

Summary

In this briefing we suggest that a variation on both conventional quantitative easing (QE) and the form that became well known as People's Quantitative Easing during the summer of 2015 could provide the essential funding mechanism to ensure that the promises made by the world's nations to fund changes required to tackle global climate change can be fulfilled.

We explore what conventional QE is and how it works and why it has not lived up to expectations but why it does create a useful and necessary precedent for what we propose.

We then suggest that a variation on existing QE programmes, many still current, could ensure that at least \$100 billion could be put on the table to ensure that essential commitments to climate change are met by 2020.

It is our final suggestion that the experience gained from doing this might lay the foundations for domestic Climate QE programmes in the UK, EU and elsewhere that might be the foundation for the elusive economic revival that so many countries are currently seeking in vain.

To Paris and beyond

'We can already see that the pledges by national governments will mean emissions after 2020 will fall far short of cuts needed to have a reasonable chance of avoiding global warming of more than 2C. It is essential, therefore, that a legal agreement is agreed at the COP21 talks in order to create a process after Paris through which countries will review their efforts and find ways to ramp up their actions on reducing emissions.'

Climate economist Lord Sternⁱ

'It is constant review and improve, review and improve. That is going to be the dynamic that Paris will set up'

Christiana Figueres Executive Secretary of the United Nations Framework Convention on Climate Change (UNFCCC)ⁱⁱ

Introduction

The COP21 United Nations climate talks in Paris starting on 30th November are now widely expected to end in some kind of agreement on climate change, strengthened by the global support felt due to France given the November terrorist attacks. However that expected agreement has two interlinked shortcomings.

Firstly the measures that countries have announced to reduce emissions of carbon and other greenhouse gases are still expected to fall well short of those needed to prevent a 2°C warming by 2100. A rise of 2°C is considered the most the Earth's climate could tolerate without risking catastrophic changes to food production, sea levels, fishing, wildlife, deserts and water reserves and yet a study of the governments' pledges by an independent scientific group of European climate experts published by Climate Action Tracker, (CAT) indicates that if all pledges are implemented, then global temperatures will rise by 2.7°Cⁱⁱⁱ.

In that case, as the above quotes from Lord Stern and the UN's Christiana Figueres show, whatever is agreed at Paris must then be used as a basis for ratcheting up additional efforts to cut greenhouse gases so that the world stays within the 2°C limit.

Second, the question of how adequate funds are to be found to pay poorer countries to change their energy systems, agricultural and other practises to adapt to climate change is unlikely to be tackled effectively. Developed countries, having been responsible historically for most carbon emissions, will need to find the lion's share of the funds to publically and privately finance the changes needed, both in developing nations and within their own. There will also be some role for emerging, heavily polluting countries such as China, India and Brazil.

The scale of the issue

The issue of funding this process of change is immense; it will cost hundreds of billions of dollars over a relatively short time period to address this issue, and this at a time when the aftermath of the global downturn of 2007/8 is still being experienced as a drag on economic activity in most countries worldwide. This implies that this is not a very fruitful time to expect rich countries to dramatically increase their spending to tackle climate change. That is the conundrum that the Paris talks must solve.

The solution is Climate QE

We believe that the answer to this problem lies in the mechanism that was introduced in rich countries to try and reboot their economies after the slump of 2008. That mechanism was quantitative easing (QE).

QE allowed the central banks of countries like the United States, the UK, Japan, Sweden and, most recently, the European Union to e-print around €7 thousand billion (€7 trillion) in an attempt to solve their economic problems and prevent their economies moving into a deflationary cycle.

The EU is still printing €60 billion a month as part of a €1.1 trillion QE programme with an expectation that this sum might be increased soon.

How QE has worked

QE describes the process where a central bank buys bonds issued by the government that owns that central bank (or in the case of the European Central Bank, the governments that own it).

Under conventional QE, as used to date, the bonds acquired have already been issued by the governments in question and QE makes payment to the previous owners of those bonds (usually pension funds, insurance companies or banks) without any condition being attached to that purchase as to how the money that the bondholder has received should be spent.

