The Green New Deal for Europe

Blueprint

For Europe's Just Transition

Edition II

Dec 2019

Contents

Green New Deal Policy Checklist

Green Public Works

Policy No.	Section	Description
1	3.1	Establish the Green Public Works (GPW), a public investment agency that will channel Europe's resources into green transition projects around the continent.
2	3.2.2	For all EU institutions, switch to a Genuine Progress Indicator system of accounting rather than Gross Domestic Product (GDP).
3	3.2.2	Introduce a new Regulation to clarify that the European Central Bank must prioritise employment, social progress and environmental protection.
4	3.2.2	Abandon the dominant model of public-private financing and invest in the transition directly.
5	3.2.2	Adopt a multi-stakeholder governance model for the European Investment Bank (EIB), ensuring that decisions are made with input from scientists, activists, country representatives and other key groups.
6	3.2.3	Fund the green transition by mobilising a coalition of Europe's public banks — led by the European Investment Bank — to issue green bonds to raise at least five percent of Europe's GDP in funding that can be channelled into the GPW.
7	3.2.4	Establish multilateral working groups on the green transition at the European System of Central Banks.
8	3.2.4	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.
9	3.3.1	Spend GPW funding on guaranteeing decent public jobs to all European residents who seek one. These jobs will be based on a three-day weekend or four-day working week with lower overall working hours. They will provide workers and communities of democratic control over their workplaces. And they will be local — ensuring that all European residents can earn fair wages in their local communities.
10	3.3.1	Use the GPW to fund an income guarantee for workers in fossil-fuel industries.
11	3.3.1	Fund a Care Income to compensate activities like care for people, the urban environment, and the natural world.
12	3.3.2	Devolve investment decisions made under the GPW to national, regional, and municipal government levels.
13	3.3.2	Allocate distinct lines of funding within the GPW for experimentation in increasing public participation in investment decision making — with a view to entrenching greater participation in local governance.
14	3.3.2	Simplify funding application and reporting processes, and include a free-to-use support service, ensuring greater participation and access of grassroots civil society organisations in investment decision making.
15	3.3.2	Provide incentives for authorities to set up local GPW agencies, to help steer investment decisions and provide technical support.
16	3.3.2	Tie all GPW funding to strict public-procurement criteria that shift public spending towards green materials, fossil-free energy, and community wealth building. Issue funding to authorities that subscribe to a shared set of fundamental principles, including democracy, transparency, and sustainability.

Policy No.	Section	Description
17	3.3.2	Fund 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.
18	3.3.3	Develop a GPW Tracking Tool to allow for public scrutiny and monitoring of GPW-funded projects.
19	3.3.3	Introduce a new EU Public Integrity Authority with the power to investigate and refer violators of European common standards and national regulations to national enforcement agencies.
20	3.3.3	Invest in the European Anti-Fraud Office to reinforce capacity to investigate abuse of public money across the EU.
21	3.4.1	Fund a major buy-back programme for vacant housing stock, repurposing it for public use wherever practicable.
22	3.4.1	Refurbish and retrofit 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.
23	3.4.1	Accommodate needs created by the changing climate in all new housing, which will be safe and non-toxic, and designed with the participation of the communities that will ultimately use it.
24	3.4.1	Ensure that construction processes are accountable to workers and communities. New buildings will be suitable given the location and nature of existing structures, avoid creating damp or other hazards through unsuitable retrofits, and minimise emissions of greenhouse gases and other environmental breakdown.
25	3.4.2	Establish a 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.
26	3.4.2	As part of the Mobility Cohesion Fund, make all municipal public transport around the continent free at the point of use or available at a low cost that incentivises its use.
27	3.4.2	To ensure maximum mobility for all Europeans — including persons with disabilities — fund a fleet of public taxis and car-pooling services.
28	3.4.2	Invest in an integrated, efficient high-speed rail system using sustainably produced energy, combined with a kerosene tax on intra-EU flights, to eventually replace air travel within the continent.
29	3.4.2	Support the public buy-out of utilities companies across EU member states.
30	3.4.2	Fund projects and organisations engaged in cooperative approaches to socio-digital innovation, such as community-owned internet service providers.
31	3.4.2	Create a democratically-controlled European Data Commons to unlock the power of aggregated data for the common good, while safeguarding privacy, individual sovereignty, security and anonymity.
32	3.4.3	Introduce a European Health and Care Standard, a minimum standard for public healthcare across the continent. Make GPW funding available to parts of Europe that fall below it.
33	3.4.3	Fund a Europe-wide Training Guarantee, supporting opportunities for jobs training across the continent.
34	3.4.3	Invest in shared public services across the continent — from public parks to childcare centres.
35	3.4.4	Support the emergence of workplace democracy across the continent, focusing investment on worker cooperatives and community-led projects based on municipal or local ownership.
36	3.4.5	Invest in establishing the Green Horizon 2030 research and development programme.
37	3.4.5	Ensure that any technologies or techniques developed under the Green Horizon 2030 programme are open source and devised in collaboration with other countries to support the emergence of sustainable economies across the globe.
38	3.4.6	Make GPW transition funding available to firms that meet a high standard of both sustainability and worker empowerment.

Policy No.	Section	Description
39	3.4.7	Establish the Europe Award, a prize for firms that meet the principles of the Green New Deal for Europe and make great strides towards sustainability and workplace democracy.
40	3.4.8	Channel investments towards reinvigorating Europe's rural communities, supporting environmentally-sustainable food production across the continent.

Environmental Union

Policy No.	Section	Description
41	4.2.1	Declare a climate and environmental emergency in the EU and commit to continuously updating targets to align with the scientific consensus.
42	4.2.2	Introduce legislation mandating that Europe's economies operate within the planetary boundaries.
43	4.2.2	Base legislation on detailed data collection on the health of natural systems and new targets for biodiversity across the EU — which must be gathered with a view to informing the legislative process.
44	4.3.1	Replace the EU emissions trading scheme with a fee-and-dividend system, after piloting the new model on a small scale and with the participation of Europe's residents.
45	4.3.1	Introduce legislation to shut down tax havens, which deprive the European public of vital funds that must be mobilised in support of the transition.
46	4.3.1	Introduce 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.
47	4.3.2	Introduce a new 'Euro 7' vehicle emissions standard to prohibit the production of fossil fuel vehicles. This will prohibit dividends for shareholders, or pay for directors of corporations who fail to comply after a transitional period.
48	4.3.2	Pass a new Public Enterprise Directive to codify the right of EU member states and regional states to create golden shares in manufacturing companies to decarbonise production.
49	4.3.2	Amend the Railways Directive to electrify all rail in Europe.
50	4.3.2	Legislate to collect data and phase out all aeroplane flights with comparable times to rail alternatives.
51	4.3.2	Renegotiate the International Convention for the Prevention of Pollution from Ships to require decarbonisation of fleets to limits of available technology.
52	4.3.2	Negotiate a new International Convention for the Elimination of War Industry to free countries around the world to invest in the fight against climate damage.
53	4.3.3	Encourage taking energy utilities back into public ownership using the Open Method of Coordination and require public voting rights in public utilities.
54	4.3.3	Amend the Electricity Directive, Renewable Energy Directive, and Gas Directive to require 100 percent clean and sustainable energy generation.
55	4.3.3	Introduce robust fossil fuel subsidy reporting standards under the NECP.
56	4.3.3	Link GPW funding to fossil fuel subsidy withdrawal during a transitional period — ensuring that no taxpayer shoulders the burdens of the transition, particularly in fossil-fuel dependent countries.
57	4.3.4	Entrench durability and sustainability at the heart of European manufacturing. As part of that, enhance consumer rights to products of lasting and durable quality, while enshrining in law a right to repair and recyclability.
58	4.3.4	Introduce a new Supermarkets and Stores Directive to require traffic light labelling for carbon and nutrition, no unnecessary plastic, decarbonising transport, a living wage for agricultural workers, and effective enforcement.
59	3.2.1	Introduce new 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.

Policy No.	Section	Description
60	4.3.5	Require companies to account for climate risks, and reserve capital fossil fuel assets, on the assumption of paying full compensation for damage caused.
61	4.3.5	Fast-track progress of the Technical Working Group on sustainable finance, and incorporate the taxonomy of social and green investments into a new, punitive prudential framework.
62	4.3.5	Building on the new taxonomy, make emergency amendments to Europe's prudential rules to penalise investments in non-renewables. In addition to introducing a new 'brown penalising factor' for banks and insurers, extend the same principle to securities financing transactions, introducing 'brown penalising' margins and haircuts.
63	4.3.5	To safeguard depositors, legislate for the separation of commercial and investment banking, as well as robust and mandatory new disclosure requirements on non-renewable investments.
64	4.3.5	Democratise finance through an Economic Democracy Directive that empowers people to exercise control through elected representatives over all voting rights attached to investments on their money.
65	4.3.5	Expand the mandate of Europe's financial regulators to monitor progress against climate, environmental and social indicators — and to support the smooth implementation of the new requirements.
66	4.3.5	Entrench sustainability within all firms, amending the Company Law Directive to codify a duty on directors to invest in renewable and sustainable energy, transport, buildings and other practices, with multiplying damages for delay, enforceable by investors, employees, creditors and representative environmental groups.
67	4.3.5	Empower businesses and others to make transparent agreements to eliminate greenhouse gas emissions, waste, and pollution exempt from competition rules.
68	4.4.1	Make agricultural subsidies conditional upon increasing 'ecological focus areas' with forests, meadows and rewilding, from five percent to 20-50 percent of farmed land.
69	4.4.1	Make agricultural payments conditional upon sustainable land practices, including eliminating all unnecessary tilling, fertilisation, pesticides, and machinery, to prioritise retention and reduction of carbon.
70	4.4.1	During a transitional period, withdraw subsidies for big farming corporations and businesses entirely upon the completion of restoration in the natural environment — redirecting the funds towards sustainable food production.
71	4.4.1	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.
72	4.4.2	Terminate all Investor State Dispute Settlement agreements, and introduce the right of communities and democratic representative groups to bring claims to enforce trade rules.
73	4.4.2	Renegotiate the World Trade Organisation rules to include human rights, including the right to the benefits of science, a clean environment and labour standards.
74	4.4.2	Recalibrate EU trade rules to support diversified, self-sustainable economies in Europe and around the world, according to the principle of decarbonisation.
75	4.4.3	Revise Europe's international development policies to align with the priorities of the Common Food Policy.
76	4.4.4	Recognising that environmental destruction is a threat to human and non-human life, introduce an Environmental Abuse Directive to codify the civil wrong for contributing towards climate and environmental damage, with personal and punitive liability for those who profit from pollution.
77	4.4.4	Recognise that climate damage is criminal damage, and that ecocide is also a crime.
78	4.4.4	Reorient international criminal law to recognise climate damage that amounts to ecocide is a 'crime against humanity'.

Environmental Justice Commission

Policy No.	Section	Description
79	5.1	Establish an Environmental Justice Commission to monitor implementation of the programme along the dimensions of international, intersectional and intergenerational justice.
80	5.2.1	Ensure that the EJC is guided by principles of equal distribution, recognition, and participation of communities across Europe.
81	5.2.2	Structure the EJC across four tiers, from Chairpersons elected to represent EU member-states down to People's Panels that inform the EJC's work.
82	5.2.3	Empower the EJC to investigate issues pertaining to environmental justice and propose recommendations to legislative bodies both inside Europe and around the world to address them.
83	5.3.1	The EJC should investigate the international dimension of environmental justice, ranging from trade relations to the rules of the game for transnational corporations.
84	5.3.2	The EJC should address intersectional inequalities inflicted by the environmental crisis and its variable impact on communities in Europe.
85	5.3.3	The EJC should pay particular attention to the challenge of intergenerational justice — both looking addressing past injustices and promoting tools to ensure that future generations inherit a habitable world.

Executive Summary

Europe today confronts three overlapping 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. And the third is a crisis of democracy. Across the continent, people are disconnected from the locus of political decision-making not only in Brussels, but also in the communities where they reside.

These crises are 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 — over and above the democratic needs expressed in communities across Europe — has constrained our capacity to respond 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 a comprehensive policy package charting a course through Europe's just transition.

The Green New Deal for Europe comprises three distinct institutions, summarized in the sections that follow.

- The Green Public Works (GPW) is an historic investment programme to kickstart Europe's just transition.
- The Environmental Union (EnU) is a package of legislation 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.

But it is not enough to propose new policies and wait around for European leaders to heed their wisdom.

That is why this Blueprint also sets out the pathways to a Green New Deal for Europe, showing how communities and grassroots organisations can mobilize to make this vision a reality.

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 members of the community 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 temperatures — 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 trans-

port 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 policymakers 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' to allow for the democratic ownership and control 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 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 offence. 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.

Environmental 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) People's 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 International Panel on Climate Change (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." 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, Education, 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 those who live in Europe are included in the green transition.

The consequences of environmental changes are durable, creating inequalities that can last for generations. The EJC 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 countries for past wrongs, including through reparations that distribute funds and resources to front-line communities affected by centuries of colonial rule and the legacies of extraction and exploitation it left behind.

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.

Forewords

By Ann Pettifor

For too long, European environmentalists have treated the ecosystem as almost independent of the international economic system based on deregulated, globalised finance. A system that operates beyond the reach of regulatory democracy, beyond the reach of national and regional borders — and that uses 'easy' if costly credit to fuel consumption and production, and to extract assets from the ecosystem. A system operated by unaccountable individuals and corporations. One that acts as if there were no limits to the exploitation of nature and labour.

This report is a blueprint for bringing about an urgent, system-wide reorganisation within a short time period. For society to regain public authority over the international monetary system, to subordinate it to the interests of society and the ecosystem. The Green New Deal for Europe is a giant step in achieving that system change.

We can — and to survive we must — transform the failed system of financialised capitalism that now threatens to collapse earth's life support systems, and with them, human civilisation. We must replace it with one that respects boundaries and limits; one that nurtures soils and aquifers, rainfall, ice, the pattern of winds and currents, pollinators, biological abundance and diversity. A system that delivers social, political and economic justice.

> "For society to regain public authority over the international monetary system, to subordinate it to the interests of society and the ecosystem. The Green New Deal for Europe is a giant step in achieving that system change."
>
> *Ann Pettifor*

We know that in the ten years or so that the UN's scientists believe are left to us, it is possible to achieve such a transformation. One reason change is achievable is this important fact: just 10 percent of the global population is responsible for 50 percent of total emissions. Tackling the consumption and aviation habits of just 10 percent of the global population should help drive down 50 percent of total emissions in a very short time. This understanding helps us grasp the rate and scope of what is possible if we genuinely believe climate breakdown threatens human civilisation and the natural systems on which we depend.

