



CHANGE FINANCE, NOT THE CLIMATE

Written by Oscar Reyes



Institute for
Policy Studies



“Green finance won’t save us — but fundamentally transforming the global financial system just might. Oscar Reyes is one of our indispensable experts on climate and finance, and I’ve long relied on his work. If you want to know how we can democratically marshal the resources for a Global Green New Deal, this is the place to start.” – Naomi Klein, author of *On Fire: The Burning Case for the Green New Deal*

“An eye opening and compelling exposé on the role played by big finance in exacerbating climate breakdown, along with innovative micro and macro level solutions for building a green, just and democratic finance sector fit for the future.” – Grace Blakeley, staff writer for *Tribune* and author of *Stolen: How to save the world from financialisation*

The hour of transformation is upon us. This comprehensive and practical handbook is the guide that transformers need to green the financial institutions that impact the economy.” – Ann Pettifor, director of Policy Research in Macroeconomics (PRIME) and author of *The Production of Money* and *The Case of the Green New Deal*

“This is a conversation that’s long overdue and now must be pursued with the utmost seriousness. The flow of money to the fossil fuel industry is, as this volume makes so clear, the key to its continued destructive expansion; crimping that flow, and redirecting it towards what we so badly need, may be the most important step we can take right now.” – Bill McKibben, author of *Falter: Has the Human Game Begun to Play Itself Out?*

“Oscar Reyes’ *Change Finance, Not the Climate* provides a wonderfully well-thought-out program for a global green financial transformation to accompany the Green New Deal. This landmark report from the Transnational Institute and the Institute for Policy Studies shows that turning the global economy into a climate and people-responsive system is not a utopian endeavor but a process that can begin in the here and now by transforming tools such as quantitative easing and investment financing from their use as instruments for shoring up and increasing corporate profitability in a neoliberal context to their serving as tools to secure the public interest in a global green economy. This work is not only a think piece for analysts but an indispensable, very readable manual for activists.” – Walden Bello, *State University of New York* and author of *Paper Dragons: China and the Next Crash* (Zed, 2019)

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PREFACE

“During moments of cataclysmic change, the previously unthinkable suddenly becomes reality.” – Naomi Klein¹

Change Finance, not the Climate was finished at the end of 2019, before the coronavirus swept the world, but the ability to implement its proposals and fundamentally shift the financial system will be shaped by the economic chaos and deep recession that is quickly unfolding as I write this in May 2020.

The significant global disruption brought about by the pandemic could open up more political space for the transformative proposals advanced in these pages. Indeed, numerous policies that “sensible” commentators assured us were impossible have already been implemented.

From Australia to Morocco, and Spain to Malaysia, manufacturers of cars, planes and military equipment transformed their operations to produce ventilators in March and April 2020, sometimes based on open source designs.² At the same time, large parts of the global economy – notably, in the service sector – simply shut down for weeks on end, with states and public financial institutions stepping in to guarantee incomes, prevent job losses, and place a moratorium on debt enforcement. In many industrialized countries, a decade or more of austerity was binned, with the global scale of new bailout funds running into the trillions. The IMF, usually a strident deficit hawk, told countries to spend what they can to tame the health crisis – noting that “exceptional times call for exceptional measures.”³

There are no guarantees that any of these measures will stick, however. The pandemic is already worsening existing global and local inequalities. The wealth of billionaires in the USA increased by US\$434 billion (15 per cent) in less than two months since the Covid-19 crisis took hold.⁴ Over 38 million people filed for unemployment in the US over the same period.

The story of how the pandemic will affect climate change and policies to prevent it is also one that remains to be written. Record drops in global CO₂ emissions grabbed some of the immediate headlines, but the main lesson that can be drawn from the unprecedented disruption to travel, eating out and shopping is that individual behavioural changes have little impact on overall emissions.⁵ In China, where emissions fell by almost a quarter at the peak of the pandemic in February, CO₂ levels had already returned to pre-pandemic levels by the end of April 2020.⁶ The take-home message should be that rapid structural shifts in our energy, food and transport systems are needed if there is any hope of keeping global temperature rises to below 1.5 degrees Celsius.

Responses to the pandemic could just as easily move us in the wrong direction, however. Short-term health advice against public transport use could do longer term damage to investment in affordable buses, trams and trains. And while cheaper oil could bankrupt a lot of the smaller shale gas and oil producers, low prices can also reduce the incentives for industry and consumers to switch away from oil.⁷

Populist politicians who have courted climate denialists are lapping up a new opportunity to push their agendas. Allies of US President Trump claim that, “If you like the pandemic lockdown, you’re going to love the Green New Deal”, their underlying message being that climate action kills jobs and the economy.⁸ In Brazil, the Environment Minister Ricardo Sales has pushed for deregulation of environmental policy while people are distracted by the pandemic.⁹

The Covid-19 crisis has massively disrupted the status quo, but the post-pandemic future depends on us doing the hard work of organizing to pressure governments into adopting green recovery plans, and replacing those that do not do so. This requires a clear narrative that the climate emergency requires massive public investment, state intervention and a change to business-as-usual every bit as drastic as the shutdowns that were experienced in the spring of 2020. Far from killing the economy, coordinated action for a Green New Deal is the best way to safeguard meaningful jobs, protect people's livelihoods and reset economic priorities towards creating a more liveable planet.

A GREEN RECOVERY

Change Finance, not the Climate was written against the backdrop of the 2008 financial crisis and a decade of austerity that followed it. Governments went out of their way to rescue banks and insurers, pumping liquidity into the financial sector that failed to drive investment and make the economy greener or more resilient. The financial sector, whose profligacy and lack of regulation had caused the 2008 crisis, emerged stronger even as millions of ordinary people lost their jobs, wages stagnated and household debts ballooned. This time around, we need a "people's bailout" and a just recovery plan to prevent any farcical repeat of that tragic response.

The financing of bailouts and stimulus packages through Quantitative Easing (QE) is a crucial test of government reactions to the pandemic. Since 2008, the approach of the US Federal Reserve, European Central Bank and others has been to buy up public and private sector bonds without attaching any social and environmental criteria to what they are buying.¹⁰ A significant chunk of this funding has passed through private banks, stimulating precious little in the way of green investment.

The estimated US\$6 trillion¹¹ rebooting of QE programmes in 2020, combined with the near collapse of numerous fossil fuel companies and big polluters, opens a new opportunity to do things differently. A “people’s bailout” should prioritize access to public health, guarantee dignified work and basic incomes, and pay for retraining, job placement and early retirement options for those shut out of jobs that relied on fossil fuel economy.¹² But emergency measures to protect people’s lives and livelihoods are only a first step towards recovery, and should be accompanied by massive new investment to reshape the economy.

The case for public ownership as a means to transform the oil and gas industry is stronger than ever. Chapter 1 examines central banks and the possibility that oil companies could be nationalized and “decommissioned” through re-directed QE programmes. The collapse in oil and shale gas company stock prices as Covid-19 swept the globe has made that far cheaper, but new routes to the same goal have also opened up. With hundreds of upstream oil and gas companies expected to face bankruptcy in the two years up to 2022, the US federal government could take an ownership stake and mandate the reorganization of these companies if it had the political will to do so.¹³ The Trump administration even flirted with the idea of taking equity stakes in oil companies and scaling back production, although it was quickly dismissed.¹⁴

If governments are intent on achieving the best value for taxpayers, as they often claim, then they should have a significant or controlling equity (i.e. ownership) stake in the companies that they rescue. As companies recover, their value together with the public purse increases, reversing the post-2008 practice of privatizing profits and socializing losses.

Taking an equity stake in bailed out companies means that governments could directly change how they function, and there are numerous precedents for this. When the US government took majority holdings of US car giants General Motors (GM) and Chrysler in 2008, it sacked the boss of GM, restructured Chrysler, and made investment in more energy-

efficient cars a core condition of the bailout.¹⁵ With industry lobbyists temporarily de-fanged, the Obama administration also passed tougher fuel-economy and carbon-pollution standards.

Environmental and social conditions should also be attached to loans for industries bailed out in response to the pandemic. Airlines are an obvious target here, since most face bankruptcy unless they receive government support.¹⁶ As of May 2020, EU airlines had requested €30 billion in bailouts since the start of the Covid-19 crisis but only France, The Netherlands and Austria had suggested environmental conditions to this funding, and their conditions look set to be weak and non-binding.¹⁷

Conditions attached to bailouts can help to make corporations more democratically accountable and socially responsible. France, Denmark and Poland have stated that they will not offer bailouts to companies that are based, or have subsidiaries, in tax havens (although this only applies to the EU's rather limited list of "noncooperative tax jurisdictions").¹⁸ The need for companies to turn their back on tax havens, as well as reforms of global taxes to create a "unitary" system that can adequately capture a share of the wealth of global corporations, is discussed in chapter 5.

A series of further conditions on bailouts have been proposed by US Senator Elizabeth Warren, which include a permanent ban on stock buybacks, and a three-year ban on paying out dividends and executive bonuses.¹⁹ Chapter 5 shows how such measures could limit the tendency of Boards and executives to prioritize short-term profitability over social and environmental goals. Executives are unlikely to bring an end to the "bonus" culture voluntarily, given how much they personally benefit from it, but companies in need of bailouts have weak bargaining power and can be forced to accept such changes.

Bailout conditions can and should be used to restructure finance as well. India's financial sector was in deep trouble even before the pandemic hit, with the government stepping in to replace the Board and redraw

corporate governance at IL&FS Group, a major “shadow bank” focused on infrastructure investment, as well as Yes! Bank, the country’s fifth largest private lender.²⁰ These takeovers have focused on financial stability and stamping out corruption, although there has so far been little political will to redirect lending away from big polluters. Chapter 2 sets out how banking regulations (such as India’s lending quotas for climate-sensitive sectors²¹) can be strengthened to support a green transition, while chapter 3 lays out how publicly owned banks are an important vehicle for changing the whole sector.

THE RISKS AHEAD

Immediate measures to rescue companies and safeguard incomes are just the first step on a far longer road to recovery. With global supply chains broken up, and export and tourism revenues collapsing, developing economies face a massive debt crisis that requires an unprecedented international response.²² There is little reason for optimism that the current crop of demagogues and incompetents that lead many of the world’s largest economies are up to this challenge, while the leading multilateral economic organizations (IMF, World Bank and World Trade Organization) have a far-from distinguished record. Some tools to stem the crisis already exist as part of the international financial architecture, however. The IMF could issue Special Drawing Rights (SDRs) to help countries cope with the coming financial crisis, as happened to a very limited extent in 2009.²³ Issuing at least US\$500 billion in SDRs is a way to pump liquidity into the global economy. Without getting into the technical details, this is a more equitable, internationalist alternative to rich countries’ QE programmes (discussed in chapter 1) and the US Federal Reserve’s “swap line” arrangements, which favour only a handful of larger economies.²⁴ SDRs could also provide a source of funding for a global Green New Deal.²⁵

The prospect that countries might have to fall back on IMF loans offers the Fund an opportunity to force the reform of fossil fuel subsidies.²⁶

But, as pointed out in chapter 6, the IMF's focus on cutting consumer subsidies as part of "rescue" packages that destroy social safety risks is harming millions of poor and vulnerable people, and could ultimately generate a backlash against the environmental objective of cutting fossil fuel support in the first place. It need not be this way, if fossil fuel producer subsidies are cut first, and subsidies are shifted to ensuring that both affordable renewable energy is supported and adequate social welfare systems are put in place.

As emergency measures are wound down and countries look to rebuild their economies, there are no guarantees that this will be geared towards a break with their reliance on fossil fuels. Crises can be transformative but, as Naomi Klein warns, "In recent decades, that change has mainly been for the worst."²⁷

On the same day that the Mayor of London announced an expansion to make the city's car-free zone "one of the largest in the world", the UK government used the collapse of revenues to push through a new round of austerity for the city's public transport system, offering a modest bailout in exchange for a rise in fares and cuts to beneficial rates for young and old people.²⁸

It is not difficult to discern the outline of how various forms of predatory capitalism could use the pandemic to advance their objectives.²⁹ High levels of unemployment are routinely used as a battering ram to break down the ranks of organized labour. Technology companies and surveillance states see "contact tracing" as an opportunity to break through rigid data protection regimes, while "social distancing" is being used as a new rationale for the accelerating automation of any number of tasks previously performed by (underpaid) humans.

Right wing politicians, spurred on by industry lobbyists, will try to revive the idea that climate action is an expensive luxury in a time of crisis, with suggestions that tougher environmental regulations could cost

jobs at a time of already high unemployment. In March 2020, the US federal government already used the crisis to suspend enforcement of environmental regulations, including monitoring of air pollution.³⁰

There is the attendant danger that even radical messaging – such as calls for a Green New Deal – could be diluted to the point of meaninglessness. The EU’s technocratic European Green Deal, which shuffles around existing funds, promotes carbon trading and “green growth” and avoids taking on fossil fuel interests, is a textbook case of this.³¹ As I write this, a majority of EU environment ministers are pushing to place this plan at the heart of the bloc’s post-pandemic recovery plans.³²

REIMAGINING THE ECONOMY

One of the main bulwarks against austerity and reformism is the sheer scale of the challenges that we now face. The post-pandemic depression is likely to dwarf the recession of 2008, with major economies on track to decline faster than during the Great Depression of the 1930s.³³ The post-2008 austerity programmes assumed that the debts owed by governments could and should be repaid. Even some of the intellectual cheerleaders for such a response are singing a different tune this time.³⁴ Low interest rates in many countries make borrowing to fund a massive programme of public investment to stimulate the economy an obvious choice.

There is also a very real opportunity to drive several nails into the coffin of the fossil fuel industry. Oil and gas companies have experienced some of the most dramatic, immediate financial impacts of the pandemic. For the first time in history oil prices turned negative, meaning oil firms were paying people to take surplus barrels of oil off their hands.³⁵ Instead of transporting oil around the world, super-tankers became overpriced storage units. OPEC+ cut a record 10 per cent off global production in April 2020 but this fell a long way short of dealing with the oil industry’s oversupply problem. While the industry is banking on a speedy recovery as economies reopen and international travel picks up, oil’s unprecedented

crash could have more lasting effects. As shown in chapter 4, investors are finding that oil and other fossil fuels are an increasingly bad investment. Renewables and clean energy stocks have consistently outperformed fossil fuels, and the latest price shock could build divestment momentum in “a financial sector increasingly eager to turn its back on the fossil-fuel industry.”³⁶

Such momentum is unlikely to be gained without reform to change the objectives of the financial sector itself, but it is here that the lessons of the pandemic could really bite. The shock of just “turning off” the economy for a period of months invites new reflections on which activities are socially and environmentally valuable, and these are often in stark contrast to the kinds of activities that are most highly prized by markets and most politicians.

All of the precedents for wide-scale economic change come out of big disruptions. In the last century, the Great Depression and World War 2 gave rise to the New Deal and welfare state. In a longer sweep of historical truisms, meanwhile, it is generally understood that plagues drive change.³⁷

The immediate priority now is ensuring that governments hardwire climate concerns and social justice into their recovery plans. Proposals for a Green New Deal already lay out in some detail how this could be done, although these should be considered stepping stones to changing the design and organization of the whole economy. The pandemic has graphically, and tragically, demonstrated the need for far more state intervention and public investment in public goods. But it also invites us to consider the role that finance plays in shaping an economy that can ensure our basic well-being. As we seek to rebuild, what comes next should be more resilient not just to the spread of pandemics, but to the challenges posed by the climate emergency.

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INTRODUCTION

With every news cycle, the urgency of tackling the climate emergency appears starker. Reports of record heat waves, unprecedented forest fires, crop failures, bleached coral and melting ice sheets are accompanied by new scientific studies warning that the Earth could enter a “hothouse” state.¹ The United Nations’ (UN) Intergovernmental Panel on Climate Change has acknowledged how extremely difficult it will be to limit global warming to 1.5°C – the target set to avoid this fate. It has stressed that the next decade until 2030 will be crucial if we are to meet this goal.²

When the 1.5°C target was included in the 2015 Paris Climate Agreement at the insistence of least developed countries, small island developing states and African countries, it risked being a concession without consequence – not least because the collective national plans of signatories would likely result in global warming of over 3°C.³ Encouragingly, the Paris Agreement opened the way for the UN Intergovernmental Panel on Climate Change’s Special Report on Global Warming of 1.5°C, which stark analysis established a new baseline that emphasizes the urgency and depth of changes needed to avoid catastrophic climate change. As *The Guardian* newspaper’s style guide now puts it, “Climate change ... is no longer considered to accurately reflect the seriousness of the situation; use climate emergency, crisis or breakdown instead.”⁴

The emergence of new youth movements and organizers reflects the urgency of radical action to avoid climate breakdown, the most visible examples being Fridays for Future and the Sunrise Movement, which demand climate solutions in line with the scale of the climate crisis as a non-negotiable baseline for inter-generational justice. These build on the longstanding concerns of environmental justice movements and frontline communities, such as the Standing Rock Sioux and Wet’suwet’en land defenders, whose struggles against oil pipeline construction in North

America have become more visible and attracted widespread solidarity as climate concerns rise up the political agenda.⁵

“How dare you pretend that this can be solved with just ‘business as usual’ and some technical solutions?” asked Greta Thunberg of world leaders gathered at the September 2019 UN Climate Action Summit.⁶ “There will not be any solutions or plans presented in line with these figures here today, because these numbers are too uncomfortable.... But the young people are starting to understand your betrayal.... And change is coming, whether you like it or not.”



Youth protesting against runaway climate change. Credit: Callum Shaw, Unsplash, Unsplash License

TRANSFORMING FINANCE

This sense of urgency is starting to impact upon discussions of finance. Avoiding catastrophic climate change requires “a massive transformation” in the global economy, as even the International Monetary Fund (IMF) now admits, with close to US\$7 trillion of investment worldwide every

year redirected towards a rapid and fundamental transition.⁷ This requires decarbonizing all primary energy sources, rapidly increasing electrification, retooling factories, retrofitting buildings and redesigning cities to cut demand, as well as major reforms in land use, reforestation and an end to deforestation. The UN Environment Programme (UNEP), for its part, has consistently flagged that “an unprecedented capital reallocation is required, measured in trillions of dollars a year.”⁸

In general, the sheer scale of this challenge serves as justification for focusing climate solutions on “unlocking private investment” in sustainable infrastructure, embracing “green growth” or touting the financial sector as “climate leaders.” From development banks to think tanks and climate non-governmental organizations (NGOs), there is no shortage of proposals on how to tweak today’s capitalist economy to make it work for a cleaner tomorrow.

This is the wrong approach. Relying on narrow and technocratic reforms to “unlock” private sector investment will not achieve anything like the scale of change needed. As the G20 Green Finance Study Group pointed out in 2016, less than 1 per cent of the holdings managed by global institutional investors (pension funds, insurance companies and asset management firms) are “green” assets.⁹ In comparison, their exposure to “carbon-intensive” sectors approaches 50 per cent.¹⁰ This book argues that tougher financial and environmental regulation rather than sweeter incentives are the core means to reverse this situation.

STOP FUNDING FOSSIL FUELS

Putting an end to fossil fuel lending and setting strict criteria to encourage a shift away from all forms of carbon-intensive investment has to be the first priority. It is not enough to offer the financial sector encouragement to develop new markets alongside a core business that continues to bankroll climate change. Hence, a good yardstick by which to measure any “green finance” proposal is the extent to which it *stops* investment in

fossil fuel extraction, deforestation or other drivers of climate change. As George Monbiot put it:

In seeking to prevent climate breakdown, what counts is not what you do but what you stop doing. It doesn't matter how many solar panels you install if you don't simultaneously shut down coal and gas burners. Unless existing fossil fuel plants are retired before the end of their lives, and all exploration and development of new fossil fuel reserves is cancelled, there is little chance of preventing more than 1.5C of global heating. But this requires structural change, which involves political intervention as well as technological innovation.¹¹

“CLEAN” ENERGY IS NOT ENOUGH

Ending the fossil fuel economy implies more than simply replacing fossil fuels with renewable energy, however. “Clean” energy can be a slippery label because it is often applied to effectively “dirty” energy sources such as large-scale hydropower, bioenergy or waste incineration that generate their own problems, including displacement of people from their land and human rights abuses, negative impact on food sovereignty and damage to public health.¹² Solar and wind power have fewer inherent disadvantages, but there are several instances of how these technologies can fuel land grabs and disempower local populations.¹³

Even energy that is produced cleanly can fuel new extractive practices, as illustrated by demand for lithium, cobalt and other minerals used in the making of electric vehicle batteries and solar panels that has been linked to severe human rights violations and land grabbing.¹⁴ There are no simple answers, but it is clear that just replacing one energy source for another would not make for a sustainable transition.

Past energy transitions from biomass to coal and oil have all been accompanied by major social and economic reorientations – shifting the possibilities of where and how goods are traded, moving populations

and enabling different industrial production methods.¹⁵ The coming transition will be of a similar scale and requires a positive vision of a democratic economy that emphasizes access to public goods and services over market-based approaches.¹⁶ Transforming the financial system is a core part of this, with the shift away from fossil fuels placing ethics and democratic accountability at the heart of investment.

BEYOND INCREMENTALISM

This book tries to imagine how we can change the financial system in response to the scale of the climate challenge. For this reason, it does not talk about incremental solutions like carbon taxes and trading, which have succeeded only in pricing 1 per cent of global emissions at US\$40/ton, the low end of World Bank estimates to meet even a 2°C climate target.¹⁷

Instead, the book tries to identify the “non-reformist reforms” that will help to wean banks and investors off their current addiction to fossil fuels.¹⁸ The further we move down this path, the more we must abandon the financial system as we know it.

One of the many lessons of the 2008 financial crisis is that the financial system is far better at concentrating wealth than it is at allocating resources – that is, investment. As one recent academic account of “financialization” puts it:

[F]inance cannot be thought of only (or even mainly) as a system for the allocation of resources. Rather, it should be thought of as a form of authority – a weapon by which the claims of wealth holders are asserted against the rest of society.¹⁹

Recent decades have seen the financial sector gain an increased share of the global economy – with a proportional decline in investment by public bodies. The financial crisis reinforced this trend in some ways, with the

public sector in many countries further “disciplined” by a harsh austerity regime, particularly in Europe. Amongst other things, this has resulted in cuts to renewable energy subsidies and investment programmes meant to stimulate an economic transition.

As of 2020, the biggest banks have grown larger since the financial crisis and some of the (limited) regulations passed to avert another crash have already been rolled back.²⁰ There is no sign that the financial system is getting any better at allocating resources for a transition. While the urgency of tackling climate change requires improving the current system, this needs to happen at the same time as challenging the role of “big finance.” A financial system that works for the climate will be one in which the financial sector plays a considerably smaller role.

A JUST TRANSITION

Stopping climate chaos is fundamentally about protecting people as well as the planet. The demand for a just transition starts by acknowledging that the same “unregulated, consumption-oriented and socially unjust economic model” that has caused the climate crisis has also caused social crises.²¹ Responding to climate change calls for changing that model.