The result of this purchase is that the central bank, owned by a government, then owns the debt issued by that government, which in effect means that the government in question then owns its own debt. This in turn means that the debt is both effectively cancelled and that in practice no interest is payable on it, because if it were the government would simply be paying itself.

These QE programmes had two goals. First they were intended to provide liquidity to the world's major financial markets by injecting additional cash into them as a result of bond purchases from major market participants. Second, it was expected that those market participants would then use that liquidity to invest in the wider economies of the countries concerned. That was meant to both provide an economic stimulus and avoid the onset of deflation, which looked likely.

The huge sums involved have, however, been predominantly invested in assets such as the stock market and property, thus concentrating the benefits amongst the financial community and wealthier parts of the societies. The proceeds from selling such bonds do not appear to have trickled down enough to help kick-start the real economy in any of the countries involved, and the track record on avoiding deflation has also been partial, at best.

An example of how QE has worked to increase the wealth of the already well off is to be found in the UK. After 3 years of QE resulting in bond purchases totalling £375 billion the Bank of England calculated that the main impact had been to increase the value of shares and bonds. These had

actually risen in value by 26% – or £600bn – as a result of the policy. As a result 40% of the gains from the UK's QE programme went to the richest 5% of households, meaning that QE greatly exacerbated asset inequality and used newly created public money to benefit the rich while the financial crisis and its after-effects were hurting the poor^{iv}. Although the Bank of England said it could not come up with precise figures for the gains from QE at a micro-economic level, estimates using data from the Office for National Statistics shows that the average boost to the holdings of financial assets and pensions of the richest 10% of households would have been either £128,000 per household or £322,000 depending on the methodology used^v. Lending to business declined in the meantime. As a mechanism for significantly stimulating anything other than financial markets QE seems to have failed.

However, we believe that a variation on this QE mechanism could be used instead to finance the investment needed to reduce greenhouse gases globally and to help countries to adapt to the effects of climate change. In this way it could also help reinvigorate the global economy, but in a manner that once and for all tackles the greatest threat facing the planet. This paper therefore calls for '*Climate QE for Paree*'

What is Climate QE and how would it work?

QE describes the process whereby a central bank (such as the Bank of England) buys government bonds issued by the government that owns that central bank. Whilst conventional QE has bought government bonds (and in the case of the USA in particular, other assets) already in issue there is no technical reason why the bonds purchased could not be issued by an agency controlled by the government. Examples of such agencies might include a government owned Investment Bank, local authorities, a health service trust or a government controlled company e.g. Network Rail. Whichever of these has their debt bought by the Central Bank the process is still QE.

The bonds that would be used for Climate QE would be issued by a government agency that had been given the specific task of investing for the purpose of creating the necessary changes in energy usage to ensure that the impacts of climate change are mitigated, so that life will continue to be safe for us humans here on earth. That agency could be specially created for this purpose, or it could be a subsidiary of a central bank that directed the funds in question to those best able to use them, whether as loans or grants. The important point is that this agency would issue bonds to bond markets (which include banks, pension funds, insurance companies, and of course individuals and companies) with the expectation that some, at least, of those bonds would be bought by the central bank of the country that owned the agency in question (or in the case of the EU, the European Central Bank). This exercise would therefore potentially result in a mix of public and private funding being used to tackle climate change as a result of such bond issues. Some of the bonds issued might be owned by the central bank of the country involved in their promotion, but equally, depending upon public demand they could also be owned by financial institutions and individuals as well. Climate QE is not a matter of all state, or all private funding: it is a case of finding an appropriate mix over time and this is one of its great strengths.

Climate QE is legal

This is quite explicitly allowed by EU law. Mario Draghi replying to a question by MEP Molly Scott-Cato in the EU Parliament stated that the ECB ‘could buy EIB bonds on the secondary market. So, to the extent that these green bonds you have described comply with our rating standards, certainly the ECB can buy them’^{vi}.

