

BLUE PRINT

For Europe's Just Transition

2019 Draft for Public Consultation

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Disclaimer

This report was based on the
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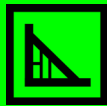
Not all of them have read the
report in its entirety and not all of
them agree with all its content.
They share a commitment to
working together to develop
solutions to the crises that plague
Europe today.

A contribution to any part of the
report should therefore not be
read as an endorsement of the
whole — or a definitive reflection
of the official policy position of
any of the organisations listed
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Executive Summary

Europe today confronts two crises. The first is an economic crisis, with rising levels of poverty, insecurity, and homelessness across the continent. The second is a climate and environmental crisis, with severe consequences for Europe's front-line communities and even more perilous ones on the horizon.

Both crises are the products of Europe's political decisions, and they are closely bound together. The promotion of extractive growth has driven environmental breakdown, and the devotion to budget austerity has constrained Europe's response to it.

A radically new approach is necessary to reverse this destructive trend — and to deliver environmental justice in Europe and around the world.

We call this approach the Green New Deal for Europe, and the following report is the first attempt to present a pragmatic and comprehensive policy package that lives up to its core principles.

The Green New Deal for Europe comprises three distinct institutions.

The Green Public Works (GPW) is an historic investment programme to kickstart Europe's just transition.

The Environmental Union (EnU) is a package of regulations to align EU policy with the scientific consensus, enshrining the principles of sustainability and solidarity in European law.

And the Environmental Justice Commission (EJC) an independent body to research, monitor, and advise EU policymakers on how to advance the cause of environmental justice.

We summarise the motivation and operation of each institution below.

GREEN PUBLIC WORKS

The GPW is the investment programme to deliver Europe's transformation. It links economic aims with a vision of environmental justice: decarbonising Europe's economy, reversing biodiversity loss and guaranteeing decent jobs across the continent.

The GPW is financed entirely through green bonds issued by the European Investment Bank (EIB). These instruments allow the EIB to raise significant amounts of money without breaking Europe's fiscal rules. Backed by the European Central Bank, the bonds are a safe investment for Europe's ailing savers and pension funds, while directing idle funds to

parts of the continent suffering from unemployment, poverty and climate and environmental breakdown.

The governance of the GPW aims to empower communities and facilitate links between them. Investment decisions are devolved to sub-European authorities, where citizens actively participate in their direction. Meanwhile, a Green Solidarity Network creates structures for horizontal cooperation among Europe's cities, regions and rural communities — enabling them to share best practices from the green transition, as well as expanding administrative capacities.

The investments of the GPW aim to reorient the European economy away from private wealth accumulation and toward environmental sustainability. Integrated housing, utilities and

mobility strategies will ensure massive reductions in energy demand while transforming Europe's neighbourhoods. Europe's 38 million vacant homes will be mobilised to eliminate homelessness and housing insecurity. A massive retrofitting programme will ensure that Europe's homes are insulated and protected from extreme heat — improving community resilience and ending energy poverty. A pan-European Mobility Cohesion Fund will ensure that every European community has access to agile, clean, inexpensive transport options.

But the GPW is more than an investment programme. It is also a promise to reinvigorate democracy by empowering workers and their communities. The GPW will invest in worker-owned cooperatives, which traditionally suffer from a lack of access to private finance, and reorient Europe's industrial practices for sustainability, democracy and justice.

GPW funding will be allocated to private firms that advance Europe's economic, social and environmental goals. Firms that reorient manufacturing towards recycling and repair, extend product life-cycles and shorten the working week will be given funding to support the transition. As will firms that put workers on boards and shift a portion of their profits towards a fund that pays workers a dividend and generates additional resources for the just transition.

Firms that excel at meeting the Green New Deal for Europe's high standards of sustainability, democracy and social justice will be given a Europe Award, tied to further transition funding.

Finally, the GPW will reinvigorate Europe's rural communities. Overwhelmingly, European subsidies flow to multinational agribusiness, with devastating social and environmental outcomes — both in Europe and abroad. The GPW will redirect these funds in support of regenerative practices across farming, fishing and forestry, ensuring that Europe's rural communities become the engine of our environmental recovery.

ENVIRONMENTAL UNION

The EnU delivers on the Green New Deal for Europe's promise of 'systems change.' It offers a robust and comprehensive regulatory package to realign European policy with the scientific consensus on climate and environmental breakdown, and transform Europe into a global leader on the green transition.

The EnU comprises three broad areas, legislating for (i) emergency, (ii) sustainability, and (iii) solidarity.

The EnU begins from the premise that European policy makers remain in denial about the crisis at hand. It therefore calls for a formal declaration of a climate and environmental emergency, using the declaration to set new targets that will force a review of all existing and subsequent European legislation.

The EnU legislates for sustainability by reigning in environmentally destructive practices within Europe and across the supply chains that link European entities to production processes beyond its borders. The EnU will introduce new amendments to Europe's prudential rules to penalize fossil fuel investments, fast-track the progress of the Technical Working Group on sustainable finance, and strengthen regulatory oversight of multinational banks operating in the Global South.

As part of its 'Legislating for Sustainability' package, the EnU also calls for a radical overhaul of EU energy policy. It discards the regulatory framework of the 'internal energy market' in order to allow for remunicipalisation of energy infrastructure. It phases out all fossil fuel subsidies, both direct and indirect. And it adopts a new fee-and-dividend system, ensuring that all emissions sectors are appropriately taxed, with the proceeds flowing to everyday Europeans.

Third, the EnU legislates for solidarity. For decades, the EU has promoted deregulation and resource extraction under the auspices of 'competitiveness.' The EnU replaces the principle of competition with that of solidarity, putting the interests of workers, communities, and the environment first.

Legislating for solidarity requires a radical shift in Europe's agricultural policy, which currently subsidizes industrial farms to flood global markets. The EnU, instead, adopts an EU Common Food Policy, a framework that realigns the various sectoral policies affecting food systems, puts an end to conflicting policy objectives and their hidden costs, and puts agricultural trade in the service of sustainable development.

International trade is central to the 'Legislating for Solidarity' agenda. The EnU aims to rewire Europe's trade relationships to support, rather than undermine, solidarity. This includes terminating Investor-State Dispute Settlement mechanisms, integrating sustainability standard into WTO frameworks, facilitating technology transfers, and supporting a global green transition in the process.

The principle of solidarity applies equally to Europe's development policies, which often fund fossil fuel projects under the banner of international aid. The EnU Green Development Regulation that recalibrates the EU's international development priorities and boosts its commitment to multilateral funding mechanisms like the Green Climate Fund.

Finally, the EnU enshrines respect for the natural world in law, introducing penalties for polluters and formally recognising 'ecocide' as a punishable offense. The introduction of these new rules by the EU could serve as a model for the global recognition of ecocide as a crime against humanity.

EUROPEAN JUSTICE COMMISSION

The Environmental Justice Commission (EJC) is the first international body tasked with ensuring that the green transition is also a just one.

The structure of the EJC aims to ensure legitimacy, democracy, and authority. It includes (i) Chairpersons elected by each EU member state, (ii) a Commission with diverse representation from inside and outside Europe, (iii) a Sub-Commission that executes the research priorities of the Commission, and (iv) Citizen Panels that put public participation at the core of the EJC's activities.

The EJC has a broad mandate to set a new international standard for research and reporting on environmental injustices, but is limited to an advisory role, assisting institutions like the European Commission and the United Nations. It is tasked with gathering data on the consequences of climate change, developing new indicators to evaluate them, monitoring the implementation of Europe's climate agenda, and advising the EU and other international institutions on future policy development.

The work of the EJC is structured along three dimensions

of environmental justice: (i) International justice, (ii) Intersectional justice, and (iii) Intergenerational justice.

The crisis of climate change is global, but its impact is not evenly distributed. Poorer countries today are paying the highest price, while bearing the least responsibility. The International Justice wing of the EJC aims to assess the relationship between EU policy and uneven environmental destruction, to monitor the extent to which EU entities perpetuate this legacy of international injustice, and to provide a platform for front-line communities to participate in the development of new regulatory frameworks.

The EJC will develop and apply its metrics of international justice across several key areas. These include migration, where the EJC will develop the first comprehensive database on environmental migration and advise EU authorities on formal recognition of climate refugees and their rights to asylum. And they include transnational corporations, where the EJC will also help advise EU institutions on the viability of the UN Treaty on Transnational Corporations and Human Rights, and whether similar legislation can be introduced at the European level.

Climate change is deepening inequality not only between countries, but within them. As the IPCC note, “people who are socially, economically, culturally, politically, institutionally, or otherwise marginalised are especially vulnerable to climate change and also to some adaptation and mitigation responses.” The EJC’s Intersectional Justice wing aims to redress these inequalities.

The work on Intersectional Justice also applies across several different areas, including Health, Employment, Ed-

ucation, and Mobility. In each, the EJC aims to identify barriers to equal distribution, recognition, and participation, and advise EU authorities on how best to eliminate them, ensuring that all European residents are included in the green transition.

The consequences of environment changes are durable, creating inequalities that can last for generations. The EJC’s will address these intergenerational consequences in both directions, confronting the colonial crimes of the past and paving the way for future generations to enjoy a healthy planet. As UN General Assembly President María Espinosa has said, “Climate justice is intergenerational justice.”

The EJC will explore mechanisms of accountability for Europe’s historic role in resource extraction in the Global South. In particular, the EJC expanding the EU’s existing set of tools for compensating “victim’s rights” to include climate reparations that distribute funds and resources to front-line communities affected by centuries of colonial rule and excessive pollution.

Finally, the EJC will examine how Europe can do justice to future generations that will inherit this planet. In particular, the EJC will evaluate Europe’s economic and environmental policies and their potential impacts on future generations. The EJC will consider an explicit legal protection for future generations, which entitles them to make claims on existing environmental policy. And it will propose changes to the discount rate that is used to inform investment decisions, adjusting down to zero discrimination against future generations.

Foreword by Bill McKibben

Two particularly baleful trends have begun to dominate life on this planet: the steady destruction of our natural world and the steady rise in inequality.

These are each incredibly dangerous: the climate and environmental crises have us on the brink of a global extinction event on a scale not seen in many millions of years. Inequality is helping destabilize our political life in countries around the globe. These trends are, of course, linked in many ways. Not the least of which is the need for effective and immediate government action to help slow the rising temperature of the earth.

This is why this is such a remarkably important document. The Green New Deal for Europe is the first attempt at a political response to climate change that is on the same scale as the problem itself, and it recognizes that any response to the climate and sustainability crisis must necessarily also deal with the austerity and economic short-sightedness that currently paralyze our societies. This is by no means impossible — in fact, compared with trying to ride out the status quo it is easy.

The engineers have done their job, dramatically lowering the cost of power from the wind and sun and opening up the prospect of a workable future. Now citizens must do their jobs with the same prowess. We must set the stage for rolling out those new technologies at a pace that actually catches up with the physics of global warming. And we must use the economic opportunity that roll-out represents to reverse

the tide of inequality and instead start a trend in the other direction, towards economic justice.

The institutions envisioned in this document will at least get the job started. But one of its crucial postulates is that the response to these crises must be living and dynamic. I am reminded of the original New Deal, a response to the Depression announced by Franklin D. Roosevelt almost a century ago. Under his leadership, a period of intense experimentation tried one solution after another, discarding those that didn't work and honing those that did. In many cases, these policies deepened social and economic inequalities, between races as between genders. But the original New Deal enshrined the principles of democracy and justice. We must emulate it — and radically improve on it — in that regard.

Roosevelt famously inaugurated the New Deal by saying “there is nothing to fear but fear itself.” We don't have that assurance, sadly. There is a great deal to fear, on a planet whose icecaps are melting, oceans rising, and cities baking. But there is also a good deal to hope for: above all the human solidarity that can rise above the tawdry exploitation of the last few decades and aim instead for a world that can be both cherished and sustained.

August 2019

The Green New Deal for Europe is the first attempt at a political response to climate change that is on the same scale as the problem itself.

Introduction

Europe today confronts twin crises — both of them of its own making.

The first crisis is economic. Inequality in Europe is at an all-time high: the top 10 percent of households own half of the continent's wealth, while the bottom 40 control just three percent.¹ This is not a story of all boats rising at once. The share of workers living in poverty is on the rise. In 2016, 118 million Europeans, nearly one out of four, were at risk of poverty or social exclusion, with rates of homelessness increasing across the continent.² Even in 'prosperous' countries like Germany, relative poverty has been steadily rising for the last two decades.³

This is a crisis by design. The policy of austerity, which severely constrains the public sector's spending capacity, has been built into European treaties and reinforced in subsequent agreements. This policy has starved Europe of investment in welfare services, worker training, and public infrastructure. Again, even in Germany — just like in France, Spain and Italy — net public investment has recently fallen to below zero.⁴

The second is a crisis of climate, ecology, and environment. As Bill McKibben notes in the foreword to this report, we are already experiencing a mass extinction: the soil is degrading,⁵ the earth is heating,⁶ the ice is melting, the oceans are acidifying,⁷ and species after species is disappearing from the planet,⁸ while increasing amounts of greenhouse gases are pumped into our air.⁹ Large parts of the planet could become uninhabitable within our lifetimes if we do not change our ways, and change them fast.¹⁰

This crisis, too, is a product of our political decisions. Centuries of subsidized pollution — and reckless neglect of the scientific evidence — have wrought havoc not only in Europe, but around the world.¹¹ In all, 75 percent of the terrestrial environment has been "severely altered" by human actions,¹² ushering in a new geological era marked by humanity's imprint on our lived environment.

These crises are bound together. The attachment to the failed, growth-oriented economic policies of the past has prevented Europe's governments from taking necessary action to redress the climate crisis. The result is commonly known as Black Zero: a fanatic pursuit of 'balanced budgets' has precluded government action on scientific evidence — even as historic heatwaves blanket Europe,¹³ disastrous wildfires tear through its towns and cities,¹⁴ and severe droughts strain its harvests.¹⁵

Inequality is also linked to the changing climate in a more direct way. The richest 10 percent of people are responsible for 49 percent of all lifestyle consumption emissions — a

measure of what we emit in our daily lives. Their average carbon footprints are 60 times higher than those of the poorest 10 percent.¹⁶ At the same time, just 100 companies are responsible for 71 percent of all global emissions.¹⁷

A movement is growing to secure a better future. In large parts of Europe, voters consider the climate and environmental crises their top priority.¹⁸ Increasingly, activists and voters are recognising the interconnectedness of economic policies, social inequalities and environmental breakdown. And for the first time, Europe's political establishment appears to be listening. In her opening speech to European Parliament, Ursula von der Leyen vowed to deliver a "green deal" during her tenure as president of the European Commission.¹⁹

Our challenge today, then, is no longer to persuade Europe's politicians that the climate and environmental crises exist. It is to help shape their solutions — and to ensure that they address inequality, reject austerity, and ditch the logic of extraction that has guided us to this critical juncture.

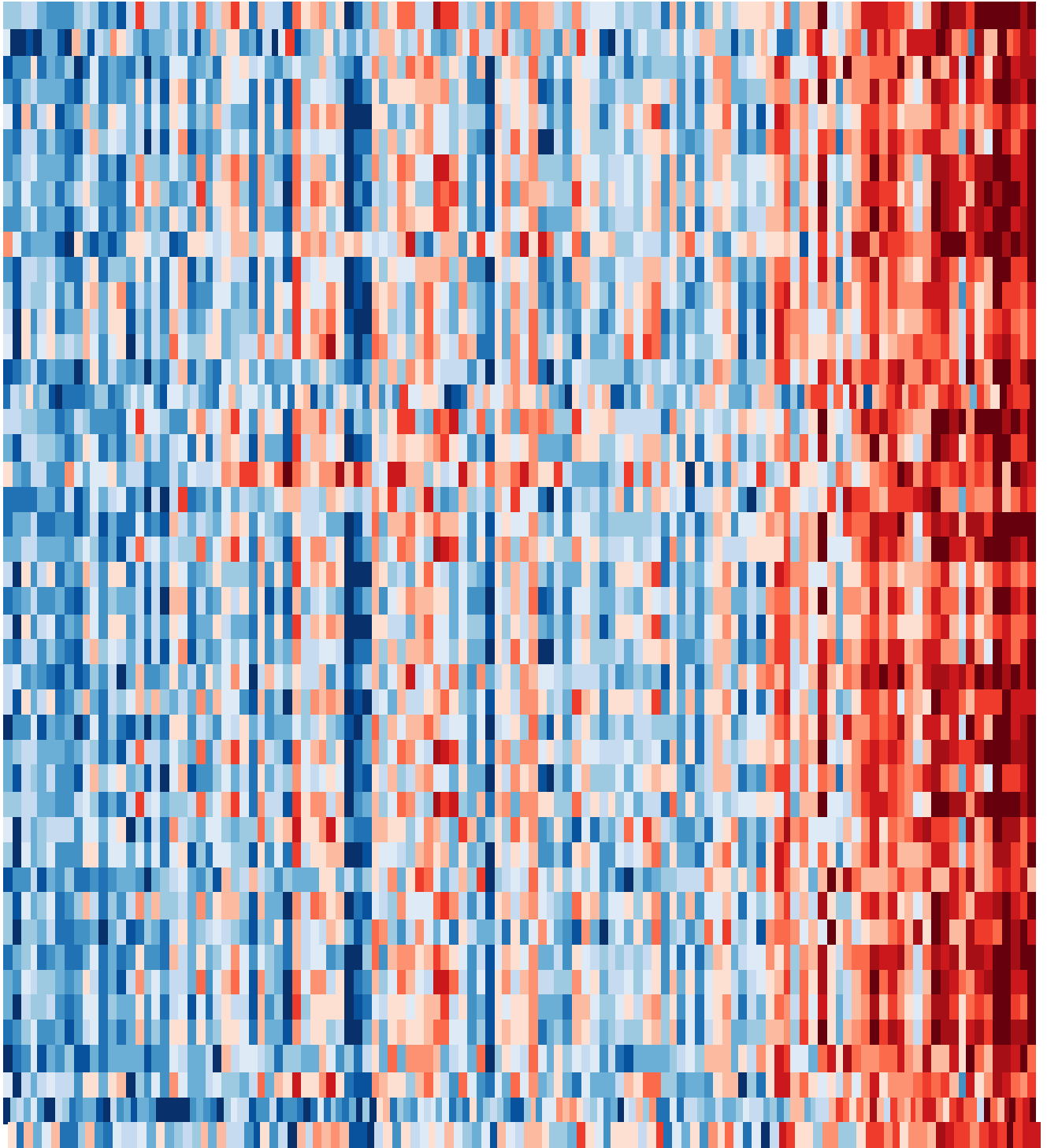
This report is the first attempt to present a clear, pragmatic, and comprehensive policy package for the Green New Deal for Europe.

The package is composed of three major initiatives. The first is the Green Public Works: an investment programme to kickstart Europe's equitable green transition. The second is an Environmental Union: a regulatory and legal framework to ensure that the European economy transitions quickly and fairly, without transferring carbon costs onto front-line communities. The third and final is an Environmental Justice Commission: an independent body to research and investigate new standards of 'environmental justice' across Europe and among the multinationals operating outside its borders.

This is a living document. The policy proposals have been developed in consultation with a wide range of activists, academics, and organisational partners. Now, we want to hear from you. Until 16 September 2019, we are soliciting amendments and proposals to improve this policy vision. The goal is to arrive at September's general strike with our little green book in arm: a concrete plan to end the climate and environmental crises and deliver justice in Europe and around the world.

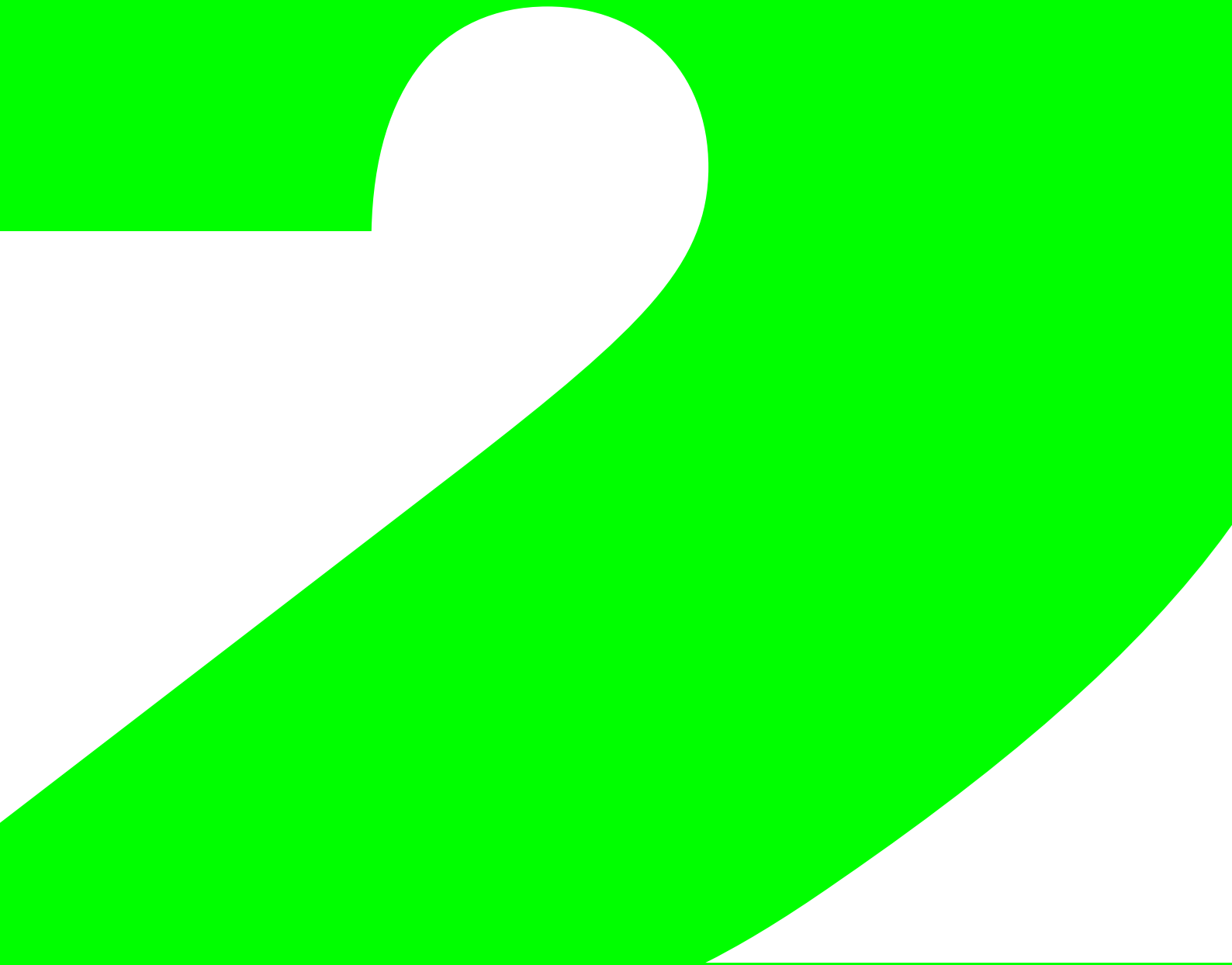
FIGURE 1 - EUROPE'S WARMING STRIPES

Annual average temperatures for 45 European countries from 1850-2018 using data from UK Met Office.