Our confidence should stem from our knowledge of human genius, empathy, ingenuity, collaboration, integrity and courage. Second, from an understanding of our economic system, and in particular of our money and monetary systems. We know that it is possible to transform the globalised financial system and make finance possible for the huge task of protecting the ecosystem, and ending social injustice, because we have done it before — in the relatively recent past.

The Green New Deal is inspired by President Roosevelt's New Deal because his administration unilaterally dismantled the gold standard — the globalised financial system of his day — and stripped Wall Street of its power to dictate economic policy. Once the elected government was in the driving seat of the economy, and Wall Street was made servant to the interests of the people and of nature, it became possible to resolve the banking crisis of that time; to end the Great Depression; to raise finance and use fiscal policy to create jobs and income and end inequality.

Most importantly, it became possible to address the ecological crisis of that day: the 'dust bowl'. The administration did so by hiring workers to plant three billion trees, slow soil erosion on 40 million acres of farmland, build 13,000 miles of hiking trails, and develop 800 new state parks.

That is the potential power of the Green New Deal for Europe. It rests on the understanding that finance, the economy and the ecosystem are closely intertwined, and that transformation of the economic system is essential to the transformation of the ecosystem.

With confidence, courage and hope we can tackle climate breakdown, restore biodiversity and save the planet. This report lays down the steps we Europeans must take to achieve that goal.

December 2019

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 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."
>
> *Bill McKibben*

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

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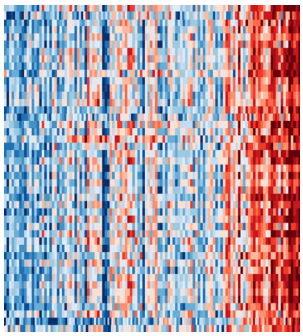
Introduction to the Green New Deal for Europe

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.



Europe today confronts three overlapping crises — all 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 been particularly devastating for women, children, people with disabilities and communities of colour. And it has starved Europe of investment in public 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.

The third crisis, then, is a crisis of democracy. Across Europe, people report a profound sense of distrust in political institutions — according to Eurobarometer, only 42

1 M. Förster, A.L. Nozal and C. Thévenot, 'The Social Divide in Europe,' OECD Centre for Opportunity and Equality, 2017, https://www.oecd.org/els/soc/cope-divide-europe-2017-background-report.pdf (accessed 31 July 2019).
2 Emilio Di Meglio et al. (eds), 'Living Conditions in Europe', Eurostat, 2018, https://ec.europa.eu/eurostat/documents/3217494/9079352/KS-DZ-18-001-EN-N.pdf/884f6fec-2450-430a-b68d-f12c3012f4d0 (accessed 15 July 2019), p. 26; C. Serme-Morin, 'Homeless in Europe - Increases in homelessness', FEANTSA, Report, 2017, https://www.feantsa.org/download/increases-in-homelessness4974810376875636190.pdf (accessed 15 July 2019), p.2.
3 N. Grevenbrock et al, 'Germany - Selected Issues', International Monetary Fund, 2017, p.24.
4 International Monetary Fund, 'IMF Fiscal Monitor: Capitalizing on Good Times, April 2018', IMF Fiscal Monitor, 2018, https://www.imf.org/en/Publications/FM/Issues/2018/04/06/fiscal-monitor-april-2018, (accessed 1 August 2019).
5 P. Panagos et al., 'The new assessment of soil loss by water erosion in Europe', Environmental Science & Policy, vol 54, pp. 438-447. See also 'Agri-environmental indicator - soil erosion', Eurostat, November 2018, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Agri-environmental_indicator_-_soil_erosion (accessed 1 August 2019).
6 N. Christidis, G. S. Jones and P. A. Stott, 'Dramatically increasing chance of extremely hot summers since the 2003 European heatwave', Nature Climate Change, vol 5, 2015, pp. 46–50.
7 IPBES, IPBES Secretariat, Global assessment report on biodiversity and ecosystem services of the Intergovernmental Science- Policy Platform on Biodiversity and Ecosystem Services: 2.2.5.2.1 Ecosystem structure', Bonn, Germany, 2019, https://www.ipbes.net/global-assessment-report-biodiversity-ecosystem-services (accessed 15 July 2019).
8 Ibid., 2.2.5.2.4, 'Species populations'.
9 Earth system research laboratory, 'Trends in atmospheric carbon dioxide' https://www.esrl.noaa.gov/gmd/ccgg/trends/ (accessed 10 July 2019); 'Trends in atmospheric methane' https://www.esrl.noaa.gov/gmd/ccgg/trends_ch4/(accessed 10 July 2019); 'NOAA's Annual Greenhouse Gas Index (An Introduction)' https://www.esrl.noaa.gov/gmd/aggi/ (accessed 11 July 2019).
10 D. Shindell et al., 'Quantified, localized health benefits of accelerated carbon dioxide emissions reductions', Nature Climate Change, 8(4), 2018, p. 291.
11 D. Coady et al., 'How Large Are Global Fossil Fuel Subsidies?', World Development, vol 91, 2017, pp. 11-27.
12 IPBES 2019.

per cent of people trust the EU; only 34 trust their national government[13] — and a sense of disenfranchisement in their economic lives. The institutions of the European Union, in particular, continue to prize the wisdom of technical managers over the needs of the communities that comprise its Union. The voices of front-line communities, bearing the brunt of environmental breakdown, are rarely heard in Brussels.

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,[14] disastrous wildfires tear through its towns and cities,[15] severe droughts strain its harvests,[16] and scores of people spill into the streets to demand that Europe's legislators respond to the crisis at hand.

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.[17] At the same time, just 100 companies are responsible for 71 percent of all global emissions.[18] The aggressive lobbying tactics employed by these companies to persuade European legislators to their cause – over €250 million in Big Oil and Gas lobbying since 2010 alone[19] — illustrate the close connection between Europe's three overlapping crises.

A movement is growing to secure a better future. In cities across the continent, students are striking to demand radical action to end the environmental crisis. Their activism has been infectious. Today, in large parts of Europe, voters consider the climate and environmental crises their top priority.[20]

Europe's political establishment has strived to appear sympathetic to the striking students, and to move swiftly to address their concerns. European Commission President Ursula von der Leyen has pledged to deliver a 'green deal,' with a commitment to make Europe "the world's first climate-neutral continent." "I want the European Green deal become Europe's hallmark," she said in September.

But the content of this 'green deal' is woefully inadequate to the challenge at hand. In size and speed, scale and scope, the plan fails to respect the scientific consensus about the demands of a just transition. And it leaves intact the basic economic architecture in the EU that has created the social and ecological crises we face today, one centred on growth and profit rather than people and planet. By the standards set out in our campaign's *10 Pillars*[21] publication, then, Ursula von der Leyen's 'green deal' does not qualify as a Green New Deal.

This report — an updated version of the first edition sent out for public consultation in September 2019 — is therefore the most comprehensive vision of a Green New Deal for Europe. It has benefitted from the expertise, oversight, and creativity of hundreds of activists, scientists, and policymakers who have helped transform this Blueprint into a visionary document to set the course for the green agenda in Europe.

That agenda 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 EU 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.

Our Blueprint offers European leaders, activists and communities a comprehensive — and realistic — plan for Europe to meet the scale of the historic challenge ahead. Calibrated in the right way and implemented with urgency, the policies proposed in our paper could

13 Directorate-General for Communication, European Commission. Standard Eurobarometer 89, "Public opinion in the European Union," March 2018.

14 A. Freedman, 'A Giant 'Heat Dome' Over Europe Is Smashing Temperature Records, And It's on The Move', Science Alert, 25 July 2019, https://www.sciencealert.com/in-europe-a-historic-heat-wave-is-shattering-records-with-ease (accessed 25 July 2019).

15 G. Trompiz and J. Faus, 'Wildfires and power cuts plague Europeans as heatwave breaks records', Reuters, 29 June 2019, https://www.reuters.com/article/us-europe-weather/wildfires-and-power-cuts-plague-europeans-as-heatwave-breaks-records-idUSKCN1TU0H0 (accessed 10 July 2019).

16 C. Harris, 'Heat, hardship and horrible harvests: Europe's drought explained', Euronews, 12 August 2018, https://www.euronews.com/2018/08/10/explained-europe-s-devastating-drought-and-the-countries-worst-hit (accessed 15 July 2019).

17 'Extreme carbon inequality - Why the Paris climate deal must put the poorest, lowest emitting and most vulnerable people first', Oxfam Media Briefing, 2 December 2015, https://www-cdn.oxfam.org/s3fs-public/file_attachments/mb-extreme-carbon-inequality-021215-en.pdf, (accessed 4 August 2019), p. 4.

18 P. Griffin, 'The Carbon Majors Database - CDP Carbon Majors Report 2017', CDP Report, July 2017, available at: https://www.cdp.net/en/articles/media/new-report-shows-just-100-companies-are-source-of-over-70-of-emissions, (accessed 4 August 2019).

19 Corporate Europe Observatory. "Big Oil and Gas spent over 250 million euros lobbying the EU," 23 October 2019.

20 Euronews, 'Environment is top priority for EU voters, survey suggests', Euronews, 29 April 2019, https://www.euronews.com/2019/04/29/environment-is-top-priority-for-eu-voters-survey-suggests (accessed 10 July 2019).

21 Adler and P. Wargan, '10 Pillars of the Green New Deal for Europe', Green New Deal for Europe, 2019, https://www.gndforeurope.com/10-pillars-of-the-green-new-deal-for-europe, (accessed 8 November 2019).

see Europe reach net-zero CO2 emissions by 2025 — a target that is consistent with the principle of equity as embodied in the "common but differentiated responsibility" clause in the Paris framework. Given Europe's greater responsibility for historical emissions, and greater technological and financial capacity, it must lead the way.

But, to succeed, the policies proposed in this paper cannot be implemented piecemeal. Their implementation must be grounded in coordination across sectors — from agriculture and urban planning to water use and industry — to facilitate a deeper understanding of the interconnected forces driving climate and environmental breakdown.

These policies must be brought to life in Roosevelt's spirit of 'bold, persistent experimentation'. "It is common sense to take a method and try it. If it fails, admit it frankly and try another," Roosevelt said. "But above all, try something."[22] This means, first of all, breaking with a status quo sustained by the rehabilitation of failed solutions.

It is not enough, then, to propose an agenda and expect the leaders of the EU to heed its wisdom. That is why our Blueprint includes a chapter on 'Pathways to the Green New Deal,' showing how people's assemblies — democratically elected, locally organised — can drive this vision to reality. We cannot afford to wait around: we can begin to build the just transition today. This report aims to show how.

Developed by a coalition of activists, economists, scientists, and trade unionists, this Blueprint offers a comprehensive policy vision of a just transition in Europe. But the work cannot stop there: A policy vision is meaningless in the absence of a strategy to realise it. "The Green New Deal cannot just be a campaign," write Fatima Zahra-Ibrahim and Hannah Martin. "It has to be a social movement."[23]

This chapter — an addition to the first edition of the Blueprint — sets out the pathways to the Green New Deal for Europe that start from the grassroots and end in policy implementation.

The chapter charts two pathways, in particular.

- The first, a Green New Deal for the European Union, makes the case that a transnational movement, built around the concerns of frontline communities across the continent, can confront the EU and insert its demands at the heart of the so-called 'European Green Deal,' filling the democratic deficit at the heart of the EU.

- The second, a People's Green New Deal for Europe, starts from the premise that the EU has proven to be an unreliable — if not hostile — steward of the environmental justice agenda, and sets out a plan to organise People's Assemblies at municipal, regional, national, and European levels to deliberate and deliver the policies set out in this Blueprint.

Anti-systemic movements have long struggled to articulate a strategic direction. Is the goal to capture the current system to deliver the just transition? Or is it to dismantle the system and replace it with one that will? The premise of this chapter is that these pathways are not mutually exclusive. No social movement for a Green New Deal can afford to ignore the EU as a set of powerful coordinating institutions and the locus of continental political mobilisation capable of responding at scale to the immediacy of the challenge ahead. Indeed, the Commission's 'Green Deal' provides a clear target for activists to mobilise around.

Equally, no social movement for a Green New Deal can dispense with People's Assemblies as an essential tool to ensure that our green transition is grounded in democratic principles — and does not fall into the trap of President Emmanuel Macron's fuel tax legislation, which pit community needs against the green agenda. It is only by pursuing both pathways — simultaneously — that we can realize the full scope of this policy vision

22 Roosevelt Institute, "Bold, Persistent Experimentation vs. Bold Persistence", Roosevelt Institute, 6 May 2011, https://rooseveltinstitute.org/bold-persistent-experimentation-vs-bold-persistence/, accessed on 21 October 2019.

2

Pathways to the Green New Deal for Europe

Developed by a coalition of activists, economists, scientists, and trade unionists, this Blueprint offers a comprehensive policy vision of a just transition in Europe. But the work cannot stop there: A policy vision is meaningless in the absence of a strategy to realise it. "The Green New Deal cannot just be a campaign," write Fatima Zahra-Ibrahim and a Martin. "It has to be a social movement."[23]

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23 F. Zahra-Ibrahim and H. Martin, 'Green New Deal Politics: From Grassroots to Mainstream', Common Wealth Green New Deal report series, 27 August 2019, https://common-wealth.co.uk/gnd-politics.html, (accessed 8 November 2019).

2.1 Green New Deal for the EU

The primary purpose of a Blueprint for Europe's Just Transition is to translate the transformative ambitions of the Green New Deal into a policy package for the EU. It targets the EU for three primary reasons. First, because the EU has an historical obligation to drive the global green transition. Second, because the EU has the necessary institutions and policy instruments to do so. And third, because the EU continues to suffer a dangerous crisis of legitimacy, which can only be resolved by addressing Europeans' climate concerns and raising their standards of living — by delivering, in other words, a Green New Deal for Europe.

The publication of this Blueprint coincides with a unique opportunity to push the Green New Deal agenda in the EU. The European Parliament elections of May 2019 saw a 'green wave' crash over Europe, as millions of young voters raised their voices to demand swift action to end the environmental crisis. With students striking all across the continent, Ursula von der Leyen committed the European Commission to deliver a 'European Green Deal' within its first 100 days, pledging to make Europe into the first carbon-neutral continent in the world.