There is no guarantee that responses to climate change will lead to progressive outcomes. Geo-engineering could lead to even harsher impacts on the world’s impoverished people who are already the most affected by the climate crisis, while the richer move to protect themselves behind gated communities and border fences.²²

Climate measures that ignore or exacerbate inequality can generate a backlash that can fatally undermine their objectives, as demonstrated by the *gilets jaunes* response to fuel tax hikes proposed by the French government in December 2017, or by the October 2019 riots against IMF-backed fuel subsidy reforms in Ecuador.²³ Protesters’ discontents were not restricted to fuel taxes in either case, but both show the danger of

advancing regressive, neoliberal reforms under the guise of addressing climate change.

In this context, climate action should be inseparable from climate justice, putting the needs of vulnerable workers and communities at the center of future demands, working alongside movements for democratization, equality and rejection of the market as “the underlying principle in our society.”²⁴

Tackling inequality is an essential part of building alliances between climate activism and other movements for social change, notably organized labor. In South Africa, for example, the mineworkers’ and metalworkers’ unions have allied with civil society in calling for the democratization of national energy company Eskom as part of efforts to shift it away from coal towards renewable solar and wind energy.²⁵



*Mother with child: Indigenous Day Native March Break Free, Backbone Campaign, 14 May 2016.
Credit: Alex Garland, Flickr, CC BY 2.0*

As pointed out by Naomi Klein, the climate crisis also presents an opportunity for radical policies that not only cut greenhouse gas emissions but also “dramatically improve lives, close the gap between rich and poor,

create huge numbers of good jobs, and reinvigorate democracy from the ground up.”²⁶ The proposals to transform and democratize the financial system set forth in this book are part of this broader vision for a more democratic, fossil-free world.

SUMMARY OF CHAPTERS

Financial System Change, Not Climate Change has six chapters, each of which offers an assessment of proposals to reform the financial system. Every chapter starts with a table that briefly summarizes the proposals that will be discussed, their proponents or examples of where they are being implemented, their potential impact, achievability and any associated drawbacks. Six core recommendations (one per chapter) emerge as priorities, but these are not the only proposals that merit being taken forward. Indeed, all of the measures discussed herein could contribute to building a financial system that would be part of the solution to climate chaos, rather than part of the problem. Uprooting the monoculture of financial capitalism and replacing it with a balanced financial ecosystem that sticks to planetary boundaries and respects social justice requires far more than uprooting a single tree.

The first chapter focuses on **central banks**. It identifies the need for these banks to embrace a climate mandate, using their role as financial regulators to identify and ultimately constrain the “climate-related financial risk” taken on by the banking sector. Central banks are also responsible for money creation. The quantitative easing (QE) programmes adopted after the 2008 financial crisis have seen central banks pump money into private sector banks and large corporations, disproportionately benefiting high carbon sectors of the economy. Proposals for “green” QE or for the creation of new money to buy up and decommission fossil fuel companies would help, although they do not fully address the destabilizing effect that QE in rich countries could have on the global South.

Current QE programmes should be replaced with **public finance for a Green New Deal**. Transforming the economy requires massive investment, which involves issuing new debt to stimulate investment and jobs, ultimately generating tax revenues to pay back the borrowing. The best plan for financing a Green New Deal would rely heavily on bonds, which are IOUs (“I Owe You”) issued by governments or corporations that want to borrow money. Ideally, public development banks would issue these bonds to finance public investment programmes in renewable energy, energy efficiency and public transport. Central banks should act as the “buyer of last resort” of these bonds.

The second chapter looks at **private banks**, which account for the largest share of investment in both fossil fuels and renewable energy. It surveys current efforts to make banking “greener” through regulatory changes. Although global efforts to improve transparency are welcome, they are far from adequate. Several other measures are proposed.

The key priority is for central banks and financial regulators to **create “green credit” policies**, building more robust versions of the example already set by China. Green credit policies should establish minimum requirements for the proportion of bank loans targeting “green” projects and upper limits on lending to carbon-intensive sectors. Such policies should cover international as well as domestic lending, and policies that are more ambitious could include rapidly reducing credit ceilings to cut off lending to companies whose “carbon intensity” is markedly above the best practice in their sector. Such credit ceilings would in effect place the worst polluters on an exclusion list for bank loans. However, it should also be noted that the capacity of regulators to change the banking system is closely linked to their ability to gain the upper hand over “too big to fail” banks, which oppose regulations that would change the status quo.

The third chapter looks at **public banks and alternatives within the banking system**. It identifies an enhanced role for public banks in financing a transition away from fossil fuels, while warning that more

democratic governance and strong accountability mechanisms need to be in place to avoid the mistakes of national development banks that have often ignored the needs and wishes of local communities. Cooperatives and local savings banks, especially those with a non-profit mandate, have a good track record of investment in renewable energy and climate-related projects in many countries and should also be encouraged. “Ethical” banks have also pioneered new standards and taken a lead in developing methods to account for banks’ climate impact. Tax incentives for green bank accounts could enhance their role. However, the alternatives proposed under the guise of “fin-tech” – peer-to-peer, blockchain and mobile financial services – have more mixed prospects.

The key priority is to **establish green development (or investment) banks** as a focus for public financing of renewable energy, energy efficiency or low-carbon transport infrastructure. Such institutions should operate with a clear mandate to prioritize public and local initiatives rather than public-private partnerships. They should also be able to offer concessional lending (or even some grant support), rather than simply investing on commercial terms. Germany’s KfW and France’s CDC (*Caisse des Dépôts et Consignations*) offer important lessons on how this could be done, and are far better models than the UK’s short-lived Green Investment Bank. With the European Investment Bank shifting to a fossil-free energy lending policy after 2021, it could become a positive example for public climate lenders. Green development banks should be the target of any reflows from existing QE programmes and could issue bonds to support a Green New Deal.

The fourth chapter looks at ways to **reform financial markets**. Ensuring that companies listed on stock markets and investment firms abide by mandatory environmental, social and governance rules is an important first step, as are measures to create a “taxonomy” of sustainable and unsustainable investments, or to provide standard definitions of green bonds. However, financial market reform will not be enough unless accompanied by tough environmental regulation to phase out fossil fuel

use and create structural incentives for investors to move their money. The main function of green bonds, meanwhile, should be as a source of funding for public development and investment banks as part of implementing a Green New Deal.

Targeting insurance industry divestment from the coal sector is paramount. Divestment campaigns have already helped to undermine fossil fuel companies' public acceptability (their "social license to operate") but are unlikely to cause significant financial damage to oil and gas companies for as long as there remain many unscrupulous financiers willing to buy up their stocks and loan them money. The coal sector is a different story because it is in a far weaker economic position, with a number of the leading coal mining companies going bankrupt and coal power producers already facing significant losses. While the biggest oil and gas companies can "self-insure" new investments, the biggest coal companies do not have the financial strength to do this, so they rely on insurance companies to underwrite the risks related to constructing and operating new coal power plants and mines. Many of the leading insurers have already scaled back their involvement in coal or are planning to stop underwriting coal power plants and mines altogether. A renewed push could help insurance companies reach the conclusion that the reputational damage of insuring coal outweighs any financial gains from the sector. This could significantly increase the costs and risks of investment in coal power, speeding up the sector's demise.

The fifth chapter focuses on **transnational corporations**. For corporations to address the climate emergency adequately requires fundamental reforms in how they are run, as well as curbing their overall power. The former calls for changes in the composition and pay structure of company boards and top executives. Increasing corporation tax, alongside a new system of "unitary" international taxation to eliminate the ability of corporations to avoid and evade their tax obligations, would help achieve the latter, at the same time as providing vital new sources of public finance to support a transition to a post-fossil fuel economy.

A key priority is **introducing corporate charters** that require large companies to act in the interests of workers, customers and the communities in which they are based, emphasizing democratic accountability rather than simply attempting to maximize short-term profits for shareholders. Amongst other benefits, they would provide a new legal vehicle for holding companies to account for the pollution they cause. This could be particularly effective as a basis for shutting down fossil fuel and carbon-intensive industries that cause local air and water pollution. Environmental justice activists have long pointed out that these industries cause climate chaos.

The sixth chapter presents the case for more **public investment and public ownership**. The public sector could steer investment through new rules governing state pension and sovereign wealth funds, although that would require changes in organizational culture. Redirecting public investment should go hand-in-hand with new sources of investment. Alongside greater willingness to engage in debt financing, as discussed in Chapter 1, this requires an increased tax base. One strategy is to put in place wealth taxes, which have the added advantage of helping to “abolish” the billionaire class that would otherwise block financial system change. New sources of climate finance (such as a Climate Damages Tax) and new rules for international financial institutions to exclude fossil fuel finance are also considered. Domestically, publicly owned utilities, transport companies and infrastructure providers could play an important role in a just transition, but this requires new models of public management, democratic decision-making and accountability.

Greening public pension funds is a key priority. Many public pension funds have little to no climate investment strategy and remain heavily invested in fossil fuels. They should reclaim their “public” dimension through a revised investment mandate that factors in environmental, social and economic considerations. This process should start with divesting from fossil fuels and assessing the “climate-related financial risk” of their

whole investment portfolio to ensure that it is fully compatible with a 1.5°C climate target.

The book concludes by offering a number of guiding principles and core recommendations for fundamentally changing the financial system to make it part of the solution to climate change, rather than part of the problem. The primary challenge is to stop the flow of money to oil, coal and gas and to establish a clear path that ties de-carbonization to reduced inequality. This requires political intervention rather than mere technical fixes, considering that whole markets will need to be redesigned. While this can involve detailed policy work in official circles, climate activism can significantly accelerate financial system change too. Acting on these principles and recommendations would leave the financial sector considerably smaller and less influential than it is now, with democratic, public bodies playing the lead role in shaping a post-fossil fuel economy.

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GREEN CENTRAL BANKING

The problem: Central banks and financial regulators rarely take into account the huge consequences of climate change when setting the rules that govern private banks. Their quantitative easing schemes to print more money have bankrolled the financial sector and big polluters.

The solution: Central banks and financial regulators should be given a clear mandate to consider climate risks when making policies. Quantitative easing should be replaced by a massive programme of public financing for a Green New Deal, and major fossil fuel companies should be bought up and “decommissioned”.

3 key steps

- Give central banks a climate mandate, requiring them to set policies that identify and ultimately constrain the “climate-related financial risk” taken on by the banking sector.
- Replace existing quantitative easing with a broader programme of public finance for a Green New Deal, issuing bonds to support public investment in renewable energy, energy efficiency and public transport.
- The US Federal Reserve should create money sufficient to buy up and “decommission” major US-based fossil fuel companies, while providing economic security for workers affected by the transition away from coal, oil and gas. Low stock prices and the precarious economic position of many companies during the COVID-19 crisis provides an opportunity to enact such measures.

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Climate mandate for central banks	<p>Central banks have a mandate to contribute to financial stability rather than just controlling inflation. This means that they should explicitly monitor “climate risks” – both physical risks posed by climate change, and the changes caused by a green transition.</p> <p>Clarifying the climate and social mandate of central banks is a first step in permitting them to regulate bank lending to fossil fuel companies and other polluters.</p>		<p>Low impact</p> <p>High achievability</p> <p>Low potential drawbacks</p>
Climate-risk stress tests	<p>Stress tests determine banks’ financial health in relation to a series of hypothetical crises. If banks fail this test, they are required to cut dividends to shareholders (or stop share buybacks) in order to build up their capital reserves.</p> <p>Stress testing could be expanded to assess the potential impact of both “physical” and “transition” climate risk. This could provide an incentive for banks to reduce their lending to fossil fuel companies and CO2-intensive industry. However, stress tests are easily gamed and offer a poor measure of cumulative impacts (of the sort that led to the 2008 crisis). Reducing climate change to its role in destabilizing the financial system also loses sight of the broader damage that climate chaos will cause.</p>	<p>Stress tests were introduced by the Federal Reserve, European Central Bank and other banking regulators in response to the financial crisis; the Network of Central Banks and Supervisors for Greening the Financial System has suggested extending them to incorporate climate risk.</p> <p>France already requires banks to report on “transition” risks. However, such tests have not stopped the six largest French banks from increasing their exposure to such risks since the introduction of this law.</p>	<p>Low impact</p> <p>High achievability</p> <p>Medium drawbacks</p>
Create money to finance a Green New Deal (Modern Monetary Theory, MMT)	<p>Governments should create new money and use it to fund a Green New Deal, funding new jobs and building clean infrastructure. This kind of approach is justified because it is ultimately less financially risky than inaction on climate change. However, MMT assumes a strong currency (e.g. US dollar) and could spread global inequality, as well as causing inflation that would ultimately harm ordinary people’s living standards.</p>	<p>There are no real world examples of MMT, but in a lighter form it would simply urge the creation of a fiscal stimulus in response to recession. The original New Deal is the classic example of this, and various countries responded to the 2008 financial crisis in this way. South Korea explicitly offered a “green” stimulus but the reality was grey more than green and did little to reduce the country’s greenhouse gas emissions.</p>	<p>High impact</p> <p>Low/medium achievability</p> <p>Medium/high drawbacks</p>
Green quantitative easing (QE)	<p>Central banks should create money for government and purchase corporate bonds to stimulate green investment. This differs from existing QE, which mostly benefits financial services and tends to fund high-carbon sectors. However, QE has been criticized for prolonging the asset price bubbles that led to the 2008 crisis, and it could even fuel new debt crises in the global South.</p>	<p>There are no existing instances of green QE, but the IMF and the European Union Technical Expert Group on Sustainable Finance have discussed whether to use this policy tool.</p>	<p>Medium impact</p> <p>Medium/high achievability</p> <p>Medium drawbacks</p>
Quantitative Easing for the Planet	<p>The US Federal Reserve should create money sufficient to buy up and decommission major US-based fossil fuel companies. However, it is not a lack of money that is the main impediment to this kind of buyout, but a lack of political will, since US politicians (not to mention technocrats at the Federal Reserve) would have fundamental ideological objections to such a buyout.</p>	<p>The combined stock value of ExxonMobil, Chevron and ConocoPhillips is US\$578 billion – far less than the additional US\$3.5 trillion created by the Federal Reserve between 2008 and 2014.</p>	<p>High impact</p> <p>Low achievability</p> <p>Medium drawbacks</p>

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Debt financing for a Green New Deal	Green bonds issued by public development and investment banks could play a significant role in financing a Green New Deal. Central banks could replace or redirect QE programmes into purchasing these bonds, as well as act as “buyer of last resort” on any bond issue linked to the Green New Deal.	The Democracy in Europe Movement’s “Green New Deal for Europe” proposal suggests that the European Investment Bank should issue green bonds, underwritten by the European Central Bank.	High impact  Medium achievability  Low/medium drawbacks  

**Rating these possibilities according to “potential impact”, “political achievability” and “drawbacks” is a subjective exercise rather than an objective judgement. The intention of these ratings is to provide an “at a glance” view of the relative merits of different proposals – a starting point for discussion, rather than the last word on the matter. All of these factors can vary considerably according to how new rules and regulations are applied, and their political achievability is closely related to the individual local or national context. Judging something to be difficult to achieve politically should also not be taken to mean that it should not be attempted – indeed, the scale of the climate crisis means that a lot of the most pressing actions will require a shift in the boundaries of what is currently considered to be politically “possible.”*

Central banks might seem an odd target for pressure from campaigners given they tend to be ruled over by technocrats and appointees at one or several removes from the democratic process, but they should be seen as an important site in the struggle to create policy responses that are adequate to the scale of the climate emergency.

THE CHANGING ROLE OF CENTRAL BANKS

Central banks exist to keep a check on the total quantity of currency in circulation in a country (or currency area) and regulate the banking system. They issue banknotes, set interest rates, regulate how much money is available for lending by banks operating within their jurisdiction, raise money for the government through bond issues, act as bankers to other banks, and liaise with international bodies and produce research to advise governments on monetary affairs.¹

The core mandate of central banks has evolved over time. In the post-war period, central banks coordinated with governments to achieve overall financial stability, with European central banks and the US Federal

Reserve all at some point engaged in selective targeting and industrial policy.² This involved setting controls on the type and extent of bank lending, as well as controlling international capital movements in order to protect domestic markets.³

In the neoliberal era, however, their role has progressively narrowed to focus on controlling inflation. This model was cemented by efforts to secure the “independence” of central banking from government, itself a marker of the neoliberal vision of a financial sector that escapes public scrutiny or democratic accountability.

The European Central Bank (ECB) is a flagship of this independent central banking approach. Its response to the 2008 financial crisis was to promote austerity policies that have massively entrenched inequality and hardship, especially in Greece and other countries on the “periphery” of the Eurozone.



The European Central Bank in Frankfurt am Main. Credit: Charlotte Venema, Unsplash, Unsplash License

In other ways, though, the tide has turned in recent years. It is now widely recognized that price stability does not guarantee financial stability.⁴ Central banks have re-emphasized their broad mandate to help achieve financial stability and have adopted new instruments to do so. New “stress tests” and regulations have been introduced to reduce the systemic risks to the real economy that were exposed by the 2008 crisis although, notably, such measures have not included breaking up any of the 30 “too big to fail” banking groups.⁵ At the same time, the US Federal Reserve and ECB have engaged heavily in QE, which involves creating new money to stimulate investment. Both of these policy directions could open the door for measures that address climate change.

A NEW CLIMATE MANDATE

In December 2017, a Network of Central Banks and Supervisors for Greening the Financial System (NGFS) was established at the initiative of *Banque de France*.⁶ Its proposals, while far from radical, have opened up a debate on how central banks can help tackle climate change. In its first comprehensive report, published April 2019, the NGFS clearly states: “Climate change is a source of structural change in the economy and financial system and therefore falls within the mandate of central banks and supervisors.”⁷

Building on a broader discourse of “environmental,” “sustainability” and “climate risk” that has emerged in the green finance sector over recent years (see BOX 1), the NGFS defines climate risk as:

Risks posed by the exposure of financial firms and/or the financial sector to physical or transition risks caused by or related to climate change (such as damage caused by extreme weather events or a decline of asset value in carbon-intensive sectors).⁸

BOX I

What is “climate risk”?

Analysts generally subdivide climate risk into “physical” and “transition” risks. Physical risks include the direct impacts of climate change, such as more frequent droughts affecting crop yields, floods that inundate coastal manufacturing or ecosystem changes making certain types of farming unviable.

Transition risks include the possibility that policy makers will set limits on big polluters, ruling out certain technologies such as coal-fired power stations or petrol cars, or leveling extra taxes that would put those technologies at a competitive disadvantage. They also include the impacts of technological change such as the reducing unit costs of solar power as it becomes more widespread, or the possibility that technological breakthroughs in energy storage could make renewables more viable.⁹

The advantages of this approach are clear: it translates climate concerns into a language that investors and financial analysts already speak. All private investment relies on “risk-adjusted returns,” which means that the potential for profit is traded off against the danger that things go wrong and the money gets lost.

But there are also significant limitations. Risk management tends to focus on short-term factors, underplaying the longer term impact of climate change – as pointed out by the Governor of the Bank of England, Mark Carney, who has dubbed this “the tragedy of the horizon.”¹⁰ More fundamentally, some of the most significant potential impacts of climate change get lost in translation when they are reduced to the categories of environmental or climate risk. Risk management frames problems in terms of the immediate threat that they pose to the profitability of a venture. Seen in that way, climate change could easily be ignored when investors see it

as less likely to affect profits than, for example, the possibility that currency exchange rates will vary considerably. Isolating climate change as a single factor in investment decisions can come at the cost of a loss of perspective over the systemic, planetary danger that it poses.

Some more recent definitions of “climate risk” have begun to address this problem by acknowledging its long-term and systemic nature. Notably, the NGFS frames climate risk as a widespread, diverse and irreversible source of structural change that will affect “all sectors and geographies.”¹¹ In economic terms, it underlines that the costs and disruptive potential of inaction are potentially far more severe than taking action to address climate change.¹²

However, to frame climate change impacts as a threat to profits can render invisible their role in exacerbating inequality and can even worsen that problem. Low-income households could lose access to credit if they live in countries or cities that are highly vulnerable to climate risks, and low-income countries already have to pay more to borrow money because they are more affected by climate change.¹³

CLIMATE RISK SUPERVISION: STRESS TESTS

Some central banks have already modified the way they interpret their roles in light of the risk that climate change poses to financial stability. Brazil, China, France and Indonesia – all G20 members – have included environmental considerations in banking policy and regulation in recent years.¹⁴ Since 2014, for example, the Brazilian Central Bank has required commercial banks operating in the country to have environmental and social risk policies, including measuring the proportion of their

investments in sectors and projects that carry significant risks to the environment.¹⁵

NGFS advocates for similar measures, calling on “central banks and supervisors to start integrating climate-related risks into micro-supervision and financial stability monitoring.”¹⁶ In practice, this boils down to greater awareness-raising and encouraging the creation and sharing of climate-related data by firms, rather than a directive to shift investment practices. The European Union (EU) has already laid the groundwork for this, proposing a “taxonomy” of sustainable investments that is discussed further in Chapter 4.

Central bank supervision of climate risk could also take the form of incorporating climate-related stresses into the regime of “stress testing” that was brought in after the 2008 financial crisis.¹⁷ These stress tests are designed to determine banks’ financial health in relation to a series of hypothetical crises. If banks fail the stress test, they must cut dividends to shareholders (or stop share buybacks) in order to build up their capital reserves.

The 2016 *French Energy Transition Law* already requires banks to “stress test” their portfolio to evaluate over-exposure to climate change risks.¹⁸ However, such tests have not stopped the six largest French banks from increasing their exposure to such risks since the introduction of this law.¹⁹ A 2018 study by the Netherlands Central Bank also recommended an “energy transition risk stress test.” Focusing on “transition” risks can offer a more robust form of stress testing, because it would force banks to evaluate (and perhaps, ultimately, reduce) their exposure to fossil fuel companies and “high CO₂ emission industries” both domestically and internationally.²⁰

Stress testing has so far been relatively ineffective as a tool to discipline bank investment, however. There is a significant risk that banks can

game the system, while in the US pressure from the banking lobby has significantly weakened stress testing requirements as well as exempted ever more banks from taking part in the exercise.²¹

Stress tests can also induce a false sense of security because they look at the impact of specific shocks on the financial system, but are unable to take into account “unexpected” impacts (in the case of climate risk, that would include the breach of various tipping points) or to assess the cumulative effect generated by losses from one form of lending cascading across the whole system – as happened in 2008.²²

Reducing climate risk to a question of financial stability also misses the broader point, as Adam Tooze points out:

Of course, everything possible should be done to make the financial system resilient.... But why is financial stability the principal concern? Central banks and financial regulators should instead be urgently exploring what they can do to alter the course of economic growth so that the world can rapidly decarbonize and thus prevent worst-case climate change—and the related financial fallout—in the first place.²³

Further measures that could be adopted by central banks and financial regulators to limit “climate risk” and regulate the activities of private banks are discussed in Chapter 2. However, central banks do not simply have a regulatory function. They also play a key role in money creation and, increasingly, as investors.

MODERN MONETARY THEORY

Whenever a Green New Deal or proposals for a radical transition to address climate change are floated, the first question that comes back is: how will you pay for it? The conventional response would be to name new sources of tax revenue, spending cuts in other areas or borrowing increases, but Modern Monetary Theory (MMT) offers a seemingly

appealing alternative: create more money. In most countries that would mean central banks would be instructed to increase the money supply; in the US, the Treasury has this role.