Source: Ed Hawkins, Berkeley Earth, NOAA, UK Met Office, MeteoSwiss, DWD.

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The Engine of Economic Transformation

The Green New Deal for Europe is more than a vehicle for redirecting resources to the fight against climate and environmental breakdown. It is a promise to build a fairer and more democratic economy, generating decent jobs, protecting workers' rights, and empowering communities to shape their futures. This is the vision behind the Green Public Works (GPW), an historic public investment programme financed by the European Investment Bank.

Like Franklin Delano Roosevelt's Public Works Administration (PWA), founded to oversee government investment during the Great Depression, the GPW programme is Europe's engine of economic transformation.

But its mandate is broader than that of the PWA. Roosevelt sought to boost industrial output and infrastructure development as a means of economic recovery. The GPW, by contrast, links economic aims with a broader vision of environmental justice: decarbonising Europe's economy, reversing biodiversity loss and tackling inequalities in Europe and around the world. In other words, the Green New Deal for Europe must not further a destructive 'green growth' agenda.

The science shows that it is not feasible to transition to renewable energy quickly enough to stay under 1.5 de-

grees Celsius if total energy consumption continues to grow.²⁰ Decarbonising Europe's economies means more than investing in renewables. It also means scaling down aggregate energy use in order to enable a rapid transformation to an economy that respects planetary boundaries. This must be done in a fair and progressive manner that enhances, rather than restricts, human well-being.

In addition to phasing out Europe's existing carbon-intensive energy systems and infrastructure, aggregate energy demand must also be reduced by scaling down material production and throughput. The GPW supports this transition by shifting income and welfare creation from industrial production to social and environmental reproduction: maintenance, recycling, repair, and restoration of environmental and infrastructural resources, as well as education, culture and care — for both people and planet.

Beyond reaching net-zero emissions, the Green New Deal for Europe must also work to reverse biodiversity loss, soil degradation, and other forms of environmental breakdown. The reduction in throughput will already release pressure on Europe's natural systems, but the GPW will do more. It will reinvigorate Europe's rural communities by investing in small-scale, regenerative

farming, forestry and fishing practices — and end the destructive practices of Europe's large agribusinesses.

Finally, the GPW is a major jobs programme that not only creates meaningful new jobs, but improves the standards of workers today.

Europe faces increasing inequality and economic concentration. People across the continent live in precarity, which also constrains their ability to live sustainably. Many are worried that environmental measures will add to the pressures they face in their daily lives, whether through job losses or higher living costs. The Green New Deal for Europe will address these concerns and, rather than demanding sacrifice from the vulnerable, offer livelihood security, stability and equality. It will, in other words, be a real solution to the problems faced by communities who are struggling to make ends meet.

This section will set out how we pay for the GPW, how the programme could work and what it will do for Europe's communities.

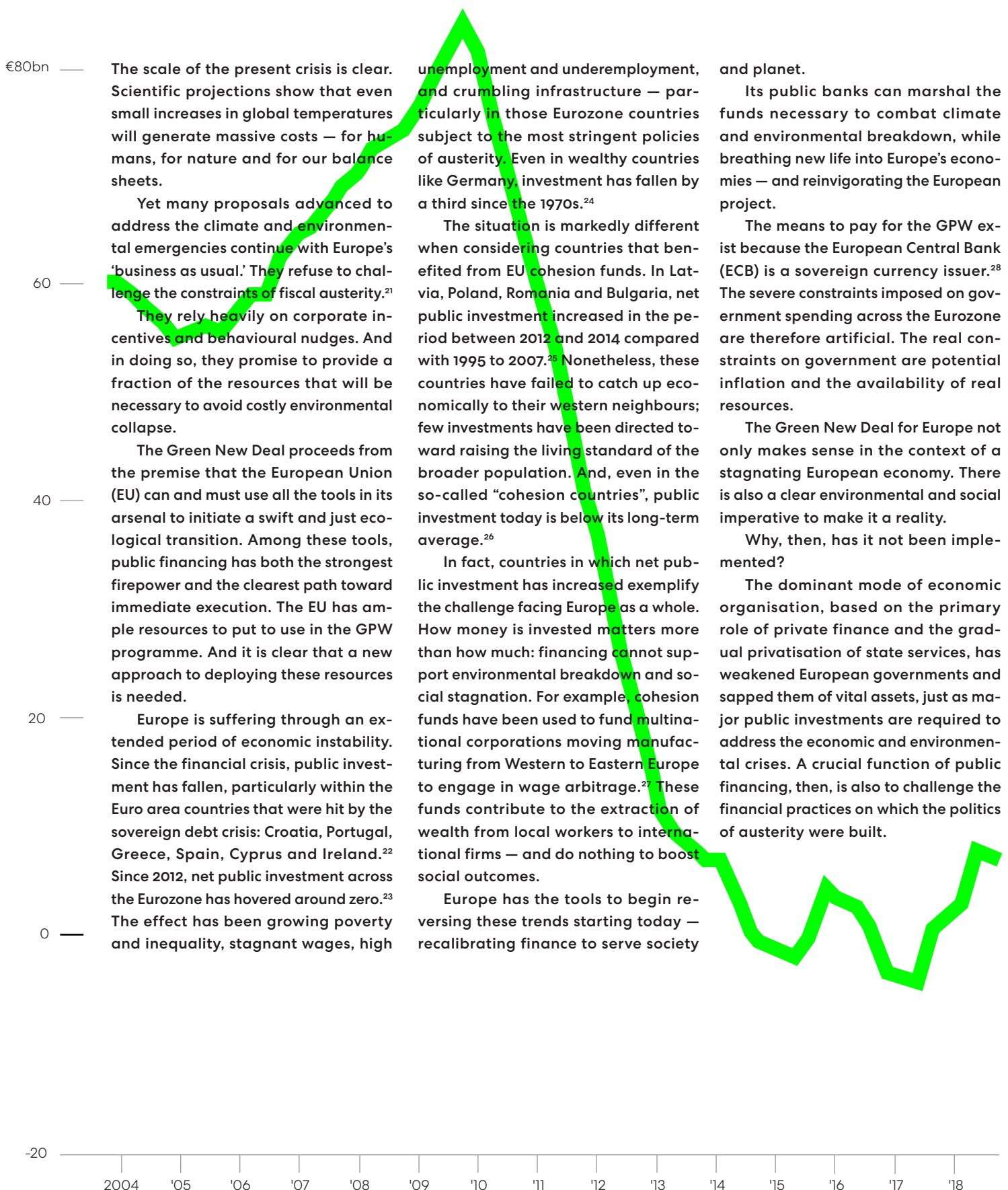
POLICY RECOMMENDATION

Establish the Green Public Works, a public investment agency that will channel Europe's resources into green transition projects around the continent.

How money is invested matters more than how much: financing cannot support continued environmental breakdown and social stagnation.

2.2

How to Pay for It



The scale of the present crisis is clear. Scientific projections show that even small increases in global temperatures will generate massive costs — for humans, for nature and for our balance sheets.

Yet many proposals advanced to address the climate and environmental emergencies continue with Europe’s ‘business as usual.’ They refuse to challenge the constraints of fiscal austerity.²¹

They rely heavily on corporate incentives and behavioural nudges. And in doing so, they promise to provide a fraction of the resources that will be necessary to avoid costly environmental collapse.

The Green New Deal proceeds from the premise that the European Union (EU) can and must use all the tools in its arsenal to initiate a swift and just ecological transition. Among these tools, public financing has both the strongest firepower and the clearest path toward immediate execution. The EU has ample resources to put to use in the GPW programme. And it is clear that a new approach to deploying these resources is needed.

Europe is suffering through an extended period of economic instability. Since the financial crisis, public investment has fallen, particularly within the Euro area countries that were hit by the sovereign debt crisis: Croatia, Portugal, Greece, Spain, Cyprus and Ireland.²² Since 2012, net public investment across the Eurozone has hovered around zero.²³ The effect has been growing poverty and inequality, stagnant wages, high

unemployment and underemployment, and crumbling infrastructure — particularly in those Eurozone countries subject to the most stringent policies of austerity. Even in wealthy countries like Germany, investment has fallen by a third since the 1970s.²⁴

The situation is markedly different when considering countries that benefited from EU cohesion funds. In Latvia, Poland, Romania and Bulgaria, net public investment increased in the period between 2012 and 2014 compared with 1995 to 2007.²⁵ Nonetheless, these countries have failed to catch up economically to their western neighbours; few investments have been directed toward raising the living standard of the broader population. And, even in the so-called “cohesion countries”, public investment today is below its long-term average.²⁶

In fact, countries in which net public investment has increased exemplify the challenge facing Europe as a whole. How money is invested matters more than how much: financing cannot support environmental breakdown and social stagnation. For example, cohesion funds have been used to fund multinational corporations moving manufacturing from Western to Eastern Europe to engage in wage arbitrage.²⁷ These funds contribute to the extraction of wealth from local workers to international firms — and do nothing to boost social outcomes.

Europe has the tools to begin reversing these trends starting today — recalibrating finance to serve society

and planet.

Its public banks can marshal the funds necessary to combat climate and environmental breakdown, while breathing new life into Europe’s economies — and reinvigorating the European project.

The means to pay for the GPW exist because the European Central Bank (ECB) is a sovereign currency issuer.²⁸ The severe constraints imposed on government spending across the Eurozone are therefore artificial. The real constraints on government are potential inflation and the availability of real resources.

The Green New Deal for Europe not only makes sense in the context of a stagnating European economy. There is also a clear environmental and social imperative to make it a reality.

Why, then, has it not been implemented?

The dominant mode of economic organisation, based on the primary role of private finance and the gradual privatisation of state services, has weakened European governments and sapped them of vital assets, just as major public investments are required to address the economic and environmental crises. A crucial function of public financing, then, is also to challenge the financial practices on which the politics of austerity were built.

FIGURE 2 - PUBLIC INVESTMENT ACROSS THE EUROZONE
Investment spending minus depreciation, billions of euros per year.

Source: Eurostat, Barron’s

2.2.1

The GPW Financial Strategy

Financial institutions and the infrastructures of financial intermediation have come to play a central role in our lives. This process is sometimes described as ‘financialisation’, which refers to “the increasing role of financial motives, financial markets, financial actors and financial institutions in the operation of the domestic and international economies”.²⁹

Through privatisation, deregulation, and credit flows, financialisation has overseen a large-scale conversion of public wealth into private capital. The 2008 financial crisis magnified this process. Around Europe, bank bailouts were financed through the imposition of cuts in public spending.

Reforms to private finance are important, but they are insufficient to respond to the crisis with the urgency it demands. Firstly, there is a growing consensus that the scale of the mobilisation required cannot be met with pricing mechanisms alone — it must be supported by a holistic transformation of our economy.

Secondly, the global financial system is ill-suited to the scale of investment needed for a just transition. It is structured around the pursuit of short-term profit. Compensation and reward packages are based on quarterly or annual reporting and short-term goals. Prudential regulations are short-termist in their outlook and rating agencies rarely look beyond a three-to-five-year horizon.³⁰ Investments in renewable energy bring returns over much longer timeframes than traditional financial institutions require.

Finally, the private sector is, at best, agnostic to the core principle underpinning every aspect of the Green New Deal for Europe: economic justice. The green transition calls on investments not just in projects that can generate profits for investors, but also in initiatives that produce social returns — enhancing community resilience and well-being. The profit motive cannot deliver such outcomes, even with significant prodding.

The effect of a lack of public investment and intervention means that vital investments in renewables remain underfunded, while global finance continues to be a major driver of climate and environmental breakdown around the world. Since 2016, just 33 global banks invested \$1.9 trillion in fossil fuel companies.³¹

The first task of the Green New Deal for Europe, then, is to begin the process of moving away from the unstable and environmentally-destructive model of financialisation, returning finance to its roots: serving local communities through deposit-taking and lending. It recognises the vital role of cooperative banks, farmer-driven financing in agriculture, credit unions and other community-based financing architectures.

And, by massively expanding the role of public finance, it challenges the risky, short-termist, speculative activities of global finance — while reorienting the debate towards the pursuit of public purpose, environmental sustainability and economic justice.

2.2.2

Harnessing public investment

When a government decides to build a new hospital, establish a new university or expand a train line, it does so through debt financing. Over time, the investment generates returns: better public health reduces healthcare spending, better-educated citizens pay more taxes, good public transport ensures cleaner air and lower travel costs.³² Europe’s green transition must be funded in the same way, and existing public investment banks are best-placed to make this happen.

Public investment banks are financial institutions operated by the public: typically, a government agency or company acting with democratic accountability. Public banks have one or more specific mandates — such as supporting small- and medium-size enterprises — that they carry out within a given country or region. Rather than accruing to

shareholders or wealthy individuals, the returns from public investments are distributed to the public in the form of improvements to infrastructure, housing, public services or other areas.

Public banks can also operate without a profit-maximisation imperative if given a public mandate to do so. They are better-placed than private banks to identify and protect long-term social assets — the public sector’s rates of return are typically lower than commercial ones, allowing longer investment horizons and less punishing productivity requirements. And they are better equipped than their private counterparts to finance priority economic sectors and geographic regions. In other words, they generate the kinds of social returns that the pursuit of profit alone cannot deliver.

It is clear that there are sufficient

public resources to support a global transition. Research by the Transnational Institute suggests that “public finances amount to more than US \$73 trillion, equivalent to 93 per cent of global gross domestic product, when we include multi-laterals, pension and sovereign wealth funds, and central banks.”³³

To ensure not only that Europe’s green transition meets the scale of the challenge, but also that the benefits of the transition accrue to the public, the Green New Deal for Europe calls for a substantially enhanced role for public sector investment and asset ownership. The European Investment Bank (EIB), as the world’s largest multilateral public bank, is best placed to raise the necessary funding for the GPW. But it will need a radically new approach to do so.

The EIB’s existing financing pro-

grammes have significant shortcomings. Under the European Fund for Strategic Investments (EFSI), for example, investment is based on a model of public-private partnerships that seeks to “nudge” private financiers into making longer-term, higher-risk investments — the dominant model for public investment today.

Rather than absorbing the investment risks themselves, private investors expect public banks to invest with them — providing public guarantees for private loans. The effect is that the risks are socialised — any losses are paid for by the public — and the gains are privatised.³⁴ This deprives the state of capital

needed to make further investments in the economy.

Current financing programmes also lack grounding in democratic processes. Under EFSI, just eight experts decide whether to back projects with a public guarantee.³⁵ This creates a significant disconnect between the needs of communities and the resources that are made available to them.

The GPW, then, will do away with this model of public-private partnership and focus on investing directly in Europe’s green transition in a way that is democratic and participatory. To ensure that sufficient funding is raised and properly allocated, the EIB must adopt

a multi-stakeholder model, uniting climate experts, labour unions, policy makers, NGOs and economic actors to ensure that its strategy is long-term, democratic and immune from capture.

And to ensure that funds are directed to where they are needed most, the money must be made available to the GPW, which will drive investment into projects across the continent.

POLICY RECOMMENDATIONS

Move away from the model of public-private financing and ensure that the benefits of public investment remain in public hands.

Adopt a multi-stakeholder governance model for the European Investment Bank.

2.2.3

Green Investment Bonds

When governments raise money through debt, they issue bonds. A bond is a financial instrument that represents a loan made by an investor to a borrower — a sovereign government, municipality or corporation can issue and sell bonds to a range of investors (bondholders). A green bond is a financial instrument that is issued specifically for making green investments. The EIB was among the first to issue green bonds in 2007 and is now the world’s largest issuer of such instruments.

Raising funding for the GPW through green bonds has two key advantages. Firstly, the current European rules restricting spending and deficits will not apply, allowing for a significant expansion of public finances without breaching Europe’s fiscal compact. Secondly, no new European taxes will be necessary. This will avoid the need for renegotiating Europe’s treaties.

The bonds issued by public investment banks will be purchased by private investors on the secondary mar-

kets. To ensure that these bonds do not lose their value, the ECB would announce its readiness to purchase them if their yields rise above a certain level. By guaranteeing to buy all green bonds on the secondary market, the ECB would eliminate the risk of insolvency for the green bonds.

The removal of default risk will, in turn, provide a stable and risk-free investment. It will also ensure that speculators will not be able to financially attack the Green New Deal for Europe, while shielding the programme from attempts by the market to “discipline” public spending.

In this sense, EIB-issued green bonds are a win-win for Europe. Pension funds in countries like Germany, hungry for safe assets, can use them to secure a safe return on investment. Under EU prudential regulations, banks investing in sovereign debt (bonds issued by governments) or public bank-issued loans do not have to hold any capital for their investment, so there are strong

regulatory incentives to buy them. On the other side of the continent, countries like Greece will be able to benefit from decent jobs and high-performing infrastructure, ending its crises of unemployment and underinvestment.

POLICY RECOMMENDATION

Fund the green transition by mobilising Europe’s public banks to issue green bonds to raise at least 5% of Europe’s GDP in funding that can be channelled into the GPW.

2.2.4 Macprudential Management

Finance faces two key risks from the climate and environmental crises.

On one hand, the transition to a zero-carbon economy will pose a significant threat to returns on fossil fuel investments and could trigger a rapid sell-off.³⁶ Citigroup estimates that global exposures to fossil fuels amount to \$100 trillion.³⁷ If banks fail to divest themselves of these assets, a sudden collapse in their prices could trigger a systemwide shock.³⁸

This would devastate communities that depend on these industries: a fire-sale of non-renewable assets would lead to large-scale job losses and send shockwaves through industries that still depend on fossil fuels.

On the other, climate and environmental breakdown pose risks for physical assets.³⁹ As weather patterns become more extreme, increasing damage to real estate, infrastructure, crops and other assets will become a financial stability risk in itself. Europe's central banks must be prepared to address these risks

at the multilateral and global level.

Within Europe, the European System of Central Banks (ESCB) must establish multilateral technical working groups on the green transition, enabling coordinated action by Europe's central banks to mitigate physical and transition risks and coordinate the purchase of green bonds issued by Europe's public investment banks.

In particular, to anticipate the market chaos that could result from a collapse in non-renewable prices, the ESCB must prepare to support the orderly winding down of Europe's fossil fuel companies. Only a holistic approach that tackles fossil fuel workers, infrastructure and ensures the environmental clean-up of polluted sites will ensure a just, stable transition. Indeed, this is the ambition of the Green New Deal for Europe. Central banking policy must play a key role in managing the financial stability risks arising from the reorientation of Europe's economy to support this transition.⁴⁰

As Europe introduces new prudential standards (see section 3.3.4 below) and other regulations to address climate and environmental risks, the ECB, should also play a key role in reshaping the global narrative on prudential standards, ensuring that the Bank for International Settlements (BIS) and its Basel Committee on Banking Supervision (BCBS) put climate and environment front and centre in future iterations of global macroprudential standards

POLICY RECOMMENDATION

Establish multilateral working groups on the green transition within the ESCB to coordinate the green bond purchasing programme and to control for physical and investment risks. Intervene in the design of global prudential standards to introduce punitive capital requirements for investments in fossil fuel-heavy and environmentally-destructive projects and businesses in the Basel framework.

2.2.5 Taxation and the GPW

The core financing mechanism of the GPW programme — issuing green bonds to power the green transition — does not preclude raising taxes to assist in it.

On the contrary, taxation plays a vital role in the Green New Deal for Europe, not only as a means of raising funds, but also a vehicle for achieving environmental and social justice.

For decades, European legislators have overseen the construction of an international financial system that permits widespread tax evasion both within the European Union and just outside its borders.⁴¹ Working communities, meanwhile, have continued to pay their fair share, even when the returns to their tax payments — in services, in

infrastructure — have declined.

Over the same period, European legislators have presided over a massive system of subsidies for environmentally disastrous industries, damaging communities within their own constituencies and also outside of them.⁴² Rather than restrained, polluting corporations have been let loose on the world.

A radical overhaul of the tax system is, therefore, doubly necessary: first, to demand that those who profited from environmental destruction help to finance our response to it; second, to curtail the system of incentives that allowed them to do so in the first place. Such an overhaul is outlined in greater

detail in the Environmental Union (EnU) proposal that follows.

However, given the scale of the crisis at hand — and the political roadblocks that are endemic to tax legislation — taxation is simply not a substitute for direct and immediate public financing. And public balance sheets are more appropriate in managing transition risks than private households or private sector. Green bonds, therefore, remain the essential ingredient of the GPW programme.