Commentators have hailed the EU's 'Green Deal' as a visionary policy, promising to unlock billions of euros in 'sustainable' investments, implement fresh regulations to curb carbon emissions, ramp up Europe's climate targets, and do more to protect biodiversity across the continent.

But while the European Commission has made a clear step forward in its rhetorical commitment to a "just transition for all," the policies themselves lack the strength, ambition and credibility to deliver it. Indeed, von der Leyen's choice of words is telling. Rather than associate with the tradition of Franklin D. Roosevelt's New Deal, she neatly excised the word 'new' from her 'green deal.' And through this careful omission, a radical vision of economic, social, and environmental justice is transformed into familiar Brussels-speak — and a strategy to sustain its status quo.

As outlined in the 10 Pillars of the Green New Deal for Europe — and, indeed, as emphasised in the preamble to the 2015 Paris Agreement[24] — democracy is a fundamental component of the environmental justice agenda. "Europe's green transition will not be top-down. It must empower citizens and their communities to make the decisions that shape their future."[25]

But von der Leyen's 'Green Deal' only serves to deepen the democratic deficit at the heart of the EU. The so-called 'Sustainable Europe Investment Plan' does not provide resources for communities, municipalities, or regions to invest in their housing or utilities. Instead, it subsidises private investors, socialising the risks of the green transition while privatising the gains. Those who live in Europe are given no control over the direction of Europe's decarbonisation.

Across the continent, millions do not recognize themselves in the climate movement. Indeed, in fossil fuel-dependent countries like Poland and Hungary, climate change can appear less of a threat than the proposals for addressing it. The EU's current proposal for a 'Green Deal' explains why. By approaching the environmental crisis from the top-down, the EU has failed to show these communities how the green transition will benefit them — by building better housing, securing better jobs, ensuring greater control over their lives. And in doing so, it has sown the seeds of its own failure.

Von der Leyen's proposal nonetheless represents a victory for the climate movement — and an opportunity to turn up the heat on Europe's institutions. On both sides of the Atlantic, radical activism put the idea of a Green New Deal firmly on the political agenda. This must be seen as a precedent and a signal that the political goalposts are ours to move.

The pathway to a Green New Deal for the EU, therefore, starts with Europe's communities.

The first step is to bring the Green New Deal for Europe into communities across EU member states, weaving their core concerns into the definition of environmental

24 Paris Agreement, (adopted 12 December 2015, entered into force 4 November 2016), United Nations Treaty Collection, https://unfccc.int/files/meetings/paris_nov_2015/application/pdf/paris_agreement_english_.pdf, (accessed 9 November 2019).

25 D. Adler and P. Wargan.

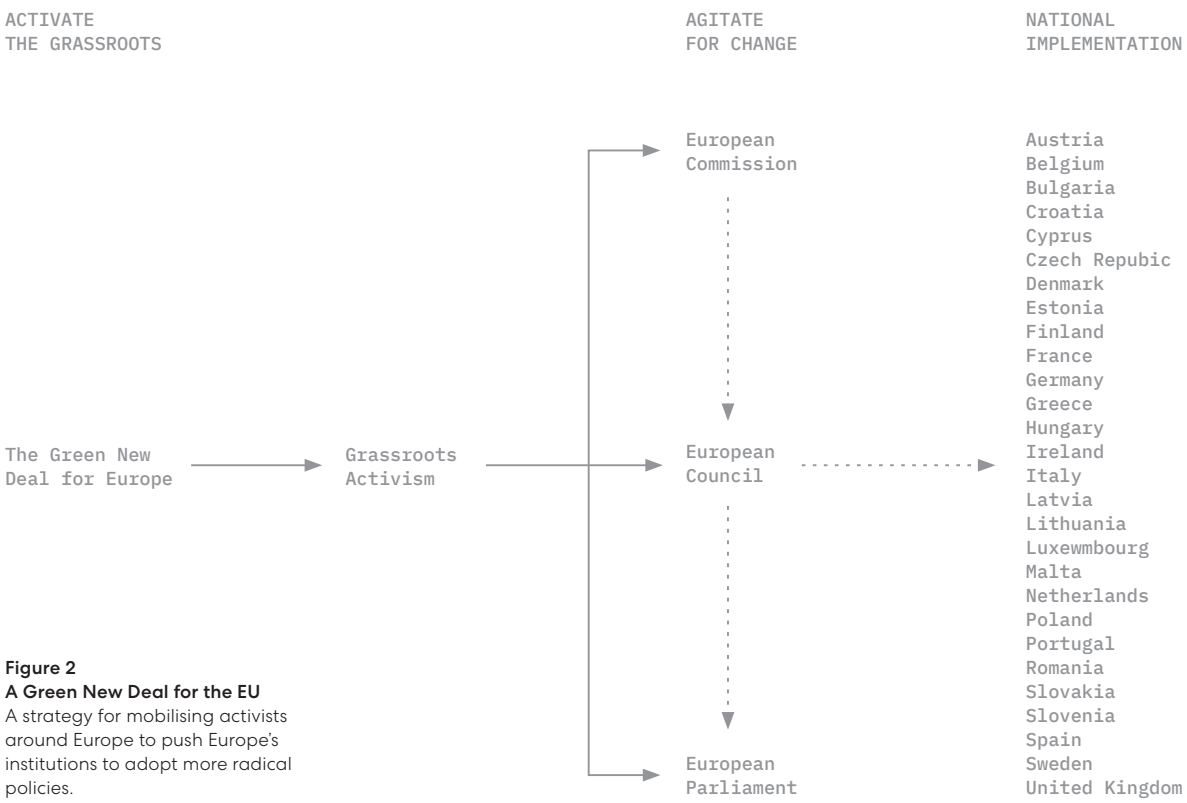


Figure 2
A Green New Deal for the EU
A strategy for mobilising activists around Europe to push Europe's institutions to adopt more radical policies.

justice. For some, justice entails addressing youth unemployment. For others, it entails the provision of better heating in the winter. Decarbonisation, as a mass political project, has the capacity to address both of these concerns — and mobilise the communities that express them.

The second step is to bring these communities together around a shared vision for the EU. The climate debate in Europe is often framed as a zero-sum exchange: Southern countries are pitted against Northern ones; borrowers against lenders; 'clean' economies against coal-dependent ones. The Green New Deal for Europe begins from the premise that the green transition can be positive-sum, and the policies we set out in this Blueprint illustrate this logic clearly. Essential to the pathway to a Green New Deal for the EU is powering a transnational movement that can — despite its disparate concerns — stand together behind a single policy vision.

The third and final step, then, is to bring this movement to Europe's institutions. The democratic deficit of the EU is not only a product of institutional design; it is also because the EU is physically isolated from the democratic pressures that rise up in cities and regions across Europe. The challenge of a pan-European movement for a Green New Deal resides here, in channeling the energies of activists across the continent to clash with the institutions that sit at the Belgian capital — through strikes and sit-ins, occupations and demonstrations: the full arsenal of direct action and civil disobedience.

But if the Green New Deal for the EU offers a pathway to civic action in Brussels, it must also aim to mobilise European lawmakers in their own communities and EU member states across the continent. Activists around Europe can work together to bring common demands to MEPs and Commissioners in their countries of origin — in addition to targeting those national officials who negotiate the Commission's legislative proposals at the European Council. In other words, local action, coordinated transnationally, can target every level of the EU's legislative process. Similarly, national-level lawsuits on areas ranging from environmental justice to social rights can build up a body of European case law — setting precedents and building momentum for further action.

This is a logic of confrontation, pitting Europe's communities against the European institutions that seem unwilling to see the climate and environmental crisis through the lens of their lived realities — and bringing on board allies inside those institutions who can champion this agenda on their behalf.

The other necessary pathway to a Green New Deal for the EU is through the logic of institutionalisation. Just as anti-systemic movements have historically struggled to articulate clear political demands, they have also failed to formulate institutional strategies to make them a reality. The climate and environmental agenda presents a unique political opportunity: public concerns are increasingly aligned with the demands of the grassroots, creating an electoral force that could power political campaigns. A key task for activists, then, is to identify

and support electoral expressions of their agendas — to transform the EU from within.

There are very good reasons for the EU to take up the challenge. The crisis of legitimacy in the EU remains acute, and the fragmentation of European politics will likely cause the EU institutions to seize up and stop working — deepening that crisis further still. The only way out of the rut is to table legislation that tackles the twin crises of environment and economy, and in doing so, revives public faith in the European project.

The clock is ticking: the first 100 days of the von der Leyen Commission begin to count down from December 1. If there were ever a time to band together to demand radical action on the EU, it is now. This is a crisis we cannot afford to waste.

Recommended actions:

1 Inject democracy into the European 'Green Deal' by employing the full arsenal of civil disobedience at Brussels — including an urgent public mobilisation during the Commission's first 100 days.

2 Organise a transnational grassroots coalition to agitate, lobby, and petition EU officials both in Brussels and across EU member states, building pressure around core demands of the Green New Deal for Europe.

3 Build a pan-European legal team to challenge legislation and coordinate legal action on behalf of a common agenda of climate, environmental and social justice.

2.2 A People's Green New Deal

But our eyes must be open. Time and again, the institutional managers of the EU have proven unwilling to recognise the scale and the urgency of the climate and environmental crisis. On the contrary, policies like the European Central Bank's quantitative easing (QE) programme — introduced under the auspices of economic recovery — have actively encouraged environmental destruction.[26]

The rapid adoption of a 'Green Deal' inside the EU — and the appearance of buzzwords like 'circular economy' and 'farm to fork' in the guiding vision of Commission President Ursula von der Leyen — are positive signs. But no social movement can stand on the quicksand of political caprice: the Green New Deal must build its own infrastructure to organise communities and build consensus among them. This strategy is more than a contingency plan; it is an essential ingredient of environmental justice.

That is why we are proposing to form People's Assemblies for Environmental Justice as the second pathway to a Green New Deal for Europe.

A People's Assembly is a form of direct and deliberative democracy that brings citizens and residents of all backgrounds to formulate solutions to shared challenges. The climate movement today — whether it takes the form of student strikes, Extinction Rebellion, or the Gilet Jaunes — has articulated a shared enemy: climate and environmental breakdown. But it has yet to come together to articulate a set of shared demands.

This Blueprint provides a general framework for Europe's just transition, but it must be complemented by deliberation at the ground level to decide where the resources raised by the Green Public Works programme will be directed. No campaign, movement, union, NGO, or political party can devise a climate plan on its own; the People's Assemblies for Environmental Justice offer a common process by which to develop it.

The People's Assemblies do not have to be formally sanctioned by political institutions. On the contrary, they can be self-organising. An advisory board, composed of local residents, facilitates sortition of the assemblies and ensures that all material presented to the Assembly is appropriately balanced. Coordinators, with the help of this advisory board, then form a panel of experts to assist Assembly members, who — as in the case of Ireland's Citizen Assembly — define relevant questions they would like answered by the panel. Finally, an oversight panel of residents, representatives of local government, and relevant community organisations monitor the process and ensure the Assembly arrives to its goals.

The Green New Deal for Europe proposes to form People's Assemblies at every level: municipal, regional, national and up to the European. Figure 2 sets out the process: self-organised municipal assemblies are the smallest core unit, which feed through into regional reserves that — through sortition — form regional assemblies, and upward. Each level is responsible for developing its own set of priorities and policy recommendations — a Green New Social Contract — that can form the basis for negotiations with relevant representatives.

This process should begin where power is closest at hand. Across Europe, a movement for 'radical municipalism' is rising, capturing seats on city councils and — in cases like Barcelona, Palermo, and Amsterdam — taking over municipal government entirely. The People's Assembly strategy should begin with areas with strong municipalist traditions, not only because they are the most likely to participate in self-organised assemblies, but also because these areas can pilot a new relationship with local government, relying on and taking inspiration from the People's Assemblies for Environmental Justice.

The case for local action is strong because the EU is the sum of its parts. The implementation of a Green New Deal by a municipality, region or country could serve as a beacon for others, paving the way for radical transformation at the EU level. But to move past the national, local movements must centre internationalism at the core of their demands: the solutions to global warming must be global by design.

26 See Sini Matikainen et al., "The climate impact of quantitative easing," Policy Paper, Grantham Research Institute on Climate Change and the Environment, May 2017.

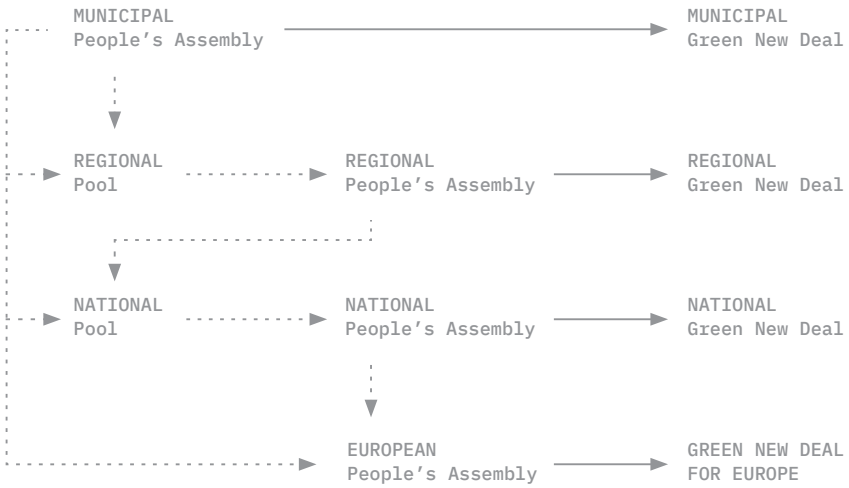


Figure 3
A People's Green New Deal
Mobilising Europe's communities to drive the just transition.

Case Study — The People's Assembly on Climate in Luxembourg

On 19 October 2019, the coalition known as United for Climate organised a People's Assembly in Luxembourg City. The assembly was supported by a range of NGOs, unions, and social movements, including Extinction Rebellion, Rise for Climate, Youth for Climate and our Green New Deal for Europe campaign.

Preparations for the assembly began with weekly meetings in late summer, with key funding provided by the partner NGOs.

The Assembly was held in a local school. Food was provided by a transition cooperative. On-the-spot child care was also provided to allow parents to take part in the discussions.

The Assembly created a space for various members of the climate movement — from IPCC representatives and the Luxembourg Minister of Environment to members of the local community — to reflect on the climate and environmental crises and the responses to them.