The basic principle behind MMT is that a government in charge of its own currency can print as much money as it likes. This is not a new insight, but whereas conventional economists have baulked at this possibility because of the risk of hyperinflation, proponents of MMT suggest that the risks are overplayed – the climate crisis is a greater existential threat than inflation, they argue.

For example, Stephanie Kelton, a key advocate of MMT and former adviser to Bernie Sanders, co-wrote an article in which she advocated for creating money to pay for a Green New Deal:

The U.S. government can never run out of dollars, but humanity can run out of limited global resources. The climate crisis fundamentally threatens those resources and the very human livelihoods that depend on them.²⁴

Kelton and her co-authors go on to argue that deficit spending was the underpinning of the original New Deal, and that creating new money is already at the core of how the US government pays for its programmes.

This argument has some merits. There can be little doubt that the US needs to invest in renewable energy, public transport and other green infrastructure. Creating money and lending it to government could help to fund this investment, as well as creating new employment opportunities.

MMT is no panacea, however. While the state often has more capacity to generate money and use debt financing than deficit hawks in the US or promoters of austerity in the EU suggest, it has limits. Inflation would ultimately destabilize economies and damage ordinary people's living

standards, and could lead to rejection of any Green New Deal associated with it.²⁵ MMT is unable to propose where the limits of money creation lie because it does not offer a coherent theory of value creation.²⁶

Some of the practical limitations and global implications of MMT have already been tested out via QE. Usually the US Federal Reserve is not allowed to purchase bonds directly from the Treasury; the now-completed QE programme marked a partial exception to this rule.

A more fundamental critique of MMT is that it relies on an implicit “American exceptionalism” without considering its global applicability or consequences for the world beyond the US. If the US wanted to print money and allow the Federal Reserve to buy it in order to finance a Green New Deal, the world economy would have to be prepared to assume that debt – but national treasuries elsewhere would likely see this as a form of economic warfare.²⁷

The US is currently able to assume US\$16 trillion in public debt (or US\$22 trillion including intergovernmental holdings) because it is the *de facto* global reserve currency.²⁸ Other countries cannot print more money so easily without foreign investors dumping their bonds, devaluing their currency and causing inflation and higher interest rates. Even Left governments taking a Keynesian approach to increasing public investment to stimulate the economy, including Salvador Allende’s Chile in the 1970s and François Mitterrand’s France in the early 1980s, have been “disciplined” by international markets in this way.

GREEN QUANTITATIVE EASING

Although a number of mainstream economists have been dismissive of MMT, it bears considerable similarities to the QE policies adopted by the US Federal Reserve, European Central Bank, Bank of Japan and Bank of England in response to the 2008 financial crisis. Over the past decade, these

programmes have created US\$10 trillion in new assets, much of which has been distributed to banks and other financial services companies.²⁹ QE is sometimes summarized as “printing money,” although it might more accurately be described as the creation of an overdraft facility for government treasuries.³⁰ New money is added to the balance sheet of a central bank at the stroke of a computer key, which the bank then uses to buy “whatever assets it likes: government bonds, equities, houses, corporate bonds or other assets from banks.”³¹

Whereas MMT makes a virtue of money creation to fund government spending, QE is considered by central banks as an “exceptional measure” to stimulate bank lending in a situation of very low interest rates. QE programmes have dedicated significant resources to providing cheap credit for the financial services industry, as well as buying corporate bonds of multinational companies. A 2017 study of ECB and Bank of England QE programmes found they were heavily skewed towards companies whose future relies on the continuation of a fossil fuel economy.³² A closer look at the ECB programme found that more than €110 billion was invested in the four most carbon-intensive sectors: fossil fuel extraction and distribution, automotive, energy-intensive industry and electricity generation.³³

Although they are billed as temporary, QE programmes have in fact significantly altered the way that central banks manage their investments. The ECB alone has already created and spent €2.6 trillion (US\$3 trillion) on buying bonds in the three years since the start of the QE programme in March 2015.³⁴ Although the programme was halted temporarily in December 2018, it restarted in November 2019 with the ECB buying Eurozone government bonds at a rate of €20 billion in net purchases per month.³⁵ At the same time, the ECB is continuing to reinvest the funds from bonds already purchased through QE that have matured, which amounts to around €14 billion in reinvestment per month.

Globally, central banks now control an estimated US\$13.3 trillion in



Mural by M-city in Katowice, Poland. Credit: Paweł Czerwiński, Unsplash, Unsplash License

assets, making them the largest class of all public investors.³⁶ Central banks traditionally held all of their reserves in the form of safe assets (sovereign bonds, gold and IMF Special Drawing Rights) or as deposits with other central banks or the Bank of International Settlements (to ensure liquidity in the banking system).³⁷ However, largely as a result of QE, central banks now have close to US\$2 trillion invested in corporate bonds (US\$670 billion), equities (i.e. shares, US\$819 billion) and asset-backed securities (US\$459 billion).³⁸

Given the QE exception has become semi-permanent, central banks should disclose the levels of climate risk on their balance sheets, showing what is being invested in polluting industries.³⁹ Beyond simply disclosing their assets, however, central banks should rapidly develop

green investment policies. The NGFS has recommended something along these lines, encouraging central banks to integrate “sustainability factors” into their “own-portfolio management,” while the IMF has also suggested “integrating climate risk analytics ... into central bank portfolio management” and “green QE.”⁴⁰ The EU Technical Expert Group on Sustainable Finance has also called for central banks to express a preference for buying green bonds through the ECB’s QE programme.⁴¹

Various proposals exist for how this could work in practice. In the EU, for example, one study (commissioned by a Green party member of parliament) has suggested that QE programmes should be redirected away from purchases of debt from banks and towards “private sector businesses, local and regional governments, and social enterprises, where those organisations can demonstrate that the central bank’s money will be used for green purposes.”⁴² The potential end use is further defined as measures to improve building and industrial efficiency, public transport, waste management, renewable energy and land management.⁴³ The European Investment Bank (EIB), rather than the ECB, would be in charge of managing this investment programme, based on greater alignment with its mandate and experience.⁴⁴ The new EIB energy lending policy, which will stop financing fossil fuel projects at the end of 2021 and ensure compliance of all EIB financing with the Paris Agreement by the end of 2020, strengthens the case for the transfer of QE programmes to this institution.⁴⁵

“Green QE” is also a prominent suggestion for financing a Green New Deal, the basic idea being to issue bonds to bankroll public works that would focus, initially at least, on renewable energy and energy efficiency.⁴⁶ If adopted, any such proposal should be backed up by an investment policy that explicitly rules out central banks holding investments in the fossil fuel architecture, and that puts strict limits on other forms of unsustainable (polluting, or human rights abusing) investment.

QUANTITATIVE EASING FOR THE PLANET

Another spin on green QE, which proposes a full frontal assault on the fossil fuel industry, is the Democracy Collaborative's *Quantitative Easing for the Planet*.⁴⁷ Rather than simply promoting greener technologies, the diagnosis is that the US government is locked into inaction on climate change because of the “domineering political influence” of fossil fuel companies, which form “a powerful roadblock to an environmentally viable energy system.”⁴⁸ Dismantling this roadblock could be achieved through “a federal buyout of the fossil fuel companies” bankrolled by a new QE programme.

Under this proposal, the US government would seek to take a 51 per cent or more controlling stake in the core oil and gas companies.⁴⁹ To give a sense of the scale, as of October 2019 ExxonMobil was valued at US\$293 billion, Chevron at US\$222 billion and ConocoPhillips at US\$63 billion.⁵⁰

Decommissioning fossil fuel companies is easier said than done, because the nationalization and managed decline of oil majors goes both against the deeply held faith in the private sector of today's senior politicians and financial administrators, and against their stated aim of using QE to stimulate the economy. Yet the proposal has the significant merit of identifying fossil fuel interests as a major impediment to progress.

THE DRAWBACKS OF QUANTITATIVE EASING

Even if QE were “greened,” there are significant drawbacks to this form of expansionary monetary policy that none of the proposals presented above fully overcome. Existing forms of QE have so far pumped money into the financial services industry with little evidence that this has stimulated investment in the real economy. Banks have used QE to build up their own reserves, boost bonuses and dividends, rather than lending money to companies that could provide jobs and invest in a green transition.⁵¹

Although the long-term impacts of QE are yet to be seen, their effect on raising asset prices is widely recognized.⁵² It is far from clear whether this is a good thing, considering it amounts to sustaining the financial bubbles underlying the 2008 crisis rather than bursting them.

Asset price inflation can have destabilizing effects on economies in the global South.⁵³ As a 2018 report by the Dutch Center for Research on Multinational Corporations (SOMO) points out, QE in high-income countries has stimulated rapid capital flows to low-income countries, which has resulted in increased government debt in the form of bond issuance, as well as private debt in the form of corporate bonds issued by companies in developing countries. This could result in damaging debt crises.



Mural in Bielsko-Biała. Credit: Paweł Czerwiński, Unsplash, Unsplash License

QE may also entrench inequality within countries rather than alleviating it, although its distributional effects are not well understood.⁵⁴ This risk comes about because QE distributes money to companies that already have considerable assets to start with, the costs of which are ultimately picked up by ordinary citizens, with the effect that “well-heeled investors who have already benefited so much from the fruits of the money tree will carry on feasting.”⁵⁵ However, counter-evidence suggests that if QE were to stimulate economic activity and job creation, low- and middle-income people would ultimately benefit.⁵⁶

FINANCING A GREEN NEW DEAL

Winding down current QE programmes does not mean that central banks should step away from the broader role they have assumed in providing an economic stimulus. Transforming the economy away from fossil fuels requires massive investment, which means issuing new debt to stimulate investment and jobs. In short, QE programmes should be replaced by or redirected into public finance for a Green New Deal.

The best plan for financing a Green New Deal would rely heavily on issuing bonds, ideally through public development banks, to finance public investment programmes in renewable energy, energy efficiency and improved public transport. Central banks could then lead by example and prioritize purchases of these green bonds.⁵⁷ At the very least, they should support scaling up of green bonds issuance by public investment and development banks by underwriting them, acting as a “buyer-of-last resort.”⁵⁸ As Adam Tooze argues:

There is a strong case for funding a large part of [the] decarbonization drive through the issuance of long-term debt. It is not the business of central banks to issue such loans. The debts should be issued by public investment banks or directly by national governments. But it should be the job of central banks to support this push by acting as a buyer of last resort for those long-term debts.

Acting as a backstop to the issuance of a massive volume of publicly issued green bonds is certainly a novel role for the central banks. But after their exertions in the 2008 financial crisis, central bankers, of all public officials, can't plausibly retreat into an insistence on the limits of their mandate.

A similar, twin-track approach that would see a public investment bank (the EIB) issuing green bonds with the backing of a central bank (the ECB) is the core financing principle behind the Democracy in Europe Movement's *Green New Deal for Europe*.⁵⁹

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NEW RULES FOR PRIVATE BANKS

The problem: Private banks are the biggest investors in fossil fuels.




The solution: Private banks should be more tightly regulated to set upper limits on lending to carbon-intensive industries and phase out fossil fuels, and minimum targets for “green” lending.

3 key steps

- Develop green credit policies, establishing minimum requirements for the proportion of bank loans targeting “green” projects.
- Set mandatory upper limits on bank lending to carbon-intensive sectors, cutting off lending to the worst polluters.
- Break up the “too big to fail” banks, whose significant power acts limits the ability of governments to set environmental or social rules on who banks lend money to.

Banks sit at the heart of the global financial system with over US\$135 trillion on their balance sheets, almost half of all global assets.¹ Unsurprisingly, this makes the banking sector the leading investor in both fossil fuels and renewable energy, offering loans to finance new projects, underwriting stock and bond issues, as well as providing a constant stream of working capital to large energy corporations and heavy industry.² Redirecting bank lending away from fossil fuels and towards more “sustainable finance” is a key priority in addressing the climate emergency. While it is possible that a handful of the largest fossil fuel companies could continue to fund themselves for some time through their own savings, most firms rely on external finance – and bank lending is the largest of these sources.³

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Capital requirements – green support factor	Capital requirements govern the amount of money that a bank needs to hold in reserve to cover the potential risk of losses on its loans and other investments. A “green supporting factor” would lower the capital requirements for green lending. However, this risks creating a green bubble, destabilizing the financial system and damaging the reputation of sustainable finance.	There are no real-world examples of a “green supporting factor,” but it was suggested as an option by the EU High-Level Expert Group on Sustainable Finance and is under consideration by the European Commission. The abundance of pre-2008 lending and investment that were not adequately backed by bank capital was a key factor in the financial crisis, so the risk of asset bubbles is very real.	Low impact Medium achievability High drawbacks
Capital requirements – brown penalizing factor	Higher capital requirements for “brown” (unsustainable) loans to fossil fuel companies and fossil fuel-intensive industries would reflect the real and growing systemic risk of these activities, and could discourage investment that contributes to climate change. The financial system as a whole would also become more robust.	The Basel III international banking regulations introduced in response to the 2008 financial crisis already raise capital requirements to limit lending risks. Adjusting these to take account of better understandings of climate risk would be a next step consistent with this form of regulation.	Medium impact Medium achievability Low drawbacks
Green credit guidance	Green banking guidelines can list priority sectors, set minimum requirements for the proportion of loans to green projects or set limits on lending to carbon-intensive sectors. Policies should cover international as well as domestic lending, however, and should put in place enforceable standards on greenhouse gas emissions and energy efficiency.	Bangladesh establishes a minimum proportion of bank lending that must flow to environmentally friendly projects. China has also set out green credit guidance.	Medium/high impact High achievability Low drawbacks
Credit ceilings	A credit ceiling is a cap placed on the amount of bank lending to specific companies or carbon-intensive sectors. Ceilings could also target the “worst offenders” by setting limits on lending to companies whose carbon intensity is significantly higher than the best practice in their sector – effectively placing those companies on an exclusion list.	Central banks have often imposed credit ceilings as a means to limit private money creation. So far there are no examples of ceilings being used to regulate fossil fuel lending. There are various examples of development banks operating exclusion lists as part of their environmental and social safeguard policies, however. The Ireland Strategic Investment Fund has created a fossil fuel exclusion list to fulfill a legal commitment to divest from fossil fuels.	High impact Low achievability Low drawbacks
Lender liability	Environmental lender liability renders banks liable for the environmental damage caused by their loans.	In Brazil, financial institutions can be held fully liable for environmental harms caused by borrowers. The United States, United Kingdom and Germany also have more limited forms of environmental liability.	Low/medium impact High achievability Low drawbacks
Climate-related financial disclosure (voluntary)	Climate-related financial disclosure makes visible who is bankrolling climate change. Voluntary disclosure can be a testing ground for methodologies that later become mandatory. Industry initiatives can be a form of “greenwashing,” however, and the lenders that bankroll most fossil fuel companies tend to avoid the more robust initiatives.	The Financial Stability Board’s Task Force on Climate-related Financial Disclosures (TCFD) has recommended that banks should routinely disclose their lending to companies with carbon-related risks. It also suggests that banks should disclose their own greenhouse gas emissions (including “indirect” emissions from the generation of electricity purchased by the bank).	Low impact High achievability Medium drawbacks

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Climate-related financial disclosure (mandatory)	<p>Mandatory climate-related financial disclosure on its own is toothless, but the data that banks gather and publish can be the basis for tougher forms of regulation. It can provide a basis for calculating levels of climate risk, while campaigners can use the disclosed data to shame the worst actors into improving their business practices or threaten consumer boycotts.</p> <p>Measurement should be sector-specific and related to a path for the transition away from fossil fuels and other sources of greenhouse gas emissions.</p>	<p>Various regulators are considering implementation of the TCFD recommendations, although progress remains slow.</p> <p>The 2016 French Energy Transition Law requires listed companies to make carbon disclosures and asks banks to “stress test” their portfolio to evaluate over-exposure to climate change risks.</p>	<p>Medium impact </p> <p>Medium achievability </p> <p>Low drawbacks </p>

The public face of the banking industry is awash with initiatives to bolster their “green” credentials. The biggest banks routinely claim to be increasing their investment in “low carbon, sustainable business.”⁴ JPMorgan Chase, Wells Fargo and other major US banks voiced their support for a global climate agreement in advance of the 2015 UN Climate Conference, and later distanced themselves from President Donald Trump’s administration when the country withdrew from the Paris Agreement.⁵

A look at how the major US banks, in particular, and most of the 30 “too big to fail” banks actually lend and invest tells a completely different story, however.⁶ Even as they pay lip service to climate action, the big banks are increasing their fossil fuel lending. Since the adoption of the Paris Agreement, 33 global banks have poured US\$1.9 trillion into fossil fuels.⁷ The six US banking giants that welcomed the global climate agreement are all in the “top dirty dozen fossil fuel banks” for 2019, accounting for over one-third (37 per cent) of all global fossil fuel financing from private banks since 2015.⁸ At the head of this list, JPMorgan Chase is “very clearly the world’s worst banker of climate change,” having poured US\$196 billion into fossil fuel investments between 2016 and 2018.⁹ “By this measure, Jamie Dimon, the C.E.O. of JPMorgan Chase, is an oil, coal, and gas baron almost without peer,” as Bill McKibben points out.¹⁰

Most of the climate campaigns directed at private banks tend to focus on denying lending facilities to landmark projects. Fossil fuel megaprojects require loans to get off the ground, which makes them vulnerable to public pressure. The ongoing struggle over the Adani coal mine, which has made all four of Australia's big banks rule out lending money to the project, shows how effective this tactic can be.¹¹ Divestment campaigning against flagship projects sets down a marker for similar fossil fuel investments and chips away at the industry's "social license to operate."¹² But other measures will be needed to rebalance the banking system in favor of investments in renewable energy and a cleaner economy.

The banks' role in climate change is as much a symptom of the failures of contemporary capitalism to respect nature and human rights as it is a specific cause. Bankers invest wherever they feel they can make money. They tend to be conservative in how they assess money-making potential, and impervious to the long-term impact of their actions. Fossil fuel lending has long been considered a safe bet, and it will continue to be so unless social movements can push governments into offering sufficiently ambitious climate targets (e.g. net zero by 2030 in the UK) for the future of these investments to become risky – as is increasingly the case in the coal sector.¹³ At the same time, banks tend to over-state the risks of green investment.¹⁴

Pressure from campaigns to end fossil fuel lending can also encourage banks to make voluntary commitments that sooner than later should be written into mandatory action. The "Global Call on Banks," for example, is a campaign (coordinated by Banktrack) for banks to immediately "end their financing of all new fossil fuel exploration, extraction and power projects, and ... publish a robust and timed phase out plan for all their existing fossil fuel clients."¹⁵ Popular pressure is unlikely to be enough if not backed or accompanied by strong new rules governing the environmental and social impacts of bank lending and underwriting, however. This chapter gives a sense of what those rules could look like. The specific contributions of public banks, cooperatives and local lenders will be examined in the subsequent chapter.

CAPITAL REQUIREMENTS

Setting “capital requirements” that favor “green” and penalize “brown” investments can sound obscure, but such rules can make a significant difference. Capital requirements govern the amount of money that a bank needs to hold in reserve to cover the potential risk of losses on its loans and other investments. One of the rumored consequences of Basel III, the international banking regulations introduced in response to the 2008 financial crisis, is that its rules on capital can discourage banks from engaging more in renewable energy-related lending.¹⁶

The reasons for this boil down to the fact that renewable energy requires large amounts of investment at the outset, but becomes cheaper over time because the cost of operating solar panels or wind turbines is close to zero. By contrast, new fossil fuel capacity is cheap to build but has higher ongoing costs.

The Basel III rules on capital requirements set a limit on how much a bank can lend compared to its “core capital” – defined as the value of the bank’s shares plus any cash it is holding onto (“retained earnings”). Given renewable energy is capital intensive (requiring a large initial financial outlay) and often perceived to be risky, a bank can make fewer overall investments if it concentrates heavily on these types of projects. Fewer investments mean fewer chances to profit, so the overall effect is to discourage bankers from backing renewables.

To remedy this perceived imbalance, the EU High-Level Expert Group on Sustainable Finance has suggested a “green supporting factor,” a proposal that is reportedly being championed by the European Commission.¹⁷ This would make renewable energy and other low-carbon investments less risky under banking rules, because they also represent a social and environmental good.¹⁸ There is a significant danger, however, that this could attract imprudent lenders into this sector, potentially leading to a “green bubble,” which could both destabilize the financial system and

jeopardize the reputation of the whole concept of “sustainable finance.”¹⁹ It is also far from clear that lowering capital requirements through a green supporting factor would lead to significantly higher levels of green investment.²⁰

An alternative proposal would be to create higher capital requirements for “brown” (unsustainable) loans to fossil fuel companies, and fossil fuel-intensive industries. This would “reflect the real and growing systemic risk of investing in carbon-intensive activities and could discourage further investment that contributes to climate change,” according to researchers at University College London and the New Economics Foundation.²¹ By encouraging banks to reflect climate risk, it would also make the financial system as a whole more robust.

GREEN CREDIT GUIDANCE

There is a long history of credit guidance policies that aim to steer bank credit creation and allocation towards desirable sectors of the economy and to repress less desirable lending.²² “Priority sector lending” (PSL) has long been used by many countries, especially in the global South, as a means of channeling loans at preferential rates into strategic sectors of the economy.²³ In India, for example, PSL has ensured that banks lend money to agriculture and small enterprises for over 40 years.

Regulation that sets out minimum green lending requirements or that limits lending to carbon-intensive sectors has already been put in place in various countries. Bangladesh has deliberately sought to fuse this developmentalist approach with a green agenda, with the country’s central bank requiring that banks direct a minimum proportion of loans to green projects, including renewable energy and energy efficiency.²⁴

In 2012, the China Banking Regulatory Commission issued Green Credit Guidelines that asked banks to increase their support for the “low-carbon and circular economy,” while at the same time strengthening

environmental and social risk management for polluting industries.²⁵ The definition of green loans is subdivided into 12 categories, such as renewable energy, green transportation and green building, and the renamed China Banking and Insurance Regulatory Commission has subsequently requested that all major banks report semi-annually on the balance of their green loans and the environmental benefits that these have delivered.²⁶



Stricter regulations are necessary in order to change investment practices. Credit: EtiAmmos, Shutterstock, Shutterstock Standard License

According to official data, the green loans held by the 21 largest commercial banks in China totaled RMB 8.23 trillion (US\$1.2 billion) by the end of 2018, or roughly 10 per cent of total lending.²⁷ There is clear evidence that these guidelines have helped to shift some investment and have even penalized some environmentally unfriendly firms. However, the Green Credit Guidelines still lack clear, enforceable standards on emissions and efficiency that could make them truly effective.²⁸ There is also a major Achilles' heel in China's green lending when it comes to

international finance. “Chinese finance is increasingly stepping in as the lender of last resort for coal plants,” with US\$36 billion committed to financing 102 GW of coal-fired capacity in 23 countries in Asia, Africa and Eastern Europe.²⁹

At present only so-called “emerging market” central banks are implementing green credit policies, but the idea of credit guidance more generally is not unique to developing countries.³⁰ The US Community Reinvestment Act, for example, mandates banks to offer credit to all of the communities in which they do business. While there is no immediate prospect of the US extending directive lending policies for climate change, the fact that they exist within the scope of federal law offers a footing for campaigning in this direction.