Mark Carney the Governor of the Bank of England in a letter to Green party MP Caroline Lucas stated ‘It is possible that if the MPC did vote to increase its asset purchases in future, it could expand the range of assets it purchased. Such a decision, however, would need to be agreed with the government.’^{vii}

Will Climate QE need to be repaid?

Since all QE involves a central bank (such as the Bank of England) buying government bonds issued by the government that owns that central bank, then in theory QE doesn’t need to be repaid. This is because the debt involved is, in effect, cancelled the moment that its purchase by the central bank takes place. The government repaying itself money is a pretty meaningless gesture, economically speaking.

This point is crucial if the bonds purchased under a Climate QE programme finance grants from rich countries to poorer ones to help them finance measures to tackle climate change. Grants by definition are not repaid. If the bonds financing those grants do not need to be repaid then the economic burden on poorer recipient countries is removed.

What is more, since QE involves a central bank putting new money into circulation by creating e-money and using it to buy assets, this process will not increase Europe’s debt levels according to the originator of the term ‘quantitative easing’, Professor Werner, Director of the Centre for Banking, Finance and Sustainable Development at the University of Southampton. He has stated that since the central bank can simply keep the assets purchased on its balance sheet then there is no need for taxpayers ever to be called upon to repay the debt^{viii}. Adair Turner, the former Chairman of the UK Financial Services Authority shares this opinion^{ix}.

We stress when noting this that the money used to buy the Climate QE bonds is created in exactly the same way that the money used to buy conventional QE bonds is created. This simply means that the Bank of England electronically creates the money in question when putting it into use, a process described in a document referenced in an endnote^x. Taxpayers do not fund the purchase of the bonds acquired in a Climate QE programme, central banks do out of newly created money.

That said, in practice there may be several ways in which returns could be paid on the assets financed if that was thought useful. In some instances projects invested in will be likely to generate revenues. This would be true if Climate QE funds were used to investing in carbon neutral housing, in

which case profits on sale or from rental incomes could be used to finance a return. These returns could, of course, be used to recycle the debt for further reinvestment in developing countries.

Alternatively, climate QE could be used to create new, carbon neutral, generating capacity which would, again, make a return, and which could therefore pay a return to investors.

Another possibility is that the government would decide to use Climate QE to subsidise a particular type of activity, as has, for example, been the case with regard to the installation of photovoltaic cells on housing during their development period. The subsidies could in that case also cover a return on capital.

Can enough money be created to meet the demands of climate change?

One of the challenges posed by climate change is the sheer scale of the investment needed to tackle the issues that arise.

In Paris the goal is to raise US\$100 billion per annum by 2020 (£66 billion per annum). Of course the sums required to eventually tackle climate change will far exceed this sum. However it is crucial that this first goal be achieved to give confidence that the bigger sums will be forthcoming as the world increases its effort to reduce emissions to limit the rise in temperature to no more than 2°C.

This sum is not, of course, required from each and every country: it is a global figure, when global GDP is about US\$77 trillion a year^{xi} the scale required is more readily understood: it is about 0.15% of global income. What is a significant sum is, expressed in that way, a little less daunting.

It is also important to note that over the last few years the global economy has been able to absorb around US\$1 trillion per annum of conventional QE. Therefore the capacity to create new money on the scale required by Climate QE does exist within the global financial system and should not threaten its stability in any way.

What is more, the global financial system has not suffered inflation as a result of this QE funding. Indeed, inflation has generally fallen as QE programmes have advanced and there has been persistent unemployment and underemployment in many of the world's major economies despite QE's use.

It is clear then that the financial capacity to invest in the infrastructure needed to promote a world that can survive climate change does exist. The role of Climate QE is to make that possible.

Climate QE – the answer to the \$100 billion question

At the last Global Climate Conference in Copenhagen in 2010 developed countries committed to mobilise jointly to fund \$100 billion a year in climate finance by 2020 for climate

action in developing countries. The French Government has astutely ensured that in the run up to this year's Paris meeting that the debate about finance has deliberately focused on this pre-2020 target as a way to help ensure support for a final agreement from developing countries. This was bolstered by the Organisation for Economic Cooperation and Development (OECD) and Climate Policy Initiative's (CPI) October report on climate finance which showed that substantial progress has been made towards the \$100 billion target – in 2014, developed countries jointly mobilised \$62 billion in climate finance, up from \$52 billion in 2013. These figures include public financing as well as conservative estimates on private finance^{xii}.