Topics were proposed by the participants. Related topics were combined to form discussion groups. Each group convened for an hour and the minutes of these meetings were immediately distributed to allow all participants to know what was said in other groups.

The same method was used to propose and select topics to discuss the next point of action or demands of the climate movement in Luxembourg. Through this deliberation, a clear set of shared dreams and demands emerged, from a shorter working week to higher-quality public transport systems.

The experience of the People's Assembly was to organise, fortify, and unite the climate movement in Luxembourg. The challenge is to organise these events over a sustained period of time in order to allow for a comprehensive vision to emerge. This method is not without limits, including — and most important — the restricted participation by working families with existing time commitments.

Nonetheless, the experience of the Luxembourg People's Assembly — as a self-organised experiment in direct and deliberative democracy — is one that can scale across Europe through the social movement for a Green New Deal.

People's Assemblies, then, will catalyse meaningful change at both the local and international level. They will also reproduce a culture of civic participation — engendering norms of public engagement on which the success of many of the proposals set out in this Blueprint depend. The indignados movement in Spain offers us a model for how this can work.

But this process must scale. As Bill McKibben notes in the Foreword, the engineers have done their job, setting us up to address the problem of environmental breakdown at the continental level. "Now citizens must do their jobs with the same prowess," McKibben writes — and contribute to Europe's legislative solution by coming together in a continental People's Assembly. Such a European Assembly would not only give structure, motivation, and purpose to the social movement behind a Green New Deal for Europe. In doing so, it would also help to fill the democratic deficit at the heart of the EU, injecting people's needs, dreams, and demands into a legislative process that has long presumed to know them better.

Recommended actions:

4 Build the movement for a Green New Deal for Europe by mobilising European residents at the local level, through door-knocking campaigns and similar initiatives.

5 Organise municipal, regional and national People's Assemblies for Environmental Justice — uniting experts, activists and scientists in developing a bottom-up vision for Europe's just transition.

6 Scale the People's Assemblies from the municipal level up to the European one in order to arrive at shared legislative priorities and ground the legislative process in democratic procedure.

Los Indignados – A Blueprint For Activating The Grassroots

In 2011, a series of demonstrations broke out around Spain. Organised by Democracia Real Ya (Real Democracy Now), the protests took aim at the economic crisis that had engulfed the country. They quickly morphed into a movement.

The los indignados movement began to organise weekly occupations of public spaces in Spain. There, it hosted public assemblies, discussing ideas for change and making decisions collectively. Everyone was invited to speak and to vote. No one held a veto.

This culture of civic participation birthed new economic models.

One assembly in Madrid organised an informal market on which community members could exchange services for free. A Catalan cooperative pooled together debtors to give them leverage in dealing with creditors. Another assembly supported people in precarious employment or those who were unable to pay their rents.

By connecting communities around shared concerns, the los indignados movement won the support of Spaniards across the political spectrum — and paved the way for greater community involvement in local decision making.[27]

27 G. Blakeley, 'Los Indignados: a movement that is here to stay', openDemocracy, 5 October 2012, https://www.opendemocracy.net/en/los-indignados-movement-that-is-here-to-stay/, (accessed 7 November 2019).

3

The Green Public Works

3.1 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 powered 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 degrees Celsius if total energy consumption continues to grow.[28] At the same time, models indicate that a significant reduction in energy demand can put us on a 1.5 degree pathway without requiring the deployment of dangerous geoengineering solutions. [29]

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 ending 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.

28 J. Hickel and G. Kallis, 'Is Green Growth Possible?', New Political Economy, 17 April 2019, https://www.tandfonline.com/doi/full/10.1080/13563467.2019.1598964?scroll=top&needAccess=true, (accessed 11 July 2019). All scientific models of climate heating assume continued growth in gross domestic product, which is increasingly proving to be incompatible with safe pathways towards a 1.5 degree Celsius world. See also: S. Evans, 'World can limit global warming to 1.5C 'without BECCS''. Carbon Brief, 13 April 2018, https://www.carbonbrief.org/world-can-limit-global-warming-to-onepointfive-without-beccs, (accessed 25 July 2019).

29 Grubler et al., 'A low energy demand scenario for meeting the 1.5 °C target and sustainable development goals without negative emission technologies', Nature, 2018, https://www.nature.com/articles/s41560-018-0172-6, (accessed 31 October 2019).

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

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

3.2
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.[30] 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.[31] Since 2012, net public investment across the Eurozone has hovered around zero.[32] 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.[33]

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.[34] 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.[35]

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.[36] 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.

30 See, for example, U. von der Leyen, 'A Union that strives for more - My agenda for Europe', 2019, https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf, (accessed 4 August 2019).

31 'Public Investment in Europe', ECB Economic Bulletin, Issue 2, 2016, https://www.ecb.europa.eu/pub/pdf/other/eb201602_article02.en.pdf, (accessed 9 July 2019), p. 5.

32 M. C. Klein, 'Italy Embraces China, and Europe's Elites Have Only Themselves to Blame', Barron's, 5 April 2019, https://www.barrons.com/articles/europes-elites-have-only-themselves-to-blame-for-italys-embrace-of-china-51554481025, (accessed 15 May 2019).tin, Issue 2, 2016, https://www.ecb.europa.eu/pub/pdf/other/eb201602_article02.en.pdf, p. 5.

33 World Bank, 'Gross fixed capital formation' https://data.worldbank.org/indicator/NE.GDI.FTOT.ZS (accessed 19 July 2019).

34 'Public Investment in Europe', ECB Economic Bulle

35 D. Revoltella, P. de Lima and A. Kolev (eds), 'Retooling Europe's Economy - EIB Investment Report 2018/2019', European Investment Bank, 2018, https://www.eib.org/attachments/efs/economic_investment_report_2018_en.pdf (accessed 10 July 2019), p. 65.

36 C. O'Murchu and A. Ward, 'Questions surround EU relocations', Financial Times, 1 December 2010, https://www.ft.com/content/74ab02a6-fd85-11df-a049-00144feab49a, (accessed 29 July 2019). See also, The Bureau, 'Multinationals cash in on EU fund', The Bureau of Investigative Journalism, 29 November 2010, https://v1.thebureauinvestigates.com/2010/11/29/multinationals-cash-in-on-eu-funds/, (accessed 29 July 2019).

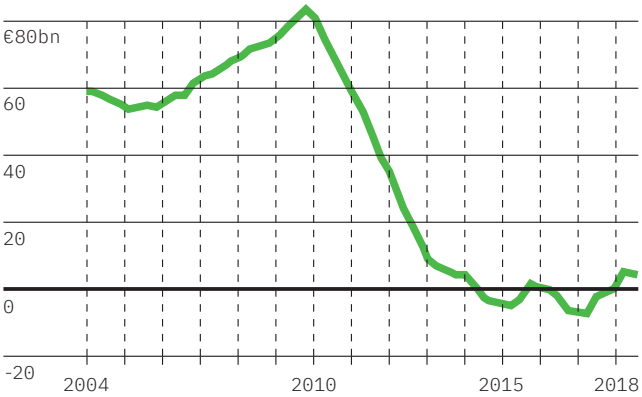


Figure 4
Public Investment Across the Eurozone
Investment spending minus depreciation, billions of euros per year.

Source: Eurostat, Barron's

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.[37] 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.

3.2.1 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". [38]

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.[39] 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 wellbeing. 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

37 By its own admission, it cannot go bankrupt. See D. Bunea et al., 'Profit distribution and loss coverage rules for central banks', European Central Bank Occasional Paper Series, No. 169, April 2016, https://www.ecb.europa.eu/pub/pdf/scpops/ecbop169.en.pdf, (accessed 15 July 2019), p. 14.

38 G.A. Epstein, 'Introduction: Financialization and the World Economy'. In G. A. Epstein (Ed.), Financialization and the World Economy, Cheltenham: Edward Elgar Publishing Ltd., 2005, pp. 3-16.

39 European Political Strategy Centre, 'Financing Sustainability - Triggering Investments for the Clean Economy', EPSC Strategic Notes, Issue 25, 8 June 2017, https://ec.europa.eu/epsc/sites/epsc/files/strategic_note_issue_25.pdf, (accessed 20 June 2019), p. 11.

driver of climate and environmental breakdown around the world. Since 2016, just 33 global banks invested $1.9 trillion in fossil fuel companies. [40]

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.

3.2.2 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 people pay more taxes, good public transport ensures cleaner air and lower travel costs.[41] Europe's green transition must be funded in the same way. Existing central and public investment banks, as well as public procurement procedures, 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.

Public procurement procedures under the GPW can be used as a driver for the materials and energy transition, and empowering communities. Whether in infrastructure or housing projects, public procurement should be used to minimise environmental harm and build community wealth. Stimulating demand for green materials and fossil-free energy through public procurement accelerates the transformation of energy-intensive industries while empowering communities.

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 percent of global gross domestic product, when we include multi-laterals, pension and sovereign wealth funds, and central banks." [42]

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 change in institutional priorities, and a substantially enhanced role for public sector investment and asset ownership.

First, all EU will shift away from a focus on Gross Domestic Product to a Genuine Progress Indicator. This requires a new Directive to set out what may and may not count as 'genuine progress' in economic performance. GDP measures of 'growth' include the pollution of our environment, damage to our climate, sales of unsafe food or products, or practices that damage labour and social rights — so long as they have contractual value. Instead, the EU needs to adopt a measure of sustainable human and environmental well-being.

Second, the ECB's mandate will be clarified to focus on 'full employment and social progress, and a high level of protection and improvement of the quality of the environment' as the Treaty on European Union requires.[43] This will be made clear in a new EU Regulation to complement but ultimately override the 'price stability' target.[44] Price stability must itself be clarified to preclude escalating wage or income inequality, and escalating housing costs. This will refocus European monetary policy on what truly matters.

Third, 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 programmes 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.

40 'Banking on Climate Change', Rainforest Action Network, 2019, https://www.ran.org/bankingonclimatechange2019/, (accessed 15 June 2019), p. 9.
41 Opportunity costs drive this logic. Resources are limited, so the fewer resources we use to achieve a given outcome the better.
42 L. Steinfort and S. Kishimoto, 'Public Finance for the Future We Want', The Transnational Institute, 24 June 2019, https://www.tni.org/en/publicfinance, (accessed 29 July 2019), p. 11.
43 Treaty on European Union article 3(3)
44 Treaty on the Functioning of the European Union article 282

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.[45] This deprives the state of capital needed to make further investments in the economy.

In a special report, the European Court of Auditors affirmed the weaknesses of the public-private financing model — emphasising that it generates outsized profits for private financiers. "The risk allocation between public and private partners was often inappropriate, incoherent and ineffective, while high remuneration rates (up to 14 %) on the private partner's risk capital did not always reflect the risks borne." [46]

Current financing programmes also lack grounding in democratic processes. Under EFSI, just eight experts decide whether to back projects with a public guarantee.[47] This creates a significant disconnect between the needs of communities and the resources that are made available to them.

Finally, the GPW 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, EU member state representatives, NGOs and economic actors — including representatives of energy cooperatives — to ensure that its strategy is long-term, democratic and immune from capture.

Policy Recommendations

1 Switch to a Genuine Progress Indicator system of accounting rather than Gross Domestic Product across all EU institutions.

2 Enact a new Regulation clarifying that the European Central Bank must prioritise employment, social progress and environmental protection.

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

4 Adopt a multi-stakeholder governance model for the EIB.

3.2.3 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. First, 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. Second, 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 markets. 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

1 Fund the green transition by mobilising a coalition of Europe's public banks — led by the European Investment Bank — to issue green bonds to raise at least five percent of Europe's GDP in funding that can be channelled into the GPW.

45 T. Marois, 'How Public Banks Can Help Finance a Green and Just Energy Transformation', The Transnational Institute, 15 November 2017, https://www.tni.org/en/publication/how-public-banks-can-help-finance-a-green-and-just-energy-transformation, (accessed 20 June 2019).

46 O. Herics et al, 'Public Private Partnerships in the EU: Widespread shortcomings and limited benefits', European Court of Auditors Special Report, No. 09, 2018, https://www.eca.europa.eu/Lists/ECADocuments/SR18_09/SR_PPP_EN.pdf, (accessed 10 November 2019).

47 'European Fund for Strategic Investments', https://www.eib.org/en/efsi/index.htm, (accessed 10 July 2019).

3.2.4 Macroprudential Management

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

On one hand, the transition to a net-zero-carbon economy will pose a significant threat to returns on fossil fuel investments and could trigger a rapid sell-off.[48] Citigroup estimates that global exposures to fossil fuels amount to $100 trillion.[49] If banks fail to divest themselves of these assets, a sudden collapse in their prices could trigger a systemwide shock.[50]

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.[51] 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 prices for non-renewables, 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.[52]

And, as Europe introduces new prudential standards (see section 4.3.4 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

1 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.

2 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.

3.2.5 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 EU and just outside its borders.[53] 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.[54] Rather than restrained, polluting corporations have been let loose on the world.

48 P. Monnin, 'Central banks should reflect climate risks in monetary policy operations' SUERF Policy Note, Issue No 41.
49 Jason Channel et al., 'Energy Darwinism II: Why a Low Carbon Future Doesn't Have to Cost the Earth', Citigroup, 2015.
50 New Economics Foundation, 'Central banks, climate change and the transition to a low carbon economy: A policy briefing', 2017, https://neweconomics.org/uploads/files/nef_briefing_central-banks-climate _e.pdf, (accessed 25 July 2019).
51 G.D. Rudebusch, 'Economic letter: Climate change and the federal reserve', Federal Reserve Bank of San Francisco, 2019, https://www.frbsf.org/economic-research/publications/economic-letter/2019/march/climate-change-and-federal-reserve/, (accessed 1 August 2019).
52 Some arguments go further. For example, The Next System proposed a public-buyout of all fossil fuel companies. It argues that this would not only lay the groundwork for a just transition for fossil fuel workers — it would also avert a probable systemic shock to global financial markets. If priced correctly, based on an accounting of fossil fuel companies' long-term prospects and role in climate breakdown, the buyout can take place at a highly discounted rate. See C. Skandier, 'Quantitative Easing for the Planet', The Next System Project, https://thenextsystem.org/learn/stories/quantitative-easing-planet, (accessed 24 July 2019).
53 For a clear illustration of these efforts, see "Luxleaks," a set of leaked documents revealing the Luxembourg government's sweetheart deals with multinational corporations to get their taxes down to zero.
54 ODI, 'Phase-out 2020: monitoring Europe's fossil fuel subsidies', September 2017.