CREDIT CEILINGS

“Credit ceilings” used to be relatively commonplace as a means of limiting credit expansion by private banks, until they got pushed aside by the neoliberal turn in banking regulation.³¹ They could be revisited in the context of a green transition. Imposing a credit ceiling on lending to fossil fuel companies or carbon-intensive industries would be a straightforward way to cap the risk posed by these sectors. The limit could be set on either lending to specific companies or applied across carbon-intensive sectors or subsectors. Lending limits could also be calibrated to target the “worst offenders” first if a cap were imposed on lending to companies whose carbon intensity were significantly higher than the best practice in the rest of the sector – effectively placing those companies on an exclusion list.³²

Although there are no examples of banking regulations that currently require credit ceilings on fossil fuel lending, there are various examples of multilateral development banks operating exclusion lists as part of their environmental and social safeguard policies.³³ The Ireland Strategic Investment Fund has recently created an extensive fossil fuel exclusion

list to fulfill a legal commitment to divestment from this sector.³⁴ Ultimately, if international climate change targets are to be met, then serious consideration should be given to placing a credit ceiling on lending to all fossil fuel companies – decreasing that ceiling over time, down to zero.

LENDER LIABILITY

While many “green” banking policies focus on transparency and incentives, regulators should also have the power to punish bad practice. Environmental lender liability – rendering banks liable for the environmental damage caused by their loans – is a tried and tested means to do this. In Brazil, for example, financial institutions can be held fully liable for environmental harms caused by borrowers, while in a number of other countries (including the US, UK and Germany) the law allows for a limited form of environmental liability when a “duty of care” is breached.³⁵ China is piloting another means to encourage lender liability, requiring lenders to take out compulsory environmental liability insurance for high-risk industries (including heavy metals and petrochemicals).³⁶ While this stops short of full regulation, it takes a small step towards making investment in big polluters less attractive.

Lender liability is useful because it can help senior executives keep the environment top of mind and contribute to addressing corporate impunity. As a case in point, the Exxon and BP-sponsored Climate Leadership Council felt sufficiently concerned about the impact of lender liability that it advocated for “a modest price on emissions in exchange for protection from climate liability lawsuits and regulations.”³⁷ However, the impact of such measures should not be over-stated, as Adam Tooze points out:

To assume that the distributional struggles unleashed by massive climate change will take the form of courtroom drama is to indulge in wishful thinking. Climate change is not the same as asbestos poisoning or tobacco litigation. It is not individualized medical conditions but an

environmental shift that will affect the very basis of human existence on the planet. It will likely create hundreds of millions of refugees. If that happens, the distribution of costs is unlikely to be decided mainly in the form of financial liability assigned by the courts.³⁸

CLIMATE-RELATED FINANCIAL DISCLOSURE

Greater transparency is one of the most basic requirements for greening the financial system, because what remains invisible is hard to fix. Data on global investment in fossil fuels compared to renewable energy and other forms of climate-friendly investment remains incomplete and largely unreliable.

The most comprehensive recent survey, the 2018 Biennial Assessment of the UN Framework Convention on Climate Change's Standing Committee on Finance, concluded that fossil fuel investment globally (US\$742 billion in 2016) significantly exceeds that in renewable energy (US\$295 billion in 2016).³⁹ A 2015 survey of the banking sector found a similar pattern, concluding that 25 of the largest private banks globally channeled up to nine times more investment into fossil fuels than renewable energy.⁴⁰ Such global surveys can only look at a sample of the financial sector, however, since the publicly available data they rely on is patchy at best. Greater transparency, built around commonly defined reporting rules, is required if we are to keep track of the shift to a cleaner economy.

The Task Force on Climate-related Financial Disclosures (TCFD) – set up by the international Financial Stability Board established after the 2008 crisis – recently recommended that banks should routinely disclose their lending to companies with carbon-related risks, based on companies' reporting of their direct and indirect greenhouse gas emissions.⁴¹ While that marks a considerable step forward from current requirements, the TCFD remains a voluntary initiative whose effectiveness very much depends on changes to national financial regulations and robust enforcement. A June 2019 progress report shows that few financial regulators (most notably,

the EU) have started the process of changing financial reporting rules and guidelines in line with the TCFD recommendations.⁴²

The most robust standards according to which banks disclose the greenhouse gas emissions related to loans and investments were developed by a group of banks in The Netherlands under the Partnership for Carbon Accounting Financials, launched in September 2019.⁴³ However, this remains a voluntary partnership and not a mandatory standard, and unless such reporting is imposed, it will likely only appeal to a subset of banks that are relatively less exposed to fossil fuel investments, while the biggest “bankers of climate change” (e.g. JPMorgan Chase or Wells Fargo) will continue to ignore it.⁴⁴

More fundamentally, it is hard to imagine that simply disclosing climate risks will translate into real market incentives for cleaner investment. Most bank shares are held by institutional investors, whose fund managers are generally not authorized to move investments on the basis of ethical concerns.⁴⁵ Nevertheless, transparency about the climate impact of investments can be a useful first step in redirecting investment if accompanied by regulations that limit the scope of investments in fossil fuel companies and other carbon-intensive activities.

A NOTE OF CAUTION: THE ROLE OF BIG BANKS IN BLOCKING FINANCIAL REFORM

It is far easier to imagine changes to the financial system than to enact them. A key part of the problem lies in the structure of the banking system itself, in which power is concentrated in the hands of large “too big to fail” banks. Since the 2008 financial crisis, the biggest banks have continued to grow and the banking sector in many high-income countries has been further consolidated by a few large players.⁴⁶ These big banks, in turn, have lobbied heavily to protect their influence and avoid reforms to the sector that would limit their power and scope, or prioritize social and environmental goals.⁴⁷ Their success in stopping any effective regulation



Glass high-rise. Credit: stux, Pixabay, Pixabay License

despite the financial crisis evidences their sheer power, and is clearly shown by the fact that the 30 or so “too big to fail” banks remain intact, and continue to harbor levels of risk on their balance sheets that are way in excess of what regulators formally consider to be prudent.⁴⁸

The close interconnection between senior decision-makers in the financial sector and their counterparts in major fossil fuel companies also serves to maintain the status quo.⁴⁹ In 2011, a group of Swiss researchers conducted the largest ever study of international corporate ownership and found that “transnational corporations form a giant bow tie structure and that a large proportion of control flows to a small tightly knit core of financial institutions.”⁵⁰ Those firms, in turn, have significant assets invested in both fossil fuel companies and commodities (oil is the world’s most heavily traded commodity). What that creates, on a global scale, is significant vested interest in the status quo: economic power allows big banks to survive and bolster the fossil fuel economy rather than adapt.

Popular pressure could ultimately have some impact on these “fossil banks” if the reputational damage of appearing as climate laggards were to exceed the profitability of their fossil fuel investments.⁵¹ Additional measures could also be pushed under Basel III global banking regulations, if “brown” assets were considered riskier when calculating how much capital these “Global Systemically Important Banks” need to hold onto at all times.⁵² Nevertheless, this should not distract from the fact that the systemic importance of a handful of privately owned banks affords them disproportionate power, in which case the best solution is to break up these banks altogether.

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PUBLIC BANKS AND BANKING ALTERNATIVES

The problem: Public policy should encourage a financial system that affords more space to public banks, cooperatives and local savings banks, and ethical banks. Public investment and development banks could play a particularly important role in financing a transition away from fossil fuels, but strong democratic governance and accountability mechanisms need to be in place to avoid repeating the current and past failures of many such institutions.

The solution: Establish green development or investment banks as a focus for public financing of a transition away from fossil fuels, and legislate to encourage a more diversified financial sector that gives greater space to ethical banks, local savings banks and coops.

3 key steps

- Establish green development or investment banks that offer concessional lending and grant support to renewable energy, energy efficiency or low-carbon transport infrastructure. These should have a clear mandate to prioritize public and local initiatives.
- Encourage the spread of cooperatives and local savings banks that have a public interest mandate.
- Support ethical banks, for example by creating tax incentives for green bank accounts.

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Public banks	<p>State-owned banks and public banks are well placed to think long term and invest in renewable energy and sustainable infrastructure, and to offer financing in support of robust climate policies. However, the track record of such institutions is mixed, with many state-owned banks having bankrolled fossil fuels and ignored local peoples' rights and needs.</p> <p>Transparency, accountability, democratic decision-making and a clear climate mandate are therefore vital, as are close partnerships with other local actors (including cooperatives, community groups and local authorities).</p>	<p>Germany's KfW is a key funder of renewable energy and efficiency programmes, offering below-market loans to small- and medium-sized manufacturers. It targets over a third of its lending (€100 billion since 2011) to environmental projects that support national energy transition objectives.</p> <p>Another example is the Bank of North Dakota, which has a mandate to support the local economy, although it has also funded the fossil fuels. California has recently passed a statute allowing for public banking.</p> <p>Costa Rica's Banco Popular y de Desarrollo Comunal invests according to economic, social and environmental considerations and is the country's third largest bank. Its governance structure is a hybrid between public ownership and a workers' cooperative.</p>	<p>High impact </p> <p>Medium/high achievability </p> <p>Medium drawbacks </p>
Green development banks	<p>Green development (or investment) banks can provide a clear focus for public financing of renewable energy, energy efficiency or low-carbon transport infrastructure. But this requires a mandate to offer concessional lending (or even some grant support) for projects, and to prioritize public and local initiatives rather than public-private partnerships.</p> <p>Green development banks should be the target of any reflows from existing QE programmes and could also issue bonds to support a Green New Deal.</p>	<p>The UK's Green Investment Bank (2013-2017) helped to encourage offshore wind investment, although it was undermined by its focus on matching private investment on market terms.</p> <p>France's CDC and Germany's KfW provide more successful examples, because they can offer concessional lending and some grant support, and they are encouraged to work with local authorities and communities.</p>	<p>High impact </p> <p>Medium/high achievability </p> <p>Medium drawbacks </p>
Cooperatives and local savings banks	<p>Cooperatives and local savings banks can be (and often are) bolstered by a "public interest" mandate that sets them apart from their larger commercial counterparts. For example, German local savings banks have created financial structures that allow individuals to invest directly in local green energy projects. Transparency (and independence from political parties) are important to avoid corruption risks.</p>	<p>In many parts of Germany, local savings banks have local lending obligations and a mandate to reinvest profits in achieving wider social objectives. Savings and cooperative banks in Germany are key financiers of local energy cooperatives, which account for almost 50 per cent of the country's installed renewable energy capacity.</p> <p>French local savings banks are required to dedicate half of their profits to social responsibility programmes.</p>	<p>Medium/high impact </p> <p>Medium achievability </p> <p>Medium drawbacks </p>

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Ethical banks	“Ethical banks” are private financial institutions that have environmental objectives and a community focus as part of their mandate (some but not all are also cooperatives or local savings banks). They have been industry leaders in developing methods for accounting for the climate impact of loans and investments. Some already have fossil-free policies and have set the goal of aligning all investment with a 1.5°C climate target. Governments could support this sector by providing tax incentives for green bank accounts. However, ethical banks account for only a small portion of overall lending.	<p>The Global Alliance for Banking on Values provides a peer network for 55 financial institutions across the world that define themselves as ethical institutions. Many of its members have committed to bringing their lending in line with a 1.5°C climate goal.</p> <p>Triodos Bank in The Netherlands has a lending policy that finances only renewable initiatives in the energy sector, excluding all fossil fuels.</p> <p>The Netherlands also provides tax incentives for green bank accounts.</p>	<p>Medium impact ●</p> <p>High achievability ●</p> <p>Low drawbacks ●</p>
Fin-tech	Fin-tech, such as peer-to-peer lending and mobile payment systems, could widen “financial inclusion” but it is far from certain that these new technologies will be harnessed for social and ecological benefits. For example, solar home systems are already being rolled out with the assistance of mobile payment systems – but public finance rather than mobile technology is the key to this type of programme taking root.	<p>Hundreds of thousands of off-grid solar home systems have been installed in East Africa with “rent-to-own” financing facilitated by mobile payment services such as M-KOPA. However, the key to the success of the largest solar home system installation programme (IDCOL in Bangladesh) was public finance rather than new technology.</p>	<p>Low impact ●</p> <p>High achievability ●</p> <p>Medium/high drawbacks ●●</p>

PUBLIC BANKS IN INDUSTRIALIZED COUNTRIES

State-owned and public banks are particularly well placed to invest in renewable energy and infrastructure to improve climate resilience. Private banks are often reluctant to finance renewable energy either because international banking regulations (Basel III) can be a disincentive or simply because they lack experience in financing such projects.

Public banks, by contrast, have already shown that they are prepared to finance a clean energy transition – especially if social and environmental goals are at the core of their mandate.¹ Such banks are generally unconstrained by demands for short-term profitability, so they are in a position to take a longer view and make decisions that support local economic development and environmental objectives.

In Germany, for example, the government-owned development bank KfW focuses its lending on three strategic objectives, or “megatrends,” one of which is “climate change and the environment.”² KfW has a target of 35 per cent lending to this area in order to support the federal government’s Energiewende (energy transition), which aims to phase out nuclear power and substitute fossil fuels with renewable energy and improved energy efficiency. From 2011 when the bank’s Energy Transition Action Plan was launched to 2016, it invested over €100 billion in this area.³ Although the Energiewende has been hollowed out substantially since its introduction – it would only phase out coal by 2038 under current proposals – the investment structures that KfW has put in place nevertheless represent an important example of how public financial institutions aligned with public policy can start to reform the economy.⁴

In the US, the Bank of North Dakota (BND) displays some of the advantages and limitations of state-owned banks. BND was founded to empower small farmers and support the local economy.⁵ During the financial crisis, it offered loans and liquidity to shore up local private banks. BND has been a useful vehicle for financing public infrastructure projects as well as paying annual dividends to the state treasury, enriching the public purse. BND takes full advantage of fractional reserve banking (lending beyond the level of cash-backed deposits) in its infrastructure investments. But while it could fund a transition to a cleaner economy – whether through municipal bond issues to finance public transport or loans for renewable energy infrastructure – its actual practices reflect the priorities of the North Dakota state’s financial elites, so it has seen assets poured into sustaining a fossil fuel-based economy. It even lent US\$10 million to local law enforcement to subsidize the repression of indigenous communities at Standing Rock.⁶

NATIONAL DEVELOPMENT BANKS IN THE GLOBAL SOUTH

Public banks in the global South – including national development banks – also have a mixed record. The *Banco Popular y de Desarrollo Comunal* in Costa Rica provides a positive example of the benefits of a “triple bottom line” that considers economic, social and environmental needs. The country’s third largest bank, it is a hybrid between public ownership and a workers’ cooperative.⁷ Although environmentalism was not a central part of its original mandate, it has developed specialized green lending facilities (e.g. eco-savings and eco-credits) that are geared specifically towards micro-, small- and medium-sized enterprises, as well as financing community energy cooperatives and local schemes to fund residential solar installations.⁸

India’s National Bank for Agriculture and Rural Development (NABARD) plays a key role in providing infrastructure, including the financing of irrigation systems, forest management, soil protection and flood protection schemes that are vital as the country adapts to the effects of climate change.⁹ It also finances smaller lenders (including cooperatives) in rural areas, while assuming part of the regulatory role in this sector. As an accredited partner of the UN’s Green Climate Fund, NABARD can now channel international finance for climate-related activities – a model that could lead to greater local ownership of international finance than has traditionally been associated with climate and development funds passed through institutions such as the World Bank. At the same time, the bank has been criticized for poorly managed and exploitative microcredit schemes.¹⁰

In other cases, state-owned banks such as the Brazilian Development Bank (BNDES) and the Development Bank of Southern Africa have been denounced for investing in projects that are harmful to local communities or for ploughing significant funds into fossil fuel infrastructure.

In the aftermath of the 2008 financial crisis, the bailout of failed private institutions led to the creation of new state-owned banks, including the Royal Bank of Scotland (RBS). Campaigners have stressed that the UK government should use this new public status to give the RBS a climate mandate, with little success.¹¹

In Belgium, meanwhile, the “Belfius is Ours” Platform has argued for the democratization of Belfius (formerly Dexia), the country’s fourth largest bank, which was also bailed out and nationalized.¹² The Platform calls for a new public interest mandate for the bank – which would stress social and climate goals – as well as a democratic governance structure devolving considerable decision-making power to the local level.¹³ Democratization goes hand-in-hand with social and environmental integrity, because it steers decisions towards the public interest in protecting the planet rather than simply focusing on short-term profitability.

While there is no magic formula for ensuring that public banks become agents of an energy transition away from fossil fuels, a few key criteria can be identified:

Climate mandate: Public banks should be driven by a clear mandate for “green” lending, backed by a target for a proportion of lending that supports climate and environmental objectives.

Environmental and social safeguards: National development banks should have proper safeguard policies or principles, ensuring that environmental impact assessments and public consultations take place before project financing is approved and that human rights are not violated. This should include an explicit exclusion of fossil fuel financing.

Democratization: Public banks should have a democratic governance structure, with the composition of supervisory boards involving workers and representatives of the communities they serve.

Accountability: Public banks need strong rules on transparency and accountability if they are to avoid capture by vested interests, or corruption.

Local partnerships: Working in close partnership with local actors including cooperatives, public companies and local governments should be a core objective of public banking – reinforced by the bank’s mandate or targets for a proportion of local lending.

GREEN DEVELOPMENT BANKS

As well as “greening” the mandate of existing public banks to ensure that they are not invested in fossil fuels, national or regional governments should set up green development (or investment) banks to provide a clear focus for public financing for renewable energy, energy efficiency or low-carbon transport infrastructure.

The UK’s Green Investment Bank (GIB), which was established in 2013 and promptly sold off in 2017, offers an example of the potential and limitations of such a model. The idea for a GIB was first floated amidst the immediate fallout of the 2008 financial crisis, and was in essence meant to provide a green fiscal stimulus to the UK economy.¹⁴ The GIB’s mandate was to work with private financiers to foster more investment in green infrastructure, rather than directly pioneering a public approach. This undermined its transformative potential, and led to a focus on relatively large-scale interventions based on established technologies – notably, offshore wind (where GIB committed 46 per cent of its capital), waste and bio-energy (34 per cent).¹⁵ It was less successful at working on smaller scale renewables and only managed a limited engagement with local authorities on energy efficiency projects.¹⁶ Although we should not read too much into GIB’s bias towards established technologies, given its very short lifespan under public ownership, it is worth noting that other public institutions that have blended their lending with that of private

investors have also ended up focussing on established technologies and projects that would likely have happened anyway.¹⁷

Other so-called green development banks, notably KfW in Germany or France's CDC, have offered more concessionary finance and credit enhancement products that can better provide investment to micro-, small- and medium-sized enterprises and local authorities.¹⁸ Loans handed out by KfW and CDC may also contain a grant element financed by public funds as part of a dedicated programme agreed with government – a lending option not open to the GIB.¹⁹

The ability to offer grants or concessional lending, and take on a larger share of project risk than commercial investors, is essential if a green bank is to fulfill its climate mandate while supporting local and public initiatives. For example, CDC is France's leading financier of affordable housing, and offers social housing providers low-interest energy efficiency loans for the construction of new homes.²⁰

Despite the failings in the UK, the rationale for creating green development banks (or “greening” existing national development banks) remains strong if they are conceived as part of a broader energy transition or Green New Deal programme. In countries or regions that have applied quantitative easing, transferring the QE investment portfolio of central banks (a task for which they are ill-equipped) to a green bank could ensure resources are targeted away from fossil fuels. In the EU, this would be the rationale for transferring QE reflows from the ECB to the EIB, for example, in particular now that the latter has adopted a fossil-free energy policy.

A green development bank can also provide a focal institution for bonds issued in order to finance a Green New Deal. The proposal for a *Green New Deal for Europe* rests on EIB-issued green bonds as the basis for financing a massive programme of public investment in renewable energy, green public housing, public transport, municipal and community initiatives.²¹

A National Investment Bank or revived Green Investment Bank, which could issue bonds to create a green economic stimulus, has also been proposed for the UK as an alternative to current QE policies.²²



Green development banks are becoming increasingly popular. Credit: jamesteohart, Shutterstock, Shutterstock Standard License

COOPERATIVES AND LOCAL SAVINGS BANKS

Cooperatives and local savings banks (some of which are owned by local government) remain an important part of the financial sector in many parts of Europe. These local banks and cooperatives generally have a public interest mandate that sets them apart from their larger commercial counterparts.²³

While the structures of these local banks vary, they often involve employees, depositors, local politicians or civil society associations on their governing boards. Often, they are set up with an explicitly not-for-profit public mandate.²⁴ French savings banks, for example, are required to dedicate half of their profits to social responsibility programmes,

which are managed by representatives of social groups and politicians, as well as bank staff.²⁵

In Germany, rules governing local savings banks (*Sparkassen*) vary according to region, but usually involve local lending obligations as well as a mandate to reinvest profits in achieving wider social objectives.²⁶ This orientation is reinforced through membership of the German Savings Bank Association (DSGV), which sets out common sustainability standards and social commitments. The *Sparkassen* or cooperative banks (*Genossenschaftsbanken*) are key financiers of local energy cooperatives, which account for almost 50 per cent of the country's installed renewable energy capacity.²⁷ German local savings banks typically arrange civic financial participation schemes, creating a financial structure that allows individuals to invest directly in green energy projects that meet their own energy needs. Alongside individual investments, larger loans are often provided by Germany's state development banks (e.g. KfW), which channel these funds through the local savings banks and cooperatives.²⁸

Local savings banks are neither a panacea nor immune from the speculative impulses that characterize the big private banks. In Spain, savings banks that were gradually liberalized to resemble the model of its commercial counterparts were hit particularly hard by the financial crisis of 2007. The intersection of deregulation and a governance structure that emphasized political appointees sowed the seeds of irresponsible property speculation and corruption.²⁹ When they are well managed though, local savings banks and cooperatives continue to offer a positive alternative for developing a greener economy. With “disruptive” technologies (e.g. mobile financial services) likely to favor the decentralization of banking in the coming years, that sector has considerable scope to expand its influence – if banking regulations and other public policies allow.

ETHICAL BANKING

The ethical banking sector overlaps considerably with cooperatives and local savings banks, although it also includes institutions that do not fit that description. Ethical banks and financial institutions are those that set “sustainable economic, social and environmental development” as part of their core mandate.³⁰

While there is considerable room for abuse if these terms are simply self-defined, the Global Alliance for Banking on Values (GABV) provides a peer network for 55 financial institutions worldwide that define themselves as ethical institutions, which provides a means of ensuring core standards are respected as well as a measure of mutual oversight.³¹ GABV’s triple bottom line approach requires member institutions to have environmental objectives and a community focus as part of their mandate, along with commitments to a long-term perspective, transparency and accountability.

