the_homes_we_need_-_a_programme_for_the_2015_government.pdf

and 300,000 new houses being required in England per annum.

<https://publications.parliament.uk/pa/ld201617/ldselect/ldeconaf/20/20.pdf> new homes are needed in England annually for the foreseeable future in England. The estimate is 23,000 new houses annually for Scotland

<https://www.bbc.co.uk/news/election-2016-scotland-35928391> whilst the figure is 8,700 for Wales

<https://sites.cardiff.ac.uk/ppiw/files/2015/10/Future-Need-and-Demand-for-Housing-in-Wales.pdf> and around 11,200 new homes per year in Northern Ireland

<http://www.irishnews.com/business/2016/08/09/news/more-houses-being-built-in-northern-ireland---but-still-not-enough-644947/>. We have used a total of 300,000 a year.

lxxxiii http://www.shelter.org.uk/_data/assets/pdf_file/0019/802270/Building_the_homes_we_need_-_a_programme_for_the_2015_government.pdf;

<https://publications.parliament.uk/pa/ld201617/ldselect/ldeconaf/20/20.pdf>;

<https://www.bbc.co.uk/news/election-2016-scotland-35928391>;

<https://sites.cardiff.ac.uk/ppiw/files/2015/10/Future-Need-and-Demand-for-Housing-in-Wales.pdf>;

<http://www.irishnews.com/business/2016/08/09/news/more-houses-being-built-in-northern-ireland---but-still-not-enough-644947/>

lxxxiv <https://www.theguardian.com/uk-news/2018/jan/16/four-cities-1-hour-13m-people-northern-powerhouse-rail-plan-revealed>

lxxxv For an academic argument supporting this idea see

<http://journals.sagepub.com/doi/10.1177/002795011824500114>

lxxxvi See, for example, this from the IMF in 2014 <https://www.imf.org/external/pubs/ft/tnm/2014/tnm1404.pdf>

lxxxvii <https://www.equalitytrust.org.uk/britains-poorest-households-pay-more-their-income-tax-richest> based on Office for National Statistics data

lxxxviii This and other tax estimates are based on page 82 here

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/661480/autumn_budget_2017_web.pdf

lxxxix

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/683943/PEN6_2007-08_to_2016-17_for_publication.pdf

xc

<http://www.pensionspolicyinstitute.org.uk/uploaded/documents/2014/Tax%20Relief%20for%20Pension%20Saving%20in%20the%20UK%20-%20-%20executive%20summary.pdf>

lxc An estimate is available here <http://www.taxresearch.org.uk/Blog/wp-content/uploads/2016/08/WealthtaxUK816.pdf>

lxcii

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/675345/Dec_17_Main_Reliefs_Final.pdf