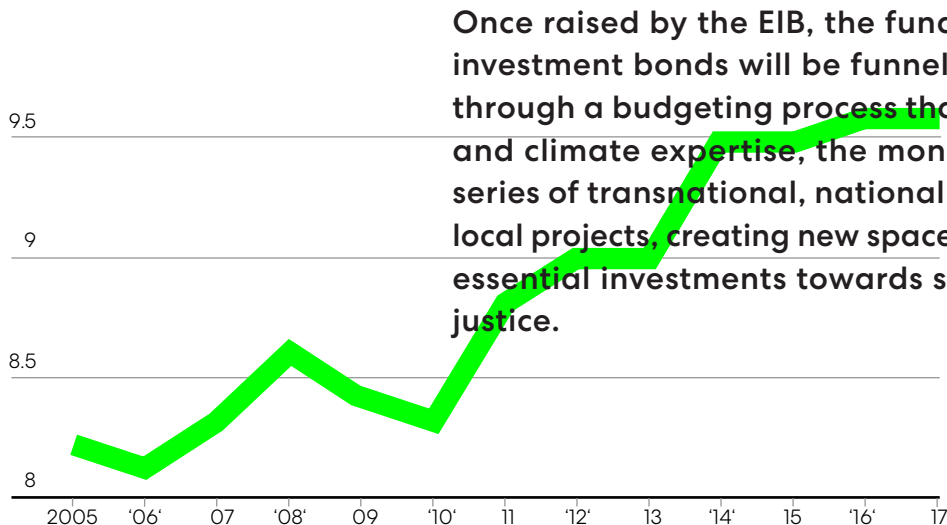


FIGURE 3 - INCREASING SHARE OF EU WORKING POOR
Percentage of working people at risk of poverty.

Source: Eurostat, @valentinromei, FT

Once raised by the EIB, the funds from the sale of green investment bonds will be funnelled into the GPW. There, through a budgeting process that balances participation and climate expertise, the money will be allocated to a series of transnational, national, regional, municipal and local projects, creating new space for communities to direct essential investments towards social and environmental justice.

2.3.1

Guaranteeing Decent Jobs

Proponents of 'full employment' in the post-war era often proposed a trade-off between job creation and environmental protection. They promised to drive equitable industrial growth — but only at the sacrifice of ecological balance.

This promise is now broken, leaving us with the worst of both worlds: economic growth that delivers a declining share of wealth for labour and increasing destruction of the environment.

For more than a decade now, the international trade movement has been advocating for a 'just transition' to a post-carbon economy — one that responds to the crisis of employment insecurity and reinvests in the infrastructure that has been left to crumble.

The GPW answers these social demands. Building on years of painstaking collective work in 'climate jobs' campaigns across Europe, the GPW aims to guarantee decent work to all those who seek it, centred on living labour — the people who will make the transition — and managed by workers, working-class communities and the or-

ganizations that represent them.

In the process, the GPW undermines the argument that environmental action is at odds with the interests of labour. The GPW ensures that no worker and no community in Europe will have to trade their health and the stability of their environment for job opportunities and income. And it will ensure that the jobs created in Europe will not be supported through environmental devastation elsewhere. In this sense, the GPW is part of a global climate justice agenda.

But the GPW will go beyond a simple job guarantee. The reduction in material throughput required by the Green New Deal for Europe will create slack in certain labour markets, particularly in fossil fuel-dependent industries. To avoid worsening unemployment and exacerbating poverty, the GPW will act as a driver for lower working hours and better pay (see also section 2.4.6 below). The European Union can therefore lead the transition to a four-day week while ensuring that workers do not receive smaller salaries as a result.

To advance the cause of econom-

ic democracy, however, higher wages and better working conditions are not enough. The GPW will ensure that workers have a voice at the level of office, firm, and industry. Jobs created under the umbrella of the GPW will put workers on the boards, provide them a share of voting power, and dedicate a percentage of annual profits to reinvest in community projects and a worker-owned fund.

As a public project, the GPW will not be constrained by short-term investor demands. This will create new possibilities for people to earn a living outside the sphere of capital accumulation. And, because work provided through the GPW involves production for use rather than exchange, it can be channelled toward environmentally sustainable projects and methods of production that will not and cannot be undertaken by the private sector. Workers under a job guarantee can earn a dignified living doing anything that is publicly deemed to be of social value, including caring for the elderly and children, habitat restoration, and

community services.

For example, under Roosevelt's New Deal, the Civilian Conservation Corps was both a jobs plan and an environmental project: its goal was to plant hundreds of millions of trees across the US to restore topsoil in the wake of the Dust Bowl. Similarly, the GPW could put people across Europe to work on restoring local environments that have been degraded — supporting the restoration of Europe's natural habitats.

By focusing on local and municipal investment, the GPW creates local job opportunities. This can help reduce levels of involuntary internal and international displacement of people — while reducing the related challenges of housing and pressure on social and health services.

The GPW will, in particular, emphasise the need for creating new green jobs in rural communities: green and cottage industries, nature preservation, rewilding, organic farming, forestry and forest products, and other regenerative activities. Greater prosperity in rural

communities will reverse the wealth drain that these regions continue to see, with businesses and investment moving back, increasing community resilience and reducing the need for commutes.

The GPW also commits to investing in programmes of re-training so that people can deploy the skills acquired working in carbon-intensive jobs (i.e., engineering, project management, and others) in the sustainable conversion of the economy.

Finally, the GPW will recognise that reproductive and care work represents a significant amount of time allocated for personal, household and community wellbeing. The GPW, then, includes provision for a Care Income (CI) — based on the recognition of the necessity of the activities of caring, which are often undervalued or invisible in our societies. This can be made available to people who are not formally employed, but are engaged on a full- or part-time basis in care — parents caring for their children, children caring for their elderly parents, and community members caring for

each other and the environment.

In aggregate, the principal aim of the GPW's job creation programme is to decouple social progress from environmental breakdown. Even as communities become more empowered and prosperous, the sources of their labour and prosperity shift away from extraction and consumption and towards regeneration and other socially valuable activities. The gradual shifting of economic activity away from material production will also help pave the way to a post-work future.

POLICY RECOMMENDATIONS

Guarantee decent jobs to all European residents who seek one, based on a four-day working week;

Participatory decision-making across workplaces and communities; Fair wages; and Local job creation, including in rural areas.

Implement a Care Income to compensate activities like care for people, the urban environment, and the natural world.

2.3.2 Empowering Communities

Democracy is a guiding principle of the Green New Deal for Europe. It is a plan to shift power back to the people — both over their lives and over the future of Europe. The GPW carries forward that principle, empowering communities to make meaningful decisions over how money is spent and to collaborate across their borders in making those decisions.

DEVOLVING INVESTMENT DECISIONS

Under the GPW programme, a large proportion of investments will be devolved directly to sub-European author-

ities, shifting power back to nations, regions, and municipalities to direct their own investment decisions. This will enable everyday Europeans to have a say in the decisions that shape their futures.

The devolution of GPW funding does not require the development of an entirely new parallel governance structure. Rather, in order to expedite the speed at which it can be implemented, it relies on existing government institutions at all levels. It works like this: the GPW earmarks funding for all national governments, regional governments, and municipal governments that agree

to a shared set of fundamental principles, including democracy, transparency, and sustainability. It then distributes funds directly to these authorities, allowing them to decide democratically on their destination, on the condition that they collect detailed data about the progress of project implementation.

However, while channelling GPW funding to regional and municipal levels is an important first step, it is insufficient to deliver on the principle of democracy. The character of regional and municipal governance varies vastly across the EU; while some local authorities have strong traditions of civic participation, others

are more distant and unaccountable. There is also a well-established difficulty faced by small, grassroots civil society organisations in participating in EU projects and shaping priorities, created by the excessive administrative burdens associated with EU funding.⁴³ The grassroots organisations in which the most excluded members of society are most likely to be found are in effect often squeezed out by larger, less representative organisations with more bureaucratic capacity.

Therefore, in addition to devolving funding decisions, the GPW will include specific lines of funding to promote experimental approaches to democratising investment decision-making at regional and municipal level. Taking this experimentation seriously is important to avoid participation becoming a superficial, 'tick-box' exercise, in which the preferences of individual citizens are harvested in a depoliticized manner.

Inspiration for more meaningful forms of participation might be provided by experiments with digital democracy in Barcelona and Madrid,⁴⁴ participatory approaches to economic governance in Emilia-Romagna,⁴⁵ and the success of the broad based civil-society alliance Citizens UK in shaping local policy agendas in the UK.⁴⁶

The GPW will also, in line with the recommendations of the Lisbon Declaration,⁴⁷ develop simplified versions of EU funding application and reporting processes, and employ a dialogical approach in co-designing funding calls, in order to facilitate access and participation for smaller, grassroots organisations. This should be accompanied by a free-to-use service for smaller organisations to access information about opportunities to shape priorities and access funding and capacity-building opportunities.

Finally, the GPW will provide strong incentives for authorities to set up local GPW agencies to help steer their investment decisions. Through these agencies, the GPW can provide extensive technical support and assist with investments that require horizontal and vertical coordination — aiding, rather than overriding, the democratic decision-making processes that undergird the GPW's devolved funding structure. This approach is not only principled, but strategic. Putting citizens in the driving seat of community development will deepen the culture of sustainability and

the consensus around the benefits of a green transition. The GPW thus aims to address the crisis of democratic legitimacy in the EU, providing a concrete political means through which Europeans can participate in this economic transformation.

THE GREEN SOLIDARITY NETWORK

All across Europe — from Preston in the United Kingdom to Barcelona in Spain — municipal movements are developing novel strategies to empower their communities, championing new public procurement models, enhancing local participation, and challenging the extraction of wealth from their local economies.

The GPW will not only support these models, but also create bold new opportunities for them to work together. The lessons from local politics — the successes, failures and best practices — can become frameworks for change around the continent. To ensure that this knowledge is shared widely, it will be scaffolded by deep, Europe-wide cooperation arrangements.

Three EU-funded initiatives are a prototype for how an ambitious European Solidarity Network might look.

URBACT III,⁴⁸ an exchange and learning programme for sustainable development, provides a platform for European cities and other levels of government to share best-practices, exchange information and work together to improve regional policies. It allows cities that are innovating in a particular area to lead a network of other cities, helping them adopt its tools. For example, Preston City Council is leading a pan-European, municipal-level project to transpose the lessons from its procurement strategy to other cities in Europe. Its strategy redirects spending to the local community by changing the procurement behaviour of local institutions with the largest budgets.⁴⁹ The programme boosted local revenues and paved the way for the expansion of the local cooperative sector.

The International Urban Cooperation (IUC) programme pairs cities in the EU and across the developing world. The IUC fosters cooperation on sustainable urban development; encourages cities to join the Global Covenant of Mayors Initiative, a municipal-level pledge to cut greenhouse gas emissions; and supports inter-regional cooperation on

local and regional development innovation, in particular focusing on international value chains and small and medium-sized enterprises.⁵⁰

The European Network for Rural Development (ENRD) supports projects across rural communities. Its core aims are to provide a platform for cooperation across agriculture, forestry, and other rural activities; supporting rural communities in making a just transition to sustainable practices; and improving food production and supply chains.⁵¹

Under the Green New Deal for Europe, such programmes will be vital. They not only support information exchange, helping institutions and communities that are working in dramatically new ways to share information on activities that fall outside the boundaries of institutional memory. They also expand the administrative capacities of local authorities and help create horizontal power relationships that challenge the vertical power of international corporations and federal and international governments.

The Environmental Solidarity Network unites these successful cooperation models under one roof, bringing them into an institutional structure that will magnify the information-sharing capacities⁵² and administrative capabilities of programmes like URBACT III, the IUC and ENRD. It will be funded by a portion of the GPW budget. And it could act as a powerful vehicle for participatory politics, helping to rapidly expand models of public decision-making and participatory budgeting across the continent and beyond.

POLICY RECOMMENDATIONS

- Devolve GPW investment decisions to national, regional and municipal government levels.
- Provide distinct lines of funding within the GPW for experimentation in increasing citizen participation in investment decision making.
- Develop simplified versions of funding application and reporting processes, and provide a free-to-use support service, to ensure greater participation and access of grassroots civil society organisations in investment decision making.
- Fund national, regional and municipal governments that agree to a shared set of fundamental principles, including democracy, transparency, and sustainability. Encourage the establishment of local GPW.
- Establish a Green Solidarity Network to unite twinning and cooperation arrangements between municipalities, regions, farmers and communities — enhancing horizontal information-sharing and political decision-making across the continent.

One of the greatest challenges for a programme at the scale of the GPW is ensuring that the investments made do not accelerate environmental breakdown, both within and outside of Europe. Far too many mainstream policies for combating climate breakdown would exacerbate pressure on other environmental systems. Planting large-scale homogenous plant life as a means to sequester carbon, for example, would likely result in the destruction of local ecosystems.⁵³

Moreover, the prevailing economic growth model in countries throughout the Global North is premised on extraction — of both financial and material resources — from the Global South.

Unless Europe's transition is firmly grounded in principles of justice, the price of action on the continent could be environmental and economic devastation elsewhere. The shift from a dirty, stagnant, austerity-battered Europe to a green, economically vibrant, socially-flourishing Europe under the current economic status quo could lead, paradoxically enough, to total environmental catastrophe.

The GPW, then, will not only aim to promote the rapid adoption of sustainable technologies. It will also usher in a shift in our dominant socio-economic model, moving away from high levels of material consumption driven by aspirations for private wealth accumulation. The society realised by the Green New Deal for Europe is one of public affluence, based on the availability of shared goods, and grounded in zero-carbon activities like education and care, which are vital in underpinning the everyday wellbeing of European citizens.⁵⁴

A new model of housing, social provision, industrial production and agriculture is needed. This section shows how the GPW can bring that model to life across key sectors.

2.4.1 Housing

Housing is now the highest expenditure for most Europeans, and house prices in most EU member states are growing faster than wages.⁵⁵ Rising levels of homelessness across the continent testify to the lack of a coherent political response — in 2017, homelessness increased in every European country but Finland, reaching record levels across the continent.⁵⁶

Homes are also a significant source of energy consumption and CO₂-emissions. Households account for roughly a quarter of the final end use of energy⁵⁷ and emissions⁵⁸ across EU member states.

With rising prices and stagnant wages, energy poverty is also on the rise. In 2018, nearly 50 million people in the EU were affected by energy poverty — understood as a condition in which “individuals or households are not able to adequately heat or provide other required energy services in their homes at affordable cost”. Energy poverty has impacts beyond the economic. It is tied to mental and physical health, and wellbeing.⁵⁹ And, as extreme weather events increase in frequency, housing will be crucial to ensuring community resilience.⁶⁰

As the IPCC notes, “people who are socially, economically, culturally, politically, institutionally, or otherwise marginalised are especially vulnerable to climate change and also to some adaptation and mitigation responses”. Sustainable public housing can therefore play a significant role in addressing housing security, lowering the cost of living, reducing fuel poverty and radically cutting emissions — all while building community resilience to extreme weather.

The redevelopment of housing at the scale required demands a holistic approach based not on individual buildings, but on entire neighbourhoods — allowing for integrated approaches to housing, mobility and services for communities. This, in turn, requires a significant mobilisation of public finance.⁶¹ But investment in public housing has actually declined in Europe between 2009 and 2012.⁶² The GPW plugs the gap, offering significant public financing for Europe’s homes.

Merely designing and building new sustainable homes alone will not be the solution. It could, in fact, contribute to further environmental breakdown, especially where it leads to the expansion

of urban territories and the loss of green spaces. Construction as a sector has a staggeringly high environmental impact. Roadmap to a Resource Efficient Europe, 2011 European Commission communication, said that better construction practices and material use “would influence 42% of our final energy consumption, about 35% of our greenhouse gas emissions and more than 50% of all extracted materials; it could also help us save up to 30% water.”⁶³

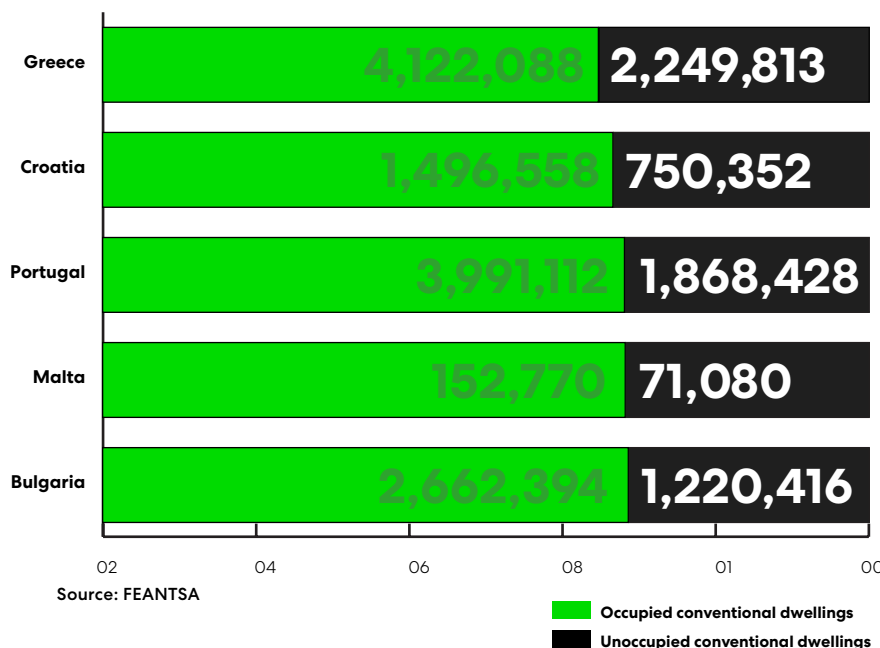
At the same time, according to the European Commission, almost 75% of buildings in the EU are energy inefficient, while only 0.4-1.2% of the building stock is renovated annually. Renovation of existing buildings could reduce the EU’s total energy consumption by up to 6% and lower CO₂ emissions by 5%.⁶⁴ Working to refurbish existing housing stock, then, carries potential to relieve the pressure created by the construction sector today, while achieving savings across energy, emissions and materials.

The GPW, then, will address housing by prioritising existing and vacant housing stock, and only invest in new construction where necessary.

Firstly, the programme will restore, maintain and retrofit existing housing stock for sustainability. The programme will commit a massive investment to convert Europe’s homes into sustainable or, where possible, “passive houses” — an energy standard that dramatically reduces a building’s ecological footprint by minimising the use of active energy systems for heating and cooling. This will also help avoid a dramatic expansion in the use of cooling systems as temperatures around Europe continue to increase. Wherever possible, the GPW will equip every European home with solar panels, heat pumps, energy and heat storage facilities and other tools essential to reducing emissions — part of an integrated public strategy to utilities, as discussed in section 2.4.2 below.

Secondly, where practical, the GPW will purchase and refurbish unoccupied private housing for public use. In 2011, there were 38 million vacant⁶⁵ homes

FIGURE 4 - HOUSING IN EUROPE
Number of vacant homes in five European countries with the highest percentages of unoccupied dwellings.



across Europe. The numbers become more striking when considering countries with the most developed tourism industries. In Greece, Croatia, Portugal, Malta, Bulgaria, Cyprus, Spain and Italy, the vacancy rates are around 30 percent of all homes, in part due to large numbers of homes being used as holiday rentals that drive up costs for residents.⁶⁶ Putting these idle resources into public use will be a key priority for Europe's housing programme.

Essential to all refurbishment and local regeneration programmes is accountability to residents. This requires meaningful consultation at all stages. The GPW ensures that residents have access to good quality independent information on the choices for refurbishment and regeneration that are available. Tenant and resident associations will be given real power over decisions and supported in the deliberative processes, including through the provision of meeting spaces. Developer decisions will be subject to review by an independent body that has power over both social and private landlords; and meaningful, deterrent compensation will be available for residents in cases where developers fail to comply with standards.

Finally, any new homes that are built will be built sustainably and based on new models of living.

In terms of sustainable construction, new building work will be carried out with independent on-site supervision. Construction cannot be based on precarious labour. There will be clear lines

of responsibility as to the result. A rigorous construction process should lead to more buildings being built by local and national government bodies using direct labour and less involvement of private developers and finance — meaning that the fruits of the investment remain in public hands, for the benefit of Europe's communities. And Europe needs to invest in vertical housing and urban density, avoiding destruction from the urban sprawl.

The building materials (including insulation) used as part of any new construction or refurbishment projects will be subject to scrutiny by qualified scientific and technical bodies independent of both the construction industry and manufacturers to avoid materials that are combustible; emit toxic fumes affecting indoor air quality, or when burnt; or are produced by exploitative or polluting processes of extraction or production. This should lead to a decrease in the use of oil-based products such as plastics, and an increase in the use of natural materials (this, in turn, will require careful attention to the use and exploitation of land).

In terms of new living models, the GPW will expand co-housing in public accommodation. In 2018, a third of all households in the EU were single-person households, which have a dramatically higher environmental footprint than shared homes.

Households are also spaces in which the unequal distribution of unpaid work like care is most clearly manifested. They are also the locus of disparities

in power based on gender, social class, ethnicity, place of origin, and migratory status within global "care chains".⁶⁷ A transition towards a low-carbon housing must therefore also accelerate work-sharing at the household level, ensuring that the burden of unpaid work is split evenly among residents. Extending co-housing models, in which residents share public spaces and appliances, across communities will reduce energy demand without increasing household workloads, which disproportionately fall on women.⁶⁸ It will also ensure that everyone has access to the high-quality services and tools they need.

Together, these changes will deliver dramatic reductions in poverty, insecurity and inequality, while eliminating homelessness. They can increase the resilience of communities around Europe, while dramatically reducing both material throughput and energy use.

POLICY RECOMMENDATIONS

Use the GPW to fund a major buy-back programme for vacant housing stock.

Refurbishing and retrofitting existing housing stock for sustainability through large scale participatory and integrated, neighbourhood-level initiatives to ensure every home is well insulated and in good repair.

Ensure that any new public housing meets needs created by the changing climate, is safe and non-toxic, and is based on models of co-housing.

Ensure that construction processes are accountable to the workers and the community and minimise emissions of greenhouse gases and other environmental breakdown.

2.4.2 Infrastructure

In the parts of Europe that are particularly struck by austerity politics, public infrastructure investment is in a dire state. According to the EIB's 2018-2019 Annual Investment Report,

"The government sector accounts for about 80% of the fall in total infrastructure investment over the past decade. The fall in government infrastructure investment was most pronounced in countries subject to adverse macroeconomic conditions and more severe fiscal constraints."⁶⁹

At the same time, investments through public-private partnerships have also collapsed, from €30 billion in 2015 to just under €9 billion in 2017. These investment models, pursued with great enthusiasm by governments around the world, were inefficient and prone to failure — in some cases at great expense for taxpayers.⁷⁰ More than that, as discussed in section 2.2 above, public-private partnerships siphon public wealth into private hands: the public funds the innovation, or takes on the risk, while private companies

capture the profit.⁷¹ This model further shifts investment away from social utility and towards profit maximisation.