Ethical banks have tended to be the main innovators when it comes to advancing voluntary efforts to make the banking sector more sustainable. For example, Triodos Bank in The Netherlands has a lending policy that excludes financing fossil fuels and focuses energy sector lending on renewables.³² It has also played a key role in developing the Platform Carbon Accounting Financials methodology to account for the climate impact of loans and investments, and has adopted a policy of aligning its lending with the 1.5°C climate target (along with 24 other GABV members).³³ Governments could actively look to support this sector by providing tax incentives for green bank accounts, as is the case in The Netherlands.³⁴

FIN-TECH: DISRUPTING CONVENTIONAL BANKING?

Considerable ink has been shed heralding how new technologies (dubbed “fin-tech”) will significantly disrupt the old models of banking. Peer-

to-peer lending, blockchain, “big data” or data analytics, and mobile payment systems have been heralded as game-changers for the future of banking.³⁵ Technologies could indeed create openings to widen financial inclusion or enhance the role of sustainable finance.³⁶ Yet the disruptive capacity of new technologies can be over-stated – overshadowing questions of ownership, power and equity – and it is by no means certain that these new technologies would be harnessed for social and ecological benefits.

Peer-to-peer lending or crowdsourcing

P2P lending aims to cut out the “middle man,” reduce the cost of financial transactions and benefit the real economy. Instead of borrowing from a bank, borrowers can directly “crowdsource” funds (using a variety of digital platforms). As the New Economics Foundation explains: “Instead of a small number of decision-makers allocating large sums of money, a large number of individuals each allocate a small sum of money.”³⁷

Notwithstanding, the reach of P2P financing remains small – and so far its impact on the transition to a cleaner economy is minimal. Germany has one of the more advanced sectors for P2P investment in renewables, with various online platforms set up to channel crowdsourced funds, but this still amounted to only €150 million in 2016.³⁸

Blockchain

Blockchain takes the idea of P2P digital interactions even further. In essence, it is a shared ledger to publicly record transactions. Someone requests a transaction, which is then validated by a P2P network of computers. The most notable use of this technology, to date, is the cryptocurrency Bitcoin. Proponents argue that it could also be used to make other types of transactions (such as sales of carbon credits) quicker and fully transparent.³⁹

It is far from clear that this would help to address climate change, though. Carbon credit markets are beset by other problems – including peddling

fake emissions-saving claims or causing social and environmental harm to local communities – that blockchain technologies would do nothing to fix.⁴⁰ The Bitcoin experience has revealed other problems, too. New Bitcoins are created by a practice of virtual “mining,” which comes with a large, and growing, energy footprint: in 2016, it was already estimated to be as large as Ireland’s annual energy consumption.⁴¹

Mobile financial services

There is considerable excitement (and hype) about the ability of mobile financial services to accelerate “financial inclusion.”⁴² Over 20 per cent of adults in Sub-Saharan Africa now have some form of mobile money account, many of whom had never opened a bank account.⁴³ In Kenya, well over half of the population regularly make payments using mobile phones, with remittances, loans and other banking services also increasingly provided via mobile platforms.⁴⁴ However, fin-tech companies in Africa are far from the shining knights of enlightened capitalism, as often portrayed. These companies tend to siphon value out of communities, breaking the local (re)investment cycle that is vital for economies to grow and flourish.⁴⁵

Attention has already turned to the use of mobile payments for renewable energy, particularly in East Africa, where hundreds of thousands of off-grid solar home systems have already been installed.⁴⁶ Most companies operating in these markets (such as M-KOPA in Kenya) offer a “rent-to-own” plan: the company installs the solar system, which the user then pays for through a series of monthly installments. This could increase electricity access, because the whole system is unaffordable if paid for upfront.⁴⁷

“Rent-to-own” and other forms of “pay-as-you-go” electricity are far from new, and do not require mobile payments to work. The largest such scheme globally is run by Bangladesh’s Infrastructure Development Company Limited (IDCOL), which helped to provide more than three million solar home systems in rural areas between 2003 and 2014,

bringing power to 13 million new users.⁴⁸ IDCOL is a government-owned, non-banking financial institution that provided capital to private partner organizations with the help of US\$750 million in grants and soft loans from multilateral development banks and agencies.⁴⁹ Ultimately, this public financial support proved key to enable the providers of solar home systems to install them and take monthly payments in arrears.

While the Bangladeshi experience is generally positive, there is no guarantee that pay-as-you-go models of energy provision will lead to just outcomes. Pre-paid electricity services have often made low-income households pay premium rates for their supply.⁵⁰ Transferring the ownership of solar home systems to the end consumers should eliminate the possibility of exorbitant service fees, but the persistence of alternative business models (which charge a monthly fee rather than transferring ownership) and the prevalence of faulty equipment do not entirely mitigate the risk.⁵¹



mPESA store in Kenya. Credit: RAND Corporation, Flickr, CC BY-NC-ND 2.0

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REFORMING FINANCIAL MARKETS

The problem: Financial markets are governed only by short-term profit motives and do not require firms to take responsibility for their climate impact.

The solution: There should be mandatory environmental, social and governance rules for firms listed on financial markets. Continuing divestment campaigns have already helped to undermine fossil fuel companies' public acceptability.

3 key steps

- Focus divestment campaigning on getting insurance companies out of the coal sector. The coal sector's ongoing economic weakness makes it particularly vulnerable to divestment campaigning, and without insurance to underwrite the construction and operation of new coal power plants and mines, many would not be viable.
- Make it mandatory for investors and companies to make climate-related financial disclosures, so that the scale of their investments in fossil fuels and high-carbon industries is clear. This should include creating a taxonomy of sustainable ("green") and unsustainable ("brown") investments.
- Redefine the "fiduciary duty" of investors, requiring them to take climate concerns into account rather than simply taking a narrow, short-term view of profitability.

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Divestment and fossil-free indexes	<p>Almost half of the money invested on stock markets is managed “passively,” meaning that investments are held in funds that match the sectoral balance of a whole stock market index like the S&P500. Fossil fuel companies tend to be over-represented and over-valued on these indexes, and have been some of the worst performing stocks over the past decade. A number of major asset managers have adopted “low-carbon investment strategies,” halving the proportion of investment in fossil fuels – although that is unlikely to make a significant difference to fossil fuel companies’ overall financial strength.</p> <p>The rise of fossil-free funds is more effective, offering pension funds and endowments new routes for divestment. Although this has only limited capacity to harm the financial standing of fossil fuel companies, divestment helps chip away at their “social license to operate.”</p>	<p>There are now several fossil-free index funds in the US (fossilfreefunds.org) and elsewhere, as part of a broader campaign that claims US\$11 trillion so far divested from fossil fuels. The financial impact on oil and gas companies is limited, although a number of coal companies are struggling and find it harder to attract financing.</p>	<p>Medium impact ● Medium achievability ● Low drawbacks ●</p>
Mandatory climate-related financial disclosures for investors and companies	<p>Climate-related financial disclosures by companies and investors increase transparency. However, they are unlikely to be effective unless they are mandatory and prescriptive, and viewed as a first step to phasing out fossil fuels and reducing other carbon-intensive investments.</p>	<p>Article 173 of the French Energy Transition Law sets mandatory carbon disclosure requirements for companies listed on stock exchanges, as well as requiring reports from institutional investors (asset owners and investment managers). Companies and investors have to report on the financial risks of climate change (both physical and transition risk) and how they have acted to reduce these risks.</p> <p>The Task Force on Climate-related Financial Disclosures created similar recommendations on a global level, although these remain voluntary.</p>	<p>Medium impact ● Medium achievability ● Low drawbacks ●</p>
Environmental, social and governance (ESG) reporting and stock market delisting	<p>Stock markets are private clubs that are unlikely to impose their own binding rules, but financial regulators could require companies to meet ESG reporting standards or face “delisting” (removal from the market). Such measures would only really bite if they were internationally coordinated, however.</p>	<p>In 2016, the Securities and Exchange Commission agreed on a requirement for oil, gas and mining companies listed on US stock exchanges to publicly report payments made to governments for access to natural resources in all countries – a measure designed to limit corruption and exploitative terms. However, this was overturned by Republicans in the US Congress in 2017.</p> <p>The UK Labour Party, the country’s main opposition, has proposed to “legislate so that any company listed in London is required to contribute to tackling the climate change crisis and if it fails it should be delisted.”</p>	<p>Medium impact ● Medium achievability ● Low drawbacks ●</p>

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Taxonomy of sustainable and unsustainable assets	A system for classifying investments according to how sustainable (green) and unsustainable (brown) they are. It requires firms to gather data on their financial exposure to climate change.	The EU's action plan on sustainable finance prioritizes creating a "taxonomy," but the proposal under discussion avoids a classification of unsustainable assets, fails to consider human rights, and may allow for gas power plants to gain a "sustainable" rating.	<p>Green & Brown: Medium impact ●</p> <p>Medium achievability Low drawbacks ●</p> <p>Green only: Low impact ●</p> <p>High achievability ●</p> <p>Medium drawbacks ●</p>
Redefining fiduciary duty	The "fiduciary duty" of investment funds and asset managers is always to act in the best interests of end investors, which is used as a defense for continuing to hold fossil fuel stocks. Financial regulators could help to undercut this by clarifying that climate risk and broader sustainability concerns are a core part of investors' fiduciary duties.	The UK pension funds regulator has issued guidance that investment managers' fiduciary duties should include having to consider "financially material factors such as environmental, social, and governance factors, including climate change" in their investment decisions. The Netherlands and France have adopted similar measures.	<p>Low/medium impact ● ●</p> <p>Medium achievability ●</p> <p>Low drawbacks ●</p>
Green bonds	<p>Bonds are IOUs issued by governments or corporations who want to borrow money. Green bonds additionally seek to certify that the money is raised for an environmentally beneficial purpose. There are several voluntary standards to certify that this is the case, which some regulators are now trying to integrate into standard definitions – although there is no guarantee that green labeling equates with actual increases in green investment.</p> <p>Investors could be encouraged to purchase green bonds by granting tax incentives to either the issuer or the investors. Disclosure rules also make green bonds a more attractive product. However, issuing green bonds is no substitute for more prescriptive environmental policies, which would render the "green" label irrelevant because they would directly force capital to be reoriented to more sustainable investments.</p>	<p>The Climate Bonds Initiative is the most robust of the current green bond standards, while the EU and the International Organization for Standardization are working on similar rules. Other voluntary industry initiatives have little environmental integrity, and the official definition of green bonds adopted by China in 2015 is just as lax. The labeling of large hydropower, biofuels and waste incineration as "green" is particularly problematic.</p> <p>Tax incentives and exemptions could incentivize green bond purchases. Such incentives already apply to US federal government issued Clean Renewable Energy Bonds and Qualified Energy Conservation Bonds.</p>	<p>Low impact ●</p> <p>High achievability ●</p> <p>Low/medium drawbacks ● ●</p>
Insurance: divestment	Encouraging insurance companies to stop insuring and investing in coal could be a particular focus for divestment movements. A handful of companies have the expertise to take a lead in underwriting new coal-fired power plants, and coal represents a small share of these companies' overall portfolios – so the reputational risk of continuing coal investments could quickly outweigh the financial returns. There is already evidence that divestment is contributing to the financial weakness of the coal sector. However, the same tactic is unlikely to prove effective against the much larger financial power of oil and gas companies.	Europe's four largest primary insurers (AXA, Allianz, Generali and Zurich) have all restricted insurance for coal, although none of these companies has stopped insuring and investing in coal outright. The Swiss/US multinational Chubb is the largest insurer so far to commit to stop insuring new coal-fired power plants and phase out coverage of coal mining companies by 2022.	<p>Medium/high impact ● ●</p> <p>Medium achievability ●</p> <p>Low drawbacks ●</p>

Most of the money invested on Wall Street and in other financial centers comes from ordinary people’s pensions and insurance premiums. It is used to buy shares in big companies (cumulatively worth around US\$75 trillion globally), as well as bonds (company and government debts, estimated at US\$102 trillion) and commodities like oil.¹ But while ordinary people own big parts of the financial system, it is currently set up in a way that give us very little say in how this money is invested.

In this section, we look at the ways in which financial markets can be reformed to make them more sensitive to the challenges posed by climate change. This is no small task. The European Commission has acknowledged that a “deep re-engineering of the financial system is necessary for investments to become more sustainable and for the system to promote truly sustainable development from an economic, social and environmental perspective,” although these robust words have yet to be matched by actions.²

Powerful vested interests maintain the status quo, where fossil fuels remain central to most investors’ strategies, and short-term profits trump social and environmental goals. Climate change will not wait, so it is important to support any measures that improve how financial markets work, while maintaining that reform measures are not enough. Ultimately, tackling climate change and building a cleaner economy will require fundamentally changing the nature of multinational corporations – including a reduction in their overall influence – and an increase in accountable and democratically controlled public investment. These are the topics addressed in chapters 5 and 6.

HOW STOCK MARKETS PROMOTE FOSSIL FUEL INVESTMENT

Financial markets are dominated by “institutional investors,” a label that covers personal investment funds, pension funds, insurance companies and university endowments, as well as the personal portfolios of the ultra-rich and, in some countries, state assets (e.g. oil revenues) managed by

sovereign wealth funds. These institutional investors control more than US\$100 trillion globally.³

This money is subdivided into thousands of individual funds, the managers of which are generally asked to maximize short-term profits irrespective of the social and environmental damage caused along the way. Until fairly recently, it was almost impossible to find “fossil-free” funds, although this is rapidly changing. The majority of funds remain heavily invested in activities that damage the climate, however, including fossil fuels. Oil and gas companies continue to sit near the top of lists of the world’s most valuable companies, which has long made them seem a safe bet.

The value of fossil fuel company shares is mostly based on estimates of how much oil, gas or coal they will be able to extract from their network of wells, mines and prospective sites. Yet exploiting all of these reserves would release enough carbon dioxide to cook the planet several times over. Reaching the less ambitious 2°C target would mean leaving at least 80 per cent of known reserves untouched, and a very strong case can be made that no new fossil fuel sources should be exploited at all.⁴ If such a consensus were achieved, or anything close to it, then this would reduce the value of fossil fuel companies considerably. Fossil fuel companies and utilities alone could be holding onto US\$1 to \$4 trillion in “stranded assets” (such as coal power plants that close early, or oil wells that are not fully exploited).⁵ In short, stock markets currently over-value these companies and underestimate the risks of investing in them.

The way that money is currently invested on stock exchanges exacerbates this bias towards fossil fuel investment. “Index funds” that match the sectoral balance of a particular stock index are commonplace, accounting for 45 per cent of the money invested on stock markets.⁶ The most prevalent of these indexes over-represent fossil fuels. For example, oil and gas companies account for 14 per cent of the value of the FTSE100 index of the largest companies listed on the London Stock Exchange,

despite representing only 3 per cent of the UK economy.⁷ If fossil fuel companies are revalued to more fully account for the risks of stranded assets, a “passive” investment strategy could become an advantage when it comes to turning financial markets away from fossil fuels.

FOSSIL-FREE INVESTMENT

Investment funds that just track the core stock-market indexes are increasingly finding that fossil fuels are a bad investment. Analysis of investments by BlackRock, which passively invests US\$4.3 trillion of its US\$6.5 trillion portfolio (the world’s largest), clearly shows this. The Institute for Energy Economics and Financial Analysis found that its failure to address the risks of fossil fuel investment had resulted in over US\$90 billion in losses over the past decade.⁸

The reasons for these losses are not hard to understand: fossil fuel companies have significantly under-performed on the market for several years. This is particularly true of coal stocks, which have tanked in the US thanks to the advance of renewable energy as well as displacement by fracked gas. Eight major US coal companies have filed for bankruptcy between mid-2018 and the end of 2019.⁹

Oil and gas companies have also seen a long-term decline in their stock price. Indeed, three-quarters of the US\$90 billion that BlackRock lost through its investment in fossil fuel companies is accounted for by the under-performing shares of four of the largest private oil giants: ExxonMobil, Chevron, Royal Dutch Shell and BP.¹⁰ This is a clear signal of the “deteriorating quality of oil and gas investments,” according to Tom Sanzillo from the Institute for Energy Economics and Financial Analysis. “Oil company investments used to be blue chip stocks – characterized by steady, stable profit generating companies.... But the low-priced, volatile, oil and gas market, punctuated by significant geopolitical realignment, greater competition, a weak business model and public opposition, is no longer a blue chip investment.”¹¹

The implications of this realignment are starting to dawn on some asset managers, which have developed “low-carbon investment strategies” that reduce their exposure to fossil fuels.¹² Most major asset managers now offer low-carbon funds, with more than two times less shares from fossil fuel companies in their indexes (from 8.4 to 3.8 per cent), although this is unlikely to make a significant difference to fossil fuel companies’ overall financial strength.¹³ Even for investments that are “passively” managed, new fossil-free indexes are springing up all the time offering a broader range of investment options.¹⁴ These are far more effective, offering investors clearer divestment options.

Putting pressure on pension funds and endowments to divest from fossil fuels can make oil and gas company stocks less attractive over time, as well as affording the type of small but significant victories that are important for the momentum and morale of campaigns to change the planet. These campaigns also keep the focus on fossil fuel companies, chipping away at their “social license to operate” in a world of accelerating climate change.¹⁵

An “aggressive stand” from BlackRock would provide a major boost to such efforts, as Tom Sanzillo explains:

The stock market would react by driving oil- and gas-stock prices down for both private companies and those state-owned enterprises on the stock market to new lows—institutional investors would understand that continued investment in the fossil-fuel sector meant more volatility, lower returns, and negative future outlook.

In January 2020, BlackRock CEO Larry Fink made a high profile statement that the company would start to avoid investments in companies that “present a high sustainability-related risk.”¹⁶ This included a concrete commitment to divest from “companies that generate more than 25% of their revenues from thermal coal production... by the middle of 2020.”¹⁷

It is a promising sign that the world's largest asset manager has released a coal policy with a clear date and threshold. The fanfare greeting what the *Financial Times* called BlackRock's "sweeping changes" to "focus on sustainable investing" is far from matched by scale of the company's new commitments, however.¹⁸ BlackRock's new policy is only to divest from coal producers, and not the companies that actually burn coal, while the 25% threshold means that some of the world's biggest mining companies – including BHP Billiton and the Russian Ural Mining Metallurgical Company (UMMC) – will remain in BlackRock's portfolio.¹⁹

Even under this new policy, BlackRock remains one of the world's largest investors in new coal-fired power plants, while its broader package of "sustainability" measures includes few concrete steps to divest from oil and gas. It remains unlikely that BlackRock would make a more substantial shift away from fossil fuel investments as a whole without overhauling its Board of Directors, where six of the 18 board members have worked in companies with strong ties to the fossil fuel sector (board reform is discussed in more detail in Chapter 6).²⁰

Change would also likely require a mix of far tougher environmental regulations and climate targets adopted by governments, but there are also a number of changes to how financial markets work that would help this process along, which we now turn to.

TRANSPARENCY AND DISCLOSURE

Improving the transparency of financial markets is a first step on the road to change. At best, sustainability and climate reporting sheds light on the continued dominance of fossil fuels, and can be a resource for campaigners. Clarity on climate impacts can even serve as a guide to improved investment strategies. But improvements in transparency and disclosure alone should be viewed with caution, since they have sometimes been promoted to stave off more far-reaching, structural reforms in how companies and financial markets operate.

Years of experience show that voluntary corporate climate and sustainability reporting has limited impact. A recent survey by KPMG found that three-quarters of large companies still do not identify climate-related risks in their annual reporting, with the financial sector amongst the worst in that regard.²¹ And when companies do report on climate change and sustainability, they typically ignore many of the long-term risks.²² Companies that voluntarily disclose their carbon footprint are not required to take any action on this basis, and many enter such schemes simply to enhance their reputation.²³ In short, disclosure only works if it is “mandatory and prescriptive” and connected to measures that require companies to limit their exposure to fossil fuel and other high-carbon investments.²⁴

At a global level, the TCFD has developed an extensive list of technical proposals on how companies report on the impact of climate change, ranging from clearer disclosures in company reports to changes in corporate governance.²⁵ The voluntary guidelines proposed by the TCFD are relatively toothless on their own but, in the best case, they might help to accelerate (and standardize) the adoption of national regulations that require companies to report on their sustainability impacts, and the exposure of their investments to climate change.²⁶ This process is already underway in the EU, where rules that require investors and financial advisers to integrate environmental, social or governance (ESG) risks in their work were agreed in March 2019, but these are nowhere near full adoption of the TCFD recommendations.²⁷ The TCFD’s own progress report documents a number of discussions in the EU (including the UK) and Canada, but there are no instances where recommendations for companies and investors have been adopted by financial regulators.²⁸

So far, the most ambitious disclosure rules adopted are provided by Article 173 of the French Energy Transition Law, which includes mandatory carbon disclosure requirements for companies listed on stock exchanges, as well as requiring reports from institutional investors (asset owners

and investment managers). According to this article, companies must disclose:

- Financial risks related to the effects of climate change;
- The measures adopted by the company to reduce them;
- Annual reporting of any potential impact that climate change could have on the company's activities, including risks that climate change poses to the services and products offered by that company.

These disclosures are in addition to reporting on the social and environmental consequences of a company's activities, which was already required.²⁹

ENVIRONMENTAL, SOCIAL AND CORPORATE GOVERNANCE AND STOCK MARKET DELISTING

Setting up tough ESG criteria for stock markets and delisting any companies that fail to meet these criteria would be another direct form of regulation that could push investment in a more sustainable direction. The Sustainable Stock Exchanges Initiative is focused only on the former step: improved ESG reporting and governance. It has issued model guidance for stock exchange ESG reporting and is tracking the progress of global stock markets in implementing this.³⁰ Although this initiative is proposed as a form of voluntary guidance, it has international credibility as a collaboration between the UN Conference on Trade and Development, the UN Global Compact, the UN Environment Programme Finance Initiative and the Principles for Responsible Investment, another UN-supported initiative.

Partly in response to this initiative, one-third of stock exchanges now have some sort of sustainability reporting, which typically includes greenhouse gas emissions accounting and energy use.³¹ Most recently, the London and Hong Kong Stock Exchanges and New York's Nasdaq have issued

updated ESG reporting guidance in line with the TCFD recommendations, although this remains an entirely voluntary approach.³²

Given stock exchanges are run like private members' clubs, it is unlikely that they would impose binding rules on their own initiative, but regulators can – and sometimes do – force them to act. For example, in 2016 the Securities and Exchange Commission (SEC) agreed to a requirement for oil, gas and mining companies listed on US stock exchanges to publicly report payments to governments for access to natural resources in all countries – a measure designed to limit corruption and exploitative terms. However, in February 2017 a Republican majority in the US Congress voted to overturn these measures.³³

The UK Labour Party, the country's main opposition, has also proposed to “legislate so that any company listed in London is required to contribute to tackling the climate change crisis and if it fails it should be delisted.”³⁴ The proposal has some teeth given London is one of the world's primary financial centers, although without coordinated international action such a measure would mainly have a symbolic effect as companies falling foul of the new rules could simply re-list elsewhere.

