



The Biggest Climate Solution You Have Never Heard Of

by Guy Dauncey, inspired by Matthias Kroll

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A globally agreed carbon cap? Carbon rationing? Holland's proposed ban on the sale of non-electric cars by 2025? Oslo's goal to reduce the city's total greenhouse gas emissions by 95% by 2030?

No, none of the above.

So what is it? In a nutshell, it's the proposal that the world's central banks create \$300 billion a year, and use it to leverage investments of up to \$2 trillion a year in the urgently needed transition to renewable energy, and other climate solutions.

I have been working in the climate trenches for twenty years, and I have written two award-winning books on climate solutions - *Stormy Weather: 101 Solutions to Global Climate Change* (2000) and *The Climate Challenge: 101 Solutions to Global Warming* (2009), the second being a complete update of the first. Both received critical praise, but neither went so far as the solution I recently came across from Dr. Matthias Kroll, Chief Economist at the World Future Council, based in Hamburg.

So first, the problem his solution seeks to address. Globally, if we are to have a chance of keeping the temperature rise below 1.5°C, there needs to be an annual investment of up to \$2 trillion a year in a rapid global energy transition to renewable energy, and in preserving forests, reducing meat consumption, and changing the way farmers, ranchers and foresters manage the land so that it starts sequestering atmospheric carbon back into the world's soil and trees.

At the Copenhagen Climate Conference in 2009 the world's nations agreed to provide US \$100 billion a year by 2020 to the Green Climate Fund to help developing nations tackle the climate crisis, but so far nations have only contributed \$10 billion, \$3 billion of which was pledged by the US, which is unlikely to be paid by President Trump's climate denial regime.¹ So where will the money come from?

Where Does Money Come From?

To answer this, let me divert your attention away from the climate crisis to the intriguing question of where money itself comes from. Surprisingly, it's not something economists often address. Economics sometimes

claims to be a science, so you might have thought that an understanding of the origin of money would have been straightforward, like the origin of atoms.² You would be wrong, however.

In a 2014 survey of British Members of Parliament, who are responsible for conducting the nation's affairs and safeguarding its economy, only 10% understood where money comes from. As Positive Money states, "71% of MPs believed that only the government has the power to create money. In reality, the government now only creates coins and notes, which make up just 3% of all the money in the economy."³

The renowned economist John Kenneth Galbraith said, "The process by which banks create money is so simple that the mind is repelled." Fundamentally, money is created out of thin air—or as I prefer to say, out of social trust. When we trust each other enough to advance a personal loan, we hand over actual cash. When bankers started doing the same on a much larger scale, however, they discovered that they almost never needed to access all the savings that people entrusted them with at the same time. So for every \$1,000 in the bank, they could issue bills of credit or promises to pay for \$10,000, which in time became bank notes.

This is how the Bank of England describes the process:

*"Where does money come from? In the modern economy, most money takes the form of bank deposits. But how those bank deposits are created is often misunderstood. The principal way in which they are created is through commercial banks making loans: whenever a bank makes a loan, it creates a deposit in the borrower's bank account, thereby creating new money. This description of how money is created differs from the story found in some economics textbooks."*⁴

Out of thin air - or social trust

The way this is often described is that the banks create money "out of thin air." This is not strictly true, however. In reality, banks create the new money as the material expression of the store of accumulated social trust—trust that loans will be repaid, trust that the country will be in good shape tomorrow, trust in the national economy. When this trust dries up, banks cease to lend, and to create new money. As the Bank of England explains it: "Money today is a type of IOU, but one that is special because everyone in the economy *trusts* that it will be accepted by other people in exchange for goods and services." (My italics).⁵

The banks are also required to keep a 4.5% capital requirement, which the Bank of International Settlements considers a safe margin of security for their money creation.

Historically, banks have often faced a run on the money. Fear would grip their depositors, who would rush to get their money out. Fear of this kind is infectious, bringing trouble to everyone and threatening the collapse of businesses and employment, so over time the bankers in each country got together and set up a central bank as a system of mutual insurance to protect their reputations and the risk of bankruptcy, along with various other important functions such as limiting inflation and regulating interest rates. Some central banks are owned by national governments, some are private, and some such as Canada's are owned by the government but managed as if they were owned privately.

And here's the thing: central banks create money too, and just like the banks they create it 'out of thin air', or as I prefer to say, out of social trust. Here's the Bank of England again: "*When interest rates were reduced to their effective lower bound, the focus of monetary policy shifted to boosting the quantity of money in the economy directly, via a series of asset purchases, or 'quantitative easing' (QE). The Bank of England electronically creates new money and uses it to purchase gilts from private investors such as pension funds and insurance companies.*"⁶

That bewildering phrase "Quantitative Easing"

Aha—that bewildering phrase 'Quantitative Easing' (QE). It sounds so technical and self-important—and that's exactly the point. The Central Banks would never want to announce that, "In order to save the banks, we are printing lots of money and giving it to the banks." So instead they call it quantitative easing, but creating new

money electronically is exactly what they are doing. Collectively, to protect the global economy from meltdown following the 2008 Crash, the world's central bankers created \$12.3 trillion in new money that they pumped into the economy through QE. Since March 2015 the European Central Bank alone has created \$1.5 trillion euros, pumping it into the economy through QE.