As the EIB said in its 2017-2018 report: "There is a need to re-prioritise public infrastructure investment."⁷² The GPW responds to this challenge, mobilising public resources for public investments to revitalise the continent's ailing infrastructure while supporting a transition to an economy that respects planetary boundaries.

But the Green New Deal for Europe will be more than an investment pack-

age. The regeneration of Europe's infrastructure will be carried out with regard to the environmental cost of financing the transition. Infrastructure development may be based on significant carbon emissions, resource use (including the mining of precious metals and minerals) and lead to land misuse across the world. It is crucial to ensure that the transition to renewables and reliance on new mineral extraction does not replicate the injustice and environmental destruction of fossil fuel extraction. Europe's green transition will be grounded in principles of global justice.

This section focuses on the transformation needed to European infrastructure in terms of mobility, energy and digital infrastructure (as opposed to digital platforms, which are addressed in section 3.2.6).

The investments proposed in this section must be read in the context of a wider policy-driven transformation that reduces the overall demand for infrastructure across Europe. Practices enabling a shorter working week, working from home and lifelong education will ensure that overall infrastructure use — whether of roads, railways or office buildings — will decrease. Such measures are discussed in section 2.4.6 below.

MOBILITY COHESION FUND

The GPW is an opportunity to radically reimagine the way we travel and commute. In place of loud, congested roads, the GPW proposes integrated transit systems that include bicycles, free public transport, fleets of shared electric taxis and high-speed rail. Car ownership will no longer be a necessity for most — reducing automobile use, which carries significant environmental risks and is impractical in a world of growing populations.

Indeed, mobility is a perfect micro-example of how the transition to net-zero emissions could be devastating to the environment unless carefully planned. Although the electrification of personal vehicles will play an important part of the energy transition, simply replacing petrol with electric vehicles can contribute to environmental breakdown while maintaining extractive economic practices that disproportionately impact countries in the Global South.

The overexploitation of precious metals for the production of electric

vehicles can have devastating social and environmental impacts.⁷³ Like supply chains for fossil fuels, the supply chains for lithium-ion batteries, which power everything from mobile phones to electric cars, are linked to human rights abuses including slavery and child labour. More than half of the world's cobalt, a key mineral used in these batteries, originates in the Democratic Republic of Congo. Amnesty International found that its extraction relies partly on hand digging by children and adults without any protective equipment, despite significant health risks.⁷⁴

Beyond that, car ownership remains a luxury that not every member of society can afford. Without robust, inexpensive public transport networks, the gradual shift from public transport infrastructure to private car ownership excludes segments of the population from mobility.

The GPW, then, will develop new integrated public mobility systems that ensure maximum accessibility within and between Europe's rural communities, towns, cities, regions and countries.

It does so through the establishment of a Mobility Cohesion Fund, a ring-fenced portion of the GPW that will work closely with Green Horizon 2050, the housing programme and other GPW initiatives to develop integrated continent-wide solutions to public transport.

Within Europe's towns and cities, trams, electric buses, trains and other modes of transport should form part of a connected public transport infrastructure, ensuring that every community is well connected. These services should be made free or low cost to all users to maximise use.

But a mere expansion of public transport systems risks failing to ensure mobility for all, especially those in rural communities without sufficient populations to justify the development of trams or local trains. One solution is to invest in fleets of clean, shared vehicles forming part of connected transport systems that minimise environmental degradation while maximising access and opportunity. These can take the form of electric taxis operating on a car-pooling model, taking passengers where they need to go at low cost.

Interregional and international connections will be based on investment in high-speed rail systems that are interconnected with local public transport. Currently, the system is an ineffective

patchwork of standards and systems. The GPW will invest in the rapid upgrade and increased integration of existing systems, ensuring that, around Europe, affordable travel is available to everyone — while dramatically reducing the number of passenger flights.

UTILITIES

There is a paradox at the heart of Europe's energy markets. On one hand, the price of renewable energies has been plummeting. On the other, investment across Europe has been in dramatic decline, falling from a peak of \$132 billion in 2011 to \$41 billion in 2017.⁷⁶ A major reason for this is the withdrawal of state subsidies.

Expecting that lower market prices will incentivise private investment, the state has withdrawn, shifting renewables investment risk — in particular risks arising from energy price volatility — towards private investment. But private investors are unwilling to take that risk without a significant return.⁷⁷

The collapsing pace of investment means that the EU is unlikely to meet its 2030 energy goals⁷⁸ and it is clear that the decarbonisation of Europe's energy systems will not happen quickly enough without policy action.⁷⁹ Europe needs an integrated approach to energy based on a reclaiming of power systems across generation, transmission, distribution, management and conservation.

The GPW provides the answer. As discussed in section 2.2 above, massive public investment can overcome the hurdles facing private investors. But it can also support the public ownership of utilities, ensuring fairer pricing and control of supply for Europe's residents.

The public ownership of utilities can also be a key strategy to enable joined-up thinking between energy, health, housing, water, transport and other areas that will be necessary to address the climate and environmental crises — while avoiding externalising costs onto other sectors in pursuit of profit. Any new investment in the energy grids and other utilities by the GPW will therefore be made with a view to the public buy-out of those utilities — bringing these essential services into public hands.

Once power distribution and transmission are in public hands, the GPW can invest in the decentralisation of power generation. As discussed in sec-

tion 2.4.1 above, this can be done by retrofitting homes with solar panels and energy storage solutions — creating significant cost savings for households.

Similar strategies can be pursued for water, ensuring that houses have capacities to collect and recycle rainwater, and are encouraged to limit use.

At the same time, a public strategy for utilities will mean that private companies and financiers will not be able to profit from the combination of decreased fossil fuel energy capacity and increased renewable energy capacity — or a declining freshwater supply. The expectation of a higher return for the risk of investing in utilities markets will be an incentive to charge more.

As renewable energy becomes cheaper and more widely accessible, technologies that have traditionally been carbon-intensive will shift to renewable sources. Public electric vehicles will provide a cleaner form of road transport, and will be integrated into electricity networks in a way that supports smart, flexible charging. Heating and cooling systems will also be decarbonised either by switching from gas to renewables. Through the public ownership of utilities, these advancements will support cost-savings for households — not higher profits for utilities companies.

These shifts will be supported by a transformation of the EU's current energy policy strategy. These changes are discussed in section 3.2.3 below.

A DIGITAL COMMONS

The dramatic expansion of digital platforms has created a vast network of digital infrastructure. Our lives are increasingly mediated and coordinated through this infrastructure — but it often operates against the demands of sustainability and justice.

In terms of sustainability, technological hardware has a significant effect on the environment. It pollutes, consumes natural resources, generates increasing amounts of waste, and, through its growing hunger for power, contributes substantially to GHG emissions.⁸⁰ These impacts are largely invisible to end users.

In terms of social impact, the private ownership of digital infrastructure is no less problematic. Corporations use their platforms to harvest data from

users and sell it to the highest bidder, returning none of these digital rents back to their communities. As Giovanni Buttarelli, the European data protection supervisor (EDPS), phrased it:

“The digital information ecosystem farms people for their attention, ideas and data in exchange for so called ‘free’ services. Unlike their analogue equivalents, these sweatshops of the connected world extract more than one’s labour, and while clocking into the online factory is effortless it is often impossible to clock off.”⁸¹

Nonetheless, the success of these systems of networked interaction also highlights new horizons for the organisation of our infrastructure. The Green New Deal for Europe can develop a more just, democratic and sustainable digitised infrastructure that maximizes the benefits of digital networks while minimizing their social and environmental costs.

The GPW, then, will invest in the expansion of digital infrastructure for social ends — intertwining the digital transformation with the demands of a just and democratic transition to a sustainable economy.

There are many examples of cooperative approaches to digitalisation that harness new technologies for public good. Community-owned internet service providers in the United States, for example, have been shown to be cheaper than private services in a vast majority of cases.⁸²

Among these examples is a growing movement for platform cooperatives. Its aim is to create digital platforms that are wholly owned by workers, users and other participating stakeholders, for example taxi drivers owning and operating their own digital platform to constrain the dominance of platform monopolies.⁸³ Europe has a large and diverse landscape of organisations and projects working on digital social innovation, trying to shape digital systems for the common good.⁸⁴

The GPW will invest in such community-based digital initiatives. This will unlock new forms of digital innovation and systems that support local or transnational coordination — creating horizontal structures for civic engagement that empower communities to actively

shape their digital lives as part of a transformation enabled by the Green New Deal for Europe.

Data is another site of intervention. The production and analysis of digital data is increasingly monopolized and weaponized against users. Europe needs to lead the way in reversing these processes — embracing new paradigms of data ownership and governance to unlock the power of data analytics for the common good and protect the freedom and autonomy of individuals.

The GPW will invest in a European Data Commons, a new institution that aggregates public data produced by governments, public administrations or through public research.

The European Data Commons will also create for Europeans the possibility to voluntarily share data based on an understanding that this data will be anonymous and protected. This will be reinforced by a governance structure that is democratic and participatory.

The European Data Commons could then become a central institution in the monitoring and assessment of the impacts of economic activities on social and environmental outcomes. It could rebalance digital power and ensure that the benefits of the digital transformation accrue to the commons. The rich stores of data within the European Data Commons will be freely available for common use, but will need to be licensed for commercial use — generating public income for the further expansion of public digital infrastructure.

POLICY RECOMMENDATIONS

Establish the Mobility Cohesion Fund to invest in the integration and improvement of Europe's public transport systems, ensuring cohesion in mobility within and between Europe's rural communities, towns, cities, regions and countries. Ensure that all municipal public transport around the continent is free at the point of use or available at a low cost that incentivises its use.

Develop a fleet of public taxis and car-pooling services that ensure maximum mobility for all Europeans.

Invest in an integrated, efficient high-speed rail system to eventually replace air travel within the continent.

Use the GPW to support the public buy-out of utilities companies across EU member states.

Fund projects and organisations engaged in cooperative approaches to socio-digital innovation, such as community-owned internet service providers.

Create a European Data Commons to unlock the power of aggregated data for the common good.

2.4.3 Social Services

Across Europe, the policy of austerity has called on governments to reduce their investments in fundamental social services like health and education, inflaming inequality and undermining community resilience to a changing climate.

This is why a major investment in sustainable public services sits at the heart of the GPW. This investment will prioritize core social services that have come under severe strain in recent years. Healthcare provision, for example, has been subject to major cuts across EU member states, hitting hardest in low-income front-line communities.⁸⁵ Education, too, was a chief victim of austerity: in countries like Latvia, the GPW will redress these inequalities. It proposes a new European Health and Care Standard that raises the bar for decent health and universal social protection provision and directs resources toward regions that fall below this standard, to begin rebalancing health and care outcomes across Europe.

Achieving this standard will require not simply increasing the resources available to pay for health and social care, but also changing the way these resources are used. In social care, for example, a combination of extractivist business models and reductive bio-medical care models has led in

many EU countries to a race to the bottom in pay and conditions, leading to poor outcomes for both the givers and recipients of care.⁸⁸

In addition to the European Health and Care Standard, therefore, the GPW will fund a massive programme of regional and municipal experimentation in business and service models in foundational services such as social care and childcare. This could involve experimentation in commissioning, encouraging forms of worker ownership and collaborative job design. Such experimentalism will be crucial to ensure dignity for both the givers of services such as social care — of ever-growing importance given Europe's changing demographics.

The GPW will also introduce a Training Guarantee, a pan-European education programme that ensures universal access to the jobs created by GPW investment.

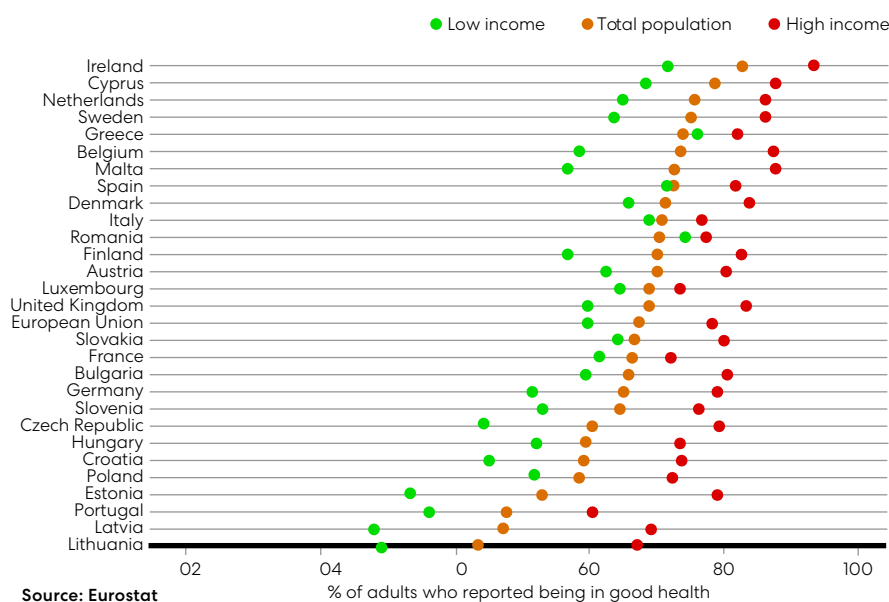
Moving beyond core social services, the GPW will also dramatically expand access to shared services: community centres and libraries, parks and childcare centres. Through public access to such facilities, the GPW can usher in a gradual shift away from private wealth and towards public affluence based on local, low-carbon activities available for free or at low cost to all.

The shifting of manufacturing, industry and services into democratic control through the GPW has another benefit. Over time, the fruits of public innovation will begin to generate significant revenues that currently fall into private hands. These can and must be reinvested in the green transition but, over time, they can also be redistributed to citizens as an annual dividend, distinct from other sources of social support.

Such a dividend could be funded through the GPW in three ways: first, through public revenue derived directly from public projects; second, as discussed in section 2.4.6 below, through inclusive ownership funds established by private firms in receipt of GPW funding; and third, as set out in section 3.2.2 below, through new taxation schemes that punish pollution and encourage a shift away from carbon consumption.

Together, the GPW's social investments aim to transform our conception of 'social security.' Today, social outcomes are often linked directly to economic growth — and, by extension, to the destruction of our natural systems. By providing universal access to social goods — and, through the dividend, unconditional freedom to enjoy them — GPW decouples social progress from continued environmental breakdown.

FIGURE 5 — DISPARITIES IN HEALTH BY INCOME
Around Europe, people with low incomes report lower health.



Source: Eurostat

POLICY RECOMMENDATIONS

Establish the European Health and Care Standard, a minimum standard for public healthcare across the continent, and GPW funding to parts of Europe that fall below it.

Fund a Europe-wide Training Guarantee, supporting opportunities for jobs training across the continent.

Invest in shared public services across the continent — from public parks to childcare centres.

2.4.4

Cooperatives & Community Projects

New models of ownership will be critical in addressing the inequalities that lie at the heart of the climate and environmental crises.

Cooperatives and community projects show the way forward. They not only hold the potential to empower communities and workers around Europe. By localising economic activity, they could also significantly contribute to the shrinking of supply chains and support more effective community responses to climate and environmental challenges, both in terms of mitigation and disaster response.⁸⁹

Cooperative ownership can increase job security, empower workers and be at least as productive as capitalist business models. A 1995 study found that cooperative ownership structures in

the plywood industry operated up to 14% more productively than capitalist firms.⁹⁰ A more recent study of Italian worker cooperatives found no significant productivity gains for cooperatives.⁹¹

However, cooperatives have historically been handicapped by a lack of access to finance: private investors demand a degree of management control and high returns in exchange for investment, which is incompatible with the ownership structure of cooperative businesses. The risk profile of cooperatives is also different, as such business models are not motivated by profit maximisation, but by other factors.

The GPW offers a solution. By radically devolving finance to local communities, it injects the necessary funding to

develop durable, long-term cooperative structures that empower local communities and support the democratisation of the economic sphere. By tying funding to standards of worker participation and empowerment, it supports private businesses in reforming their working standards — this is discussed in more detail in section 2.4.6 below.

Beyond worker cooperatives, community projects with municipal or local ownership can ensure a high quality of service provision at the local level, redressing economic imbalances between regions.

POLICY RECOMMENDATION

Focus investment on worker cooperatives and community-led projects based on municipal or local ownership.

2.4.5

Green Horizon 2050

Innovation, both in technology and in agroecological, organic, low-input agricultural approaches, will play a key role in accelerating the pace of environmental action in Europe. The role of the GPW, then, will be to support initiatives in identifying the tipping points in technological and agricultural innovation and investing in them — triggering exponential progress towards our climate and environmental targets.

Although the EU has pledged to double its green energy research and development spending under the Mission Innovation initiative, it is failing to meet its targets. On average, the 24 countries (plus the EU) that have taken the pledge will only reach 50 percent of the overall target at current rates. And it looks like global green research and

development spending is in decline.⁹²

This is why the GPW will include a dedicated research and development programme, “Green Horizon 2050”. Building on Horizon 2020 – the EU’s €11 billion investment in research and innovation – “Green Horizon 2050” will be dedicated exclusively to developing solutions to the climate and environmental crises. This programme will be funded out of a siloed portion of the GPW funding generated by Europe’s public banks. That money would then be devolved to support innovation at the international, regional, municipal and community-level, supporting the development of solutions big and small.

By channelling the funds into a dedicated public programme, the GPW also ensures that the gains of public innova-

tion stay in public hands. Under the current “start-up factory” model for innovation the public ends up paying twice for new research — first to finance the groundwork research through universities, research councils or other bodies, and then to pay for the outcome of the research when it is commercialised by private companies. This is a significant drain on public finances. Green Horizon 2050 will avoid this trap altogether.

Of course, technological fixes are no substitute for structural economic reform. Many corporations — seeking to divert attention from their heavy pollution — promote new ‘solutions’ to geo-engineer our way out of the crisis. But as van Ypersele notes, geoengineering amounts to risking irreversible harm to the planet while delaying a perma-

ment transition to a carbon-free economy. Appendix 1 to this report details the main geoengineering solutions and their drawbacks.

Nonetheless, innovation will be an essential — and exciting — avenue to accelerate the green transition and reimagine a more sustainable future. Green Horizon 2050 leaps us down that avenue.

POLICY RECOMMENDATION

Establish the Green Horizon 2050 research and development programme.

2.4.6 Industry

Although the energy intensity of industrial activity around Europe has been decreasing, it accounts for roughly 25 percent of all energy use in Europe today.⁹³ To accelerate progress towards Europe's climate and environmental targets, the Green New Deal for Europe will move beyond investment in new industries — and recalibrate the modes of production across the continent to sustainability.

The climate transition will generate significant new employment — the European Commission projects an additional 1.2 million net new jobs by 2030.⁹⁴ But alongside the rapid scaling up of clean energy and infrastructure will necessarily come big changes to carbon-intensive industry. This could affect the future of many millions of workers across Europe, with these impacts falling differently according to the patterns of industry and employment in different countries. Of Europe's 13 million jobs in the automotive sector, 840,000 of these are in Germany; of its 240,000 jobs in coal mining and energy production, Poland accounts for almost half (115,000).⁹⁵

Industries and the communities that they support will face very different

transition pathways and challenges. A car plant can shift from production of the combustion engine to electric, but a coal mine does not immediately have that option; nor is it a given that the skills needs of an evolving industry will match to historic need.

A 'just transition' for communities, industries and the different needs of different sectors and regions is essential, as called for by the European Trade Union Congress.⁹⁶ It is a required commitment within the Paris Agreement on Climate Change.⁹⁷ Supported by new regulations outlined as part of the EnU below, the GPW helps spearhead the transition across supply chains, product design, product life-cycles and labour practices.

The Green New Deal for Europe puts particular focus on less developed regions with a stronger dependency on fossil fuels — to guarantee that the transition does not imply the unemployment or economic exclusion of fossil fuel workers. Locally-driven processes of social dialogue between multiple stakeholders based around long-term investment in regional transformation are essential components of delivering the just transition.⁹⁸

Rather than taking on a punitive character, Europe's climate and environmental targets will create opportunities for industries and businesses. For firms that meet the conditions, the prize is high: a fully-funded transition to sustainability. But the conditionality of GPW funding will be bold, and usher in a total transformation of material relations in our society. To obtain funding, then, firms will be required to commit to a transformation of industrial practices and new labour practices. The GPW will seek to evolve the existing heritage, identity and culture of places whose past is intertwined with fossil fuels.⁹⁹

TRANSFORMING INDUSTRIAL PRACTICES

Numerous research projects assess impacts and resource consumption associated with ecological transition. They highlight the key role of circular economy approaches and of design for long lifetime to minimise negative impacts.

In terms of supply chains, industry must adopt stringent environmental assessment of processes and supply chains should be made mandatory for each product, with a life-cycle perspec-

tive for better ecolabelling and decision-making. This could also serve as a basis for green taxes as well as GPW funding — creating a powerful framework of incentives to push industry towards sustainable outcomes.

In terms of product design, products should be designed for recyclability and should be subject to mandatory recycling — ensuring that no reusable materials or minerals end up in landfills. A particular focus is needed on improving the recycling of minerals to reduce extraction, and responsible sourcing where needed.

Finally, Europe must end planned obsolescence, impose strict limits on packaging and advertising, and ensure that every appliance can be turned off conveniently. Such measures will be discussed in more detail in the EnU.

EMPOWERING WORKERS

The Green New Deal for Europe is committed to extending democracy to new frontiers. In addition to democratising public investment decisions, it will also be a catalyst for the democratisation of private workplaces — ushering in a new pact between owners and workers.

To bring about this transformation, funding under the GPW will be tied to a radical transformation in labour practices, including (a) a reduction in working time, (b) better commuting policies, (c) worker participation (d) retraining of workers to adapt to decreases in ma-

terial production and (e) the establishment of an inclusive ownership fund.

A shorter work week: GPW financing should include a transitional subsidy for firms that move to a four-day work week without cutting staff or pay. This could start with compensation amounting to 100% of the decrease in income associated with the shorter work week, moving to 50% in the second year and 25% in the third year.