TAXONOMY

To achieve sustainability it is necessary to define what it means first, or at least that is the core thinking behind the European Commission's *Sustainable Finance Action Plan*, which prioritizes the creation of a “taxonomy” of sustainable investments as its “most important and urgent” priority.³⁵

The EU's taxonomy aims to develop “a technically robust classification system to establish market clarity on what is ‘sustainable’.”³⁶ This classification could then be used by financial regulators in EU Member States to set specific requirements for investment funds, pension schemes or corporate bonds that are marketed as environmentally sustainable.³⁷ It

could also serve to fix direct or indirect emissions limits on investment portfolios, although the EU is not currently discussing this more robust option. The EU taxonomy is supposed to “create a new grammar for financial markets to know what is green or not,” according to Pascal Canfin, the EU Parliament’s chief negotiator on the new regulation to facilitate sustainable investment that provides its legal basis.³⁸ The taxonomy will define what actions make a “substantial contribution” to climate change mitigation or adaptation, while other criteria focus on how to avoid “significant harm” to the environment.³⁹

However, the EU proposals currently under discussion fall far short of what is needed, because criteria are only proposed for sustainable (“green”) activities but not for unsustainable (“brown”) activities. Without such criteria, says Benoît Lallemand of Finance Watch, “it is illusionary to think that finance will disinvest from economic activities which rely heavily on fossil fuel energy.”⁴⁰ The proposed taxonomy further muddies the waters by creating new classifications of “enabling” and “transition” technologies, which could allow the gas industry to claim that it contributes to sustainability.⁴¹ The EU taxonomy has also been criticized for ignoring the need to include human rights in any assessment of what is, or is not, “sustainable” investment.⁴²

NEW RULES FOR INVESTORS: FIDUCIARY DUTY AND STEWARDSHIP CODES

The “fiduciary duty” of investment funds and asset managers is always to act in the best interests of end investors, such as ensuring that the value of pensioners’ savings is maximized. The exercise of this “duty” has often served as an excuse to avoid applying specific environmental criteria to investments, or to reject calls for divestment from fossil fuels. For example, BlackRock’s main defense for holding onto such high volumes of fossil fuel stocks is that it forms part of its fiduciary duty to protect the value of its clients’ investments.⁴³

Financial regulators could help to undercut this defense by clarifying that climate risk and broader sustainability concerns are a core part of investors' fiduciary duties to the pension fund holders, insurance clients and investors whose funds they manage.⁴⁴

In 2018, the UK Department of Work and Pensions introduced regulatory guidance that requires pension funds to clearly show how they have considered “financially material factors such as environmental, social, and governance factors, including climate change” in their investment decisions.⁴⁵ New regulations in The Netherlands and France point in a similar direction, although this practice is a long way from becoming the norm.⁴⁶

Principles for Responsible Investment has suggested that an Organisation for Economic Co-operation and Development (OECD) convention on fiduciary duty could be a means to mandate investors to take account of climate risk,⁴⁷ while the EU High-Level Expert Group on Sustainable Finance has recommended that institutional investors and asset managers should explicitly integrate ESG factors and “long-term sustainability” as part of how they interpret their fiduciary duties.⁴⁸

Institutional investors are also increasingly required to adopt stewardship codes, which provide guidance on how they engage in the “corporate governance” of companies they own a stake in – for example, how they vote in annual general meetings. ESG criteria could be added to the list of standard requirements contained in these codes.⁴⁹ Similar ESG criteria could be incorporated as a standard part of various other investment rules, such as “asset management agreements” (legal documents that set the rules for investment managers to follow), or the regular disclosures that asset managers are required to make describing how they have invested their clients' funds.⁵⁰

GREEN BONDS

Bonds are simply IOUs issued by governments or corporations that want to borrow money. Global bond markets were reportedly worth over US\$102 trillion by the end of 2018.⁵¹ This includes government and local authority bonds, as well as those issued by financial institutions and large corporations. The US is by far the largest bond market (US\$41 trillion), followed by China (US\$13 trillion) and Japan (US\$12.5 trillion).

Green bonds can be issued by governments, financial institutions or companies; the only difference with standard bonds is that they claim to have an environmentally beneficial purpose (“climate bonds” are a subset of this category focused on measures to address climate change).⁵² This presents various issues when it comes to classification and comparability. There is no unified global standard for defining green bonds, a label often attached to large hydropower projects despite their destructiveness.⁵³ A number of voluntary efforts have attempted to instil greater consistency in labeling, and peer review processes. Climate Bonds Initiative currently offers the most robust methodology.⁵⁴

The scale of green bond issuance remains small by comparison to the overall market, accounting for less than 0.5 per cent of debt financing in all G20 countries except France (0.75 per cent) and South Africa.⁵⁵ According to the Climate Bonds Initiative, US\$167 billion in green bonds were issued in 2018, with the US (US\$119 billion), China (US\$77 billion) and France (US\$57 billion) leading the way.⁵⁶ A separate calculation by Environmental Finance estimates that around €550 billion (US\$625 billion) in green bonds were circulating in the market as of June 2019.⁵⁷ Approximately a third of these green bonds is issued by the public sector.⁵⁸

As with other forms of voluntary reporting, however, self-regulation by the industry or non-profit organizations can only go so far. Financial regulators are now taking a keener interest in developing common standards. China developed its own loose definition (“green bond

catalogue”) in 2015.⁵⁹ The International Organization for Standardization (ISO) is currently working on a standard set of criteria by which to evaluate green bonds, as well as its own taxonomy.⁶⁰ The EU is also currently developing a Green Bond Standard, which would be aligned with the taxonomy discussed above.⁶¹ This would remain a voluntary initiative rather than seeking to apply ESG criteria to bond issuance more widely.⁶² However, as Finance Watch points out:

If the green bond market is today a niche market, it is mainly because there are currently no concrete commitments from the emission intensive industries to make the investments needed to promote the necessary transition.... [I]f environmental policies were more prescriptive, it would be irrelevant to label the bonds ‘green’, because the capital would be reoriented towards sustainable investments anyway.⁶³

If the work of creating green bonds is to become more consequential, a system should rapidly be put in place for public development banks to issue green bonds, with central banks underwriting these as a “buyer of last resort” (see Chapter 1).⁶⁴

Various additional measures could encourage private investors to increase their holdings of green bonds, for example by granting tax incentives either to the issuer of green bonds or to investors.⁶⁵ Such incentives already apply, in limited form, to US federal government-issued Clean Renewable Energy Bonds and Qualified Energy Conservation Bonds.⁶⁶ Municipal bonds in the US are also tax exempt.⁶⁷

The adoption of disclosure rules would also encourage green bond purchases, considering green bonds should already provide information on environmental benefits that help fulfill ESG requirements.⁶⁸ Also proposed are adjustments to rules governing “capital allocations”— a term that applies to capital requirements for banks that are discussed in Chapter 2, as well as the pension and investment fund solvency rules mentioned below – but this risks stimulating a “green bubble,” fueling

financial instability and ultimately damaging the reputation of green investment itself. Therefore, this last proposal should be avoided.



Several measures can encourage private investors to choose green bonds, but the impact of these measures remains limited. Credit: AbsolutVision, Unsplash, Unsplash License

INSURANCE: UNFRIENDING COAL

Within the financial system, the insurance sector is where the impacts of climate chaos should be the most obvious, with now-frequent extreme weather resulting in significant increases in payouts for related loss and property damage.

The insurance system is designed to spread risk – it picks up the bill for the immediate costs of climate disasters and passes these on to all customers, while insurance companies also cover their own liabilities by taking out reinsurance. This system has its limits: “A 2°C world might

be insurable, [but] a 4°C world certainly would not be,” according to Henri de Castries, former CEO and Chairman of AXA insurance group.⁶⁹ The strain posed by catastrophic climate change would be too much for insurers to bear and with increasing numbers of activities, individuals, sectors or even whole countries rendered uninsurable, “the global credit system as we know it would simply cease to function.”⁷⁰

Against this backdrop, insurance companies are slowly starting to take action on climate change. The context for the chair of AXA’s remarks was a decision by that company to divest partially from coal-related activities. AXA has since stated that coal is “very much a commodity of the past,” although its divestment policy leaves it free to invest in companies planning almost half (44 per cent) of the world’s new coal pipeline, a salutary reminder of the gap between corporate climate rhetoric and reality.⁷¹

Other insurers are also starting to divest from coal, a process that is encouraged and documented by the “Unfriend Coal” campaign, an international coalition of NGOs and social movements calling on insurers to divest from coal and support a clean energy transition. It notes that Europe’s four largest primary insurers (AXA, Allianz, Generali and Zurich) have all restricted insurance for coal, although none of these companies has stopped insuring and investing in coal outright.⁷² US and Japanese insurers lag further behind, although a potential breakthrough came in June 2019 when Chubb (a Swiss multinational listed on the New York Stock Exchange) committed to stop insuring new coal-fired power plants and phase out coverage of coal mining companies by 2022.⁷³

Insurance companies are a particularly effective target for divestment campaigns because only a handful of companies have the expertise to play the lead role in underwriting new coal power projects in Asia, where most are being developed – and all but AIG have already ended or limited their involvement in this market.⁷⁴ While this does not preclude other companies from stepping up to fill the vacuum, their limited expertise

would likely require a higher degree of reinsurance, pushing the cost higher for coal project developers, or leaving Chinese state backing as the main alternative option.⁷⁵

“European insurers clearly believe coal is now a bigger reputational threat than it is a commercial opportunity,” according to the *Financial Times*, a dynamic that is driven by the fact that coal is relatively expendable, accounting for just 0.3 per cent of non-life insurance premiums.⁷⁶ Coal industry insiders have already reported that insurance difficulties are hastening the sector’s demise. Any push to shut down the coal sector should be accompanied by measures to ensure a fair deal for workers, however. The “Just Transition” plan for Spain’s mining sector, which offers early retirements for miners over 48, retraining for green jobs and environmental restoration offers a good example of how this can be achieved in practice.⁷⁷

Insurance companies do not simply offer insurance; they are also major asset managers, with around US\$30 trillion under management. This aspect of their business is also subject to capital requirements, with similar issues and solutions to those discussed in Chapter 2.⁷⁸ At a minimum, insurance companies should be subject to the same mandatory reporting requirements regarding “climate-related financial risk” that were discussed above in relation to banks and asset management firms. Such reforms are already under discussion in the EU as part of a review of the “Solvency II” framework, although this process will not wrap up before 2021.⁷⁹ There is no technical reason why such guidance could not simply rule out underwriting and investing in fossil fuels altogether. Indeed, this should be an urgent priority for legislators, although it is a demand that remains beyond their imagination for the most part.

While the divestment approach has also proved successful in pushing some insurers and reinsurers – notably Swiss Re – out of tar sands and other “extreme” fossil fuels, it has not yet enjoyed success at targeting the far bigger markets in oil and gas.⁸⁰



NO DAPL, Invest in Schools protest on 19 January 2017. Credit: Joe Piette, Flickr, CC BY-NC 2.0

INVESTMENT BEYOND FINANCIAL MARKETS

The gravity of climate change means we cannot afford to wait for an overhaul of the financial system, and there is no shortage of potential regulatory changes to encourage financial markets to invest in a transition to a post-fossil fuel economy. Such measures will not be sufficient, but achieving little victories could add momentum to calls for broader financial reform. However, tweaks to the existing system need to be treated with caution. Handing a greater role to financial institutions can serve to constrain or “discipline” public decision-makers, potentially weakening the democratic space and environmental and social considerations.⁸¹

The same system that sowed the seeds of runaway climate change is unlikely to solve the problem that it created. Financial markets concentrate power and wealth in the hands of those who are already the richest. Returns on capital investment tend to accumulate wealth more quickly than the rate of growth of the economy, as Thomas Picketty explains, resulting in greater inequality.⁸²

At the same time, financial markets have been very poor at directing investment to green projects and companies, and incapable of driving the type of structural reforms needed to bring about the steep changes that addressing climate change requires. As the G20's *Green Finance Synthesis Report* notes, less than 1 per cent of the holdings managed by global institutional investors are green assets.⁸³ That compares unfavorably to their exposure to carbon-intensive sectors, which can approach 50 per cent.⁸⁴ The biggest investment gaps lie in energy efficiency projects in buildings, and in the transport sector – but similar failings are found in energy production, industry and agriculture too.⁸⁵ This should come as no surprise, given various studies have shown that market-based finance prioritizes rent-seeking (making the rich richer) over funding the productive economy.

Instead of encouraging financial markets to “shift the trillions” needed for investment in a cleaner economy, it is important that new regulations be put in place to structure markets in socially useful directions. At the same time, as the next chapter shows, we also need to transform and dismantle the power of the corporations at the heart of these markets, and look to a renewed role for the public sector in bringing about a just transition to a cleaner, more sustainable economy.

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TRANSNATIONAL CORPORATIONS





The problem: Transnational corporations are too powerful. They undermine efforts to transition economies away from fossil fuels by avoiding tax obligations, which drains public bodies of the resources to act. The way transnational corporations are established and run prioritizes the relentless pursuit of short-term profits with little regard for the environment or the needs of the communities in which they operate.

The solution: Transnational corporations should be required to run on more democratic lines, with changes in how corporate Boards are composed, and corporate charters that require accountability to the communities in which they operate. A new “unitary” global tax system is needed to overcome tax evasion and avoidance.

3 key steps

- New corporate charters should be introduced that require large companies to act in the interests of workers, customers and the communities in which they are based. Shareholders would have the right to sue companies that ignore their social and environmental obligations.
- A new “unitary” global tax system is needed to ensure that corporations are properly taxed on their global income, regardless of where it has been earned.
- Multinational corporations should be required to allow workers to elect up to half of their Board members, helping to break up the informal networks that currently tie big financial corporations to fossil fuel interests.

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Corporate board reform	<p>The fiduciary duty of company directors should explicitly extend beyond profitability to ensure that companies engage in socially and environmentally sustainable practices.</p> <p>However, such a measure is easily circumvented unless boards themselves become more accountable. Giving workers a right to elect board members directly could achieve this.</p>	<p>In Germany, companies employing more than 2,000 people are required to allow workers to elect up to half of the members of their boards.</p>	<p>Medium/high impact </p> <p>Medium achievability </p> <p>Low drawbacks </p>
Limiting executive pay	<p>Executive pay structures reinforce short-termism, while corporate bonuses in the fossil fuel sector are often linked to increasing projected fossil fuel reserves – despite the urgent need to keep remaining sources of coal, oil and gas in the ground. Limits on executive pay could effectively curb short-termism and have clear climate benefits.</p>	<p>Chinese state-owned companies already cap the pay of senior executives.</p> <p>A number of social interest companies in the EU and US have also adopted this practice.</p>	<p>Low impact </p> <p>Medium achievability </p> <p>Low drawbacks </p>
Corporate charters	<p>A corporate charter would mandate companies over a certain size (e.g. US\$100 million per year) to consider not just the financial interests of shareholders, but to act and invest according to the interests of all major stakeholders – including workers, customers, and the cities and towns where they operate.</p> <p>Shareholders would have the right to sue companies that ignore these broader interests, providing a new tool for disciplining executives into taking climate action amongst other things. This might also prove useful in environmental justice struggles against fossil fuel corporations, whose climate pollution usually comes with significant air pollution that damages the health of neighboring communities.</p>	<p>Senator Elizabeth Warren proposed a bill that contains corporate charters in the US Congress in 2018, although it did not pass. Both the Warren and Bernie Sanders 2020 US presidential campaigns contain a corporate charter proposal.</p>	<p>Medium/high impact </p> <p>Medium achievability </p> <p>Low drawbacks </p>
Shareholder activism	<p>Shareholder activism can be a lever to encourage climate action by corporations. Amongst other measures, shareholders could ask for mandatory and prescriptive reporting on the risks that climate change poses to investments, and on what measures companies have undertaken to reduce these risks. Companies with shareholders could also be asked to show how their activities align with Paris climate targets and the need to transition to a low-carbon economy. However, the non-binding nature of corporate resolutions means that their usefulness should not be overstated.</p> <p>Threats to vote down climate laggards on company boards, or even to replace the entire board, if they do not take sufficient action to tackle the climate emergency would be more effective, although it is more difficult to achieve.</p> <p>Weakening the voting power of institutional investors could also tip the balance in favor of environmental protection – although transferring power to workers is far from a guarantee of positive environmental outcomes, especially in the fossil fuel industry.</p>	<p>In 2017, ExxonMobil shareholders voted (against the Board) for the company to produce an assessment of climate change risks – although the report that the company produced in response was a total whitewash. In 2018, more than a dozen US energy companies agreed to produce reports on climate-related financial risks (compared to just one in 2017) in order to avoid similar reversals in shareholder resolutions.</p> <p>The 2020 Sanders presidential campaign in the US has proposed weakening the power of institutional investors, and giving workers greater voting rights.</p>	<p>Medium impact </p> <p>Medium achievability </p> <p>Medium drawbacks </p>

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Making corporations pay tax	Multinational corporations have long avoided paying their fair share of taxation, undermining the tax base for public investment to support a just transition to a cleaner economy. Corporate tax rates should be increased, alongside a crackdown on tax avoidance and evasion. This should work towards a system of “unitary taxation” to ensure that corporations are properly taxed on their global income, regardless of where it has been earned. International tax rules should also be harmonized via a globally representative UN Tax Commission (to replace the OECD’s de facto role in rule setting).	The OECD “Base Erosion and Profit Shifting” project is an international effort to tackle tax evasion and avoidance, and has received G7 and G20 backing. However, its 15-point Action Plan still leaves transnational corporations with plenty of room for manoeuvre, since it focuses on patching up the existing (failed) system rather than introducing a new “unitary” approach. Consistent with its origins in the OECD (rather than a UN Tax Commission), this reform proposal also tends to reflect developed country priorities.	<p>Medium/high impact  </p> <p>Medium achievability </p> <p>Low drawbacks </p>

For transnational corporations to address the climate emergency adequately requires fundamental reforms that weaken their power over the economy as a whole. These changes come in two main flavours. First, the structure of corporations needs to be reformed, including through changes in the composition and pay structure of company boards and top executives. Second, corporations must pay their fair share of tax. On a domestic level, this requires a reversal of the decades-long trend towards cutting corporation tax, but that would only succeed as part of international action to eliminate the possibility for transnational corporations to avoid and evade paying tax. If such measures succeed, they would also provide vital new sources of public finance to support a transition to a post-fossil fuel economy.

PUTTING PEOPLE AND PLANET BEFORE PROFIT: REDEFINING THE ROLE OF BOARDS

The boards and executives of multinational corporations in both the energy and finance sectors prioritize profitability over social and environmental sustainability, often operating according to rules that oblige them to do so. That needs to change at all levels. Redefining the role of company directors, the incentives guiding their decisions and the composition of boards is a good place to start.

Company directors are responsible for the overall performance and strategic direction that a company takes and, in this role, they have a fiduciary duty to act in the interests of the company rather than merely seeking personal enrichment. This implies both a duty of care (offering an identifiable rationale behind investment decisions) and a duty of disclosure (being able to communicate that rationale to shareholders).¹ Often, directors' fiduciary duty is narrowly defined as taking decisions in pursuit of profitability. The only social and environmental consequences that need to be considered are those that would imply the company breaking national laws, such as paying less than minimum wage or ignoring air pollution rules.

A new, broader interpretation of fiduciary duty is starting to gain ground in some countries. For example, in South Africa, the UK and the US, fiduciary duties should now incorporate an assessment of "material value drivers," including the environment.² The EU High-Level Expert Group on Sustainable Finance, which is tasked with recommending changes to EU financial regulations, suggests that fiduciary duties encompass considerations of environmental and social sustainability.³ In this broader definition, company boards should be given "explicit responsibility for ensuring sustainability (rather than simply profitability)."⁴ However, there is no clear path from weakly worded statements asking that the environment be given consideration to a robust requirement that boards take firm action to address the climate crisis and align investment with a 1.5°C climate target.

A further step to ensure boards make decisions that are more sensitive to social and environmental factors would be to change their composition, breaking up the informal networks that tie big financial corporations to fossil fuel interests.⁵ This could be done through measures to enhance employee ownership (including along cooperative lines) or to give workers half of the seats in corporate boardrooms (as is already the case in Germany for companies employing more than 2,000 people).⁶ The Bernie Sanders 2020 presidential campaign has suggested extending this

system to the US, with 45 per cent of company board members elected by workers in corporations with over US\$100 million in annual revenue, as well as in all publicly listed companies.⁷

While there are no international laws that govern this area, international principles do exist to govern national practice – such as the G20/OECD Principles of Corporate Governance.⁸



Scene from a Labour Day demonstration in Zurich. Credit: Arie Wubben, Unsplash, Unsplash License

LIMITING EXECUTIVE PAY

The pay structure of the top executives responsible for the day-to-day management of large companies also accelerates climate change. In 2015, researchers at the Institute for Policy Studies found that the top executives of oil, gas and coal companies earned considerably more than the average for large (S&P500) companies.⁹ As most senior corporate executives, fossil fuel bosses received more than half of their pay in the form of stock grants and options, which “encourage a short-term fixation on pumping up share prices, no matter the long-term cost to the environment.”¹⁰ In addition, bonuses are often tied to increases in projected fossil fuel

reserves, despite the fact that new sources of coal, oil and gas would need to remain in the ground if we are to address climate change.

The structure and incentives behind excess executive pay are part of a broader problem with how large corporations function. Ratios to limit executive pay (relative to workers' pay) and to enhance accountability to shareholders and broader stakeholder groups would help.¹¹ So would new rules applied to executive bonus and incentive schemes, shifting away from the current focus on short-term profitability and towards environmental and social sustainability (including climate impacts).¹² As a first step, public procurement contracts could include clauses requiring that executive pay ratios and incentives for sustainability be in place.

NEW CORPORATE CHARTERS

Transnational corporations need to be given a new formal mandate to act sustainably, in terms of environmental protection, workers' rights and the avoidance of harm to the communities where they operate.

At present, companies claim “corporate personhood,” while acting as pathological profit-maximizing machines. In the future, they could be legally mandated to seek benefits beyond profit – similar to the model of “benefit corporations” that already exists in a handful of US states.¹³

In 2018, for example, Senator Elizabeth Warren introduced an Accountable Capitalism Act in the US Congress that “starts from the premise that corporations that claim the legal rights of personhood should be legally required to accept the moral obligations of personhood.”¹⁴ The core provision of this proposal was that any corporation with revenue of over US\$1 billion per year would be required to obtain a federal charter of corporate citizenship. This would mandate companies to consider not just the financial interests of shareholders, but to act and invest according to the interests of all major stakeholders – including workers, customers and the cities and towns where they operate.¹⁵ Shareholders

would have the right to sue companies that ignore these broader interests, providing a new tool for disciplining executives into taking climate action (amongst other things). This might also prove useful in environmental justice struggles against fossil fuel corporations, whose climate pollution often comes with significant air pollution that damages the health of neighboring communities. Warren has also pledged to go after corporate lobbyists (a group that is well stuffed with fossil fuel interests), including by levying an “excessive lobbying tax.”¹⁶

The Bernie Sanders 2020 presidential campaign’s *Corporate Accountability and Democracy Plan* contains similar provisions for a federal “stakeholder” charter for large companies, although it reduces the threshold for these to cover “corporations with more than \$100 million in annual revenue, corporations with at least \$100 million in balance sheet total, and all publicly traded companies.”¹⁷

SHAREHOLDER ACTIVISM

There are also signs that “shareholder activism” on climate change is going mainstream – with one-fifth of the resolutions suggested at the annual meetings of the largest US corporations demanding climate change-related actions.¹⁸ Resolutions are non-binding but generally acted upon if passed.