And don't worry—I am winding my way back to the climate crisis.

The ability of the Central Banks to create new money, and to do so rapidly in the event of an emergency, is an essential tool of economic management. It's also a simple expression of the reality that we are societies of people who fundamentally trust each other, and the cultures we have created. When there's a collective crisis we can act together to address it, and we can use a Central Bank's ability to create money as one way to do so.

Germany's Hyper-Inflation

So why does this feel as if some taboo is being broken, or something secretive is being done? The reason goes back to 1921, when the German government, fresh out of its humiliating defeat in The Great War, had to find an enormous sum of money every month to repay both the money it had borrowed to fight the war and the \$33 billion in financial reparations that the Allies demanded it pay to cover the enormous damages the war had caused. Unable to find the money, the finance minister chose to print it. When too much new money is injected into an economy, however, it causes inflation. In Germany's case, the inflation got so bad that by 1923 a US dollar traded for \$4.2 trillion marks, a theatre ticket cost a billion marks, and people used wheelbarrows full of money to buy a loaf of bread.⁷

The psychological impact of Germany's hyperinflation caused a generation of economists to conclude that governments should never be allowed to interfere with monetary policy or the operation of a central bank. The Central Banks, as a result, acquired the independence they wanted to manage their economies the way they saw fit, which was mostly to protect the value of capital by controlling inflation.

In 2008, however, everything crashed, and when the global economy threatened to lapse into a prolonged depression the central bankers in Europe and America scrambled to do whatever they could. Their solution was to create new money in the form of QE, and inject it into their economies.

Three Kinds of Quantitative Easing

But pause a minute. There are three ways in which a central bank can inject new money into an economy, not one.

The first is Conventional QE - creating money to buy government bonds or other assets from the banks, giving the banks new money with the hope that they will turn around and lend it to businesses to kick-start the economy. This is what the central banks have been doing, but if businesses don't feel confident enough to borrow there's nothing the banks can do. What happened in reality is that the banks ended up lending the new money to those who were already relatively wealthy to buy new or already existing assets such as stocks, bonds and housing, contributing in large part to the affordable housing crisis that is causing such distress in so many countries around the world.

The second is Helicopter Money QE - giving newly created money directly to people by way of a free cheque in the mail, as the economist Milton Friedman proposed in 1969.⁸

The third is Public QE - spending the newly created money on social and economic needs such as affordable housing, public transit, bike lanes, better public services or renewable energy. In Europe this is known as 'QE for People', and there is a whole social movement trying to make it happen, supported by 115 economists, twenty organizations and thousands of people, and indirectly by the European Parliament, which passed a motion in 2016 acknowledging that conventional QE was failing.⁹

But does money creation like this not cause inflation, as it did in Germany? No, not if it's done on a small scale in an economy that is struggling to grow. Germany's problem was the massive mismatch between the size of its economy and the volume of money that was printed.

So, finally, we come back to the climate crisis, and Matthias Kroll's proposal.

As a world, we are a community of people. Often fractured, sometimes arguing, sometimes fighting, but compared to a hundred years ago we have made incredible progress towards becoming a unified global culture in which we care about each other—and other species—across barriers of geography, language and creed. As an increasingly unified world, we are creating a bond of social trust in our global existence, beyond our separate national existences.

“Catastrophic”

With the climate crisis, we face a threat to our planet and our global community like none other, barring nuclear winter or a massive asteroid strike. When asked, 41% of climate scientists used the word ‘catastrophic’ to describe the likely climate impact over the next fifty to a hundred years.¹⁰

In 2016, the World Bank reported that by 2050 the climate crisis could cost the world \$158 trillion—twice the global economy's annual output—as a result of climate-caused disasters, and put 1.3 billion people at risk.¹¹ And that's not counting the loss of the one-in-six species that face climate-caused extinction,¹² and of ecosystems like the Great Barrier Reef and the Amazon rainforest. The last time the world was 3C warmer, in the Pliocene Era three million years ago, the sea level was twenty-five metres higher.

The Bank of England itself has stated that the risk to the stability of the financial system posed by the climate crisis through insurance losses, stranded carbon assets and the resulting financial instability is a potential new responsibility for central banks as they seek to address fundamental change.¹³

To tackle the crisis, depending on who you heed, we need an annual global investment of \$16.5 trillion by 2030 to have a hope of the temperature staying below 2°C (World Bank),¹⁴ \$1 trillion a year (Christiana Figueres/International Energy Agency),¹⁵ or \$1.5 to \$2 trillion a year to stay below the 1.5°C temperature boundary (Matthias Kroll, World Future Council).

Matthias Kroll's proposed new climate solution is elegant in its simplicity. The world is full of climate investment opportunities, but investors need to see the prospect of a sufficient return before they are willing to invest. In a nutshell, his proposal is that the world's central banks acting together should use Public QE or ‘QE for the Climate’ to create \$300 billion of new money a year, providing the leverage needed for the private sector to invest in the climate solutions that are so urgently required.