Commuting policies: Similarly to the four-day week, employers could be offered a partial transitional subsidy for financing public transport commutes for their employees. A small subsidy could also encourage firms to adopt better working-from-home policies — this would lower costs associated with commuting. This would have the added benefit of reducing demand for public transport infrastructure.

Participation: Employers will be encouraged to shift to more participatory management structures, enabling meaningful worker representation on boards by giving at least 33% of votes to workers.

Inclusive ownership funds: Employers will place a portion of their equity into a fund, a part of which will be paid out as an annual dividend to employees. The remaining portion will be committed to the GPW, with a view to eventually supporting a broader, universal dividend.

Retraining: The decrease in material production needs to be accompanied

by an increase in reproduction: repair, recycling and other activities meant to expand the lifecycle of products. Companies will be encouraged to provide retraining opportunities for their workers.

THE EUROPE AWARD

To accelerate the pace of change, the GPW will introduce a major incentive for firms that excel both at their industrial and labour transformations. The “Europe Award”, made available to top performers across each of the areas outlined in this section, will be tied to additional financing under the GPW.

This scheme mimics Roosevelt’s “Patriot” award in the Great Depression, giving public recognition to companies that make great strides towards sustainability and democracy.

In particular, the prize will identify and reward those business models and operations with the greatest scope for scaling effective environmental solutions that simultaneously improve social and economic outcomes.

POLICY RECOMMENDATIONS

Make GPW funding available to firms that meet a high standard of both sustainability and worker empowerment.

Establish the Europe Award, a prize for firms that meeting the principles of the Green New Deal for Europe and make great strides towards sustainability and democracy.

By ending corporate control of public discourse and individual subjectivity, the Green New Deal for Europe can enable reflexive, open and rigorous debates about science and our societies in transformation.

2.4.7 Agriculture

Agriculture has sat long at the core of the European Union's economic agenda. For the period of 2021-2027, the Common Agricultural Policy (CAP) is set to have a budget of €365 billion,¹⁰⁰ or more than 35% of the Union's budget at current rates.

Agriculture, which is responsible for about 10% of all GHG emissions in Europe,¹⁰¹ also employs 10 million people around the continent, including over 10% of the workforces of Romania, Bulgaria, Greece and Poland. These workers can expect to see impacts to farming practices and in some cases to the viability of agriculture itself due to the climate crisis.¹⁰²

However, agriculture generates just 1.6% of EU GDP.¹⁰³ A large chunk of CAP subsidies are paid out to large landowners, heavily mechanised industrial farms and agribusiness whose agricultural methods are both input-intensive and energy-intensive, leading to environmental breakdown such as soil and water depletion, eutrophication and biodiversity loss.

In all, about 80% of farm aid goes to about a quarter of EU farmers — those with the largest landholdings. Europe's small rural farmers receive no significant aid.¹⁰⁴

The climate and environmental crises demand deep transformations to the way we produce and consume food. Europe currently loses nearly 1 billion tonnes of soil each year,¹⁰⁵ severely threatening farmer livelihoods across the continent. In turn, Europe has come to rely heavily on food imports, with all the attendant social and environmental costs around the world.¹⁰⁶

At the same time, the livelihoods of European farmers and rural communities are often precarious, squeezed by competition from major agribusinesses. The share of EU food chain value going to farmers dropped from 31% in 1995 to 24% in 2005,¹⁰⁷ and has recently been estimated to have fallen as low as 21%.¹⁰⁸ These economic hardships have been exacerbated by a drain of wealth from rural and suburban areas to urban ones: workers typically live on city outskirts or rural areas and commute to urban centres to work and shop —

siphoning resources away from Europe's regions.

The CAP's focus on boosting Europe's competitiveness in the global food export markets has caused devastation across the Global South, where cheap European produce drowns out local — and more sustainable — agricultural and food production.

These practices are antithetical to one of the core pillars of the Green New Deal for Europe: supporting climate justice around the world. The GPW will not only transform Europe's agricultural policies. It will support Europe's rural communities in transitioning to more sustainable production models, producing healthier food for all. The investments in rural communities will be grounded in participatory approaches that engage with farmers, fishermen and rural communities to understand their needs and concerns.

Europe's agricultural transition will be grounded in three principles: reducing harmful agricultural and fishing practices; supporting regenerative and climate friendly practices; and ensuring that the transition is grounded in justice — both for European communities and those around the world.

This transition must begin by curtailing the subsidies to corporate landowners whose methods drive environmental destruction, and shifting these resources toward small landholders whom they often employ.

In terms of regenerative farming practices, the GPW will provide low interest loans and other financing packages for a range of agricultural activities based on food sovereignty and sustainability, including:

- Permaculture, polycultures or regenerative agriculture to restore soil loss and biodiversity in over-exploited farmland.
- Rewilding marginal areas and creating corridors for wildlife. These activities are currently considered “unproductive”, but they have an important role in preserving biodiversity.
- Agroforestry, like Portuguese montado or Spanish dehesa, which en-

hances biodiversity compared to other means of producing forestry products and animal husbandry products.

- Transition to organic meat production and a reduction in overall meat output, substituting mass-produced meat with good-quality meat.
- Fisheries that develop biodiversity-intensive practices, such as seaweed and shellfish production, which provide many wider ecosystem benefits in addition to protein production — including carbon storage, habitat restoration and water purification.

The GPW will also confront the role of meat production in environmental breakdown. For millennia, meat consumption was relatively rare. Our ancestors reserved meat for special occasions. With the advent of industrialised farming, meat consumption has grown rapidly while the quality of the meat has declined. The overreliance on meat — particularly red meat — as a source of protein has had negative effects on both health¹⁰⁹ and the environment.

The GPW will support an increase in European production of non-meat protein sources, recognising that despite advancements in “lab-grown meat” and growing interest in this technology, such solutions are generated by corporations and offer little support for Europe's farmers, as well as having uncertain life-cycle environmental benefits. Non-meat protein sources and plant-based diets can also be healthier, although food quality is a far greater determinant of health than food type.¹¹⁰

Achieving a transition to sustainable food and farming systems also requires new modes of governance — a ‘Common Food Policy’ — to realign agricultural policies with the many other EU policies (e.g. trade, development, environment, research) shaping European and global food systems. This new approach is discussed in section 3.4.1 below.

POLICY RECOMMENDATIONS

Channel GPW investments towards reinvigorating Europe's rural communities, supporting environmentally-sustainable food production across the continent.

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On its own, an investment plan like the Green Public Works (GPW) is insufficient to address the climate and environmental crises. A much broader legislative package is necessary to rein in environmentally destructive practices and realign policymaking with the scientific consensus.

Just as Franklin D. Roosevelt introduced legislation to regulate banking and curb speculation in the wake of the Great Depression, the European Union (EU) urgently needs a set of rules that ensures that Europe gets on a pathway consistent with a safe and just transition: an Environmental Union (EnU).

Like other 'Union' frameworks in the EU, the EnU is a strategy to bind all EU member states to a system where both gains and burdens of the green transition are shared equitably. Unlike other frameworks, however, the EnU is deeply grounded in the scientific evidence and the mandates for change that it implies.

The changes brought about by the EnU are therefore both broad and deep. They refer not only to the areas that directly impact the environment, like production, distribution, and consumption. They also encompass areas like financial services that shape this system and constrain the actors operating within it.

This chapter does not intend to provide a definitive account of the laws and regulations required to confront the climate and environmental crises. Instead, it sets out some of the key policy aims that legislation introduced under the EnU will need to address.

The science leaves little doubt: this is an emergency. Only regulations that match the scale, scope, and urgency of this crisis merit consideration by European policymakers.

The EnU is the first legislative package to live up to this standard. It introduces a spate of emergency measures that aim at transforming Europe’s economies and societies. It is bold because the science demands it.

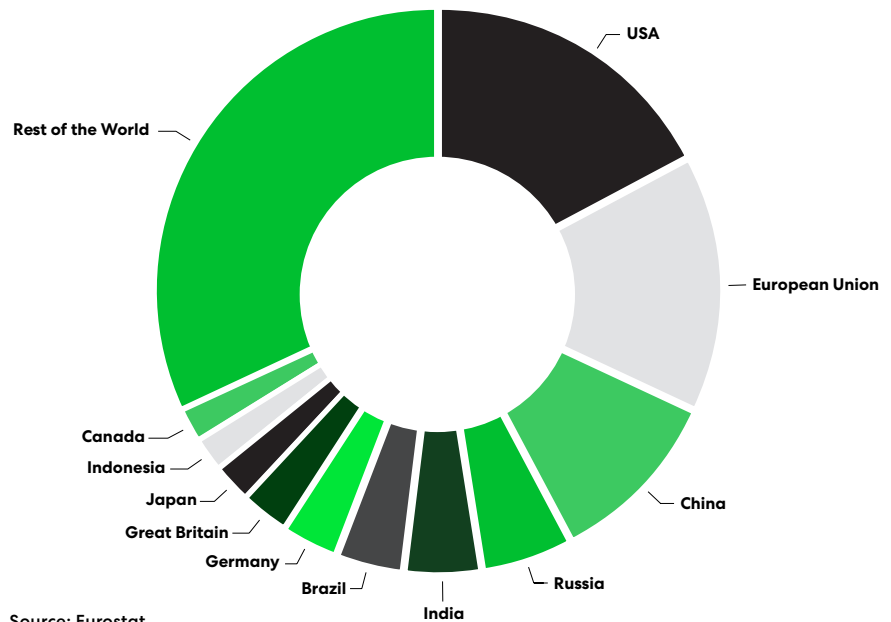
The uncertainties of climate and environmental breakdown — and the fact that none of the scientific models incorporate assumptions not based on the continued growth in gross domestic product¹¹¹ — mean that Europe’s transformation must be grounded in robust economic analysis and precaution: economic analysis, because we need to make changes to the fundamentals of our economy if we are to maximise our chances of success; precaution, because we cannot afford to fail.

FIGURE 6 - TOP TEN CONTRIBUTORS TO GLOBAL GHG EMISSIONS BY 2100
Based on data measuring countries' historical responsibility for GHG emissions.

3.2.1
Declaring Emergency

The policies outlined in this paper are designed to decouple human flourishing from economic growth, ensuring that we can transition to a society where wellbeing is not determined by ever-increasing production and consumption. On its own, this should be a significant factor in reducing pressures on natural systems.

The aggregate impacts of climate, biodiversity and environmental breakdown on humanity are profound, and they are becoming increasingly visible with each year.¹¹² As the planet heats, extreme temperatures will kill increasing numbers of people.¹¹³ The UN’s World Health Organisation (WHO) estimates that, by 2030, the health crisis associated with a changing climate will cost between \$2 and \$4 billion per year and push an additional 100 million people



Source: Eurostat

into poverty.¹¹⁴ Between 2030 and 2050, climate change will kill about 250,000 additional people annually, an estimate that the author of the WHO study has called “conservative”.¹¹⁵

If global temperatures rise by more than 2 degrees Celsius, we could enter a “hothouse Earth” state in which the planet itself begins to generate greenhouse gases that contribute to global

heating.¹¹⁶ In that scenario, we will eventually face the hottest temperatures in over a million years. Current sea levels are predicted to rise by one metre by the end of this century, which could displace tens of millions of people at the frontline of the climate crisis.¹¹⁷ In a hot-house Earth, sea levels could eventually rise by 10–60 metres,¹¹⁸ affecting at least a tenth of the world’s population and sinking Europe’s coastal cities.

Europe is the third largest emitter of GHG in the world. Beyond that, its economy depends on globalised trade flows which export emissions and pollution to other parts of the world; Europe is a global driver of environmental breakdown. This is why European leadership is crucial — its impacts extend far beyond its borders and its successes can serve as a model for a new global multilateralism, based on scientific

fact, sustainability and environmental justice.

To live up to this responsibility, Europe must first take it seriously — and put the issue at the very front of its political agenda.

POLICY RECOMMENDATIONS

Declare a climate emergency in the EU and commit to continuously updating climate targets to align with scientific consensus.

3.2.2 Respecting planetary boundaries

The first task of the EnU is to carve out a safe operating space for Europe’s economies. That means putting hard regulatory brakes on environmentally-destructive practices.

Europe must, finally, bring forward legislation to commit all EU member states to reaching zero or net-zero GHG emissions in a way that is compatible with the principles of a just transition.¹¹⁹ Such measures cannot be punitive in nature, but must be connected to generous support packages. And, for the reasons outlined in Appendix 1 to this report, the targets must be based on domestic reductions in greenhouse gas emissions and not requiring international offsets and large-scale BECCS deployment or other geo-engineering solutions,¹²⁰ which drive land-grabs and deforestation.

In addition to robust climate provisions, the EnU must also include legislation on the protection of our natural systems.¹²¹ Europe’s current approach is insufficient to holistically address the scale of the crisis, which is structurally linked to social and economic systems.

The EnU, then, must include a spate of new rules designed to support economic development within our planetary boundaries.

As with climate targets, the legislation must set targets for the preservation of natural habitats and reversal of biodiversity loss and other environmental breakdown including across biodiversity, soil and air quality, effectively placing a full sustainability constraint on all EU economic activity.¹²² In this way, the legislation should be modelled on the domestic legislative action of some nations, which mandate those governments to progressively reduce greenhouse gas emissions in line with ‘carbon budgets’, effectively placing a greenhouse gas constraint on economies. It is vital that this constraint is extended to cover all elements of environmental breakdown across the EU.

The legislation would include a technical mandate for the Environmental Justice Commission (see section 4) to develop interim and regional targets or other means of measuring improvement in the health of natural systems

and the pace of decarbonisation. These targets should be based on the planetary boundaries framework outlined in Appendix 3 and must be formulated with input from climate scientists, the non-governmental sector, activists and with the participation of citizens. Crucially, fossil fuel companies and financial institutions involved in the financing of fossil fuels must not be involved in this process.

POLICY RECOMMENDATIONS

Introduce legislation mandating that Europe’s economies operate within our planetary boundaries.

Commission detailed data collection on the health of natural systems and new targets for biodiversity across the EU.

A robust assessment of the science points to a need for systems change. Decarbonisation and environmental targets — while a vital response to the present emergency — are not enough to embed sustainability at the heart of European economies in a durable way. This is why the Green New Deal for Europe reorients every economic sector, from finance to manufacturing, so that it operates within planetary limits.

The second task of the EnU, then, is to legislate for sustainability. It must embed in law the aspirations of the GPW investment programme, which promises to usher in a world where material throughput and private wealth accumulation make way for reproduction and solidarity; where care — for planet and people — is rewarded; where workers and communities are empowered to make decisions about their future; where products are designed for durability and repair; and where the destructive role of global finance is constrained.

The transformation to a fairer economy promised by the Green New Deal for Europe will not only relieve pressure on our natural systems by reducing demand for energy, infrastructure and materials. It will also create new opportunities for human flourishing.

This section considers the kinds of laws that are needed to rewire European economies for sustainability.

3.3.1

Fiscal interventions

Although, as discussed in section 2.2.5 above, the issuance of green bonds is at the heart of the financing model for the Green New Deal for Europe, fiscal measures must play a key role in the transition.

The intertwined nature of the two major contemporary crises of inequality and climate and environmental breakdown calls for designing fiscal measures to benefit lower income groups — who are neither responsible for the crises nor capable of bearing mitigation costs —

instead of subjecting them to additional pressures. In short, one of the requisites of a sustainable and equitable green transition is to make carbon-free energy cheaper than fossil fuels without burdening people who are already struggling to make ends meet.

There are essentially two ways of pricing carbon.¹²³

The first is a fee-and-dividend model, whereby a fee (or tax) is levied at the source on every tonne of CO₂ equivalent emitted, and the revenue

redistributed to citizens as a dividend.

The second is the cap-and-trade model, whereby a fixed quota of pollution permits is allotted to companies which can then trade them with others.

Today, the EU relies on the cap-and-trade approach (known in the EU as the Emissions Trading Scheme, or EU-ETS) in response to powerful industrial lobbies¹²⁴ and despite its limited applicability, inefficacy, inherent instability, loopholes, and profiteering by financial services. The income and profits made

by emissions traders are added to the fuel cost. The Transnational Institute¹²⁵ and others¹²⁶ have described the EU-ETS (and carbon trading in general) as a failure that has led to no significant emissions reductions, absorbed enormous amounts of political will and attention, and acted as a huge subsidy for some of the biggest polluters in Europe.

Although EU-ETS is currently undergoing reform, the proposed changes are insufficient to tackle its root flaws. Firstly, EU-ETS does not currently apply to all sectors or all GHG emissions. Secondly, the cap is incompatible with a safe pathway to 1.5 degrees Celsius. Thirdly, there are significant numbers of free emissions certificates that are issued. Fourthly, EU-ETS supports “carbon leakage” where emissions are simply shifted to other countries. Finally, as a private-sector-driven solution, EU-ETS is agnostic to the core principles underpinning the Green New Deal for Europe: economic and environmental justice.

To confront the climate crisis and meaningfully reduce emissions, the EU must explore replacing EU-ETS with a fee-and-dividend approach. This would consist of a rising pan-European carbon fee (or tax) with the revenue redistributed to citizens as part of a citizen’s dividend. A carbon fee is the most efficient and cost-effective¹²⁷ way to shift demand to green technology. Coupled with the dividend, it also makes for the most economically just approach.

In the fee-and-dividend system, large corporations and wealthy individuals — in other words, the heaviest fossil-fuel users — pay the bulk of the carbon fee, while low-income groups receive more in dividends than they pay in fees. This model reverses the current trend in Europe, in which the costs of the transition have fallen disproportionately on the poor.

The carbon fee proposed under the fee-and-dividend system, however, is levied at the source, and automatically applies across the board (to all emissions sectors). While low-income families typically spend a higher proportion of their income on fuel for transport and domestic purposes, the dividend is based on revenue from all emissions sectors, and works invariably to their advantage.

In line with the climate convention’s principle of “common but differentiated responsibilities and respective capabilities”, the Green New Deal for

Europe also proposes that wealthier countries pay a higher carbon price, which would depend on the country’s per capita emissions as well as its level of development (HDI). Less developed countries can thus add export taxes on fossil-fuel-based exports, a border adjustment that prevents carbon leakage and provides additional funding for the green transition in less developed countries.

A carbon fee, like every additional tax, might still be difficult for sections of the public to swallow at first, without clarity on the extent of the dividend benefit. A pilot phase with a low initial carbon fee, and dividend payback over a short period of a few months, might help garner citizen support for the scheme. Thereafter the carbon fee should rise at an economically sound rate that encourages technological innovation and infrastructure development. A proportionally rising dividend is likely to enhance its public appeal.

A number of variations have been proposed to the basic fee-and-dividend system described above, though the essence remains the same. One of these, proposed¹³³ by the French Réseau Action Climat, recommends starting by selectively taxing the most polluting sectors and creating an extra buffer for low-income groups by introducing the dividend a year before the all-encompassing carbon fee takes effect.

In any case, the citizens’ dividend proposed by the Green New Deal for Europe would be funded through multiple sources (in addition to the carbon fee). The carbon fee is after all just a transitional incentive that will become redundant once the green transition is in full swing.

Beyond identifying a just and effective tool for pricing carbon, the EU must finally take the lead in shutting down tax havens. These structures are linked to environmental breakdown as both cause and effect: they reduce the resources available for governments to address their urgent environmental concerns, and they provide a safe haven for resource extractors to conceal their profits without consequence.

This is why the tax regime of the Green New Deal for Europe focuses on rebalancing the global economy so that international finance flows back to the places from which resources have been extracted, and that tax evaders pay their fair share to address the crisis.

The EnU can enhance this reparative dimension with further fiscal measures. For example, an environmental damages tax could be introduced to put a cost on other forms of environmental breakdown, such as air pollution. The proceeds from this tax could be channelled to communities on the frontline of climate impacts and used to support the just transition. And a financial transaction tax could raise finance for climate justice reparations, for example by supporting vulnerable countries affected by climate-induced “loss and damage” in rebuilding after climate disasters. This would replace the current model under which disaster-stricken countries are forced to borrow their way out.

POLICY RECOMMENDATIONS

- 1 Look into replacing EU-ETS with a fee-and-dividend system. Initially pilot the new model on a small scale and with the participation of Europe’s residents.
- 2 Introduce legislation to shut down tax havens.
- 3 Consider introducing additional fiscal measures, such as an environmental damages tax and a financial transaction tax, to generate funds to support communities on the frontline of the climate and environmental crises.

MACRON AND THE FRENCH FUEL TAX

In 2018, French president Emmanuel Macron proposed to introduce a direct tax on diesel, which burdened low-income families disproportionately as they spend a larger share of their incomes on fuel for transport and domestic use (in 2018 the fraction of income spent by the bottom 10 percent was 2.7 times¹²⁸ greater than that spent by the top 10 percent).

France already suffered from significant inequality. The top 1 percent's share of GDP growth over the last decade was greater than that of the bottom 50 percent.¹²⁹ The fuel tax would have added to Macron's earlier tax cuts on the wealthy and oil price increases, further exacerbating income inequality in the country. A study by the French Institut des Politiques Publiques found that cumulative effect of the 2018-2019 budgets would have meant that households in the bottom 10th income percentile would be worse off, while households in the top 1st percentile would be materially better off.¹³⁰

At the same time, many industrial sectors were exempted¹³¹ from taxation. A recent study¹³² showed that 1091 installations of highly-polluting industries operating in France were paying a carbon price of €21 per tonne of CO₂ equivalent via the European cap-and-trade system (EU-ETS), as compared to the price of €44 per tonne paid by households and less polluting industries. Furthermore, some industries (paper industries, for instance) were over-allotted (up to 130%) free emissions quotas and paid no price at all, while the cement industry received a 14% free emissions quota.

The *Gilets Jaunes* movement was the public response to these trends. Eventually, it compelled Macron to abandon the controversial fuel tax.

3.3.2 Energy

The EU's energy policy has been failing to deliver on its decarbonisation and energy efficiency targets,¹³⁴ and has overseen a major slowdown in investments. As discussed in section 2.4.2 above, Europe's energy systems must be grounded in public investment and ownership across energy generation, transmission, distribution, management and conservation — a vision that is incompatible with the EU's heavily market-driven reform strategy.