In addition to this there are already discussions taking place and commitments being made that look beyond 2020 and insiders feel it is inconceivable that the Paris Agreement will not contain any commitments for post-2020.

This is where Climate QE can play a crucial role. For example, the European Central Bank is already e-printing €60 billion a month as part of its QE programme and is committed to doing so until September 2016. If it allocated say €10 billion a month either from this QE programme, or from an additional QE commitment, it could use it to buy climate change bonds from the European Investment Bank. The EIB could then direct these funds to climate change programmes. A second €100 billion would then be on the table to fund climate change before the end of 2016. This could have a galvanising effect on other rich countries, putting pressure on them to introduce their own Climate QE initiatives and thus further bolster global funds towards the many hundreds of billions eventually needed to keep temperature rises at 2°C.

Since QE involves the one arm of the EU, the ECB, creating e-money and using it to buy assets from another arm of EU, the European Investment Bank (EIB), this will not increase Europe's repayable debt levels. This would also hold true for countries like the United States and the UK, something that is crucial to making involvement in 'Climate QE' post Paris politically acceptable to all rich countries.

How Might the EIB Spend Climate QE?

In this context it is important to note that the EIB already invests around 10% of its funds in developing countries and gives priority to the following types of projects in these countries:

- 1) climate change mitigation and adaptation (e.g. renewable energy, energy efficiency, urban transport and other projects that reduce CO₂ emissions);
- 2) development of social and economic infrastructure, including water and sanitation;
- 3) local private sector development, in particular support to small and medium sized enterprises (SMEs)^{xiii}

What we are proposing appears consistent with these goals.

To achieve the goals likely to be set in Paris will need a particular emphasis on the funding of energy efficiency, which will be responsible for around 50% of the targeted emissions reduction. Climate QE funding may be particularly suited to this task as the funding of the development of renewables technology is easier to obtain from the private sector because there is a clear record of commercial returns being feasible on such developments. The returns from energy efficiency in the key areas of retrofitting buildings in rich countries, industrial infrastructure globally and new build in the cities of developing countries, are more difficult to project and so attract less private finance since the returns are harder to identify and the process of capturing and sharing them are more complex. The International Energy Agency has, however, stated that an eight-fold increase in such investment is required globally.

A useful precedent for funding of this sort is to be found in the European Fund for Strategic Investments (EFSI), an initiative launched jointly by the EIB Group and the European Commission to help overcome the current investment gap in the EU by mobilising private financing for strategic investments. It is hoped that this would unlock additional investment of at least €315bn over the next three years. EFSI will focus on sectors of key importance where the EIB Group has proven expertise and the capacity to deliver a positive impact on the European economy, including the expansion of renewable energy and resource efficiency.

The EIB could provide a similar fund for Strategic Investments in energy efficiency globally as a follow up to Paris with a similar guarantee from the EU budget funded by Climate QE. Putting such an offer on the table would show the EU's commitment to tackling a fundamentally central part of the post 2020 agenda in reducing emissions through attracting public and private funding into energy efficiency globally.

Climate QE could also help developed country economies – the UK example

Research by the Green New Deal Group has shown that for the UK and the rest of the Europe there are very good reasons for introducing Climate QE for their own economies. An earlier variant of this idea, called 'Green Quantitative Easing', was first explicitly proposed in 2010^{xiv}. This concept of directing quantitative easing to fund the greening of the UK's infrastructure was included in the Green New Deal Group's 2013 report 'A National Plan for the UK'^{xv} and in the New Economic Foundation's 2013 report 'Strategic quantitative easing'^{xvi}.