Climate change resolutions have been tabled at shareholder meetings for years without success, but they increasingly have the support of some of the largest asset managers. In 2017, ExxonMobil shareholders voted (against the board) for the company to produce an assessment of climate change risks – although the report that the company produced in response was a total whitewash.¹⁹ If nothing else, this could serve as a reminder that climate risk assessment has limited impact without support within the company itself.

In 2018, more than a dozen US energy companies agreed to produce reports on climate-related financial risks (compared to just one company in 2017) in order to avoid similar reversals in shareholder resolutions.²⁰ However, such actions should be treated with caution, to ensure that institutional investors are not merely highlighting “pro-climate” measures to greenwash other forms of unethical investment.

Another serious limitation to this type of shareholder action is that the focus remains mainly on carbon disclosure – transparency about climate risk – rather than more directly mandating corporations to reduce their greenhouse gas emissions. Such measures are also constrained by attempting to operate within the current model of shareholder capitalism rather than trying to reform it.

Voting down climate laggards on company boards or even replacing the entire board would arguably be a more effective measure, signaling that investors are ready to demand far more serious engagement with the climate crisis. While support for this currently appears insufficient, the idea was given some credence by Ron O’Hanly, chief executive of State Street, one of the world’s largest asset managers: “If we conclude that a company’s board is not taking into account these risks then we will either vote all the board out or we’ll use our vote against the board or we’ll use it against individuals on the board that we think should be acting and aren’t.”²¹

Another way to approach the issue would be to strip asset managers of their voting power altogether. Research on “social responsibility resolutions” has shown that institutional investors often do not follow the interests or the preferences of their own investors.²² The Sanders 2020 presidential campaign’s corporate accountability plan posits that this could be overcome by giving voting rights to members, and restricting asset managers to voting only on matters where their investors have provided a specific mandate for them to do so.²³

MAKING CORPORATIONS PAY TAX

The past decade of austerity in many Northern economies reflects political choices rather than economic necessity. There is considerable scope to boost public finance to support a just transition to a cleaner economy. Still, to do so would require significant shifts in how taxation works, as well as crackdowns on tax avoidance and evasion.

In the US, the top corporate tax rates have been cut to less than half their previous rate: from over 50 per cent in the late 1960s to 35 per cent in the early 1990s, and down to 21 per cent as part of December 2017 reforms to the US tax code.²⁴ UK corporation tax was 45 per cent in the late 1960s; the main rate in 2018 was 18 per cent. Corporate tax rates in the Eurozone averaged 37 per cent in 2006, compared to 24 per cent in 2018.²⁵ Similar stories can be told about most “advanced” economies. Proponents of corporate tax cuts claim that they pay for themselves by stimulating increased investment, but this is rarely the case. Instead, corporate tax cuts have fueled a race to the bottom with business taxes falling ever lower as a share of national budgets.²⁶ The result is a rise in public debt, which becomes justification for continued austerity. Unraveling this systemic shift would require, amongst other things, greater controls on the free movement of capital, although this remains outside of the toolkit of most “conventional” economists.

The headline rate of corporate taxation is only half of the story, however, because state budgets have also shrunk due to tax evasion and avoidance by large corporations and super-wealthy individuals. “Intra-firm trade” (between different branches of the same corporation) is commonplace, accounting for close to half of all US goods imports.²⁷ A significant part of this trade is likely to involve “transfer pricing,” whereby corporations use non-market prices for their internal transactions in order to minimize the taxes they pay. These same corporations routinely create webs of shell companies and subsidiaries to take their profits offshore, offload responsibility and minimize transparency.

“Offshoring” and “transfer pricing” are the everyday tools of corporate globalization, which urgently needs to be re-forged. Increasing taxes on intra-firm transactions is a stopgap measure that could help, although ultimately a system of “unitary taxation” would be a better means to ensure that corporations are properly taxed on their global income, regardless of where it has been earned.²⁸

Under a unitary system, revenues would be divided between jurisdictions where companies have genuine operations, leaving out shell companies. This would mean dividing the total global profits of a transnational corporation among each country where it operates, explains Nicholas Shaxson of the Tax Justice Network, “using a formula based on real economic substance: the number of employees and the size of sales, turnover and physical assets in each place.”²⁹ Creating international rules on how to divide these revenues would go a significant way to avoiding competitive “tax wars.”³⁰ Unitary taxation is just one of a series of possible measures to rebalance the international taxation system and avoid systemic corporate tax avoidance. Other proposals, such as “value chain analysis,” point in a similar direction.³¹

The OECD’s “Base Erosion and Profit Shifting” project (which has received political backing from the G7 and G20) has identified a number of other possibilities written into a 15-point *Action Plan*.³² These actions should be implemented in full by the G20 and other countries, but they would only patch up the existing system (often by adding new layers of complexity) rather than creating a new one.³³ Ultimately, a new representative UN Tax Commission should be tasked with addressing this issue, because it could bring a level of international legitimacy and accountability that the OECD lacks.

Tackling tax avoidance through secrecy jurisdictions is also a priority. It is important to recognize that “tax havens” are not simply palm-tree lined islands and mountain hideouts. Some of the most important actors in this global system of tax avoidance are located in and governed by

rich OECD countries, such as the UK, The Netherlands and the state of Delaware in the US.³⁴ Public pressure within these countries can bring about new rules, including greater transparency, and ban the practice of funding projects through off-balance sheet companies (“special investment vehicles”).³⁵ At an international level, a new UN commission should be created to establish a system of global tax rules.³⁶



Corporate tax avoidance is a global problem. Credit: Yabresse, Shutterstock, Shutterstock Standard License

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TAKING BACK CONTROL: FROM PUBLIC INVESTMENT TO PUBLIC OWNERSHIP

The problem: We urgently need investment in clean infrastructure that removes our dependence on fossil fuels, but the private sector has proven unwilling and unable to provide it. The public sector could and should play a lead role – it is far better placed than the private sector to develop and invest in new technologies, for example – but it is tied back by a lack of resources, and has been undermined by years of privatisation and austerity.

The solution: More public investment and greater public ownership, especially in the energy sector.

3 key steps.

- Greater public ownership of the energy sector, such as through the “re-municipalization” of privatized utilities or the creation of new companies. These companies, as well as existing public providers, should be given a public interest mandate that includes a requirement to invest in renewable energy infrastructure and rapidly phase out fossil fuels.
- Public pension funds should be required to consider environmental and social factors in reaching their investment decisions. This process should start with divesting from fossil fuels and assessing the “climate-related financial risk” of their whole investment portfolio to ensure that it is fully compatible with a 1.5°C climate target.
- Wealth taxes should be introduced to capture the riches of the billionaire class, as part of an overall strategy to increase the tax base.

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *
Fossil fuel subsidy swaps	Redirecting fossil fuel subsidies can provide a significant source of funds for public investment in energy transition projects. However, reforming subsidies on fossil fuel consumption can be a disaster unless combined with cash payments to compensate low-income households, as well as social programmes. The remainder of the funds can also be shifted to energy transition projects. Ending producer subsidies such as tax breaks for fossil fuel companies is also urgent.	Most of the recent fossil fuel subsidy reforms have cut consumer subsidies. IMF-sponsored programmes linking reforms to austerity measures have been disastrous, such as in Ecuador and Egypt. More successful examples exist, though, from India (where subsidies are being shifted to increase renewable energy access) to Ghana and Indonesia, where fossil fuel subsidy cuts were accompanied by cash payments and social programmes.	<p>High impact ●</p> <p>High achievability ●</p> <p>High drawbacks ●</p>
Fossil-free sovereign wealth funds	Sovereign wealth funds have the flexibility to invest in long-term, climate-friendly measures and contribute to a just transition. Divesting from fossil fuels is an important first step, as are governance reforms to make these funds more accountable. As most have been funded by fossil fuel extraction, they should also contribute to a global financing mechanism addressing the irreparable loss and damage caused by climate change, and seek to finance environmental restoration.	<p>In response to pressure from environmental and consumer protection groups, Norway's Pension Fund Global (the world's largest sovereign wealth fund) has divested more than US\$8 billion from coal, and dropped investments in 60 companies linked to deforestation. It is also reducing its investments in oil and gas, but the scale of this selloff (US\$8 billion on US\$36 billion total investment) was limited following oil industry lobbying, and the Pension Fund Global still maintains its three largest oil investments in Shell, BP and Total.</p> <p>A number of the other major sovereign wealth funds are located in autocratic regimes that remain highly dependent on oil wealth, making reform unlikely.</p>	<p>High impact ●</p> <p>Low/medium achievability ● ●</p> <p>Low drawbacks ●</p>
Fossil-free public pension funds	<p>Many public pension funds have little to no climate investment strategy, and remain invested in fossil fuels. They should reclaim their "public" dimension through a revised investment mandate that factors in environmental, social and economic considerations. Divesting from fossil fuels and assessing their "climate-related financial risk" are urgent first steps towards an investment strategy that is entirely compatible with a 1.5°C climate target.</p> <p>However, most of the more than US\$11 trillion invested by public pension funds serves to purchase government bonds. A minimum threshold for green bond purchases is needed to "green" these investments – while still ensuring adequate care is taken to protect workers' retirement plans.</p>	<p>Since 2018, the California Public Employee Retirement System and the California State Teachers' Retirement System have had to report publicly on "climate-related financial risk" to comply with a bill that passed the state's senate after a campaign by environmental groups that also won vital trade union endorsements.</p> <p>In 2019, Danish public pension fund MP Pension divested close to US\$100 million from 10 of the world's biggest oil companies.</p>	<p>High impact ●</p> <p>Medium achievability ●</p> <p>Low/medium drawbacks ● ●</p>

PROPOSAL	EXPLANATION	EXAMPLE	POTENTIAL IMPACT, ACHIEVABILITY, DRAWBACKS *	
Wealth taxes	Wealth taxes would tax the “net worth” of the ultra-rich, alongside a system of sanctions for moving wealth offshore and a global registry to neutralize the impact of secrecy jurisdictions. These taxes would feed into general taxation, increasing the tax base and, with it, the space for public investment in a just transition to a zero-carbon economy. This might involve earmarking a specific segment of the revenue for climate and just transition projects. As important as revenue raising is making use of wealth taxes to curtail the power of the ultra-rich and ultimately to “abolish” billionaires, who would otherwise put a block on more fundamental reforms of the financial system.	The Bernie Sanders and Elizabeth Warren 2020 presidential campaigns in the US have brought wealth taxes closer to the realm of implementable policy. The Warren proposal’s headline figures are a 2 per cent tax on fortunes valued at between 50 million and 1 billion dollars, and a 3 per cent tax above that, with an “exit tax” equal to 40 per cent of total wealth for those who respond by relinquishing US citizenship. The Sanders plan is similar, with a number of additional and more punitive tax brackets, which rise to 8 per cent on fortunes over US\$10 billion. It proposes “a national wealth registry and significant additional third party reporting requirements” to reduce the risks of base erosion and weak enforcement.	Medium/high impact Medium achievability Low drawbacks	● ● ● ●
International climate finance	International climate finance is a system of financial transfers between high-income countries and those in the global South to help put the latter onto a cleaner development path, while also compensating them for the effects of climate change that are already happening. Funding passes through a mix of bilateral and multilateral institutions, including the World Bank and regional development banks as well as the UN’s Green Climate Fund. Most of these institutions have yet to rule out fossil fuel financing. There is also a significant lack of finance for adaptation to the impacts of climate change that are already being felt, while rich countries are refusing to pay reparations for irreversible “loss and damage.”	The European Investment Bank energy lending policy and the Ireland Strategic Investment Fund’s fossil fuel exclusion list provide good real-world models of how to eliminate fossil fuel finance. A Climate Damages Tax on fossil fuel extraction could be a starting point for reparations for “loss and damage.”	Medium impact Medium achievability Low drawbacks	● ● ●

Developing a cleaner economy requires not only fundamental changes in the way that private banks, stock markets and large corporations work, but also a reduction in their overall influence. Public investment and democratic control of public utilities could play a leading role in bringing about this shift, and we have already identified ways in which public finance could fund a Green New Deal, notably through the issuance of green bonds through national investment or development banks as described in Chapter 5. This chapter identifies additional measures that would increase the tax base and redirect public investment to fund a just

transition away from a fossil fuel economy, weakening the power of the multinational corporations and ultra-rich people who have benefited from it. In their place, public utilities could play a key role in democratizing the economy and averting the climate crisis.

SHIFTING FOSSIL FUEL SUBSIDIES

“I suspect that the key to disrupting the flow of carbon into the atmosphere may lie in disrupting the flow of money to coal and oil and gas,” wrote Bill McKibben in *The New Yorker*.¹ Ending fossil fuel subsidies is a core part of this. The basic case in favor of reforming fossil fuel subsidies is simple and widely acknowledged: the world needs to move away from fossil fuels rapidly and towards renewable energy to have any chance of avoiding dangerous climate change. Subsidizing fossil fuels is economically inefficient, and worsens inequality, air pollution and climate change.²

This diagnosis is backed up by numerous inter-governmental initiatives aimed at phasing out “inefficient” subsidies “that encourage wasteful consumption,” with the G20, G7, European Union and Asia-Pacific Economic Cooperation all making commitments to this effect.³ Despite this, the fossil fuel industry still receives around US\$372 billion in subsidies, according to International Energy Agency estimates, or up to US\$5.2 trillion in “direct and indirect” subsidies, using the IMF’s very expansive definition.⁴

If estimates of the scale of fossil fuel subsidies vary widely, what is far clearer is that this form of energy continues to receive considerable support in the form of:

- favourable trade tariffs;
- price controls (and regulations allowing fossil fuels to be sold below market prices);
- tax breaks for consumers or producers;

- payments made directly to fossil fuel producers;
- payments made to end users;
- risk transfer instruments such as loan guarantees; and
- energy-related services provided by governments.⁵

Redirecting these subsidies towards cleaner energy, greater efficiency and reduced consumption would go a long way towards reshaping markets – creating conditions for private investors to contribute to a transition rather than reinforcing the status quo. Subsidies could also be redirected into publicly owned utilities and direct public investment in energy transition projects, reducing reliance on the market and reflecting that energy use and conservation are public needs that should not be determined by the profit motive. This is easier said than done, not least because there are powerful vested interests behind state-owned fossil fuel companies and maintaining producer subsidies. Reforms to consumer subsidies also need to be handled with care to avoid changes that hit impoverished people the hardest.

Most of the subsidy reforms achieved in recent years have in fact fallen on the consumer side, removing price limits that keep diesel or gasoline affordable, or offering tax breaks on those fuels. Cutting these subsidies tends to be regressive, because people with low incomes spend a larger share of their income on energy than the rich do.

To make matters worse, the IMF has taken to hard-wiring fossil fuel subsidy reform into broader packages of austerity, with Ecuador's move to eliminate subsidies on diesel and gasoline the poster child of this approach.⁶ This move had a predictable result: a political insurgency that has swept across the country. A similar condition in IMF lending to Egypt has also sparked protests and worsened inequality in the country.⁷

This is not an argument against cutting fossil fuel subsidies, but it does make abundantly clear that such a policy requires a framework that shields and compensates low- and middle-income households from adverse

effects, as well as communicating these benefits clearly.⁸ Such measures are likely to include redirecting a proportion of the subsidies into cash transfer payments for lower income households or, as happened in Ghana and Indonesia, redirecting some of the subsidies' increase in spending on education, as well as health care and other forms of social protection.⁹

Consumer subsidy shifts should be embedded in a wider process of reforming tariffs to reduce energy costs for the lowest income households, boosting investment on renewable energy and encouraging energy access. For example, in India a proportion of consumption subsidies have been redirected into providing support for energy access (notably, clean cooking subsidies) aimed at women living below the poverty line.¹⁰ On aggregate, public finance in India has also shifted from support for petroleum products to subsidizing renewable energy and electricity transmission and distribution, although actual implementation leaves significant room for improvement.¹¹ Even redirecting a relatively small share of the huge subsidies paid out for fossil fuels to renewable energy (with the rest distributed for social welfare to help people with low incomes) could help pay for a “clean energy revolution.”¹²

SOVEREIGN WEALTH FUNDS

Public investment funds could also support a climate transition. Sovereign wealth funds (SWFs) oversee an estimated US\$7.5 trillion in investments globally and have the potential to invest long term and in climate-friendly, just-transition measures that their more commercial counterparts find unattractive.¹³ SWFs operate according to long-term horizons, a close fit for many of the renewable energy or efficiency projects that are needed.¹⁴ Yet SWFs tend to be managed and judged according to market rules and norms that were devised for short-term, for-profit investors, often delegating the investment of a significant proportion of their assets to private fund managers.

In 2015, for example, the Norwegian government's Pension Fund Global

(the world's largest SWF) announced its intention to divest over US\$8 billion from coal.¹⁵ It has also dropped investments in 60 companies due to deforestation risks, including 33 companies involved in oil palm production. In both cases, divestment was a response to pressure from environmental and consumer protection groups.¹⁶

The Pension Fund Global is also taking steps to reduce by US\$8 billion its US\$36 billion investments in oil and gas, although here the picture is mixed.¹⁷ Part of the divestment push came from activist pressure, supported by technical analyses showing the financial risks of exposure to fossil fuel extraction. Falling returns on oil stocks (due to low prices) and an economic case for diversification made by the Norwegian Central Bank were also key factors. The scale of the selloff has been restricted in response to oil industry lobbying, however, with the Pension Fund Global maintaining its three largest oil investments (in Shell, BP and Total). Lobbyists found a sympathetic ear amongst some of Norway's governing conservative politicians – a salutary reminder that divestment is intricately linked to broader political change in a moment of right-wing ascendancy in many countries.

A similar challenge, albeit for different reasons, arises in many of the undemocratic, oil-dependent states that manage most of the world's largest SWFs. Entrenched elites, who made their fortunes from oil and gas exploitation, are far from the ideal actors to advance divestment from fossil fuels, or to develop investment rules that emphasize sustainability and collective well-being. Democratization is probably a pre-requisite if most SWFs are to play a constructive role in achieving a just transition.

With the most significant SWFs drawing their funds from fossil fuel extraction, their contribution to a just transition should also include significant measures to address the irreparable loss and damage caused by climate change, and finance environmental restoration.

PUBLIC PENSION FUNDS

Public pension funds – which manage over US\$11 trillion in assets – should also be primed to invest in a climate transition, yet many trail behind their private counterparts in addressing the climate emergency. A 2018 survey by the Asset Owners’ Disclosure Project found that “over 60% of the world’s largest public pension funds have little or no strategy on climate change.”¹⁸ To take another example, the Chief Investment Officer of Japan’s Government Pension Investment Fund, the world’s largest pension fund, recently went on record to dismiss green bonds as a “passing fad.”¹⁹

The reasons behind this reluctance towards green investment are obvious: fund managers have a narrow focus on maximizing economic returns, and do not see climate-friendly investments as particularly profitable. Shifting this perception is more challenging and requires, at its core, a cultural shift in how these funds operate. Reclaiming the “public” dimension of public pension funds requires, at minimum, that they be given a core mandate to invest responsibly, based on environmental, social and economic considerations.



Public pensions funds need to react to the climate emergency. Credit: Photography-ByMK, Shutterstock, Shutterstock License

Since a large proportion of these funds are likely to remain invested in government bonds (which are perceived as relatively secure, reliable investments), a key priority should be to ensure that public pension funds adopt a minimum threshold for green bond purchases. In this way, long-term investments in public infrastructure that contributes to a climate transition would be prioritized.²⁰ This can be reinforced by a series of technical changes, including a requirement that addressing climate risk and sustainability be part of the fiduciary duties of fund managers, and instructing them to take account of the “materiality” of the risk that climate change poses to fossil fuel investments.²¹

The push for change will ultimately come from the public. Fossil fuel divestment campaigns are underway in various countries, and gained a victory in Denmark in September 2019 when public pension fund MP Pension (*Pensionskassen For Magistre and Psykologer*) divested close to US\$100 million from 10 of the world’s biggest oil companies.²²

In the US, the California Public Employee Retirement System (CalPERS) is seen as one of the most activist funds in pursuing socially responsible investment goals, but this was not always the case.²³ The move to develop a more activist and principled approach to investment was reinforced by efforts to coordinate public investment, such as the formation of a Council of Institutional Investors (which took modest steps to question excessive executive pay awards and improve corporate governance), and was driven by initiatives to promote better public investment, such as Ceres, a US sustainability non-profit organization.²⁴

CalPERS and the California State Teachers’ Retirement System (CalSTRS) have also been pushed into more climate-responsive investments by legislative changes. Notably, CalPERS and CalSTRS are now required to report publicly on climate-related financial risk thanks to Senate Bill 964, passed by the California State Senate in August 2018.²⁵ The impetus for the bill came from environmental groups led by Fossil Free California and Environment California, which were behind the original drafting

of the bill as well as a campaign to win support amongst legislators. This included lobbying political representatives and working for union endorsements from the California Service Employees International Union and the California Teachers' Association.²⁶

Ultimately, reforming management of public investment funds could reposition them as a model for changes that should also take place across the private sector, showing that social interest and long-term stability can coincide.

WEALTH TAXES

In the previous chapter, we highlighted the importance of ending corporate tax avoidance in order to both bolster the tax base and rein in private companies' power. Similar priorities apply in terms of taxing the ultra-rich, who have long used secrecy jurisdictions and loose rules on the movement of capital to avoid contributions to the public purse. The basis of wealth taxation is simple. Instead of simply taxing the "income" of the very rich, there should be a globally coordinated effort to tax them based on their "net worth." This would require, amongst other things, a global registry of financial assets to neutralize the impact of secrecy jurisdictions.²⁷

The Elizabeth Warren and Bernie Sanders 2020 presidential campaigns in the US have brought wealth taxes closer to the realm of implementable policy. The Warren proposal is for a 2 per cent tax on fortunes valued between 50 million and 1 billion dollars, a 3 per cent tax above 1 billion, alongside an "exit tax" equal to 40 per cent of total wealth for those who respond by relinquishing US citizenship.²⁸ As Thomas Picketty points out: "The tax would apply to all assets, with no exemptions, with dissuasive sanctions for persons and governments who do not transmit appropriate information on assets held abroad."²⁹

The Sanders plan is similar, with a number of additional and more punitive tax brackets, which rise to 8 per cent on fortunes over US\$10 billion. It proposes “a national wealth registry and significant additional third party reporting requirements” to reduce the risks of base erosion and weak enforcement.³⁰

Another variant on taxing the mega-rich would be a “surtax,” which might be easier to implement in the US since it would use existing tax structures rather than set up an additional system. A bill introduced in the US Senate in November 2019 proposes such a tax, by means of a 10 per cent increase to income and capital gains tax rates for those earning over US\$2 million per year.³¹

In essence, wealth or surtaxes would feed into general taxation, increasing the tax base and, with it, the fiscal room for investment in a transition to a zero-carbon economy. This might include earmarking a specific segment of the revenue for climate and just transition projects.