Public ownership can both reduce energy prices and accelerate the pace of our transition. But today, the joint aims of the Energy Union and the Third Energy Package are to further liberalise Europe's energy markets, surrendering ever-greater segments of Europe's energy infrastructure to the forces of competition. This not only risks driving up prices for Europeans, but also dismantles the economies of scale necessary to address energy efficiency and decarbonisation in an integrated and just manner. Indeed, there is a growing trend in municipalities around the world of bringing utilities like energy back into public hands.¹³⁵

Public participation can ensure that decisions about energy generation, distribution and prices are subject to democratic scrutiny — and that environmentally-destructive practices like fracking are not pursued in opposition to community interests.

An energy policy oriented around public need, not profit, can also eliminate energy poverty — bringing relief to the over 50 million people in Europe currently struggling to pay their bills. One of the simplest ways to achieve this while reducing energy use across

the continent is to introduce an energy allowance. All households would benefit from an amount of free energy up to a certain point necessary to satisfy essential needs: heating and cooking. Beyond that, the price would rise steeply, creating a powerful incentive for households to conserve energy.

The EnU must also, finally, phase out Europe's fossil fuel subsidies.

If we are to limit global heating to 1.5 degrees Celsius, we can create no new fossil fuel infrastructure. But governments continue to fund climate and environmental breakdown at an alarming rate. By some estimates, just one-fourth of the amount currently spent on fossil-fuel subsidies globally would be sufficient to pay for the transition to renewables.¹³⁶ In the EU, direct and indirect fossil fuel subsidies exceed €200 billion¹³⁷ annually.

This is why the EnU must set legislative brakes on subsidies, phasing out existing fossil fuel subsidies and redirecting them towards the GPW. But such a phase-out cannot be merely an opportunity to punish EU member states for non-compliance. For years, coal-dependent countries like Poland have resisted calls to decrease emissions — any punitive, target-based system will fail on a political level.

Existing tools being designed under the Energy Union can support better disclosure and planning. For example, member states are currently required to develop integrated National Energy and Climate Plans (NECP) focusing on the five dimensions of the Energy Union, which include energy efficiency and decarbonisation. These plans are developed based on standardised tem-

plates, which do not currently include data on fossil fuel subsidies.

The *Institut du développement durable et des relations internationales* proposes including this data in the NECPs, which could go a long way towards supporting disclosure of both direct and indirect subsidies to fossil fuel industries.¹³⁸ However, mere reporting will be insufficient to support fossil fuel-reliant EU member states in their decarbonisation targets. This is why GPW investment must be distributed to countries in accordance with their decarbonisation needs.

One way to achieve this would be to “top up” countries' reductions in fossil fuel subsidies with additional GPW funds. During a transitional period, for every euro redirected from fossil fuel subsidies to renewable energies, the GPW could add an amount intended to support the just transition. These funds can be used to retrain workers, phase out fossil fuel infrastructure and further bolster the development of renewable energies.

POLICY RECOMMENDATIONS

- Begin exploring alternatives to the EU's current approach to energy policy, which is based on highly liberalised and decentralised markets.
- Introduce robust fossil fuel subsidy reporting standards under the NECP.
- Link GPW funding to fossil fuel subsidy withdrawal during a transitional period.

3.3.3 Supply Chains

A just transition commits Europe to reimagining the way it manufactures and consumes everyday goods. The Green New Deal for Europe calls on us to transform both our means of production and social expectations of consumption so that they respect planetary boundaries. Europe's supply chains must be recalibrated to support a reduction in material throughput while ensuring sustainability.

The most effective way to achieve this is to introduce a series of standards that extend the lifecycles of everyday goods while mandating repair and recycling and setting limits on waste. At a minimum, these rules should require:

- longer product lifespans and mandatory warranties;
- a right to repair;
- mandatory recyclability;
- a ban on food waste (as has been introduced in South Korea);
- a shift from ownership to usership (i.e., from private cars to shared cars

or public transportation, as proposed in section 2.4.2 above); and

- a shift from private consumption provisioning to public consumption provisioning.

This could be supported through a transitional cap on annual material throughput, which would be tightened every year. This will go a long way towards reorienting Europe's manufacturing towards sustainability.

But the accounting of Europe's environmental successes should not stop at its borders, invisibilising the vast global networks of extraction, production, and distribution that a massive transition to renewable energy would require. A global, and holistic, view reveals that major investments in renewable energy sources will intensify mining, which provides the raw materials to remake our built environment to function exclusively on electricity.

And a world of intensified mining is, in turn, one of accumulation by dispos-

session and contamination. Replacing a rapacious fossil-fuel industry with an equally rapacious renewables industry is not in line with the principles of social justice. Supply chain justice should be at the forefront of the energy transition to ensure that the materials required are handled with commitment to social and environmental justice in the rest of the world.

The EnU must include legislation on supply chain management based on principles of global justice, life-cycle thinking and assessment methods to highlight and quantify the trade-offs between impacts — for example decarbonisation in Europe at the expense of environmental destruction abroad.

POLICY RECOMMENDATION

Introduce legislation governing both domestic and international supply chains, ensuring that they achieve a reduction in material throughput in Europe and are grounded in principles of justice

3.3.4 Finance

As this report outlines in section 2.2, the financialisation of the global economy has been a key driver both of inequalities and of climate and environmental breakdown. Europe's regulatory framework is ill-equipped to change the behaviour of financial institutions.

The transition to a net-zero economy requires significant investments in sectors with high capital costs. The existing capital framework not only hinders these investments, but also incentivises investments in non-renew-

ables at the expense of low-carbon technologies.¹³⁹ As discussed in section 2.2.4 above, this exposes the financial system to systemic risk, as non-renewables face both risk of physical damage and transition risk.

The prudential framework introduced after the financial crisis to regulate banks and insurers¹⁴⁰ defines climate-related financial risks narrowly, and does not require social, environmental or climate-related risks to be included in the risk-weighting for ex-

posures. In effect, the way these rules operate means that banks are not required to hold capital as a buffer against some of the most significant investment risks: climate, environmental and social breakdown.

The emergency legislation introduced as part of the EnU must therefore make changes to the rules governing Europe's financial institutions to ensure that they cease funding climate, environmental and social breakdown and rapidly divest themselves of the non-re-

newable assets they currently hold.

Firstly, it must include emergency amendments to the prudential rules for banks and insurers to introduce punitive capital requirements for investments in non-renewables and to recalibrate prudential rules so they operate with a greener perspective. For example, an enhanced countercyclical capital buffer could further limit banks' investments in non-renewables during periods of credit expansion in non-renewable markets.

Various countries have already introduced similar reforms, including by setting lending limits to channel credit away from high-carbon towards low-carbon activities.

Secondly, it must accelerate work aimed at separating commercial and investment banking activities. As the financial crisis demonstrated, this exposes everyday depositors to systemic shocks in the wider financial system. As the financial stability risks of climate and environmental breakdown rise, it will be vital to protect Europe's depositors from the fallout.

Thirdly, the ongoing work of the Technical Expert Group on sustainable finance should be fast tracked. The Technical Expert Group is developing: (a) a taxonomy for sustainable economic activities; (b) an EU Green Bond Standard to introduce comparable criteria for issuing green bonds and (c) a report on EU climate benchmarks and benchmark disclosures.

The legislative outputs of this work

must be more ambitious than currently envisioned, producing a taxonomy that takes into account the latest scientific consensus on climate and the environment and ensuring the full transparency of investment portfolios and lending activities, which must be accompanied by mandatory portfolio targets for decarbonisation and other environmental factors. The taxonomy must not only focus on environmentally-sustainable activities, but identify those that are environmentally and socially destructive, to better price long-term risks. It must also include clear and stringent criteria governance requirements that make reference to the fight against speculation and fiscal dodging.

When developed, the taxonomy can be linked directly to the revised prudential framework. This will ensure that the risks and externalities of investments in non-renewables are accounted for more accurately, which can also support the accurate long-term pricing of fossil fuel assets — dramatically lowering their market value and paving the way for the orderly winding-down of fossil fuel companies.¹⁴¹

Beyond that, better valuation of social and environmental risks will drive up the prices for commodities derivatives, which are a major contributor to global poverty and inequality. Many countries across the Global South are financed through securitised investments by multinational banks, which impose structural adjustment programmes on

governments in whom they invest — exporting policies of austerity to the poorest nations.¹⁴²

Finally, the EnU will include new powers for Europe's financial regulators in respect of multinational banks. In particular, it will include provisions for the evaluation of existing debt agreements and how their conditionality — including stipulations around the privatisation of assets and infrastructure, the imposition of austerity, and liberalisation of the financial sector — helps or hinders environmental justice.

As part of that, robust transparency requirements will be introduced to mandate reporting of non-renewable investments around the world.

POLICY RECOMMENDATIONS

Introduce emergency amendments to Europe's prudential rules to penalise investments in non-renewables.

Fast-track progress of the Technical Working Group on sustainable finance, and incorporate the taxonomy of social and green investments into the new, punitive prudential framework.

Introduce the separation between commercial and investment banks, as well as robust and mandatory new disclosure requirements on non-renewable investments.

The society envisioned by the Green New Deal for Europe is one where solidarity displaces competition. Only by cooperating across borders — within Europe and beyond — can we hope to stave off climate and environmental catastrophe and build shared prosperity.

The shift from competition to solidarity will require a sea-change in Europe's legislative frameworks. For decades, the EU has advocated a combination of structural reforms that increase wage flexibility, liberalize trade, lower corporate taxes, and drive internal devaluation.¹⁴³ It is a strategy intended to make European goods more attractive to foreign buyers — while driving job insecurity, inflaming inequality, and undermining sustainability all around the world. These outcomes are not accidental, but the products of a global system designed to support the transfer of wealth and resources according to principles of 'market efficiency'.

The EnU offers a new paradigm. Rather than advocate for big corporations under the auspices of 'competitiveness,' it protects the interests of workers, communities, and their environments first. Rather than viewing Europe's interests as zero-sum with those of its neighbours, it brings them on as partners in the project of sustainable development.

This section maps out four key areas where the EnU takes forward this principle of solidarity, and the policy recommendations that flow from it.

EXPORTING POLLUTION AROUND THE WORLD

“Just between you and me, shouldn’t the World Bank be encouraging more migration of dirty industries to the LDCs [less developed countries]?... The economic logic behind dumping a load of toxic waste in the lowest wage country is impeccable, and we should face up to that... Under-populated countries in Africa are vastly under-polluted; their air quality is probably vastly inefficiently low compared to Los Angeles or Mexico City... The concern over an agent that causes a one in a million change in the odds of prostate cancer is obviously going to be much higher in a country where people survive to get prostate cancer than in a country where under-five mortality is 200 per thousand.”¹⁴⁴

1991 memo from Larry Summers, then-Chief Economist at the World Bank

3.4.1 Agriculture

About a decade ago it was estimated¹⁴⁵ that the agricultural policies of developed countries cost developing countries about \$17 billion per year — equivalent to five times the level of official development assistance (ODA) for agriculture over the same period. Economist and Nobel Laureate Joseph Stiglitz additionally estimated¹⁴⁶ that rich countries cost poor countries three times more in trade restrictions than their total ODA. Over the last couple of decades, Africa has become a net importer of food and agricultural products, despite its vast agricultural potential.¹⁴⁷

As discussed in section 2.4.7 above, the EU spends close to half its budget on agricultural subsidies through the CAP. A significant part of these subsidies is paid out to large landowners, heavily mechanised industrial farms and agribusiness whose agricultural methods are both input-intensive and energy-intensive, leading to high GHG emissions, soil and water depletion, eutrophication and biodiversity loss.

CAP subsidies also help to keep agricultural commodity prices artificially low, often below production costs, facilitating the dumping of cheap produce on global markets.¹⁴⁸ In developing countries — in stark contrast to the EU — an average of 60%¹⁴⁹ (ranging from 20 to 90%)¹⁵⁰ of the population is employed in agriculture. Small farmers and agricultural labourers comprise 70% of the world's poorest billion people.

Many small-scale farmers in the Global South are already adopting chemical-free, organic and agroecological practices in order to improve their livelihoods and sustain the ecosystems on which they rely: nearly 30% of farms globally are estimated to have undertaken some form of 'system redesign'.¹⁵¹ By diversifying their production, farmers are able to produce a variety of staple and traditional foods to feed local communities, in a way that sustains their land and resources.

Instead of supporting agroecological transition, EU agriculture and trade policies support intensive export commodity production. FTAs have been negotiated with the explicit goal of increasing EU

exports in high-emitting sectors like meat and dairy.¹⁵² Meanwhile, developing countries are encouraged to use their land and resources for a limited number of cash crops, rather than upgrading to added-value products and sectors, and rather than feeding local populations. Small-scale farmers struggle to access export markets, and even struggle to compete on their own markets thanks to the dumping of cheap produce by multinationals.

Skewed tariff and non-tariff trade barriers, as well as the conditionalities of international financial institutions (IFIs)¹⁵³ have contributed further to preventing small farmers in the Global South from benefiting from agricultural production — by demanding the dismantlement of national policy measures¹⁵⁴ providing credits to farmers and assistance in processing and marketing, as well as lowered import tariffs.

The marginalisation of small farmers has led to uncontrolled and unsustainable urban migration in the Global South. Some 50 million people leave rural areas every year¹⁵⁵ in search of alternative livelihoods. Valuable knowledge on locally optimal, traditional and sustainable farming is being lost as a result while rural migrants augment the ranks of the urban poor, exceptionally susceptible to food insecurity.

Those remaining in rural areas are increasingly dependent on global agribusiness — for providing inputs (seeds, fertiliser, etc.) as well as for buying produce, since small farmers have little direct access to markets. Agribusiness thus dictates prices and conditions, leaving small farmers indebted and often compelled to abandon or sell their land to large-scale mechanised operations.

The long-term costs incurred by industrial farming are not factored into current policies; nor are they reflected in food prices. These costs are "market externalities" — a consequence of market failure — where the pursuit of private interest hinders the efficient use of society's resources or a fair distribution of public goods.¹⁵⁶ These include environmental costs (to biodiversity, soil

and water) that render the production of nutritious food unsustainable over the longer term, human health costs (e.g., through exposure to endocrine disrupting chemicals¹⁵⁷ and air pollution¹⁵⁸), as well as the socio-economic costs of poverty, malnutrition, and the marginalisation of small-scale farmers in the Global North and South.¹⁵⁹ The costs of making sustainable farming viable for the millions of smallholders around the world are vanishingly small, compared to the costs of failing to do so.

This is why the EnU includes a Common Food Policy:¹⁶⁰ a policy framework that realigns the various sectoral policies affecting food systems (agriculture, trade, development, environment, research, public procurement etc.), puts an end to conflicting policy objectives and their hidden costs, and puts trade in the service of sustainable development.

Under a Common Food Policy, various supply-side and demand-side policy tools will be harnessed to spark a transition to sustainable food systems, ensuring coordinated actions and equitable cost-sharing along the chain. Integrated food system governance is therefore a crucial aspect of EnU. Coupled with the redirection of investments under the GPW (see section 2.4.7 above), it will accelerate the agroecological transition and will ensure that it pays to farm sustainably in the EU and around the world.

POLICY RECOMMENDATION

Adopt the Common Food Policy, a framework that realigns the various sectoral policies affecting food systems, puts an end to conflicting policy objectives and their hidden costs, and puts trade in the service of sustainable development.

3.4.2 Trade

While agriculture remains the main source of income for the world's most underdeveloped regions, these regions also urgently need to diversify into processing, manufacturing and other value-adding activities — in light of climatic uncertainties and ecological impact as well as economic advantage.

Most of these countries remain dependent on imports for manufactured goods and many still have no knowledge and services sectors. To get off the ground, their “infant industries” need protection from global competition. But this is not allowed by the structural adjustment regimes imposed by IFIs or by WTO rulings (like Non-agricultural Market Access or NAMA and the General Agreement on Trade in Services or GATS), which compel developing countries to open up their manufacturing and service sectors to global competition under the condition of “reciprocity” in trade relations — and even less so by bilateral and regional “free trade” agreements (FTAs) between the EU and developing countries. The EU's Economic Partnership Agreements (EPAs) with ACP countries (Africa, Caribbean and Pacific) are a case in point.¹⁶¹ These are often produced in a context characterised by deep power imbalances and the influence of multinational corporations.¹⁶²

Reciprocity in trade agreements between countries with vastly different levels of economic development mostly serves the interests of the wealthy ones with developed manufacturing and service sectors, and is not observed in areas like agriculture where the Global South might have an advantage.

FTAs have been deemed even worse for developing countries than the WTO¹⁶³ because the latter still offers them some flexibility¹⁶⁴ against further tariff reduction on imports. In addition, “tariff escalation” (whereby import tariffs increase along the processing chain) deployed by the EU further hinders the development of value adding industries in poor countries, confining their exports to raw material that feeds European industries while importing back processed goods along old colonial lines.

For instance, Haiti and West Africa (among the world's poorest regions) could greatly benefit from exporting processed chocolate instead of cacao for processing in the EU. Apart from enabling supplementary income for producers, local processing would reduce ecological pressure on arable land as well as lower GHG emissions by reducing transported volumes.

Trade reform campaigns¹⁶⁵ were at the top of the development agenda given their potential impact on alleviating poverty and hunger, but fizzled out after 2006 amidst the continuing deadlock (between developing and developed nations) at the Doha round of trade negotiations, as well as the emergence of climate change as a top development issue.

A green transition necessarily involves the development of lower-emission transport options over the coming years. A more integrated and inclusive analysis of global sustainability — both environmental and economic — could go a long way towards alleviating the impact of trade injustice on the Global South.

The EnU, then, will rewire Europe's international trade relationships for sustainability and justice. It will do so in four key ways.

Firstly, it will terminate all investor state dispute settlement mechanisms. These are currently used by transnational corporations in carbon-intensive industries to sue governments introducing environmental regulations.

Secondly, the EU will work to actively reshape WTO rules in accordance with its new international and trade priorities. Over the near term, the EU could work to develop common accounting approaches and increase the administrative capacity of the WTO's Trade & Environment Committee to support WTO legal drafting. In the long term, the EU will push to integrate sustainability in the WTO.

Thirdly, the legislation should encourage technology transfers in renewable and other technologies that can help build lower carbon economies. This must include legislative provisions to

ensure that any technology developed as part of Green Horizon 2050 can be made available for free or at low cost to countries across the Global South. At the same time, old fossil fuel architecture that is retired as a result cannot be sold to governments in the Global South. Companies administering this infrastructure must be made responsible for its clean-up.

Finally, the EnU will also lay the groundwork for relocalising manufacturing in Europe. It will make provision for (a) the inventorisation of the goods and services are currently imported and exported from Europe; (b) a robust analysis of what products could feasibly be produced within each EU member state; (c) a set of tariffs and import quotas on products, increasing over a 10-year transition period as manufacturing is relocated to Europe; and (d) encouragement for European producers to fill the gaps opened by growing local markets, which can help compensate for the loss of former export markets.

While this process is in motion, the EnU will also introduce robust waste management policies mandating standards for eco-design, reuse and reparability. These requirements will automatically limit imports of non-compliant products from abroad, while strengthening the position of manufacturers.

POLICY RECOMMENDATION

Recalibrate EU trade rules to support diversified, self-sustainable economies in Europe and around the world.

3.4.3 Development

Europe's foreign aid policies continue to fund fossil fuel projects and agribusiness around the world. The EnU will include new international development policies that ensure clean development and engage donor and recipient countries in Green New Deal policies across Africa, Asia and Latin America.

Europe's development policies, bilateral funding arrangements, multilateral funding mechanisms such as the Green Climate Fund and the EU's official position at the UNFCCC climate negotiations must include provision of climate and environmental finance to support countries on the front line of

climate and environmental breakdown. The countries to suffer most are least responsible for the crisis, so Europe must take the lead in paying for the costs of loss and damage, adaptation and transitioning to green pathways.

The EU must also play a role in encouraging countries to shift away from harmful subsidies for fossil fuels and synthetic nitrogen fertilisers. Zambia, for example, spends a significant proportion of its agricultural budget on subsidising fertilisers — much of which flows to wealthier households.¹⁶⁶ This is money that could be far better spent on investment, support, training and

extension services to strengthen adaptation through agroecology.

The EnU, then, will include a Green Development Regulation that recalibrates the EU's international development priorities, as well as ensuring that agriculture and trade policies are realigned with sustainable development imperatives under a Common Food Policy (see section 3.4.1).

POLICY RECOMMENDATION

Revise Europe's international development policies to align with the priorities of the Common Food Policy.

3.4.4 Environmental Abuse

Finally, the Environmental Union must enshrine respect for the natural world in law.

In 2008, the Justice and Home Affairs Council formally adopted the Environmental Crime Directive, which member states were required to transpose in 2010.¹⁶⁷ The Directive includes a list of environmental offences — from polluting that is likely to cause serious injury or death to the destruction of protected sites — that must be subject to criminal penalties if committed intentionally or with serious negligence.

This law is clearly insufficient. Major fossil fuel companies generate dangerous levels of pollution across Europe — but their CEOs go unpunished. Logging companies continue to destroy precious forests across the continent — but no one is held responsible for the environmental damage. Fracking companies

poison our water and agricultural companies destroy our soil.

The Environmental Crime Directive fails because it does not recognise that business as usual may in itself constitute a crime against the environment. It does not penalise any of the 100 companies that, collectively, are responsible for 71% of global greenhouse gas emissions.

This is why the Environmental Union must include a new set of environmental laws establishing both civil penalties and criminal offences related to ecocide, environmental negligence and other examples of wrongdoing.

The legislation could include penalties for the most egregious polluters and causes of environmental breakdown — for example, aligning with those currently applicable for breaches of Europe's antitrust rules (i.e., penalties amounting to up to 10 percent of global

group turnover).

The new legislation should recognise the crime of ecocide, defined as “loss or damage to, or destruction of ecosystem(s) of a given territory(ies), such that peaceful enjoyment by the inhabitants has been or will be severely diminished.”¹⁶⁸ The introduction of this new law by the EU could serve as a model for the global recognition of ecocide as a crime against humanity under a Common Food Policy (see section 3.4.1).