In the UK it has been estimated that a Green Infrastructure QE programme would need to spend in the region of £50 billion a year over a ten year period. This could be funded by the Bank of England e-printing the money and using it to buy bonds from a National Green Investment Bank or Local Authorities. This money would then be used to fund a realistically timed, carefully costed, and hence non-inflationary, nationwide programme to train and employ a fairly paid 'carbon army' to make all of the UK's 30 million buildings energy efficient and, where feasible, fit them with solar panels. The programme would also help solve the housing crisis because it would finance the building of new highly insulated homes, predominantly on brown field sites. Finally the Green Infrastructure QE

would finance improved regional public transport and digital networks to help revitalise local and regional economies.

Such funding would have a galvanising effect on the real economy and provide a huge stimulus for local economies. The increased employment and business opportunities would also match the policy priorities of political parties, the private sector, trade unions, community groups and NGOs. At the same time this Green Infrastructure QE would kick-start the essential transition to a revitalised and greener UK economy needed to reduce carbon emissions.

Such a programme would also increase the UK tax take because of the number of people it would get back into well-paid employment in the UK and this would then reduce the deficit.

It could also provide the confidence needed to unlock additional private investment for green infrastructure from pension and insurance companies through to individual savers.

Bristol Shows the Way

Bristol City Council as part of its role of being the European Green Capital^{xvii} for 2015 wants to make a step change in the amount of investment that it undertakes in energy efficiency and has identified a billion dollar programme of measures to achieve this. We believe that Climate QE would let other cities copy this initiative and then fund the resulting plans.

For Europe

Unease over the economic future of the Eurozone, the rest of Europe and the wider global economy is increasing. The austerity measures which were supposed to rebalance economies and reduce deficits are creating an electoral backlash across Europe. Their actual effect has been to increase unemployment and underemployment, thus reducing economic activity, lessening governments' tax takes and increasing public debt. What is required instead is a Europe-wide Climate QE programme to reduce dramatically the climate change emissions. The concept of directing quantitative easing to fund the greening of Europe's is referred to in the Green New Deal Group's 2015 report 'Europe's Choice - How Green QE and Fairer Taxes Can Replace Austerity'^{xviii}

The ECB's €1.1 trillion QE programme to buy government bonds will, like its £375 billion UK predecessor, do little to increase economic activity, and is, instead, likely to boost asset prices rather than generate sustainable jobs throughout the continent. As an alternative the Green New Deal Group proposed in 2015^{xix} that all EU countries introduce a programme of 'Green Infrastructure QE' to increase the continent's renewable energy supplies, ensure all buildings are energy efficient and to revitalise local and regional transport links. Paying a living wage to those engaged on such programmes would help to boost the tax take and overcome the present lack of long-term effective demand in the economy. The paper estimates that a continent wide programme would need funding of the order of €500 billion (£400 billion) per year over the next decade, roughly half of the present ECB QE programme. This would obviously cost more than the Climate QE programme we are

suggesting that the ECB fund as a direct result of the Paris summit. The additional cost we think the EU should incur anyway for the domestic economic benefits it will provide.

As example, it has been estimated that Climate QE for one of the most economically beleaguered countries in the EU, Greece, could take the form of €9 billion Euros spent on fitting free solar PV to one million south facing roofs, and a further €4 billion Euros to train a 'carbon army' to install energy saving measures in all of Greece's more than 4 million homes^{xx}. The impact on that beleaguered economy would, we think, be significant.

Therefore as well as contributing to Climate QE for developing countries it is also time for political leaders across Europe as well as the European Parliament and Commission to demand that the European Central Bank (ECB) introduces a sustainable programme of Climate QE across the continent that would stimulate the economy, boost employment and tackle climate change. Such an approach would have a galvanising effect on the real economy of Europe. The increased employment, business opportunities and tax base would also match the existing priorities of governments, the private sector and trade unions. When climate change is the biggest challenge facing the planet it is hard to see what can be lost by trying Climate QE as a the basis for economic revival in the EU, and beyond.

APPENDIX 1

Support for Green QE is on the rise.