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.

3.3 How to Spend It

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.

3.3.1 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 expense 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 union 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 organisations 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 workers and communities in Europe will benefit both in terms of health and the stability of their environment, and in 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 3.4.6 below). The EU can therefore lead the transition to a three-day weekend or other reduction in working time while ensuring that workers' wages increase, by fulfilling the commitments of EU Member States in the European Social Charter 1961.[55] The Working Time Directive will be updated to increase paid holidays for workers, so that people can have the flexibility and security to choose the right balance of work and life.[56]

To advance the cause of economic 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. A new Economic Democracy Directive can guarantee that workers will have the right to be represented on the boards of companies, have a minimum share of voting power in firm meetings, and have representation in all capital savings, pensions or worker funds. This will be mandatory for all jobs created under the umbrella of the GPW.

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, children and people who are ill or disabled; habitat restoration; and community services.

55 European Social Charter 1961 section 2(1) requiring reduction of the working week in accordance with 'increase in productivity and other relevant factors'.

56 Working Time Directive 2003/88/EC articles 5 and 7 hold current weekly rest and annual leave rights.

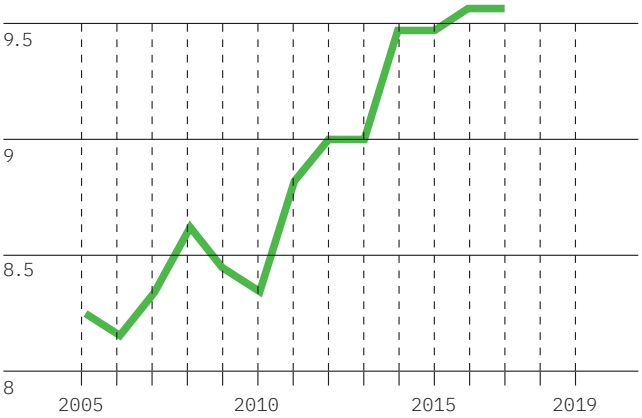


Figure 5
Increasing Share of EU Working Poor
Percentage of working people at risk of poverty.

Source: Eurostat, @valentinaromei, FT

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. It will provide an income guarantee for every worker from a fossil fuel employer, excluding directors or senior managers, that must be phased out by law, so that people will maintain their living standards.

Finally, the GPW will recognise that reproductive and care work represents a significant amount of time allocated for personal, household and community wellbeing and the protection of and struggle for human rights which is integral to care work. 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 and overwhelmingly performed by women — especially mothers. 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.

By providing social and financial recognition, the CI would provide an incentive for people to engage seriously with care work. This, in turn, would provide security for disabled people — facilitating access to the care they need to live independently. It would also help remedy the structural disadvantages faced by women and other caregivers in today's economy — overcoming the scourge of unequal pay.

Finally, the CI would strengthen families. In parts of Europe, children are being taken into care at an alarming rate.[57] This is the result of policies such as austerity which have impoverished families, particularly single-mother families, and the privatisation of children's services, which have added a profit motive to removing children. A Care Income would redirect resources towards mothers and children, supporting social services in enabling families to stay together.

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:

1 Guarantee decent jobs to all European residents who seek one, based on:
   - A three day weekend or four-day working week with lower overall working hours;
   - Democratising the economy and society across workplaces and communities;

57 The Association of Directors of Children's Services Ltd, 'A Country that Works for All Children', ADCS Position Paper, October 2017, https://adcs.org.uk/general-subject/article/a-country-that-works-for-all-children.

- Fair wages; and
- Local job creation, including in rural areas.

2 Policy Recommendation: Implement an income guarantee for workers in carbon-intensive industries that must be phased out by law.

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

3.3.2 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 authorities, 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 makes use of public procurement strategies to ensure that funds invested into local communities remain in local hands. Public procurement must be subject to strict requirements on the use of sustainable materials and energy, and framed to prioritise worker-led organisations, cooperatives and community projects. The GPW 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.[58] 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 individuals are harvested in a depoliticized manner. These processes must be carried out with a view to rapidly expanding the capacities of people across Europe to participate in political decisions — and entrenching democratic norms and practices at the heart of every community.

Inspiration for more meaningful forms of participation might be provided by experiments with digital democracy in Barcelona and Madrid[59] and participatory approaches to economic governance in Emilia-Romagna.[60]

The GPW will also, in line with the recommendations of the Lisbon Declaration,[61] 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 the public 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 democrat-

58 Social Innovation Community, 'The Lisbon Declaration: Social Innovation as a path to a sustainable, resilient and inclusive Europe', 2018, https://media.nesta.org.uk/documents/Lisbon_Declaration_on_Social_Innovation.pdf, (accessed 29 July 2019), p.5.
59 I. Peña-López, 'Citizen Participation and the Rise of the Open Source City in Spain', Institute for Development Studies, 2017.
60 P. Bianchi and S. Labory, 'Industrial policy after the crisis: the case of the Emilia-Romagna region in Italy', Policy Studies, 32:4, 2011, pp. 429-445.
61 Social Innovation Community.

ic legitimation in the EU, providing a concrete political means through which Europeans can participate in this economic transformation.

Policy Recommendations:

1 Devolve GPW investment decisions to national, regional and municipal government levels.

2 Provide distinct lines of funding within the GPW for experimentation in increasing public participation in investment decision making.

3 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.

4 Provide incentives for authorities to set up local GPW agencies, to help steer investment decisions and provide technical support.

5 Fund national, regional and municipal governments that agree to a shared set of fundamental principles, including democracy, transparency, and sustainability — and subscribe to strict public procurement requirements.

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,[62] 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.[63] 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.[64]

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.[65]

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 capacities[66] 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 Recommendation:

1 Establish a Green Solidarity Network to unite twinning and cooperation arrangements between municipalities, regions, farmers and communities — enhancing horizontal infor-

62 'Urbact', https://urbact.eu/, (accessed 12 July 2019).
63 M. Jackson, 'Making Spend Matter', URBACT, 23 October 2018, https://urbact.eu/making-spend-matter, (accessed 13 July 2019).
64 'International Urban Cooperation, http://www.iuc.eu/, (accessed 14 July 2019).
65 ENRD Thematic Work, https://enrd.ec.europa.eu/enrd-thematic-work_en, (accessed 15 July 2019).
66 These can be further supported by the establishment of public digital infrastructure, as discussed in section 3.4.2.

mation-sharing and political decision-making across the continent.

3.3.3 Tackling Climate Corruption

In the long run, the environmental crisis presents a threat to every living species. As the United Nations laid out in its recent global assessment report, the rate of extinction "is already at least tens to hundreds of times higher than it has averaged over the past 10 million years."[67]

But in the short run, it also presents ample opportunities for grift, corruption, and exploitation of wide-spread fear for financial gain.

In particular, the disruptive force of environmental breakdown allows opportunistic actors — in both the public and private sectors — to make a quick buck out of human desperation, or to siphon funds that are destined for front-line communities. In short, climate destruction threatens to become just another application of the "Shock Doctrine": disaster capitalism gone wild.[68]

Insofar as the GPW generates and then devolves public funds, it therefore requires new policy tools and public authorities to ensure the transparency of fund distribution and integrity of fund expenditure. Evidence of EU budget abuse is widespread;[69] in order to succeed — in order to truly empower people across Europe — the Green New Deal for Europe must actively combat corruption.

Alongside the GPW, therefore, the EU should introduce new clean-up institutions and invest in oversight of its public funds.

These include:

1. A GPW Tracking Tool, a public platform that allows people to monitor the distribution of GPW funds and the execution of GPW projects.

2. A new EU Public Integrity Authority with the power to investigate and refer violators of European common standards and national regulations to national enforcement agencies.

3. A reinforced European Anti-Fraud Office, with funds and staff to support investigations of the abuse of public money across the EU.

Policy Recommedations:

1 Policy Recommendation: Develop a GPW Tracking Tool to allow for public scrutiny and monitoring of GPW-funded projects.

2 Policy Recommendation: Introduce a new EU Public Integrity Authority with the power to investigate and refer violators of European common standards and national regulations to national enforcement agencies.

3 Policy Recommendation: Invest in the European Anti-Fraud Office to reinforce capacity to investigate abuse of public money across the EU.

67 Sandria Díaz et al. "Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services," May 2019.
68 Naomi Klein. The Shock Doctrine, New York: Penguin Random House, 2007,

3.4 Where to Spend It

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.[70]

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.[71]

In aggregate, the effect of the GPW investment programme is to transition all sectors to 100 percent renewable energy at scale and at pace while lifting the standard of living, empowering communities and safeguarding the environment. To achieve this, new models of housing, infrastructure and social provision, industrial production and agriculture are needed. This section shows how the GPW can bring that model to life across key sectors.

3.4.1 Housing

Housing is now the highest expenditure for most Europeans, and house prices in most EU member states are growing faster than wages.[72] 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.[73]

Homes are also a significant source of energy consumption and CO2-emissions. Households account for roughly a quarter of the final end use of energy[74] and emissions[75] 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

70 G. Monbiot, 'Averting Climate Breakdown by Restoring Ecosystems - A call to action', Natural Climate, https://www.naturalclimate.solutions/the-science, (accessed 29 July 2019).
71 The Foundational Economy Collective, Foundational Economy: The Infrastructure of Everyday Life, Manchester University Press, 2018.
72 A. Pittini et al., 'The State of Housing in the EU 2017 - Housing is still Europe's challenge', Housing Europe, 17 October 2017, http://www.housingeurope.eu/resource-1000/the-state-of-housing-in-the-eu-2017, (accessed 15 July 2019).
73 C. Serme-Morin, 'Homeless in Europe - Increases in homelessness', FEANTSA, Report, 2017, https://www.feantsa.org/download/increases-in-homelessness4974810376875636190.pdf, (accessed 15 July 2019), p.2
74 'Energy Statistics - an overview', Eurostat, June 2019, https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Final_energy_consumption, (accessed 15 July 2019).
75 European Environment Agency, 'End user GHG emissions from energy, reallocation of emissions from energy industries to end users 2005-2010', 20 December 2012, http://www.eea.europa.eu/publications/end-user-ghg-emissions-energy, (accessed 15 July 2019), p. 8.

poverty has impacts beyond the economic. It is tied to mental and physical health, and wellbeing.[76] And, as extreme weather events increase in frequency, housing will be crucial to ensuring community resilience.[77]

Sustainable public housing can play a significant role in addressing housing security, lowering the cost of living, reducing fuel poverty, ensuring accessibility 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.[78] But investment in public housing has actually declined in Europe between 2009 and 2012.[79] 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. The Roadmap to a Resource Efficient Europe, 2011 European Commission communication, said that better construction practices and material use "would influence 42 percent of our final energy consumption, about 35 percent of our greenhouse gas emissions and more than 50 percent of all extracted materials; it could also help us save up to 30 percent water."[80]

At the same time, according to the European Commission, almost 75 percent of buildings in the EU are energy inefficient, while only 0.4-1.2 percent of the building stock is renovated annually. Renovation of existing buildings could reduce the EU's total energy consumption by up to six percent and lower CO2 emissions by five percent.[81] 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.

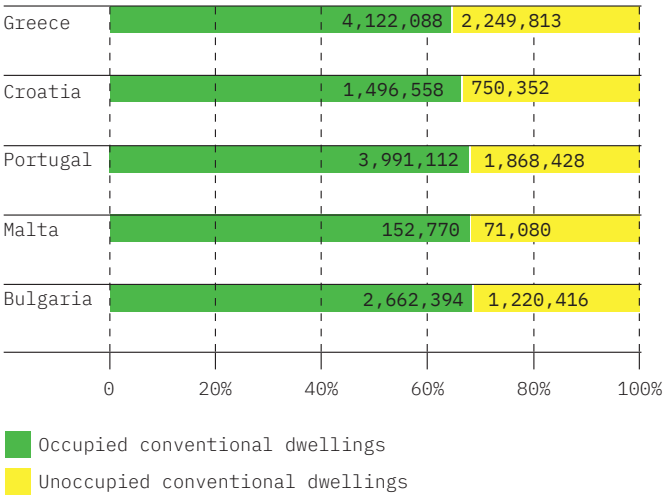
The GPW, then, will address housing by prioritising existing and vacant housing stock, and only invest in new construction where necessary.

Firstly, the programme will restore, maintain and retrofit existing housing stock for sustainability. The programme will commit a massive investment to bring Europe's homes to a standard of energy efficiency that minimises the need for active energy systems for heating and cooling, increases health and comfort, and dramatically reduces their ecological footprint. This will also help avoid a dramatic expansion in the use of cooling systems as temperatures around Europe continue to increase.

Wherever practical, the GPW will equip every European community 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. These programmes must be subject to stringent suitability and affordability criteria, prioritising neighbourhoods in the greatest need and households least able to afford refurbishing their home.

Figure 6
Housing in Europe
Number of vacant homes in five European countries with the highest percentages of unoccupied dwellings.

Source: FEANTSA



76 H. Thomson, S. Bouzarovski, 'Addressing Energy Poverty in the European Union: State of Play and Action', EU Energy Poverty Observatory, August 2018, https://www.energypoverty.eu/sites/default/files/downloads/publications/18-08/paneu-report2018_final_v3.pdf, (accessed 15 July 2019), p. 6.

77 'For example, during the 2019 heatwave, in which temperatures across parts of Europe reached historic highs, public parks and pools in Paris remained open into the night to provide relief from sweltering apartments. See H. Evers, 'What Lies Ahead for Europe's Climate', Spiegel Online, 1 July 2019, https://www.spiegel.de/international/europe/hell-is-coming-europe-engulfed-by-massive-heatwave-a-1275268.html, (accessed 2 July 2019).

78 J. Dijol et al, The financing of renovation in the social housing sector - a comparative study in 6 European countries, 4 June 2018, http://www.housingeurope.eu/resource-1124/the-financing-of-renovation-in-the-social-housing-sector, (accessed 15 July 2019).

79 L. Fransen, G. del Bufalo and E. Reviglio, 'Boosting Investment in Social Infrastructure in Europe - Report of the High-Level Task Force on Investing in Social Infrastructure in Europe', European Economy Discussion Paper, January 2018, https://ec.europa.eu/info/sites/info/files/economy-finance/dp074_en.pdf, (accessed 15 July 2019), p. 33.