POLICY RECOMMENDATION

Introduce legislation that includes significant civil penalties for the heaviest polluters and contributors to environmental breakdown.

- 111 Evans.
- 112 See Appendix 2 for a brief primer on the science.
- 113 In 2003, a major European heatwave killed as many as 35,000 people across the continent. See IPCC AR5, WG2 chapter 8, <https://www.ipcc.ch/site/assets/uploads/2018/02/ar4-wg2-chapter8-1.pdf>, p. 397.
- 114 'Climate change and health', World Health Organization, 1 February 2018, <https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health>, (accessed 04 August 2019).
- 115 J. Christensen, '250,000 deaths a year from climate change is a 'conservative estimate,' research says', CNN, 16 January 2019, <https://edition.cnn.com/2019/01/16/health/climate-change-health-emergency-study?no-st=1564934345>, (accessed 15 May 2019).
- 116 W. Steffen et al., 'Trajectories of the Earth System in the Anthropocene', *Proceedings of the National Academy of Sciences*, 115(33), 14 August 2018, pp. 8252-8259, <https://www.pnas.org/content/115/33/8252>, (accessed 5 August 2019).
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The challenge of confronting climate change cannot be separated from the question of social justice. Whether it is a carbon tax or a plastic ban, climate policies have massive ramifications for who gets what, and how. The recent revolt of the *Gilets Jaunes*, a response to President Emmanuel Macron's fuel tax, reveals the social impact of climate action — and the extent to which its authors fail to consider the concerns of working communities bearing the brunt of environmental degradation.¹⁶⁹

The Green New Deal for Europe offers a corrective. It centres the question of social justice, ensuring not only that no community gets left behind in the green transition, but also that the European Union (EU) take action to redress extraction, exploitation, and inequality in Europe and around the world.

The policies set out in the previous sections make important progress toward delivering justice. But they are not sufficient. After all, the letter of the law is rarely respected by its implementation — and there is always a possibility that a programme like the GPW has unforeseen, and unjust, externalities.

That is why the Green New Deal for Europe will establish an Environmental Justice Commission (EJC), an independent body with the mandate to monitor the progress of the green transition, investigate questionable practices, and advise EU authorities on how to redress Europe's role in environmental injustice around the world.

The EJC is structured along three dimensions of environmental justice. The first is International Justice: climate breakdown is a global phenomenon, and our response must be global, too. The Green New Deal for Europe aims to build bridges of cooperation and coordination between countries — not walls between them. The Commission aims to ensure that Europe's green transition does not evolve into a form of green colonialism, exporting unsustainable practices beyond its borders and down its supply chains.

The second is Intersectional Justice. The Green New Deal ensures that no community is excluded from Europe's green transition — regardless of geography, race, gender, age, or ability. The Commission aims to identify and eliminate barriers to their inclusion.

The third is Intergenerational Justice. Europe today bears responsibilities both for its past and to its future.

The Commission aims to develop a framework for redressing Europe's history of pollution and resource extraction across the Global South. And it aims to develop new tools for ensuring that future generations do not suffer on account of present climate destruction.

Together, the EJC aims to set a new standard for multilateral commitments to environmental justice. Many advocates of a Green New Deal have sought to address only those injustices that occur within their borders. The EJC, by contrast, considers the reverberating consequences of European policy all around the world. By leading with international accountability, EJC sets the stage for bodies like the United Nations to lead a broader, more global Green New Deal.

POLICY RECOMMENDATION

Establish the EJC to monitor implementation of the Green New Deal for Europe along the dimensions of international, intersectional and intergenerational justice.

4.2.1

Principles

Across all the dimensions of its work, the EJC is guided by the principle of environmental justice, which can be defined according to its three essential features.

DISTRIBUTION

Environmental justice requires a fair and equitable distribution of ‘goods’ and ‘bads’.¹⁷⁰ Our current system generates massive economic and environmental inequalities — both within countries and between them. Environmental justice means attacking these inequalities at their root, ensuring that no community bears excess burden in the climate emergency, and that all communities gain together from our transition out of it.

RECOGNITION

Equitable distribution of goods, however, is often undermined by failures of recognition — and the systems of oppression that undergird them. Environmental justice means recognizing all groups and their claims — historical, present, and in the case of generations to come, future — to land, resources, and livelihood. After all, “recognition is not just a courtesy we owe people. It is a vital human need.”¹⁷¹

PARTICIPATION

Environmental justice cannot come from the top-down. Rather, justice is served only when every resident of the com-

munity has a say in its future, and such participation is only possible when political institutions enable it. Democracy is therefore a fundamental component of environmental justice. The IPCC’s own report enshrines participation as the guiding principle of climate action.¹⁷²

These elements are not distinct, but deeply intertwined. We can only deliver an equitable Green New Deal if we recognize the rights of populations both inside and out of Europe, and create avenues to claim them.¹⁷³ The EJC is guided by this rich sense of environmental justice and an eye toward where its different components intersect to prevent its implementation.

4.2.2

Governance

The structure of the EJC aims to reflect both its robust definition of environmental justice and its emphasis on citizen participation as a means to deliver it. This structure has four levels.

CHAIRPERSON

Leading the EJC are elected representatives from each of the EU member

states, with a mandate to chair the Commission until the next European elections. The goal is to ensure equal voice to all countries in the governance of the EJC. The role of each Chairperson is not only to represent their country in Brussels, but also to liaise with actors within their country to support the work of the Commission.

COMMISSION

Chairpersons are responsible for selecting the members of the Commission. Candidates for the Commission must be politically independent and representative of a wide swathe of civil society, including climate experts, trade union leaders, and community organisers. The Commission will be composed not only

of Europeans, but also representatives from beyond Europe, who can provide essential outside perspective on the work of the Commission.

SUB-COMMISSION

The work of the Commission is aided by a Sub-Commission that is responsible for executing the research priorities of the Commission. The Sub-Commission

therefore acts as a “think-tank” for the EJC, drawing on international expertise to evaluate and report on the questions raised by the Commission.

CITIZEN PANELS

The EJC advocates a definition of environmental justice that puts citizen participation at the core of its activities. The EJC therefore commissions the

random selection of citizen panels to inform each of its three phases of work, from priority formation to research execution to policy recommendation. All panel meetings are open to the public, ensuring that the work of the Commission remains transparent and grounded in democratic engagement.

4.2.3 Competencies

The competencies of the Environmental Justice Commission are both expansive and limited. They are expansive in the sense that the EJC, the first institution of its kind, has a mandate to set a new international standard for research and reporting on environmental injustices, requiring that the EJC connect dots that other agencies have failed to connect: developing, for example, reports on the connection between gender exclusion and a changing climate.

The EJC is confined, however, to this advisory role, assisting institutions like the European Commission to develop its legislation and bringing cases to institutions like the European Court of Justice to adjudicate. In this sense, the competencies of the EJC remain limited.

The benefit of these constraints is their pragmatism. With this limited mandate, the Environmental Justice Commission can be established tomorrow, without requiring lengthy changes to the EU treaty system. Given the urgency of the challenge we face, such pragmatism is essential.

The three areas of work are as follows:

RESEARCH

The Sub-Commission researches and analyses issues that pertain to the dimensions of justice enshrined by EJC. This work is empirical, conceptual, and public. The empirical work pertains to gathering the data on the consequences of climate change across Europe and the impact of its policies on environmental outcomes around the world. The conceptual work of the Sub-Commission pertains to the development of new indicators for assessing these data. And the public component pertains to the publication of open-access tools that allow citizens to track climate change in their communities and compare these conditions across the map. Gathering academics and policy experts from around the world, the research activities of the Sub-Commission aim to make the EJC a hub for global thinking about environmental justice.

MONITORING

Working with Sub-Commission experts, the EJC is tasked with assessing the implementation of Europe’s

climate agenda to ensure that it lives up to the standard of environmental justice. In other words, the EJC behaves as an independent watchdog of the Green New Deal, providing assistance at the European level (to institutions like the Commission and its GPW programme) as well as at the member-state level, where Chairpersons liaise with national, regional, and local authorities.

RECOMMENDATION

Finally, the EJC will set out detailed recommendations for how to align broader policy frameworks with the principle of environmental justice. These recommendations will be largely addressed to the EnU and the wide set of issues that it addresses. But the advisory role of the EJC is not limited to Europe-based authorities. On the contrary, the EJC aims to advance the cause of environmental justice around the world by interfacing with multilateral bodies like the World Bank, IMF, ILO, and others to demand that environmental justice is a key component of international affairs and financial infrastructure.

Dimensions of Environmental Justice

The work of the EJC is split across the three dimensions of justice: International, Intersection, and Intergenerational. Chairpersons oversee work across all three areas, while Commission members and the Sub-Commission assisting them are divided according to expertise. A brief description of each area follows.

4.5.1 International Justice

The crisis of climate change is global, but its impact is not evenly distributed. Poorer countries today are paying the highest price — while bearing the least responsibility. Many small island states, for example, have lost their homes, their livelihoods, and their entire nations, despite contributing less than one percent of the world's greenhouse emissions.¹⁷⁴ The injustice is evident.

The goals of the International Justice wing of the EJC are therefore threefold. First, it aims to assess the relationship between EU policy and uneven environmental destruction, both between European countries and across continental borders.

Second, it aims to monitor the extent to which EU entities — both public and private — perpetuate this legacy of international injustice, offering recommendations for how to regulate their activities.

Third, carrying forward its principle of participation, it aims to provide a platform for front-line communities — many of them far beyond the sight of European regulators — to relay their priorities and participate in the development of these new regulatory frameworks.

This EJC will develop and apply its metrics of international justice across several key areas.

TRADE

As set out in the EnU, international trade remains a powerful driver of environmental breakdown at the global level, and a more focused assault on the environment of the Global South.¹⁷⁵

The EJC will assess areas of international trade that inhibit environmental justice and propose new directions for-

ward for its realisation, including:

- **Investment protections:** Trade agreements often protect foreign investors' rights to resource extraction and prevent governments from adopting renewable energy technology. The EJC will research conflicts between climate goals and investment protections and propose

legislation to strengthen the primacy of sovereign sustainability over foreign investment.

- **Liberalisation directives:** Frameworks like the WTO require countries to liberalize their trade policies to gain access to a wide swathe of goods. The EJC would develop a framework for discrimination between different types of goods,

depending on their environmental impact, and advocate for reforms of these global frameworks on that basis.

- **Government subsidies:** As in the India-US solar panel case — when the US government challenged India's right to subsidize renewable energy infrastructure — frameworks like the WTO allow countries to challenge government subsidies in ways that undermine sustainability.¹⁷⁶ The EJC will investigate whether a similar case can be made against subsidies for fossil fuel companies that keep extractive industries afloat.
- **Intellectual property:** Legislation like TRIPS actively prevent countries from adopting green technologies. The EJC will advocate for reforming these to facilitate tech transfer and encourage green innovation around the world.
- **Arms sales:** Violent conflict is a catalyst for environmental destruction. The EJC will research the impact of the arms trade and propose a way forward to ensure that Europe does not contribute to climate displacement through its military engagements.

MIGRATION

IPCC has long warned that one of the fundamental impacts of a changing climate would be the displacement of population,¹⁷⁷ with the International Organization for Migration reporting that between 25 million and one billion people might be forced to move because of the climate by 2050.¹⁷⁸ Recent events have provided clear evidence of their prescience: whole towns destroyed by extreme weather conditions; whole regions forced to relocate on account of droughts. Frontline communities in the Global South often bear a double brunt: first, the consequences of environmental destruction; second, the challenge of providing for displaced arrivals.

Yet these climate displaced persons are not formally recognized by our international institutions — let alone sup-

ported via international obligations.¹⁷⁹ In 2018, the UN finally adopted its Global Compact for Migration, which acknowledges the role of climate change in migration¹⁸⁰ — but the compact was voluntary and nonbinding. And even then, nine EU member-states either abstained or voted against its passage.¹⁸¹

EJC will consider migration a core component of international justice. It will develop the world's first comprehensive database on environmental migration. As noted by the Migration Data Portal, “the majority of existing surveys focus mainly on the links between migration and the environment as a driver, and are mostly qualitative in nature. More information is needed on the impacts of those movements on adaptation to environmental and climate change.” The EJC will fill this gap.

As part of this research effort, the EJC will assess the relationship between Europe's role in climate change and the rise in involuntary migration — both within the continent of Europe and in other parts of the world. The findings from this research will inform the regulatory framework of the EnU, as well as feeding into existing programmes conducted by agencies like UNHCR and IOM.

FINANCE

The current architecture of the international financial system serves to obstruct, rather than enable, environmental justice. The global epidemic of tax evasion, for example, is closely tied to environmental destruction as both cause and effect: it reduces the resources available for governments to address their urgent environmental concerns, and it provides a safe haven for resource extractors to smuggle their money without consequence.¹⁸²

The EJC would identify key barriers and propose new directions for reform, in areas like:

- **International Financial Institutions (IFIs):** Evaluation of existing debt agreements and how their condi-

tionality — including stipulations around the privatisation of assets and infrastructure, the imposition of austerity, and liberalisation of the financial sector — helps or hinders environmental justice.

- **Multinational Private Banks:** Research the role of financialisation in hastening environmental decline, and evaluating new risk parameters to ensure that private banks do not trample over the rights of small-scale farmers around the world.
- **Tax Justice:** Evaluate the connection between tax evasion and environmental injustice and advise EU institutions on how to redress it.

TRANSNATIONAL CORPORATIONS

The environmental toll of transnational corporations (TNCs) is well documented.¹⁸³ Yet there are few mechanisms for holding these TNCs to account, and even fewer for recognizing and giving voice to the communities affected by them.

The EJC will examine the role of Europe-based transnational corporations in deepening environmental injustice around the world and support the work of EU regulators to restrain them.

This includes researching the impact of so-called ‘regulatory dumping’ — the pursuit of low-protection regions by fossil fuel companies seeking to skirt their environmental obligations — and recommending new legislation that allows European authorities to sanction them for doing so.

The EJC will also help advise EU institutions on the viability of the UN Treaty on Transnational Corporations and Human Rights, and whether similar legislation can be introduced at the European level.

POLICY RECOMMENDATION

Revise Europe's international development policies to align with the priorities of the Common Food Policy.

Climate change is deepening inequality not only between countries — but also within them. Communities that have already been pushed to the margins of the economy are often at the frontline of the climate and environmental crises. They are impacted most heavily by air pollution, soil erosion, and extreme weather conditions — but they have the fewest resources to protect themselves from the phenomena.¹⁸⁴ As the IPCC note, “people who are socially, economically, culturally, politically, institutionally, or otherwise marginalised are especially vulnerable to climate change and also to some adaptation and mitigation responses.”¹⁸⁵

The Green New Deal for Europe aims to redress, rather than deepen, these injustices. Its investments are a vehicle for creating a more equal Europe, where all people enjoy a decent life and participate in their communities — regardless of age, ability, ethnicity, gender, or geography.

The EJC is tasked with evaluating intersectional justice in the context of a changing climate, creating a new space for frontline communities to voice their concerns and demands, and advising EU authorities on how best to respond. The work of the EJC will focus on several key areas of intersectional injustice:

HEALTH

The impact of the environmental crisis on our health is both direct and indirect.

The destruction of the environment directly affects our health when it contaminates our water, air, and food.¹⁸⁶ Recent years have yielded numerous cases in which corporations — seeking to cut corners, unconcerned about their surroundings — pollute their environments and devastate communities in the process.¹⁸⁷ Such impacts tend to be focused in lower-income areas with less visibility, and among vulnerable groups with less time to voice their concerns.¹⁸⁸

There is also an indirect impact. Climate change lengthens the transmission season and increase risk of disease, it increases temperatures that hurt crop yields and damage nutrition, and increases displacement from stable homes.¹⁸⁹ These impacts, too, are uneven.

To EJC aims to redress these health inequalities. It will take a holistic view of the relationship between health and climate, researching — for example — the connection between social inequalities, environmental destruction, and access to decent, healthy food, which can then

inform the agricultural investments of the GPW.

In this way, the health work of the EJC’s Intersectional Justice operation proposes fixes to existing EU policies in order to reduce health inequalities and improve healthcare provision in the context of climate change.

EMPLOYMENT

The guarantee of a decent job lies at the heart of the Green New Deal: a promise to address long-standing crises of unemployment and under-employment in parts of the continent that have long been neglected by EU economic and social policies.¹⁹⁰

But the introduction of a job guarantee will not resolve these inequalities overnight: the continent is riven with far too many inequalities of administration, capacity, and access.

The role of the EJC is to work both inside and out of the Green New Deal framework to redress employment inequality. It aims to identify barriers to decent employment in marginalised regions of Europe. It aims to monitor the implementation of the GPW programme to advance employment equality within

its remit. And it aims to develop recommendations for EU regulators to rebalance the European economy more broadly.

EDUCATION

Education is a barrier to entry in the green economy and the new opportunities it aims to provide in areas like research and development. Without extensive investments to rebalance education outcomes across the continent, the investments of the GPW programme could entrench, rather than reduce, economic inequality in Europe.

Intersectional justice in the Green New Deal means that communities who have been historically excluded from economic growth have new opportunities to participate in the green transition.

The EJC aims to assist EU authorities to deliver a more egalitarian and regionally balanced green economy by identifying the barriers to (green) education provision across Europe and making recommendations at European and member-state levels to redress them.

MOBILITY

One of the key mechanisms linking the environmental crisis and the economic crisis is mobility. The degradation of infrastructure — and the refusal to reinvest in it — has deprived communities of their ability to participate in an emerging economy that revolves increasingly around place. The Green New Deal aims precisely to address this long-standing inequality.

The EJC has two roles in ensuring intersectional justice in mobility. The

first is to monitor GPW investments so as to maximize inclusion, regardless of geography, ability, or identity. The other is to evaluate environmental regulations that may have the unintended consequence of hindering mobility for groups relegated to their margins.

POLICY RECOMMENDATION

Revise Europe's international development policies to align with the priorities of the Common Food Policy.

4.5.3 Intergenerational Justice

The consequences of environment changes are durable, creating inequalities that can last for generations. A single drought can, for example, displace an entire region, preventing its residents from accessing primary education for their children and profoundly impacting the socio-economic inheritance of their own children, in turn.

The EJC aims to redress these consequences — in both directions.

Looking toward the past, intergenerational justice means confronting the crimes of colonial plunder and resource extraction that have deprived current populations around the world of a healthy environment.

And looking toward the future, intergenerational justice means ensuring that generations to come do not suffer on account of our present consumption. We must leave a healthy planet for them to enjoy.

As UN General Assembly President María Espinosa has said, “Climate justice is intergenerational justice.” The EJC is tasked with driving Europe to deliver it.¹⁹¹

REPAIRING THE PAST

Europe bears immense responsibility for depriving communities around the world of their natural heritage and resource wealth. This is particularly true in countries of the Global South, where colonial expansion through dispossession was often considered state sport. These systems of colonial extraction were essential to the development of Europe as we know it, and to the high standards

of living it continue to enjoy. As Jason Hickel has noted, “Europe didn’t develop the colonies. The colonies developed Europe.”¹⁹²

The EU has already created tools to compensate for “victim’s rights”.¹⁹³ But these largely omit references to Europe’s role in resource extraction and land dispossession.

The EJC aims to rectify this omission by conducting research on this historical legacy and making recommendations

for how to redress it. The goal is to move beyond symbolic commitments to “anti-colonial action” to consider meaningful contributions to repairing the past in the form of infrastructure funding, technology transfers and resources for displaced communities.

One area of particular focus will be climate reparations. Despite the link between northern development and southern displacement, few international organisations have seriously con-

sidered measures to repair this damage and restore a sense of environmental justice. The EJC will be tasked with developing a proposal for the EU to account for its long centuries of colonial rule and pay out climate reparations to the affected communities.

PREPARING THE FUTURE

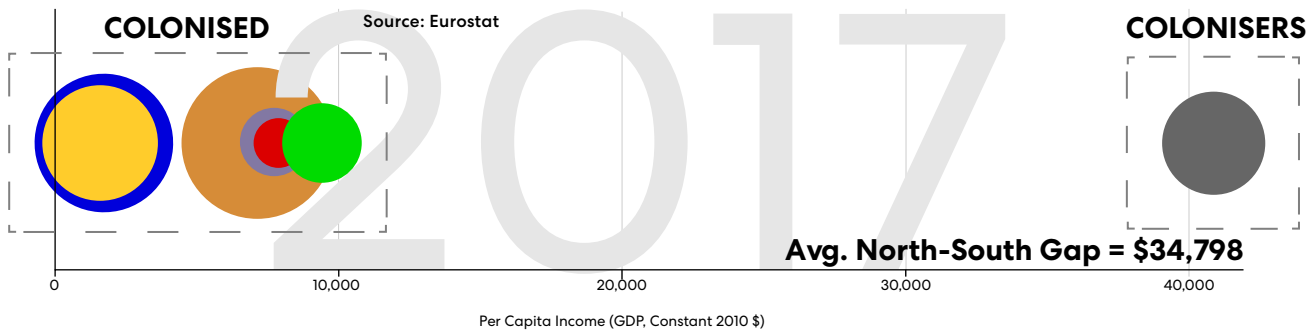
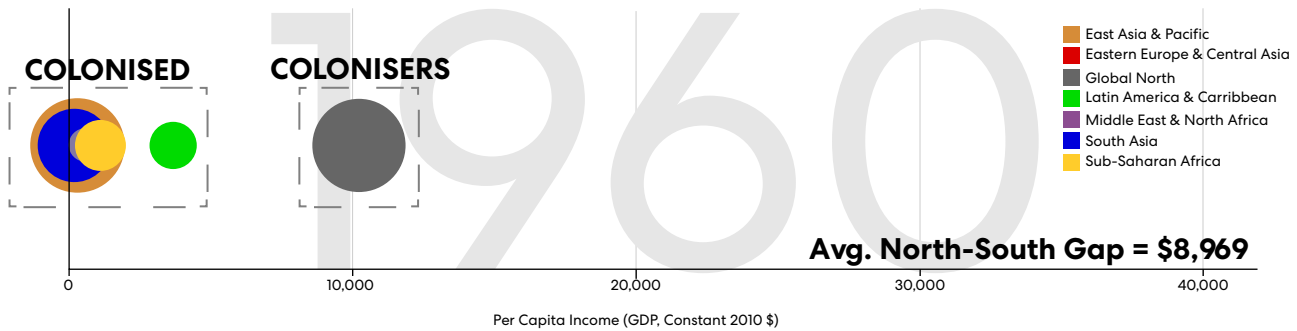
Future generations will suffer on account of their parents' disregard for

the environment that they will inherit.¹⁹⁴ This injustice is a product, in part, of a lack of legal recognition for generations that have yet to arrive. Young people around the world are beginning to rise up to challenge the 'adults in the room,' but European legislators have little understanding of how best to enshrine their right to a habitable world.