The term 'Green Quantitative Easing' was first explicitly used by the authors in 2010^{xxi}. This concept of directing quantitative easing to fund the greening of the UK's infrastructure was included in the Green New Deal Group's 2013 report 'A National Plan for the UK'^{xxii} and in the new economic foundation's 2013 report 'Strategic quantitative easing'^{xxiii}.

The concept of directing quantitative easing to fund the greening of Europe's infrastructure was included in the Green New Deal Group's 2013 discussion paper 'Help save Europe with a Green New Deal'^{xxiv} and in its 2015 report 'Europe's Choice - How Green QE and Fairer Taxes Can Replace Austerity'^{xxv}.

In November 2014 a number of UK Green NGOs and green industry representatives signed onto a call for the Government to introduce Green Infrastructure QE^{xxvi}.

In June 2015 the Green MEP Molly Scott Cato launched a report 'Green Money- Reclaiming QE' in the European Parliament^{xxvii}.

In August the Labour Leader Jeremy Corbyn announced his call for People's QE based on Richard Murphy's writings on Green QE. This prompted support from the unlikely quarter of a Financial Times article that asserted that 'Corbyn's People's QE could actually be a decent idea'^{xxviii} and a leading hedge fund manager Paul Marshall supporting the concept^{xxix}.

Finally, in December Positive Money and a number of European NGOs will launch a 'QE for People Campaign' urging the ECB to redirect its Quantitative Easing programme so that new money is directed into the real economy rather than financial markets^{xxx}.

Appendix 2 - Endnotes

- ⁱ <http://www.theguardian.com/environment/2015/oct/10/climate-2c-global-warming-target-fail>
- ⁱⁱ <http://www.bbc.co.uk/iplayer/episode/b06qmlwq/newsnight-23112015> 28 minutes
- ⁱⁱⁱ <http://climateactiontracker.org/news/224/INDCs-lower-projected-warming-to-2.7C-significant-progress-but-still-above-2C-.html>
- ^{iv} <http://www.bankofengland.co.uk/publications/Documents/quarterlybulletin/qb1203.pdf> p254
- ^v <http://www.theguardian.com/business/2012/aug/23/britains-richest-gained-quantative-easing-bank>
- ^{vi} <https://polcms.secure.europarl.europa.eu/cmsdata/upload/5e158246-b33a-457a-825a-2d3aab2e4bbb/15.06.2015.pdf> p7-8
- ^{vii} <http://www.ft.com/cms/s/0/812f3388-aeaf-11e3-8e41-00144feab7de.html#axzz3sL7jB0YB>
- ^{viii} <http://www.greennewdealgroup.org/wp-content/uploads/2012/03/Green-QE-report-CBFS-D-Policy-News-2012-No-1.pdf>
- ^{ix} <http://www.ft.com/cms/s/0/8e3ec518-68cf-11e4-9eeb-00144feabdc0.html?siteedition=uk#axzz3M3aqRWef>
- ^x <http://www.taxresearch.org.uk/Blog/2013/04/19/all-money-is-a-confidence-trick-4/>
- ^{xi} [https://en.wikipedia.org/wiki/List_of_countries_by_GDP_\(nominal\)](https://en.wikipedia.org/wiki/List_of_countries_by_GDP_(nominal))
- ^{xii} <http://www.oecd.org/env/cc/Climate-Finance-in-2013-14-and-the-USD-billion-goal.pdf>
- ^{xiii} <http://www.eib.org/projects/regions/ala/>
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- ^{xviii} <http://www.taxresearch.org.uk/Documents/GNDAusterity2015.pdf>
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- ^{xxvi} <http://www.theguardian.com/environment/2014/nov/28/green-infrastructure-initiative-for-jobs>
- ^{xxvii} <http://mollymep.org.uk/2015/06/15/greenqe/>; http://mollymep.org.uk/wp-content/uploads/Green-Money_ReclaimingQE_V.Anderson_June-2015.pdf.
- ^{xxviii} <http://ftalphaville.ft.com/2015/08/06/2136475/corbys-peoples-qe-could-actually-be-a-decent-idea/>
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