Green Climate Bonds

Here's how it would work. (For the details, see Matthias Kroll's paper *Financing the 1.5°C Limit*.)¹⁶ The Green Climate Fund and other dedicated climate finance institutions would together create \$300 billion a year of Green Climate Bonds, which would be perpetual, standardized, and interest-free. The central banks in developed and advanced developing nations would create \$300 billion a year to buy the bonds, and they would hand the money to the Green Climate Fund and similar climate finance institutions.

These organizations would turn the money around and offer it as free public grants to approved climate solution investment projects. As a result, the investment community would find the projects sufficiently enticing to invest up to \$1.7 trillion a year, and the projects would go ahead. And the nations that pledged to provide \$100 billion a year to the Green Climate Fund at the Paris Climate Conference in 2015 could consider their pledges fulfilled.

The \$300 billion a year in leverage grants would be distributed for use by governments, non-profits and climate agencies to provide support for approved projects, whether in the form of subsidies, loan guarantees, start-up financing, support for renewable energy feed-in tariffs, support for the purchase of threatened rainforests, or

incentives to persuade farmers to make the transition to organic farming, ranchers to make the transition to holistic grazing management, and foresters to make the transition to ecosystem-based sustainable forestry, all of which are known to increase soil carbon storage.

Doesn't Creating New Money Cause Inflation?

Would the newly created money be inflationary? No. As a share of the global GDP of \$80 trillion, \$300 billion is an annual monetary increase of only 0.375%. The private sector investment would trigger the creation of up to \$1.7 trillion a year in new money by non-central banks, but unlike Central Bank money, this would cease to exist when the loans were repaid, so it would not be inflationary.

Would the \$300 billion in annual new money creation make it difficult for central banks to respond to a future global economic crisis without causing inflation? No. If global annual economic growth is 4%, coupled with inflation of 2%, the world needs a 6% increase in the money supply each year, totaling \$4.8 trillion, sixteen times larger than the \$300 billion in green climate bonds.

Would the scale of QE for the Climate create a new climate boondoggle? In 2015, global investments in renewable energy totaled \$286 billion.¹⁷ If 100% of the new investments went into renewables, which is unlikely, this would represent a sevenfold increase in activity, certainly opening the door to potential scams and other abuses. The Green Climate Fund approval process would need to be rigorous, using pre-agreed categories (excluding projects like hydro dams and many types of biofuel), and the penalty for abuse might be exclusion from access to all future Green Climate Fund financing for twenty years, along with whatever penalties local jurisdictions might see fit to impose.

Why hasn't this been proposed before? My guess is that it's a combination of two reasons. First, that most people have no idea that central banks can create money and don't understand what quantitative easing is, and second, that most climate activists don't understand monetary policy, so they have not had the confidence to move into this territory.

Serious attention, Serious debate, Rapid adoption

Dr. Matthias Kroll *has* moved into this territory, and his proposal deserves serious attention, serious debate, and rapid adoption as a new climate solution that could have huge impact.

It would be good to see every climate organization put this on their agenda for consideration, every progressive economist consider supporting it, and every progressive media outlet give it attention and analysis, resulting in proper global awareness, and petitions and sign-on letters to every government and central bank around the world.

- Guy Dauncey



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¹ Green Climate Fund Resources Mobilized: www.greenclimate.fund/partners/contributors/resources-mobilized

² *Is Economics a Science?* Robert Schiller, The Guardian, Nov 6, 2013.
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³ *Poll Result: Only One out of Ten MPs Understand that Banks Create Money.* Positive Money, August 2014.
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⁴ *Money Creation in the Modern Economy.* Bank of England Q1 Quarterly Bulletin.
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⁵ Ibid

⁶ Ibid

⁷ *Germany in the Era of Hyperinflation.* Spiegel, Aug 14, 2009. www.spiegel.de/international/germany/millions-billions-trillions-germany-in-the-era-of-hyperinflation-a-641758.html

⁸ *What is Helicopter Money?* World Economic Forum, August 15, 2015.
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⁹ QE for People. www.qe4people.eu

European Parliament: www.qe4people.eu/eu_parliament_report_unprecedented_level_of_concern_on_ecb

¹⁰ When asked what they regard as "the likely effects of global climate change in the next 50 to 100 years," on a scale of 1 to 10, from Trivial to Catastrophic: 13% of respondents replied 1 to 3 (trivial/mild), 44% replied 4 to 7 (moderate), 41% replied 8 to 10 (severe/catastrophic), and 2% didn't know. Stephen J. Farnsworth; S. Robert Lichter (October 27, 2011). *The Structure of Scientific Opinion on Climate Change*. Wikipedia.
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¹⁴ *Climate Pledges Need \$13.5 Trillion Investment by 2030, IEA Says.* Bloomberg, Oct 21, 2015.
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¹⁵ *UN climate chief calls for tripling of clean energy investment.* Guardian, Jan 14, 2014.
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