The role of the EJC is to recognize this right — and to furnish EU institutions with the tools to protect it. In particular, the EJC will evaluate Europe's

economic and environmental policies and their potential impacts on future generations. The EJC will consider an explicit legal protection for future generations, which entitles them to make claims on existing environmental policy. And it will propose changes to the discount rate that is used to inform investment decisions, adjusting down to zero discrimination against future generations.

Europe didn't develop the colonies. The colonies developed Europe.



Source: World Bank, Jason Hickel

FIGURE 7 - GLOBAL INEQUALITY FROM 1960 TO 2017
The gap between the global north and its former colonies has magnified.

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Climate engineering or ‘negative emissions’ technologies involve the removal of CO₂ from the atmosphere (CDR or GGR) or the deflection of sunlight before it reaches the earth’s surface (SRM).

Originally proposed as stopgap measures to cover an interim period where the impact of actual emissions reductions might be insufficient, they have — in the absence of the latter — increasingly entered the mainstream of IPCC discourse on mitigation pathways and long-term deployment.

This is an alarming development. The IPCC’s 2007 Assessment Report referred to mitigation techniques involving human interventions to lower actual GHG emissions through green technology, energy efficiency, improved land management and other means.¹⁹⁵

Now, as reported in *Science* in 2016, “Almost all the scenarios with a likely chance of not exceeding 2 degrees Celsius being considered by the IPCC assume that the large scale roll-out of ‘negative emissions’ technologies is technically and economically viable ... If we rely on negative-emission technologies and they are not deployed or are unsuccessful at removing CO₂ from the atmosphere at the levels assumed, society will be locked into a high-temperature pathway.”¹⁹⁶

This appendix outlines the main geoengineering options available, and explains why they are not an appropriate solution to the climate and environmental crises. Carbon Capture and Storage (or Sequestration)

CARBON CAPTURE AND STORAGE (OR SEQUESTRATION) (CCS)

CCS involves capture of CO₂ emitted by industrial processes (steel and cement production, chemicals and refining, and fossil fuel combustion for generating electricity. This is followed by compression/liquefaction, transport via pipeline and high-pressure injection into near-depleted oil and gas fields, saline aquifers, or ocean beds. Used mainly in combination with enhanced oil recovery (EOR), CCS is therefore interesting to the fossil fuel industry.

The technology is costly and challenging. Environmental hazards¹⁹⁷ include water depletion, toxicity and eutrophication. Its symbiotic relationship with EOR makes it questionable as a serious climate change response. Leakage of the injected fluid into water bodies has been reported,¹⁹⁸ which undermines any sequestration gains and raises concerns about water contamination. Reports of damage to rock formations and the activation of geological fracture zones¹⁹⁹ increase the questionability of this technique.

BIO-ENERGY CARBON CAPTURE AND STORAGE (BECCS)

BECCS involves capture and storage of CO₂ emitted by bio-energy use. It has taken centre stage in recent years as a key negative emissions technology and integral part of IPCC mitigation pathways. Virtually all climate change models projecting a future consistent with the Paris Agreement assume a key role for BECCS.

The “negative emissions” claim is based on the fallacy that bio-energy is in the first place carbon neutral, whereas Life Cycle Analyses (LCA) conclude otherwise, showing that many bioenergy processes lead to even more GHG emissions than the fossil fuels they replace.²⁰⁰

A vast amount of land will be needed to produce the necessary biofuel crops — more than 40% of all arable land, which is likely to exacerbate land-grabbing and conflict with food crops and food sovereignty²⁰¹ that has already and invariably followed the large-scale cultivation of biofuel feedstock.

Furthermore BECCS deployment could cause up to 10% reduction in global forest cover and biodiversity.²⁰² A recent study by the Potsdam Institute for Climate Impact Research shows that it involves high risks of transgression of planetary boundaries for freshwater use, land-system change, biosphere integrity and biogeochemical flows.²⁰³ Within safe boundaries, BECCS can compensate for less than 1% of current

global GHG emissions.

In addition, BECCS shares all the drawbacks of the injection and storage phase of CCS.

CARBON CAPTURE AND USE (AND STORAGE) (CCU OR CCUS)

CO₂ is extracted as in CCS but then fed to algae to produce biodiesel (whereby the gas will again be released) or reacted with calcified minerals (mineral carbonation)

In addition to sharing the drawbacks of the capture phase of CCS, lifecycle analyses indicate that CCU involves a questionable energy balance and the possibility of net increase in GHG emissions.

MASSIVE AFFORESTATION

Forests have multiple values as a source of natural capital: apart from absorbing carbon, they regulate soil and water levels and nutrients, protect biodiversity, improve resilience and adaptation capacity, and protect against desertification and erosion.

Afforestation is being promoted by governments and the private sector as a safe and cost-effective carbon sequestration technique. However, there are numerous setbacks to deploying massive afforestation in this way.²⁰⁴ Planted forests do not provide the benefits of natural ones. Emphasis on the carbon sink function of trees is leading to the plantation of vast monocultures of fast-growing, evergreen and often non-native species like palm, pine or eucalyptus, which are water-intensive, often involve intensive use of pesticides and fertilizers, and can lead to “green deserts” and degraded soils.²⁰⁵

Invasive species can spread to other areas where native species cannot compete. Moreover, the carbon sequestration capacity of trees is often unpredictable, being highly dependent on climate change and weather conditions and associated effects like pest infestations, drought and storms. And most importantly, forests are not permanent - their potential removal in the future,

whether due to manmade or natural causes, risks vast amounts of CO₂ being released into the air.

Proponents argue that tree plantations can put “marginal land” to good use, but marginal land is a vital source of livelihood for poor communities,²⁰⁶ who use it for subsistence farming, live-stock grazing and many other purposes. The quest for biofuel feedstock has already led to transgressions on marginal land.²⁰⁷ The expansion of monoculture plantations has been associated with increased poverty rates²⁰⁸ and the displacement of indigenous and other communities in the Global South.

Finally, the number of trees needed to even put a dent in CO₂ emissions would clash with food and biofuel crops.²⁰⁹ While the benefits of forest protection cannot be overestimated, the idea of deploying massive afforestation as a substitute for achieving significant cuts in GHG emissions is not a sound one.

DIRECT AIR CAPTURE (DAC)

Experiments have shown it is possible to suck carbon dioxide directly from the air, converting it into fuel pellets or storing it underground.²¹⁰ As with CCS, the fossil fuel industry is attracted to DAC because the captured CO₂ can be used for EOR.

As of now, the technology is prohibitively expensive and not commercially viable. It is also energy intensive and some have therefore proposed that it be powered by nuclear energy.

OCEAN FERTILISATION (OF)

Phytoplankton consume CO₂ and drag it to the bottom of the ocean when they die. OF consists of sowing the ocean with iron filings or other sources of iron to stimulate phytoplankton growth and thereby enhance carbon sequestration. Experiments have shown that this creates large blooms.

However, scientists worry about unintended impacts. Die-offs of plankton, for example, use up oxygen, which could create massive “dead zones” in the oceans, something already on the rise.²¹¹ Too much phytoplankton can disrupt the marine food web and create toxic algal blooms. Surplus iron or urea can cause mineral and nutrient imbalances in an already stressed and acidic ocean environment.²¹²

ENHANCED WEATHERING (EW)

Natural weathering of rocks — a chemical process — removes about one billion tonnes of CO₂ from the atmosphere every year, about two percent of total man-made CO₂ emissions.²¹³

EW refers to a technological acceleration of the process by spreading mined olivine (magnesium iron silicate) on beaches (where wave action disperses it into the sea) or on land. The idea is to sequester additional carbon in the newly formed rock deposit in the form of magnesium carbonate.

But carbon uptake levels are relatively unknown, as are the effects of large-scale dumping on ecosystems. Massive mining operations required to extract sufficient olivine (possibly thousands of times greater than the current scale) are likely to be expensive and have adverse effects on ecosystems and local populations.²¹⁴

The marine variation of EW involves adding chemical carbonate to the ocean to increase alkalinity and therefore carbon uptake. The dissolution rates of these minerals and the costs of procuring a sufficient amount raise major concerns, as does the increased mining activity involved and the impact on marine ecosystems.

BIOCHAR

A method of converting biomass into charcoal and mixing this into the soil to store the burnt carbon. But field trials showed that biochar-treated soils were less effective in sequestering carbon than untreated soils: the added carbon stimulates microbes to release more CO₂. Claims that addition of biochar enhances agricultural productivity has not been consistently demonstrated.

2 SOLAR GEOENGINEERING OR SOLAR RADIATION MANAGEMENT (SRM) OPTIONS

All options involve modifying the planet’s radiative balance — likely to alter the hydrological cycle and weather patterns, potentially threatening food and water access for millions of people and disturbing the planet’s ecological balance in unpredictable ways. Other significant potential dangers include termination shock, technology lock-in, and significant changes in weather patterns.

STRATOSPHERIC AEROSOL INJECTION (SAI)

The prevailing SRM technology, SAI involves injecting or spraying tiny reflective aerosol (sulphate) particles into the stratosphere—possible with balloons, aircraft or through giant tubes in order to reflect sunlight back into space. Potential dangers (additional to those common to SRM) include ozone depletion.

CLOUD MODIFICATION: BRIGHTENING, THINNING, INCREASING COVER

Scientists have found ways to alter clouds to deflect or absorb sunlight. One way is to brighten the white, billowy marine clouds by increasing cloud condensation nuclei by shooting or spraying salt or salty seawater into the clouds. Another is to thin out cirrus clouds, which absorb more sunlight than they reflect. But the consequences are unpredictable and could produce drought or floods, or even the opposite effect (heating).

SURFACE ALBEDO MODIFICATION

Proposals include genetically engineering crops with reflective leaves and “whiting out” the earth’s surface by covering the deserts with white polyethylene sheets, painting roofs, pavements and mountaintops white, covering Arctic ice with a thin film, and clearing boreal forests to increase reflectivity. All entail significant risks for the environment and biodiversity.

SPACE SUNSHADES

Involves the launching of trillions of tiny spacecraft over the planet to create an artificial cloud. Could in theory divert 10% of sunlight back into space. The technology involved is daunting.

SPACE MIRRORS

Space mirrors positioned in exactly the right place could reflect 1-2% of sunlight back into space. But computer models suggest mixed results²¹⁵ the technology is prohibitively expensive and, so far, also impossible.

DRAWBACKS

Each of these options has its own specific problems, but all share the following drawbacks and implications:²¹⁶

- All are end-of-pipe approaches, aiming to reduce GHG levels in the atmosphere without reducing GHG emissions. Their promoters maintain they do not preclude urgent climate action. In reality they create a false sense of security, providing a convenient escape for climate deniers and governments seeking to avoid the political costs of actual emissions reduction. Stepped up research and development on geoengineering is diverting resources and funding away from real solutions. It is delaying the transition to a carbon free economy and being used to justify eased restrictions on high polluting industries. Further entrenchment of polluting industries combined with the new techno-fixes could have us permanently locked into a geoengineered world with continuing GHG emissions. This unrealistic attempt to “buy time” has been described as intergenerational injustice²¹⁷ because future generations will have to deal with the consequences, as captives of geoengineering and victims of an even harsher climate.
- Each of these techniques would have to be deployed on a massive scale to have an impact on global climate. Other unintended impacts could also be massive and will necessarily transcend national boundaries.
- Geoengineering plays with poorly understood and complex nonlinear dynamical systems. There are countless risks and uncertainties due to incomplete knowledge and data, mechanical failure, human error, changes in political and financial circumstances, and increase in unpredictable natural phenomena (volcanic activity, earthquakes, tsunamis etc.).
- All climate engineering options have many potential negative environmental impacts ranging from depletion of biodiversity, soil and water to disturbing the entire planet’s ecological balance by blocking sunlight.
- Because of the scale required and the nature of geoengineering technologies, their application and its impacts on ecosystems and people are likely to be irreversible.
- The powerful countries and corporations primarily responsible for current and historical GHG emissions are the main investors in geoengineering and related intellectual property. While these powers dominate international climate politics, the majority of impacts of geoengineering will be experienced in the Global South. When the creators of the problem are managing the solution, the interests of the less powerful are likely to be ignored.
- Geoengineers are applying for and being awarded patents for the technology, and some are pushing to include geoengineering options in carbon trading schemes - leading to the horrifying prospect of private monopoly rights on modifying the climate.
- Geoengineering technology evolved from weather manipulation techniques like cloud seeding operations in the Vietnam war, which led to the ENMOD treaty prohibiting the hostile use of weather manipulation - but this has remained on the defence agenda of the US and other countries for decades.²¹⁸
- Deployment of geoengineering violates UN treaties and rulings like ENMOD, the Convention on Biological Diversity (CBD) and the London Convention/Protocol.

THE CLIMATE

Since 1988, humanity has emitted half of all historic GHG emissions.²¹⁹ Over that same period, concentrations of CO₂ in the atmosphere increased from around 350 parts per million to over 410 — the highest level in 800,000 years and over 130 above the pre-industrial average.²²⁰

The 2015 Paris Agreement seeks to limit global heating to below 2 degrees Celsius, and to pursue efforts to limit the temperature increase to 1.5 degrees Celsius by 2050. The IPCC Special Report on 1.5 degrees Celsius (IPCC SR 1.5) was commissioned under the Paris Agreement to consider the implications of and pathways for 1.5 degree Celsius heating — a scenario that had not been explored in previous IPCC reports.

IPCC SR 1.5 says that we have under 12 years to limit temperatures to 1.5 degrees Celsius — a level that will already reflect a different world. Extreme

term, with agriculture, forestry and other land use (AFOLU — a term that primarily relates to ecosystems and afforestation) providing “negative emissions” to draw down atmospheric CO₂ and keep global temperatures under 1.5 degrees Celsius.

Scenario Pathways 2, 3 and 4 outline delays in climate action, before requiring the massive expansion in the use of environmentally devastating and unreliable technologies such as bioenergy with carbon capture and storage (BECCS) to eventually remove CO₂ from the atmosphere to meet the 1.5°C target by 2050.²²² These scenarios might even mean “overshoot” — that is, going temporarily above 1.5°C for a few years or decades while humanity removes atmospheric CO₂.

While it is theoretically possible to limit warming to 1.5 degrees Celsius without the deployment of BECCS, this would require dramatic changes in lifestyles and economic systems — and

threatened, with up to one million species facing extinction, many within decades.²²³ It cites five key factors, all of which centre humanity’s role in the destruction of natural systems:

- **Land and water use:** A third of the world’s land is currently used for agriculture and livestock. Between 1980 and 2000, approximately 100 million hectares of tropical forest was cut down.
- **Exploitation:** Hunting and poaching.
- **Climate breakdown:** A heating planet becomes increasingly inhospitable to species. Warmer oceans hold less oxygen, and rising temperatures kill animals unable to cope, for example.
- **Pollution:** From the increasing toxicity of bodies of water to the contamination of the oceans with plastic, human pollution is profoundly affecting the natural world.
- **Invasive alien species:** When a new animal species is introduced to a habitat in which it has no natural predators, it can quickly displace native species and disrupt local ecology, threatening local life.

The IPBES report, like the IPCC report for climate, links these changes to the global economy, which in five decades has “grown nearly 4-fold [while] global trade has grown 10-fold, driving up the demand for energy and materials. A variety of economic, political and social factors, including global trade and the spatial decoupling of production from consumption, have shifted the economic and environmental gains and losses of production and consumption...”²²⁴

Linked to, but extending beyond biodiversity loss, is environmental breakdown more broadly. Soil degradation, ocean acidification, air pollution and other sources of environmental breakdown must be recognised in a transition to a sustainable economy, because they have a profound effect on humanity’s future.

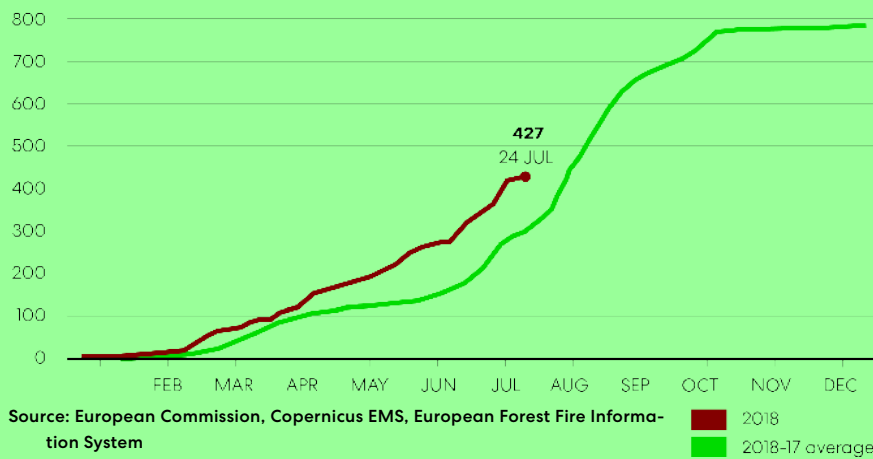


FIGURE 8 - AVERAGE NUMBER OF FIRES IN EU COUNTRIES 2008-17 average compared with 2018.

droughts, storms, wildfires, droughts and deadly heatwaves will increase in frequency and intensity. In about 50 years, such heatwaves will become a regular occurrence at current rates of warming.²²¹

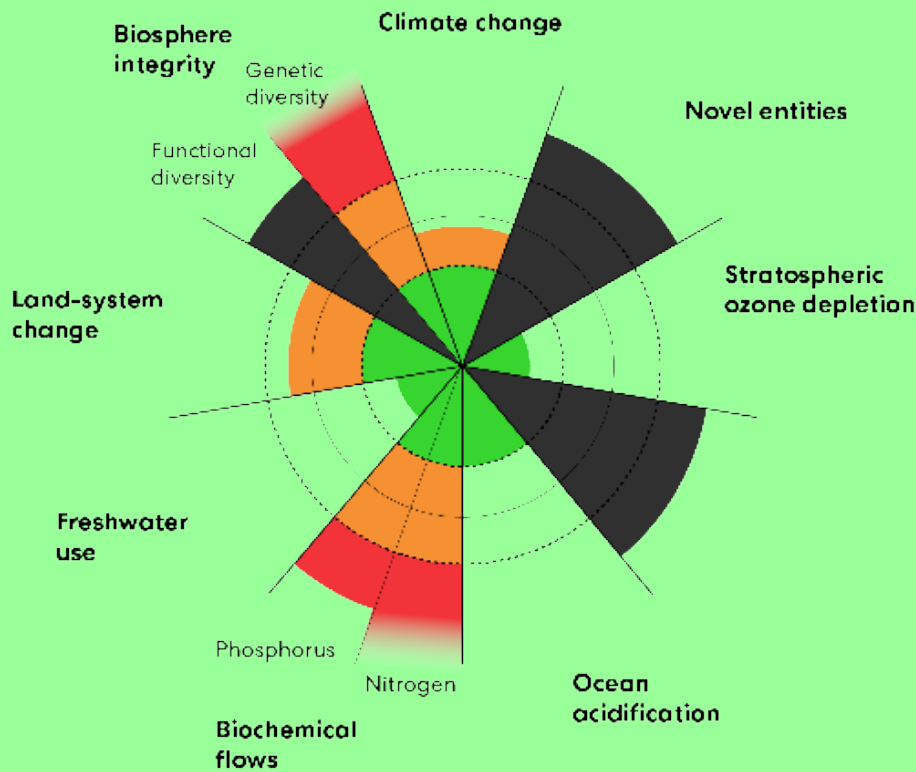
Published in 2018, IPCC SR 1.5 outlines four Scenario Pathways for 1.5 degrees Celsius of heating. Scenario Pathway 1 is the most ambitious, envisioning a rapid transformation and steep emission reductions in the near-

none of the scientific models currently assumes such changes.

BIODIVERSITY AND ENVIRONMENT

The Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services (IPBES), the body that assesses the state of biodiversity around the world, warns that about 25 percent of species in assessed animal and plant groups are now

FIGURE 9 - PLANETARY BOUNDARIES FRAMEWORK
 Nine planetary boundaries within which we can continue to develop.



Source: Stockholm Resilience Centre

- Beyond zone of uncertainty (high risk)
- In zone of uncertainty (increasing risk)
- Below boundary (safe)
- Boundary not yet quantified

The 'planetary boundaries framework', developed by the Stockholm Resilience Centre defines the 'safe operating space for humanity' across key natural systems, as shown in the figure above. The planetary boundaries framework uses three central concepts to describe the risks of human impacts on natural systems:

- **Threshold:** A 'tipping point' can be triggered if human activity pushes a natural system beyond the threshold of its stable state, causing an abrupt and possibly irreversible change in the functioning of the system. One example is the melt-

ing of permafrost, which releases huge amounts of GHG gases into the atmosphere, triggering runaway global heating. Those systems most at risk of passing a threshold are marked in red in the figure above.

- **Boundary:** An estimate of the 'safe distance' from a threshold. Systems exceeding boundaries and entering an unsafe space are marked in yellow, while those yet to breach the safe boundary are marked in green.
- **Uncertainty:** The behaviour of natural systems is highly complex and uncertain. For example, it is impossible to quantify and anticipate the point at which some or many nat-

ural systems could pass a tipping point. So, the framework uses three zones — safe, increasing risk and high risk — to give an overall indication of the health of natural systems.

Since any transgression of these planetary boundaries can have catastrophic consequences for both people and planet, the framework offers a valuable tool for policymakers looking to base legislation on both science and precaution.

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