80 Roadmap to a Resource Efficient Europe, Communication From the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions, https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=CELEX:52011DC0571, (accessed 15 July 2019).

81 'Energy performance of buildings', European Commission, https://ec.europa.eu/energy/en/topics/energy-efficiency/energy-performance-of-buildings, (accessed 18 July 2019).

Secondly, where practical, the GPW will purchase and refurbish unoccupied private housing for public use. In 2011, there were 38 million vacant[82] homes 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.[83] 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, using sustainable prefabricated construction methods, to avoid 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 facilitate experimentation in participatory urban and community planning, putting people in the driving seat of changes to housing models — and opening the door for new models of community co-living. 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".[84] 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 could reduce energy demand without increasing household workloads, which disproportionately fall on women.[85] It could 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:

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

2 Policy Recommendation: 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.

3 Policy Recommendation: Ensure that any new housing meets needs created by the changing climate, is safe and non-toxic, and is developed with the participation of the communities that will ultimately use it.

4 Policy Recommendation: Ensure that construction processes are accountable to the workers and the community, are suitable to the location and to the nature of existing structures, avoid creating damp or other hazards through unsuitable retrofits, and minimise emissions of greenhouse gases and other environmental breakdown.

84 R. Todaro, 'Global Care Chain', A. Wong, M. Wickramasinghe, r. hoogland and N. A. Naples (eds), The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies, 2016, https://onlinelibrary.wiley.com/doi/abs/10.1002/9781118663219.wbegss126.

85 G. D'Alisa, C. Cattaneo, 'Household work and energy consumption: a degrowth perspective - Catalonia's case study', Journal of Cleaner Production, Vol. 38, January 2013, http://dx.doi.org/10.1016/j.jclepro.2011.11.058, pp. 71-79.

3.4.2 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."[86]

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.[87] While no proof exists for their cost efficiency, public-private partnerships are highly complex, expensive to plan, and extremely difficult to negotiate.

As the EIB said in its 2017-2018 report: "There is a need to re-prioritise public infrastructure investment."[88] 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 package. 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 3.4.6 below.

a. 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 without reducing vehicle use through providing public alternatives 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.[89] 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.[90]

To limit the negative social and environmental impacts described above, Europe will need to scale up its battery recycling capacity: even in a scenario projecting only moderate uptake of electric vehicles by 2030, the current Li-ion recycling capacity will not be able to cope with projected demand from exhausted electric vehicle batteries.[91]

86 D. Revoltella, P. de Lima and A. Kolev (eds.), p. 2.
87 D. Revoltella, P. de Lima and A. Kolev (eds.), pp. 73 - 74.
88 D. Revoltella and A. Kolev, 'From recovery to sustainable growth - EIB Investment Report 2017/2018', European Investment Bank, 2017, https://www.eib.org/attachments/efs/economic_investment_report_2017_en.pdf, (accessed 10 July 2019), p.2.
89 E. Dominish, N. Florin and S. Teske, 'Responsible minerals sourcing for renewable energy', University of Technology Sydney, 2019, https://www.uts.edu.au/research-and-teaching/our-research/institute-sustainable-futures/our-research/resource-futures/responsible-minerals-for-renewable-energy, (accessed 21 July 2019).
90 'Amnesty challenges industry leaders to clean up their batteries', Amnesty International, 21 March 2019, https://www.amnesty.org/en/latest/news/2019/03/amnesty-challenges-industry-leaders-to-clean-up-their-batteries/ (accessed 21 July 2019).
91 T&E, Element Energy, Enel, Iberdrola and RenaultNissan, 'Batteries on wheels: the role of battery electric cars in the EU power system and beyond', June 2019, https://www.transportenvironment.org/sites/te/files/publications/2019_06_Element_Energy_Batteries_on_wheels_Public_report.pdf,(accessed 23 October 2019), p. 4.

Beyond that, car ownership remains a luxury that not every member of society can afford. Without robust, inexpensive public transport networks and a continued focus on private car ownership, our transport systems would continue to allow exclusion of certain segments of the population and will not solve challenges for city infrastructure such as congestion.

To address that, the GPW 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 2030, 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, and accommodate people with any disability, including by making assistance available without pre-booking. Bicycle routes should be insulated from automobile traffic, well-maintained and broad enough to accommodate significant throughput. Above all, cycling needs a level playing field with other modes of transport, most notably in terms of infrastructure investment and fiscal incentives.

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, providing door-to-door services to all passengers 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.[92] The GPW will invest in the rapid upgrade and increased electrification and integration of existing systems, ensuring that, around Europe, affordable travel is available to everyone — while dramatically reducing the number of passenger flights.

Finally, sustainable passenger travel within Europe will also be conditional on the right incentives and fair regulation and taxation of transport sectors based on the polluter-pays-principle. While airlines' emissions on flights within Europe are already covered by the EU's emissions trading system (ETS), the cost of offsetting for airlines is currently a fraction of what a standard rate taxation of kerosene would cost the sector.[93]

For the freight and logistics sector, a shift from air and road transport to less carbon intensive modes such as barges and rail must be a priority. On average the energy intensity of heavy freight trucks is more than eight times higher than rail.[94] The transport of goods by road consumes around half of all diesel fuel and accounts for 80 percent of the global net increase in diesel use since 2000.[95] This shift can be achieved by investing heavily in rail infrastructure and improving interfaces to roads to allow for efficient inter-modal transport until the last mile.

Poliicy Recommendations:

1 Policy Recommendation: 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.

2 Policy Recommendation: 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.

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

4 Policy Recommendation: Invest in an integrated, efficient high-speed rail system using sustainably produced energy, combined with a kerosene tax on intra-EU flights, to eventually replace air travel within the continent.

b. 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

92 'A European high-speed rail network: not a reality but an ineffective patchwork', European Court of Auditors, Special Report No. 19, 2018, https://www.eca.europa.eu/Lists/ECADocuments/SR18_19/SR_HIGH_SPEED_RAIL_EN.pdf, (accessed 4 August 2019).
93 European Commission, 'Taxes in the Field of Aviation and their impact', Draft final report, https://www.transportenvironment.org/sites/te/files/publications/EC_report_Taxes_in_field_of_aviation_and_their_impact_web.pdf (accessed 23 October 2019), p. 23, 51.
94 International Transport Forum/OECD, 'Towards Road Freight Decarbonisation: Trends, Measures and Policies', OECD Publishing, Paris.
95 Ibid.

$132 billion in 2011 to $41 billion in 2017.[96] 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.[97]

The collapsing pace of investment means that the EU is unlikely to meet its 2030 energy goals[98] and it is clear that the decarbonisation of Europe's energy systems will not happen quickly enough without policy action.[99] 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 3.2 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 to regions, municipalities, neighbourhoods, and even individual homes, where solar panels and energy storage solutions can create 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 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 4.2.3 below.

Policy Recommendation:

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

c. 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.[100] 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:

96 UNEP and BNEF, 'Global Trends in Renewable Energy Investment Report 2018', http://fs-unep-centre.org/publications/global-trends-renewable-energy-investment-report-2018, (accessed 20 June 2019). Fiona Harvey, 'European clean tech industry falls into rapid decline,' The Guardian, 23 March 2016, http://www.theguardian.com/environment/2016/mar/23/european-clean-tech-industry-falls-into-rapid-decline, (accessed 20 June 2019).

97 A. Stukalkina, C. Donovan, 'The dangers of subsidy-free renewable energy', Imperial College Business School, 30 October 2018, https://www.imperial.ac.uk/business-school/knowledge/finance/dangers-subsidy-free-renewable-energy/, (accessed 15 July 2019).

98 It is worth noting that the Commission insists on the need for more private finance as a remedy. See 'Sustainable Energy Investment Forums', European Commission, https://ec.europa.eu/energy/en/topics/energy-efficiency/financing-energy-efficiency/sustainable-energy-investment-forums, (accessed 4 August 2019).

99 'Final Report of the High-Level Panel of the European Decarbonisation Pathways Initiative', European Commission, Directorate-General for Research and Innovation, November 2019, https://publications.europa.eu/en/publication-detail/-/publication/226dea40-04d3-11e9-adde-01aa75ed71a1, (accessed on 4 July 2019), p. 34.

100 See, for example, D. Clark and M. Berners-Lee, 'What's the carbon footprint...of the Internet?' The Guardian, 12 August 201, https://www.theguardian.com/environment/2010/aug/12/carbon-footprint-internet, (accessed 29 July 2019).

"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."[101]

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.[102]

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.[103] 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.[104]

> "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."

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.

Pollicy Recommendations

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

2 Policy Recommendation: Create a democratically-controlled European Data Commons to unlock the power of aggregated data for the common good, while safeguarding privacy, individual sovereignty, security and anonymity.

3.4.3 Social, Cultural and Health Services

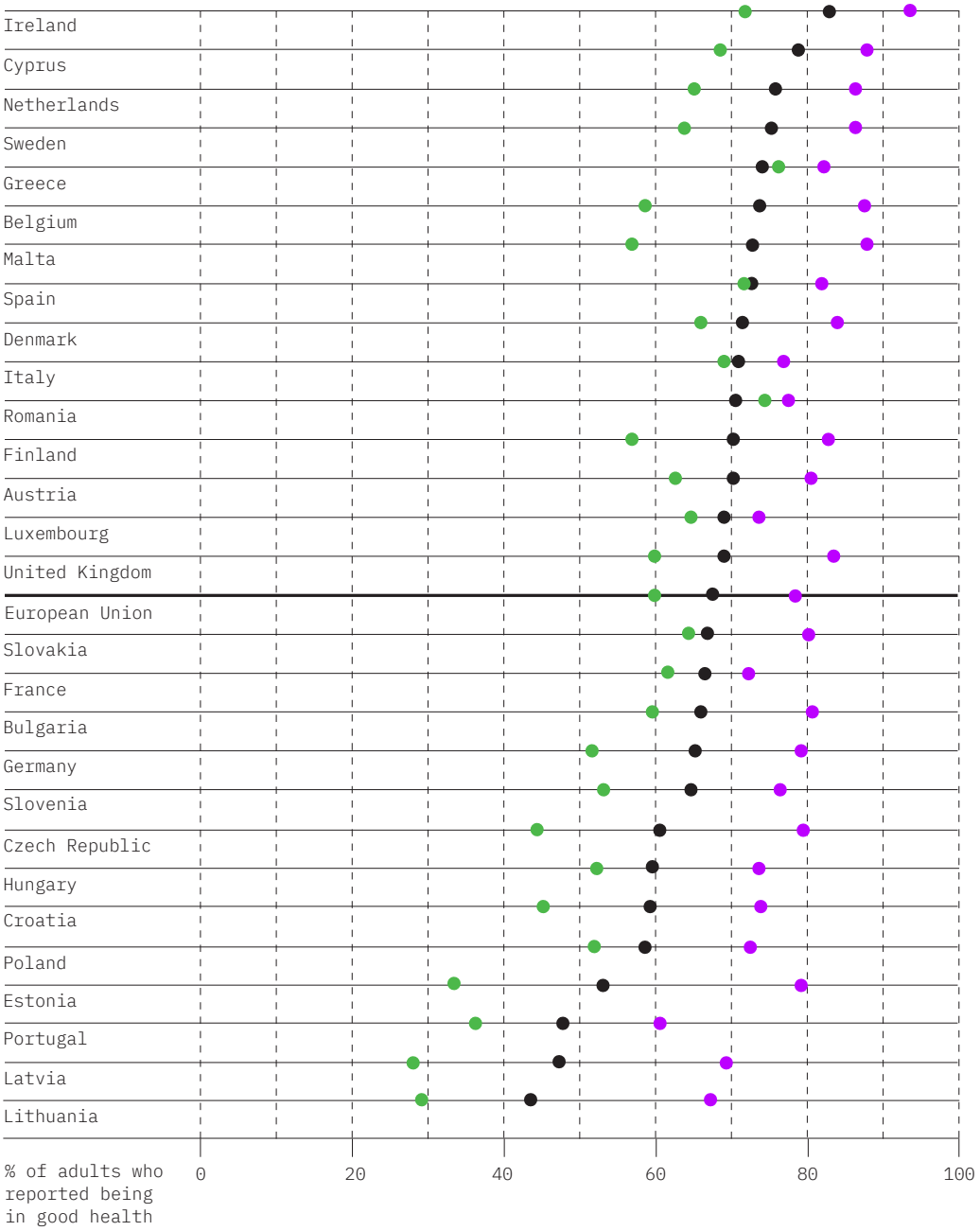
Across Europe, the policy of austerity has called on governments to reduce their investments in fundamental social services like health and education, inflaming inequality and undermining community resilience to a changing climate.

This is why a major investment in sustainable public services and culture sits at the heart of the GPW. This investment will prioritise 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 frontline communities.[105] Education, too, was a chief victim of austerity: in countries like Latvia, Estonia, Romania, and Lithuania, funding to public universities was slashed by

101 Buttarelli, G. "Accept and continue," European Data Protection Supervisor, April 2018.
102 D. Talbot, K. Hessekiel and D. Kehl, 'Community-Owned Fiber Networks: Value Leaders in America', Berkman Klein Center for Internet & Society Research Publication, 2017, https://dash.harvard.edu/handle/1/34623859, (accessed 29 July 2019).
103 See, e.g., 'Platform Cooperativism Consortium', https://platform.coop/, (accessed 29 July 2019).
104 See 'Organisations', Digital Social Innovation, https://digitalsocial.eu/organisations, (accessed 29 July 2019).

Figure 7
Disparities in Health by Income
Around Europe, people with low incomes report lower health.

Source: Eurostat



Case Study: The Lucas Aerospace Combine Committee

In 1976, in response to proposed job cuts at Lucas Aerospace, a group representing the company's workers proposed an Alternative Corporate Plan.

A significant portion of Lucas Aerospace's contracts were with military buyers and therefore funded publicly. The Lucas Aerospace Combine Committee believed that these funds would be better directed towards socially-useful production, which responds to public needs and social concerns. Mike Cooley, one of the authors of the proposals, wrote:

"We have a level of technological sophistication such that we can design and produce Concorde, yet in the same society we cannot provide enough simple heating systems to protect old age pensioners from hypothermia. In the winter of 1975-76, 980 died of the cold in the London area alone..."[108]

The Plan included proposals for the manufacturing of 150 products — from medical equipment and alternative energy to new mobility technologies — that could be built using the company's existing machinery and workforce. Lucas Aerospace's management rejected the proposals, even as labour unions around the world supported them.