Another proposal put forward in 2018 by the German Advisory Council on Global Change – a scientific advisory body to the government – would be to use an inheritance or estate tax levy to support “transformation funds”:

For Germany, the WBGU [German Advisory Council on Global Change] estimates revenues from a 10% estate tax at approx. €20 billion per year.... [R]evenues from an estate tax would be linked to the principles of equity. Since the accumulation of wealth cannot be detached from the respective societal context, the redirection of inherited assets for the promotion of the common good seems justified.³²

Even coming from an influential actor, this proposal seems unlikely to become implementable policy given the difficulties surrounding existing inheritance or estates taxes.

Rebuilding the tax base is a crucial element in ensuring that adequate public finance exists to support a just transition to a cleaner economy. As important, however, is the ability of taxes to curtail the power of the ultra-rich and abolish billionaires, who would otherwise put a block on more fundamental financial system reforms.

INTERNATIONAL CLIMATE FINANCE

In addition to increasing domestic resources to fund a climate transition, far more international climate finance is needed. Although there have been attempts to water down the meaning of “climate finance” in recent years, it should involve financial transfers between high-income countries and those in the global South to help the latter onto a cleaner development path, while also compensating them for the effects of climate change that are already happening.³³

The underlying rationale is that rich countries should take a lead on climate action because their emissions have caused and continue to worsen the climate crisis. In most cases, these same countries also have the largest present-day financial capability to contribute to global action. This is a form of the “polluter pays” principle, with climate finance equating to a responsibility to make reparations for a “climate debt” owed to the South rather than to a form of charity.

As part of the 2015 Paris Agreement, rich countries reaffirmed a commitment made in 2009 to provide US\$100 billion per year in climate finance by 2020, but the devil lies in the details of how this is calculated.³⁴ It is also important to keep sight of the fact that US\$100 billion is a politically expedient figure, rather than one based on an assessment of climate finance needs. When developing countries’ needs are taken into account, the actual requirements for climate finance are far higher: up to US\$750 billion per year by 2020 for mitigation alone, or up to US\$1.5 trillion for climate finance as a whole.³⁵ These figures include the additional costs that climate change imposes on countries in the global South – with the

actual cost of investing in cleaner power supplies, buildings, transport and industry estimated at over US\$6.4 trillion per year.³⁶

As the supply of climate finance continues to fall short, the means of delivering this money is also being rethought. Climate finance is typically provided by a range of multilateral financial institutions (e.g. World Bank) and bilateral institutions (national development banks or agencies); they tend to follow trends shaped by neoliberal thinking, combined with the need to claim a role in moving (“leveraging” or “mobilizing”) far larger amounts of finance than they actually provide. The basic idea is that public institutions mobilize private finance by providing seed money, soft loans or guarantees that reduce the risks taken by private investors, encouraging them to expand their green investment operations to new countries or sectors.

In practice, claims about the amount of private money “mobilized” by public finance tend to be highly inflated – a practice that is common because of limited data and difficulties in measurement. Public monies often end up supporting projects that would have happened anyway or bailing out poorly designed private projects, rather than supporting projects with significant public benefits. When public climate finance subsidizes already viable private projects, this takes scarce resources away from the type of investment that multilateral funding is uniquely placed to achieve: notably, grants for non-profitable projects that strengthen lower income countries and communities (in particular, for adaptation and “loss and damage,” which refers to climate change impacts that go beyond what people can adapt to).³⁷

While there is a role for multilateral climate finance institutions to engage with private investors, they should emphasize domestic enterprises and smaller, emerging companies. Within these confines, the Green Climate Fund (GCF) has a mandate to focus part of its resources on domestic micro-, small- and medium-sized enterprises, although it has not delivered on this effectively so far. The GCF’s target of 50 per cent

adaptation funding is welcome, and in fact it has become the largest multilateral funder of adaptation in the global South.³⁸

The nature and scope of international climate finance should also be more clearly defined. The construction of coal plants, oil refineries and various forms of infrastructure to support fossil fuel power generation have all been funded in the name of climate finance.³⁹ The GCF and other climate finance providers should explicitly exclude these forms of funding, as well as adopt strict rules to ensure that climate finance does not support environmentally and socially damaging large hydroelectric, biomass or waste incineration projects.⁴⁰ The EIB energy lending policy and the Ireland Strategic Investment Fund's fossil fuel exclusion list (see Chapter 1) already provide good real-world models.

NEW SOURCES OF CLIMATE FINANCE

After the 2009 UN Climate Summit in Copenhagen, considerable attention was placed on finding “alternative sources” for funding international climate finance. Most notably, then-UN Secretary General Ban Ki-Moon established a High-Level Advisory Group on Climate Change Financing tasked with identifying “practical proposals on how to significantly scale up long-term financing,” including a survey of new “potential sources” such as financial transaction taxes, carbon taxation and the removal of fossil fuel subsidies.⁴¹

A decade later, little progress has been made in establishing new international sources of climate finance. OECD countries have focused their energy on developing new means to count existing private sector investments as climate finance, rather than developing new funding sources to meet the rising costs of addressing climate change adaptation or mitigation (let alone the “loss and damage” of irreversible changes to livelihoods and habitats). Indeed, it may be difficult to persuade governments that the creation of international levies independent of their direct control can happen in ways that do not undermine their sovereignty.

Nevertheless, some important international financing measures have been proposed. For example, a Climate Damages Tax would seek to raise funding of up to US\$50 billion per year for an international facility to address “loss and damage.” Revenues would be generated from a levy on oil, coal and gas extraction, set at a consistent global rate based on how much climate pollution (CO₂e) is embedded within the fossil fuel. The suggested starting rate is US\$5 per ton from 2020, rising by US\$5 per ton each year after that, to incentivize the phase-out of fossil fuels. In addition to providing finance for an international solidarity facility for loss and damage, the Climate Damages Tax could return revenue to domestic treasuries in producer countries to contribute to financing a just transition away from fossil fuels, such as retraining and early retirement programmes for fossil fuel workers.⁴²

International financial transaction taxes and levies on international aviation and maritime transport are other leading contenders to provide new money for international climate finance.⁴³ For example, at the UN Climate Conference (COP14) in 2008, the Least Developed Countries Group submitted a proposal for an International Adaptation Passenger Levy (a small additional passenger charge on international flights) that could raise between US\$8 billion and US\$10 billion annually for adaptation in the first years of operation, and more in the longer term.⁴⁴ The Unitaid international solidarity facility, which involves a small levy on passenger tickets to bring about innovations to prevent, diagnose and treat major diseases in low- and middle-income countries (leveled by France and a handful of other countries), is a model that could be replicated. However, the glacial pace of progress in setting international emissions reduction targets at the International Maritime Organization and International Civil Aviation Organization and the considerable pushback against the EU’s attempts to extend its Emissions Trading System to cover international flights suggest that such proposals will not be approved without significant public mobilization.

MAKING PUBLIC INVESTMENT ACCOUNTABLE

Simply increasing the volume of public investment is not enough. New measures to ensure that public money is distributed accountably and in ways that assist the transition to a cleaner economy matter. There are no easy answers here, so listening to the voices of workers and affected communities, as well as learning from international experiences, is an important step. In Scotland, for example, a Just Transition Commission has been set up to advise government on how to create “a more resource-efficient and sustainable economic model in a fair way which will help to tackle inequality and poverty, and promote a fair and inclusive jobs market.”⁴⁵

States could also use public procurement policies to invest massively in measures to reduce greenhouse gas emissions and lessen the impacts of climate change. But to do so requires challenging the ideological dominance of austerity and “balanced budgets,” which push off infrastructure investment from public books and long into the future by means of public-private partnerships. These schemes routinely deliver poor value for taxpayers while, over the long term, they compromise the ability of states to invest in projects that could help them adapt to the effects of climate change (e.g. flood defences, coastal protection or improved health systems).

Ultimately, improving the responsiveness of public investment will likely require both a greater role for the public sector and democratic reforms to how publicly owned companies are managed.

PUBLIC OWNERSHIP

Investment in energy, public infrastructure and transport – some of the key sectors of the global economy that contribute to climate change – was not always driven by large private corporations listed on stock markets. Most of the world’s electricity supply has been publicly owned

by states or municipalities, much of the infrastructure was built by the public sector, and in many places it remains under the control of public companies. The same is true of major oil and gas companies, railways, metro and bus services, cargo ships and airlines. In a number of countries, district heating still accounts for a majority of the supply, generally under some form of public (often municipal) ownership. When talking about reclaiming public control of energy and key public resources, a good starting point is to engage with those cases and places where it has never gone away.

Public companies are, in principle, the best placed to adapt to the scale and pace of the climate challenge – which many commentators have described via the analogy of a wartime economy.⁴⁶ Public companies can invest without being answerable to the short-term demands of shareholders, and can be drivers of rapid change when political will is present.

The history of the developmental state, in its various forms, offers numerous examples of this process. A key factor in Korea's rapid economic rise between the 1960s and 1980s was the total state ownership of the banking sector, combined with a powerful Economic Planning Board setting out clear guidelines for private companies. State-owned companies (including energy companies) combined with rigid industrial policies were also key factors in the economic development of France and Scandinavia.⁴⁷

Yet a general history of state or public ownership would also show that it is insufficient to ensure a transition to a more sustainable economy. Twelve of the world's 20 biggest emitters are national oil companies, state-owned or controlled corporations set up to exploit oil, gas or coal.⁴⁸

According to the National Resource Governance Institute's National Oil Database, the most complete source of data on national oil companies, these produce over half of the world's oil and gas (55 per cent) and

control US\$3.1 trillion in assets.⁴⁹ At least 25 countries rely on national oil companies for more than 20 per cent of all government revenues, generally affording them a significant role in how government budgets and priorities are set. State ownership neither guarantees that the benefits of investment in new climate technologies will be fairly distributed nor that their impacts will reduce inequalities nor spare the environment.

For these reasons, by definition attempts to reclaim the public sphere should also involve transforming the public sector (state enterprises in particular).⁵⁰ Up to now that transformation has tended towards greater “corporatization,” bringing in private incentives and mechanisms to supposedly increase a public enterprise’s efficiency. France’s EDF and Sweden’s Vattenfall, two of Europe’s largest electricity utilities, are publicly owned but structured as private companies; the same is true of South Africa’s Eskom. Often, corporatization is a prelude to privatization, introducing a new management ethos emphasizing profitability over the social good.⁵¹ Eskom, Vattenfall and other para-statal utilities have limited accountability to the public in their home countries, and even less so when they operate overseas, where their activities have drawn considerable criticism.⁵²

Trade unions and activists in South Africa are campaigning to change this situation, with a call to “scrap and democratize” the board of Eskom and other state-owned enterprises in order to counter corruption, and emphasize providing free electricity to “the working class poor and their families” over the profit motive.⁵³ These demands are backed up by research showing that democratization could help to shift Eskom away from its reliance on coal towards renewable solar and wind energy, while at the same time introducing fairer tariffs to ensure that all citizens have affordable access to electricity.⁵⁴

A larger role for public ownership of energy (amongst other sectors) should be accompanied by the de-corporatization and democratization of state-owned enterprises, in particular reversing moves to convert them

into joint stock companies. It should also focus on enhancing their public interest mandate and increasing democratic participation. In the case of public energy companies, that means planning a decisive shift away from extracting fossil fuels, or producing power from those fuels, and towards renewable energy generation, flexible grid infrastructure (including smart grids) and efficiency. Shifting the focus of state-owned companies would have knock-on effects on the private sector too, because they tend to work in partnership to develop new extraction sites.⁵⁵

The most climate-responsive and democratic public energy companies often exist at a local level – perhaps unsurprisingly given the close relationship between greenhouse gas emissions and air pollution. Creating new public energy companies or returning energy services and infrastructure to municipal public ownership can help to break the stranglehold of the large corporate utilities that are delaying the transformation of the energy system – as well as reducing costs, improving services and creating better conditions for workers.⁵⁶

In Stuttgart, Germany, for example, the city council took control of electricity and gas networks in 2014. Its new municipal utility company is now at the center of a strategy to achieve “zero emissions” by 2050 – an ambitious goal for a city of over half a million people that is home to several large manufacturers. The new utility company partnered with a pioneering local green energy cooperative, allowing it to learn from citizens’ initiatives. Taking control of the energy supply also means that the council can better coordinate efforts to reduce energy use.

Around the world, municipal public ownership has emphasized the need for accountability to ordinary citizens. On the Hawaiian island of Kauai, private energy companies were replaced by a not-for-profit citizens’ cooperative. The users-owners of the coop set a goal of 50 per cent renewable energy generation by 2023, which may be reached ahead of time – in stark contrast to the fossil fuel-heavy private utilities in many other parts of the US.



A woman holding a sign saying “We demand democracy”. Credit: Fred Moon, Unsplash, Unsplash License

BOX 2.

Public innovation

The public sector has a key role to play in promoting innovation. Beyond the stereotype of the dynamic entrepreneur, private investors are remarkably conservative in their approach to new products or economic sectors – they tend to prefer low-risk, incremental improvements rather than financing potentially mould-breaking innovations.⁵⁷

Public funding has consistently been fundamental to supporting technological breakthroughs. Without the constraints of short-term profitability, state-funded researchers are positioned to take

risks or explore the potential for “game-changing” products. As Mariana Mazzucato has pointed out, “there is not a single key technology behind the iPhone that has not been State-funded,” and the same can be said of the search algorithm that launched Google to prominence, as well as most of the technologies underpinning the development of the internet.⁵⁸

The democratic state should play a more active role in creating and shaping markets, as well as reclaiming activities from them. This requires a shift in the role of public investors away from simply “de-risking” private investments to a more active stance characterized by:

[M]aking strategic decisions on the kind of crosscutting technological changes that will affect opportunity creation across sectors (eg internet, battery storage), the type of finance that is needed, the types of innovative firms that will need extra support, the types of collaborations with other actors to pursue (in the third and private sectors), and the types of regulations and taxes that can reward behaviour that is desired (eg rewarding long-term investments and reinvestment of profits rather than hoarding).⁵⁹

In policy terms, this requires coordinated, multi-sectoral policy-making. Germany’s *Energiewende*, a coordinated approach to an energy transition that cuts across various sectors from domestic energy efficiency to heavy industry, remains a useful (but highly flawed) example of how this might be achieved.⁶⁰ Uruguay and Costa Rica have also become global leaders in renewable energy, thanks in large part to the involvement of democratically accountable state-owned companies.⁶¹

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CONCLUSION AND RECOMMENDATIONS

This book looks at how new rules can be drawn up to reshape the financial system, encouraging investors to turn their back on fossil fuels and invest in an energy transition, as well as limiting the unaccountable power of a handful of large players in the financial sector whose actions brought the global economy to its knees in 2008. Nation states, international and local institutions continue to play a significant role in creating and shaping markets. They set the rules and regulations without which markets could not function, create a range of incentives (and penalties) for investors, and are often the leading investors in new and expanding markets that the private sector is too timid to enter.

There is an urgent need to reverse decades of austerity, which has stripped the state of much of its capacity to invest through debt financing and which has undermined the tax base, allowing transnational corporations and a growing billionaire class to shift their profits and wealth beyond the reach of tax authorities. Reversing these trends, and shifting power back to democratically accountable public companies will be key to achieving a rapid and just transition away from the fossil fuel economy.



A young woman at a Fridays for Futures protest. Credit: Markus Spiske, Unsplash, Unsplash License

FIVE GUIDING PRINCIPLES FOR TRANSFORMATION

It is important to step back and look at the common threads that tie the various progressive financial tools presented in this book. These can be boiled down to the following five guiding principles for fundamentally changing the financial system so that it becomes part of the solution to climate change, rather than part of the problem:

1. **The primary challenge is to stop the flow of money to oil, coal and gas and to establish a clear path towards de-carbonization.** The “sustainability” of finance can be gauged by how far and how fast it shifts us away from the fossil fuel economy, rather than simply allowing the financial sector to develop new “green” markets alongside a core business that continues to bankroll climate change.
2. **Changing markets means redesigning them, and this requires political intervention rather than mere technical fixes.** Put simply, there is a lot of money invested in fossil fuel companies, airlines, the car industry, big agribusiness and other large polluters and powerful vested interests that keep financiers locked into the status quo.
3. **Climate activism can significantly accelerate financial system change.** Reframing the climate discussion around the need for radical, urgent action to stem the “climate emergency” forces investors to question the wisdom of continuing to back fossil fuels, which can make a significant difference in a financial system that is highly susceptible to groupthink. More fundamentally, it also raises the pressure on governments and regulators to adopt policies that phase out fossil fuels and accelerate de-carbonization of all economic sectors.
4. **Changing the financial system in ways that benefit the planet requires reducing the size and influence of the financial sector,** as well as “de-financializing” other parts of the economy. There are

many areas where private investors will not go, because they are too fixed on existing business models, or so heavily invested in fossil fuels that they stand to lose heavily when these become “stranded” assets. Reining in the financial sector is also a way to bring together efforts to tackle climate change with broader demands for economic justice and the democratization of a financial system that has allowed the ultra-rich and large corporations to act with impunity for too long.

5. **Public investment and democratic ownership has a crucial role to play in creating a post-fossil fuel economy.** Public finance can take a lead by bankrolling a Green New Deal, issuing new debt to pay for public works and support public utilities. It can also play a decisive leadership role in shaping markets as long as key sources of public capital (such as sovereign wealth funds, public pension funds and national development banks) are invested in line with a triple bottom line of environmental, social and financial concerns, instead of directed towards short-term profits while ignoring the long-term damage this would cause the planet.



NO DAPL, Invest in Schools protest on 19 January 2017. Credit: Joe Piette, Flickr, CC BY-NC 2.0

TOP SIX RECOMMENDATIONS FOR ACTION

This book has presented a long yet far from exhaustive list of measures – from modest reforms to wide-ranging structural changes – that can help to reshape the financial system in response to climate change. This concluding section emphasizes six key recommendations that could help to bring about a more sustainable financial system.

1. **Replace quantitative easing with public finance for a Green New Deal.** The US, EU and Japan responded to the 2008 financial crisis with “exceptional” policies to create money that was then sunk into purchase of sovereign and corporate bonds. These measures should be replaced by a programme of public funding for a Green New Deal. Public investment and development banks should issue green bonds (better still, adopt fossil-free policies for all energy sector lending) to finance public investment programmes in renewable energy, energy efficiency and improved public transport. Central banks could play a role too, acting as the “buyer of last resort” of these bonds. In some cases, this proposal would require the creation of new green development banks at a national or regional level.

2. **Get central banks and financial regulators to create “green credit” policies,** building up more robust versions of the example that China has already set in this area. Green credit policies should set minimum requirements for the proportion of bank loans targeting green projects and upper limits on lending to carbon-intensive sectors. Such policies should cover international as well as domestic lending, and could be ambitious enough to include rapidly reducing credit ceilings to stop lending to companies whose carbon intensity is markedly above the best practice in their sector. These credit ceilings would in effect place the worst polluters on an exclusion list, cutting them off from receiving bank loans.

- 3. Establish green development banks** (or green investment banks) as a clear focus for public financing of renewable energy, energy efficiency or low-carbon transport infrastructure. Such institutions should operate with a clear climate and social mandate to prioritize public and local initiatives rather than public-private partnerships. They should also be able to offer concessional lending (or even some grant support), rather than simply investing on commercial terms. Germany's KfW and France's CDC offer important lessons on how this could be done, and are far better models than the UK's short-lived Green Investment Bank. With the EIB shifting to a fossil-free energy lending policy from the end of 2021, it could become a positive example for public climate lenders, too. Green development banks should be the target of any reflows from existing QE programmes, and could issue bonds to support a Green New Deal.

- 4. Target insurance industry divestment from the coal sector** as a key priority. Divestment campaigns have done important work in limiting fossil fuel companies' "social license to operate," but are unlikely to cause significant financial damage to oil and gas companies so long as there remain unscrupulous financiers willing to buy the dumped oil and gas company stocks and loan them money. The coal sector is a different story, with many leading mining companies and coal power producers already facing losses. While the biggest oil and gas companies can self-insure new investments, the biggest coal companies do not have the financial strength to do this, so they rely on insurance companies to underwrite the risks related to constructing and operating new coal power plants and mines. Many of the leading insurers have already scaled back their involvement in coal, however, or are planning to stop underwriting coal power plants and mines altogether. A renewed push could help insurance companies reach the conclusion that the reputational damage risks of insuring coal outweigh the potential financial gains from the sector. This could significantly increase the costs and risks of investment in coal power, speeding up the sector's demise.

5. **Create corporate charters**, requiring large companies to act in the interests of workers, customers and the communities in which they are based. This would emphasize democratic accountability over and above maximization of short-term profits for shareholders. Amongst other benefits, corporate charters would provide a new legal vehicle for holding companies to account for the pollution they cause. This could be particularly effective as a basis for shutting down fossil fuel and carbon-intensive industries that cause local air and water pollution, and climate chaos.

6. **Encourage greening of public pension funds**. Many public pension funds have little or no climate investment strategy and remain heavily invested in fossil fuels. They should reclaim their “public” dimension through a revised investment mandate that factors in environmental and social as well as economic considerations. This process should start with divesting from fossil fuels and assessing the climate-related financial risk of their whole investment portfolios to ensure that they are fully compatible with a 1.5°C climate target.

THE ORGANIZATIONS



The Transnational Institute (TNI) is an international research and advocacy institute committed to building a just, democratic and sustainable planet. For more than 40 years, TNI has served as a unique nexus between social movements, engaged scholars and policymakers. TNI has gained an international reputation for carrying out well researched and radical critiques. As a non-sectarian institute, TNI has also consistently advocated alternatives that are both just and pragmatic, for example providing support for the practical work of public services reform.

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Stopping climate chaos calls for an overhaul of the financial system. Fossil fuel lending can be redirected towards green energy to protect people and the planet. Challenging the role of “big finance” will require political intervention rather than mere technical fixes. Public finance can take a lead by bankrolling a Green New Deal, placing democratic control and equitable access to common goods and services at the heart of investment.

This book presents progressive proposals to build a fair financial system that can respond to the climate crisis, assessing their potential impact, achievability and any associated drawbacks. Climate activists are presented with a variety of financial tools to power a just transition, including: green bonds for public investment in a Green New Deal; credit policies by central banks and financial regulators to increase fossil-free lending and cut the flow of finance to the worst polluters; the creation of green development banks with a clear climate and social mandate to prioritize public and local initiatives; reforming company boards and introducing corporate charters that offer a legal vehicle to hold companies to account for the pollution they cause; divestment from fossil fuels, targeting insurance companies underwriting the coal sector as a first priority; and the development of climate investment strategies by public pension funds.

There is an urgent need to reverse decades of austerity, which has stripped the state of much of its capacity to invest through debt financing and undermined the tax base. This allowed transnational corporations and a growing billionaire class to shift their profits and wealth beyond the reach of tax authorities. Reversing these trends, and shifting power back to democratically accountable public enterprises, will be key to move rapidly towards a fossil-free world.



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