A democratic corporate structure would have rewired the company — shifting its focus away from the military and towards socially-useful production.

up to 50 percent.[106] The result has been sustained education inequality between regions of Europe, with whole swathes of the population shut out from new opportunities in 'green' industries that require more advanced training.[107]

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 healthcare, it will challenge the increasing dominance of private pharmaceutical companies in the provision of healthcare services and the development of medicine. And in social care, it will challenge the 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.[109]

In addition to the European Health and Care Standard, therefore, the GPW will fund a massive programme of regional and municipal experimentation in service models in foundational services such as social care, independent living for disabled people 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 and the recipients 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 members of communities 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 3.4.6

105 M. McKee et al., 'Austerity: a failed experiment on the people of Europe', Clinical Medicine, 12(4), August 2012, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4952125/, (accessed 29 June 2019).
106 'Latvia austerity steps and budget cuts', Reuters, 17 June 2009, https://www.reuters.com/article/latvia-cuts-idUSLH54432920090617, (accessed 29 June 2019).
107 'Education & training in Europe: inequality remains a challenge', European Commission, Press release, 9 November 2017, https://ec.europa.eu/commission/news/education-and-training-europe-inequality-remains-challenge-2017-nov-09_en, (accessed 4 August 2019).
108 M. Cooley, 'Meeting Social Needs', in B. Russell, Democracy: Growing or Dying?, The Spokesman, 25 October 2010, p. 37.
109 The Foundational Economy Collective; D. Burns et. al., 'Where does the Money Go? Financialised chains and the crisis in residential care', CRESC Public Interest Report, 2016, available at http://humme-dia.manchester.ac.uk/institutes/cresc/research/WDTMG%20FINAL%20-01-3-2016.pdf,(accessed 4 August 2019).

below, through inclusive ownership funds established by private firms in receipt of GPW funding; and third, as set out in section 4.2.2 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.

Policy recommendations:

1 Policy Recommendation: 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.

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

3 Policy Recommendation: Invest in shared public services across the continent — from public parks to childcare centres.

3.4.4 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.[110]

Cooperative ownership can increase job security, empower workers and be at least as productive as capitalist business models. A 2006 study showed that cooperatives are more productive than conventional enterprises,[111] while recent study of Italian worker cooperatives found no significant productivity gains for cooperatives[112] — suggesting that, on the whole, cooperatives are at least as productive as capitalist firms.

Beyond the potential for greater productivity, cooperative structures have several other clear benefits. Firstly, the non-hierarchical working practices and participatory structures provide more meaningful work than conventional enterprises.[113] Secondly, and most critically, cooperatives are already playing a vital role in driving the renewable energy transition.[114] For example, the European network of renewable energy cooperatives — supported within the Horizon 2020 framework — includes 1,500 organisations working to advance the transition.

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 3.4.6 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:

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

110 'Confronting climate change through cooperative enterprise', Food and Agriculture Organisation of the United Nations, 11th UN International Day of Cooperatives, 2008, https://www.ica.coop/sites/default/files/2008-idc-fao-en.pdf, (accessed 1 August 2019).

111 J. Logue and J.S. Yates, 'Cooperatives, worker-owned enterprises, productivity and the International Labor Organisation', Economic and Industrial Democracy, 2006, 27(4): 686-690.

112 D. Jones, 'The Productive Efficiency of Italian Producer Cooperatives: Evidence from Conventional and Cooperative Mills,' in S. Novkovic, V. Sena (eds.), Cooperative Firms in Global Markets: Incidence, Viability, and Economic Performance, Oxford: Elsevier, 2007.

113 G. Kokkinidis, 'Spaces of possibilities: Workers' self-management in Greece', Organisation, 2015, 22(6): 847-871.

114 T. Bauwens, B. Gotchev and L. Holstenkamp, 'What drives the development of community energy in Europe? The case of wind power cooperatives', Energy Research & Social Science, 2016, 13: 136- 147; and A. Wierling et al., 'Statistical Evidence on the Role of Energy Cooperatives for the Energy Transition in European Countries', Sustainability, 2018, 10(9), https://doi.org/10.3390/su10093339.

3.4.5 Green Horizon 2030

Innovation, both in technology — such as battery storage and photovoltaic and wind energy — 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. For example, the programme should invest significantly in the development of fossil-free basic materials and recycling (for example, in steelmaking, cement and plastics industries) and making the outputs available globally — on an open source basis.

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.[115]

This is why the GPW will include a dedicated research and development programme, "Green Horizon 2030". Building on Horizon 2020 – the EU's €11 billion investment in research and innovation – "Green Horizon 2030" 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 innovation 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 2030 will avoid this trap altogether.

> "Climate engineering diverts attention away from the need to reduce emissions. CO2 removal gives the illusion that we can continue using fossil fuels indefinitely."
>
> *Jean-Pascal van Ypersele*

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 permanent transition to a sustainable 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 2030 leaps us down that avenue.

Policy Recommendations:

1 Policy Recommendation: Establish the Green Horizon 2030 research and development programme.

2 Policy Recommendation: Ensure that any technologies or techniques developed under the Green Horizon 2030 programme are open source and devised in collaboration with other countries to support the emergence of sustainable economies across the globe.

3.4.6 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.[116] 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.[117] 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).[118]

Industries and the communities that they support will face very different transition pathways and challenges.

116 'Energy Statistics - an overview', Eurostat, June 2019.
117 'Employment and Social Developments in Europe: 2019 review highlights that tackling climate change can be a driver for growth and jobs', European Commission, Press Release, 4 July 2019, https://ec.europa.eu/commission/presscorner/detail/en/ip_19_3412, (accessed 5 July 2019).
118 R. Popp, P. de Pous and J. Gavanta, 'How to ensure a just and fast transition to a competitive low-carbon economy for the EU?', Think 2030, 21 November 2018, https://ieep.eu/uploads/articles/attachments/48c9607d-0c50-48a4-a0e4-d7809e2f89ec/Think%202030%20Low-carbon%20economy%20for%20the%20EU.pdf?v=63710108760, (accessed 15 July 2019).

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.[119] It is a required commitment within the Paris Agreement on Climate Change.[120] 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.[121]

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.[122]

a. Transforming Industrial Practices

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

Basic materials industries — also known as energy-intensive processing industries — convert natural resources into materials like steel, cement, chemicals, plastics, aluminium, glass and paper.[123] These industries require significant energy inputs and represent the main source of industrial emissions, accounting for approximately a third of global greenhouse gas emissions.[124] Most of these materials cannot currently be produced in a climate-friendly, fossil-free way. At the same time, decarbonising these sectors is by no means straightforward — and the solutions will vary from sector to sector. For some materials, decreasing production and use might be necessary to decrease resource and energy throughput. Others will be needed in the transition, and demand for some of them might even go up during the transition (e.g., due to the need for renewable energy, climate adaptation technologies or mobility infrastructure), driving the need for entirely new production technologies. In this space, the transformation must be guided by robust public R&D through the Green Horizon 2030 programme.

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 perspective 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.

b. 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) the promotion of diversified worker ownership funds, and (e) retraining of workers to adapt to decreases in material production.

- 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 percent of the decrease in income associated with the shorter work week, moving to 50 percent in the second year and 25 percent 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 sub-

123 J.H. Wesseling et al., 'The transition of energy intensive processing industries towards deep decarbonization: Characteristics and implications for future research', Renewable and Sustainable Energy Reviews, 2017, vol. 79, pp. 1303-13.

124 M. Fischedick et al., 'Industry', in O. Edenhofer et al. (eds), Climate Change 2014: Mitigation of Climate Change. Contribution of Working Group III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change, 2014, Cambridge University Press, Cambridge, United Kingdom and New York, NY, USA.

Case Study: The French associations for the maintenance of peasant agriculture

Since 2001, a new model of community-supported agriculture appeared in France: the association for the maintenance of peasant agriculture (AMAP).

Under the AMAP model, local producers commit to regularly delivering fresh, locally-produced food to their local communities. All food produced under this model is based on stringent sustainability criteria.

Consumers, in turn, commit to purchasing these goods at a specified price for a given period of time. This links communities to their local food producers, strengthening community bonds and entrenching economic and environmental sustainability within local agricultural supply chains.

sidy could also encourage firms to adopt better working-from-home policies — this would lower costs and emissions associated with commuting, effectively reducing demand for public transport infrastructure.[125]

- Participation: Employers will be required to shift to more participatory management structures, enabling meaningful worker representation on boards with at least 33 percent of seats, and at least 20 percent of votes to workers in firm meetings through a new Economic Democracy Directive.

- Diversified worker ownership funds: Employers and asset managers will be required under the Economic Democracy Directive to ensure that all funds from workers in pension or other ownership plans are managed by boards where at least 50 percent of members are elected by workers or independent trade unions. All voting rights in company shares will be controlled by elected representatives.

- 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.

c. 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:

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

2 Policy recommendation: 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.

3.4.7 Agriculture and Rural Communities

Agriculture has long sat at the core of the EU's economic agenda. For the period of 2021-2027, the Common Agricultural Policy (CAP) is set to have a budget of €365 billion,[126] or more than 35 percent of the Union's budget at current rates.

Agriculture, which is responsible for about 10 percent of all GHG emissions in Europe,[127] also employs 10 million people around the continent, including over 10 percent 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.[128]

125 Simulations show that increased teleworking may affect three to 30 percent of trips by 2050, depending on the region. International Transport Forum/OECD, 'ITF Transport Outlook 2019', OECD Publishing, Paris, https://doi.org/10.1787/transp_outlook-en-2019-en.

126 'EU Budget: the Common Agricultural Policy after 2020', European Commission, 1 June 2018, https://ec.europa.eu/commission/news/eu-budget-common-agricultural-policy-after-2020-2018-jun-01_en, (accessed 17 June 2019).

127 'Agri-environmental indicator - greenhouse gas emissions', Eurostat, September 2017, https://ec.europa.eu/eurostat/statistics-explained/index.php/Agri-environmental_indicator_-_greenhouse_gas_emissions, (accessed 25 July 2019).

128 D. Dinesh, 'We are all in this together: Agriculture growth, jobs, food security and climate', CGIAR, 10 April 2014, https://ccafs.cgiar.org/research-highlight/we-are-all-together-agriculture-growth-jobs-food-security-and-climate, (accessed 25 July 2019).

However, agriculture generates just 1.6 percent of EU GDP.[129] 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 percent 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,[130] even though they represent a vital source of knowledge about agroecology and sustainable farming.

The climate and environmental crises demand deep transformations to the way we produce and consume food. Europe currently loses nearly one billion tonnes of soil each year,[131] 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.[132]

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 percent in 1995 to 24 percent in 2005,[133] and has recently been estimated to have fallen as low as 21 percent.[134] 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 begins by curtailing the subsidies to corporate landowners whose methods drive environmental destruction, and shifting these resources toward small landholders whom they often employ. This will drive a transfer in land ownership away from large landholders and towards community-owned agricultural models such as community-supported agriculture. It can also take an innovative approach to boosting community resilience to food shocks, for example by supporting the expansion of urban or local farming outside the sphere of capital accumulation. For example, over 50 percent of Polish and nearly 40 percent of Czech non-farming households produce food for personal consumption and share it with their friends and neighbours.[135] With funding, expertise and capacity building, the GPW could power an expansion of these sustainable models of food production.

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 enhances biodiversity compared to other means of producing forestry products and animal husbandry products.
- Transition to sustainable meat production and a reduction in overall meat output, substituting mass-produced meat with good-quality meat.

129 'Q&A: Reform of EU farm policy', BBC News, 1 July 2013, https://www.bbc.com/news/world-europe-11216061#howspent, (accessed 25 July 2019).
130 J. de Jong, I. Megens and M. van der Waal (eds.), Walking the Tightrope: Europe between Europeanisation and Globalisation, Selected papers presented at European studies intensive programme 2010, University of Groningen. Groningen: Euroculture consortium.
131 P. Panagos et al., 'The new assessment of soil loss by water erosion in Europe', Environmental Science & Policy 54 (2015), pp. 438-447.
132 FERN, 'EU consumption and illegal deforestation', FERN, 2015.
133 European Parliament, 'Report on fair revenues for farmers: A better functioning food supply chain in Europe', 2009/2237(INI), 2009, http://www.europarl.europa.eu/sides/getDoc.do?type=REPORT&reference=A7-2010-0225&language=EN, (accessed 15 July 2019).
134 European Parliament, 'Parliamentary questions - Answer given by Mr. Hogan on behalf of the Commission', European Parliament, 27 February 2015, http://www.europarl.europa.eu/doceo/document/E-8-2015-000521-ASW_EN.html, (accessed 15 July 2019).
135 P. Jehlička, P. Daněk and J. Vávra, 'Rethinking resilience: homegardening, foodsharing and everyday resistance', Canadian Journal of Development Studies / Revue canadienne d'études du développement, 2018, https://doi.org/10.1080/02255189.2018.1498325.

- 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 health,[136] the environment, and has produced a crisis in the treatment of animals.

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.[137]

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 4.4.1 below.

Policy Recommendation:

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

136 Y. Zheng et al, 'Association of changes in red meat consumption with total and cause specific mortality among US women and men: two prospective cohort studies', BMJ, 2019 https://www.bmj.com/content/365/bmj.l2110, (accessed 25 July 2019).

137 S. Mayra, N. Ugarte and C.S. Johnston, 'Health Biomarkers in Adults Are More Closely Linked to Diet Quality Attributes Than to Plant-Based Diet Categorization', Nutrients, 11(6), 2019, https://www.mdpi.com/2072-6643/11/6/1427, (accessed 25 July 2019).

4

Environmental Union

4.1 Introduction

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.

4.2 Legislating for Emergency

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 product[138] — 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.

4.2.1 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 well-being 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.[139] As the planet heats, extreme temperatures will kill increasing numbers of people.[140] 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 into poverty.[141] 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".[142]

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.[143] 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.[144] In a hothouse Earth, sea levels could eventually rise by 10-60 metres,[145] 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. It must recognise that a 2 degree Celsius rise, or 1.5 degree rise, itself involves an unacceptable level of

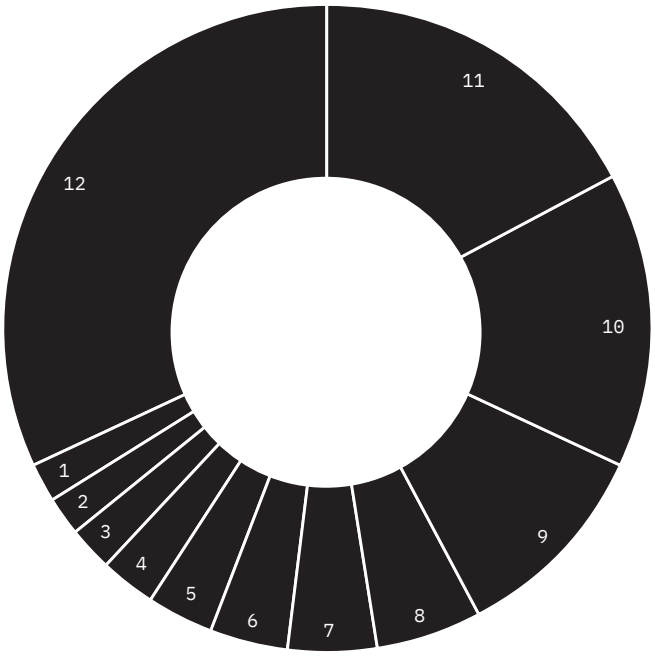
138 S. Evans, 'World can limit global warming to 1.5C 'without BECCS''. Carbon Brief, 13 April 2018, https://www.carbonbrief.org/world-can-limit-global-warming-to-onepointfive-without-beccs, (accessed 25 July 2019).
139 See Appendix 2 for a brief primer on the science.
140 In 2003, a major European heatwave 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.
141 'Climate change and health', World Health Organisation, 1 February 2018, https://www.who.int/news-room/fact-sheets/detail/climate-change-and-health, (accessed 04 August 2019).
142 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).
143 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).
144 S. Dasgupta et al., 'The impact of sea level rise on developing countries: a comparative analysis', Climatic Change, Vol 93, Issue 3–4, April 2009, pp. 379–388, https://link.springer.com/article/10.1007/s10584-008-9499-5, (accessed 5 August 2019).
145 W. Steffen et al.

Figure 8
Top ten contributors to global GHG emissions by 2100
The chart to theh right is based on data measuring countries' historical responsibility for GHG emissions.

Source: Climate Analytics

KEY

1 Canada
2 Indonesia
3 Japan
4 Great Britain
5 Germany
6 Brazil
7 India
8 Russia
9 China
10 European Union
11 USA
12 Rest of world



climate damage. Europe must put the issue at the very front of its political agenda.

Policy Recommendation:

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

4.2.2 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 net-zero GHG emissions in a way that is compatible with the principles of a just transition.[146] 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,[147] 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. Europe's current approach is insufficient to holistically address the scale of the crisis, which is structurally linked to social and economic systems.[148] The EnU, then, must include a spate of new rules designed to support economic development within the 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.[149] 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 and worldwide.

The legislation would include a technical mandate for the Environmental Justice Commission (see section 5) to develop interim and regional targets or other means of measuring biodiversity and 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 formu-

146 We have not attempted to set a date for decarbonisation in this document. A fixed date for the EU as a whole is desirable — and the target of reaching net-zero by 2050 is clearly not ambitious enough. But an EU-wide figure obscures disparities in emissions between EU member states. A date that applies to every European country may not be attainable for those EU member states that are currently heavily reliant on coal and other fossil fuels for energy. What matters more than a fixed date for reaching net-zero is the pace at which the transition happens and the size of the "net": a just transition cannot be based on continued emissions offset through the deployment of large-scale decarbonisation strategies.
147 These are detailed in Appendix 1.
148 IPBES, B4.
149 IL. Laybourn-Langton L and T. Hill, 'Facing the crisis: Rethinking economics for the age of environmental breakdown', Institute for Public Policy Research, 1 August 2019, http://www.ippr.org/research/publications/rethinking-economics-for-the-age-of-environmental-breakdown, (accessed 1 August 2019).

lated with input from climate scientists, the non-governmental sector, activists and with the participation of community members. Crucially, fossil fuel companies and financial institutions involved in the financing of fossil fuels must not be involved in this process.

In particular, biodiversity monitoring should be supported by experts, including taxonomists, and make use of the latest developments in species identification. Monitoring should address status and trends in ecosystems, species, and functional and genetic diversity. As part of the Care Income, the GPW can offer financial rewards for community scientists engaging in biodiversity monitoring, but such programmes must be underpinned by adequate support structures and mechanisms for the collection, sharing and analysis of data. Equally important is the need for collecting and synthesizing social science data along with environmental data, including data on drivers of biodiversity change, from agriculture, energy, transport and other sectors.

Policy Recommendation

1 Introduce legislation mandating that Europe's economies operate within the planetary boundaries.

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

4.3 Legislating for Sustainability

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.

4.3.1 Fiscal interventions

Although, as discussed in section 3.2.5 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.[150]

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 the public 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 lobbies[151] 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 Institute[152] and others[153] 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

150 J. Hansen, Storms of My Grandchildren: The Truth About the Coming Climate Catastrophe and Our Last Chance to Save Humanity, Bloomsbury, 2009, p. 114.

151 J. Hanoteau, 'Lobbying for carbon permits in Europe', Recherches économiques de Louvain, Vol. 80, 2014, https://www.cairn.info/revue-recherches-economiques-de-louvain-2014-1-page-61.htm#, (accessed 3 August 2019).

152 K. Smith, 'Carbon trading isn't working', The Transnational Institute, 9 November 2009, https://www.tni.org/en/article/carbon-trading-isnt-working, (accessed 1 August 2019); T. Gilbertson and O. Reyes, 'Carbon Trading - How it works and why it fails', critical currents, Dag Hammarskjöld Foundation, Occasional Paper Series, No. 7, November 2009, https://www.tni.org/files/download/carbon-trading-booklet.pdf, (accessed 1 August 2019).

153 'EU ETS myth busting: Why it can't be reformed and shouldn't be replicated', Corporate Europe Observatory, 15 April 2013, https://corporateeurope.org/en/climate-and-energy/2013/04/eu-ets-myth-busting-why-it-can-t-be-reformed-and-shouldn-t-be-replicated, (accessed 29 June 2019).

Macron and the French fuel tax

In 2018, French president Emanuel 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 times[156] 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.[157] 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.[158]

At the same time, many industrial sectors were exempted[159] from taxation. A recent study[160] 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 percent) free emissions quotas and paid no price at all, while the cement industry received a 14 percent free emissions quota.

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

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 as part of a public dividend. There is broad consensus among economists that a carbon fee is the most efficient and cost-effective[154] way to shift demand to green technology.

A well-designed carbon fee offers triple benefits: it reduces emissions; drives investments in clean technologies, making them relatively cheaper; and raises revenue. In the European context, a carbon price has the potential to channel investments into more sustainable sectors of the economy, ultimately generating local employment and reducing foreign energy dependency.

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 or other benefits 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

154 See, for example, U. von der Leyen, 'A Union that strives for more - My agenda for Europe', 2019, https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf, (accessed 4 August 2019).
155 Réseau Action Climat.
156 Réseau Action Climat, 'Pas de Transition Écologique sans Justice Sociale', 2019, https://reseauactionclimat.org/wp-content/uploads/2019/04/presentation.pdf, (accessed 29 July 2019).
157 T. Piketty, 'Inequality in France', Le Monde, [web log], 18 April 2017, https://www.lemonde.fr/blog/piketty/2017/04/18/inequality-in-france/, (accessed 29 July 2019).
158 M.B. Jelloul et al, 'The 2019 French Budget: What effect will it have on households?', Institut des Politiques Publiques, https://www.ipp.eu/wp-content/uploads/2019/01/n37-notes-IPP-January2019.pdf, (accessed 20 July 2019), p. 7.
159 RA. Robert, 'Row over fuel prices highlights flaws of France's ecological tax', Euractiv, 9 November 2018, https://www.euractiv.com/section/climate-environment/news/french-dispute-over-carbon-tax-highlights-flaws-of-its-ecological-tax/, (accessed 20 July 2019).
160 Réseau Action Climat.

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 public support for the scheme. Thereafter the carbon fee should rise at an economically sound rate that encourages technological innovation and infrastructure development to eliminate all carbon emissions as soon as technically possible and socially bearable. A proportionally rising dividend is likely to enhance its public appeal. It should be set at €100 per tonne, escalating yearly by €100 to 2025, allocated to a Carbon Elimination Fund that pays for research and sustainable infrastructure.

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, proposed[155] 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 public 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 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. Replace the EU-ETS with a fee-and-dividend system, after piloting 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.

4.3.2 Transport

The EU's transport policies have taken significant steps in setting new standards for vehicles on our roads, for railways, for air travel, and for shipping. With energy generation, fossil-fuel reliant transport is one of the top sources of greenhouse gas emissions and climate damage.

Today, the EU has a range of vehicle emissions and fuel-efficiency standards, but these have not been updated since 2014. Vehicle corporations have not played their part in shutting down fossil fuel car production, even though many of the largest Chinese companies have already committed to zero emission vehicle fleets by 2025. Our railways also still run inefficient diesel trains, when tracks could be electrified. There are large gaps in the quality of bus services across different EU member states, forcing people to use expensive taxis or to buy personal cars.

There is no time left for new polluting vehicles to be rolling out of our factories.

First, we must amend the Vehicle Emissions Regulation, to introduce a new 'Euro 7' standard that is consistent with zero-exhaust pipe emissions on all passenger vehicles.[161] This will require that all new vehicles are fully electric, or powered by hydrogen or any other green technology. Buses or light vans should be included. All heavier goods vehicles must also be zero emissions, subject to specific exemptions made by the Commission on a temporary basis, to the extent enabled by technology.

In addition, the Emission Performance Regulation should be changed to require that all vehicles that are manu-

161 Vehicle Emissions Regulation (EU) No 459/2012/EC Annex
162 Emission Performance Regulation (EC) 443/2009 contains the present rules.

factured have zero exhaust-pipe emissions, or that from 25 December 2021 no dividends or director compensation may be paid.[162] For each month of infringement, fines amounting to 10 percent of annual turnover shall be paid.

Second, a new Public Enterprise Directive should clarify that EU member states, or regional states, may create golden shares in any automotive manufacturing company to exercise governance and voting rights for the purpose of rapid decarbonisation.[163]

Third, the Railways Directive should be amended to require that railway undertakings and EU member states set out plans and achieve the rapid 100 percent electrification of rail networks.[164]

Any transport plan has to be fully integrated, and enable passengers and business the full freedom to use the most environmentally sustainable technology available. While air travel is currently two percent of global emissions, unlike other forms of transport there are not currently easy alternatives for fossil-free flight. However, many flights are unnecessary where high-speed rail exists. When factoring in the time for transit, check-in, and security at both ends, flights may be even longer. This means, with investment and subsidies for high-speed railway outlined in 3.4.2, many flights could be phased out.

So fourth, the Railways Directive should be amended to require the Commission to gather information on all currently replaceable and target routes as high-speed rail extends, and the power to prohibit air travel when trains with comparable travel time are available. Subsidies for additional trains and costs will be made available under the Green Public Works.

In international transport, shipping makes significant contributions to carbon emissions, particularly with large inter-continental tankers shipping goods and oil. Solar technology can radically reduce emissions, while saving costs.[165] So fifth, as well as legislating for its own fleets, the EU should renegotiate the International Convention for the Prevention of Pollution from Ships to require that corporations with over 15 twenty-foot equivalent unit capacity ships decarbonise their fleets to the limits of available technology.

Finally, the largest consumers of oil in the world are military organisations through the vehicles of war in the air, on land and at sea.[166] The EU must use the Open Method of Coordination with member states to stop all unnecessary military equipment movements. The EU must also be aggressive in its Common Foreign and Security Policy in preventing wars and the conditions that give rise to war, by negotiating a new International Convention for the Elimination of War Industry. This will aim to reduce government military budgets in order to fund the humanity's fight against climate damage.

Policy Recommendations:

1 Introduce a new 'Euro 7' vehicle emissions standard to prohibit the production of fossil-fuel vehicles. Prohibit dividends for shareholders, or pay for directors of corporations who fail to comply after a transitional period.

2 Pass a new Public Enterprise Directive to codify the right of member states and regional states to create golden shares in manufacturing companies to decarbonise production.

3 Amend the Railways Directive to electrify all rail in Europe.

4 With investments in high-speed rail, collect data and phase out all aeroplane flights with comparable times to rail alternatives.

5 Renegotiate the International Convention for the Prevention of Pollution from Ships to require decarbonisation of fleets to limits of available technology.

6 Negotiate a new International Convention for the Elimination of War Industry to free countries around the world to invest in the fight against climate damage.

4.3.3 Energy

The EU's energy policy has been failing to deliver on its decarbonisation and energy efficiency targets,[167] and has overseen a major slowdown in investments. At the same time, Europe's renewable energy targets have greatly accelerated the expansion of other environmentally-destructive forms of energy generation. Ultimately, the low-carbon transition carries significant risks if it lacks accountability to all residents.

As discussed in section 3.4.2 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.

163 The effect is to reverse Commission v Germany (2007) C-112/05 in the field of environmental issues, but it could also be an opportunity for the EU legislature to clarify the meaning of TFEU article 345, that systems of property ownership are to be left entirely to member states.
164 Railways Directive 2012/34/EC contains the current rules.
165 'Solar-Powered Shipping to Save 250 Million Tons of Fuel Per Year' (27 June 2019) ThomasNet
166 See for example, 'The US military and its oil' (30 June 2014) Union of Concerned Scientists.
167 EurObserv'ER, 'The State of Renewable Energy in Europe 2018', 18th annual overview barometer, 2018, https://www.eurobserv-er.org/18th-annual-overview-barometer/, (accessed 3 August 2019).

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. There is also a failure to use existing regulation to decarbonise our energy suppliers by eliminating coal, oil and gas. This not only risks driving up prices for Europeans as renewable energy costs fall, but also maintains our dependence on fossil-fuel dictatorships, 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.[168] This can be encouraged through the Open Method of Coordination. A new Economic Democracy Directive will require that all publicly owned utilities enable members of the public in the locality to vote for a minimum number of representatives in the utility's governance.

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.

While encouragement of public ownership is desirable, minimum environmental standards must be set whether energy is in public or private hands. The Electricity Directive currently has no clear standards for decarbonising the electricity supply.[169] This is true, even though wind turbines everywhere, and solar farms in many places, are already cheaper than new coal, nuclear, gas or oil based energy generation.[170] This makes the issue clear: the only reason that the electricity is not already carbon free is because of a failure in political vision.

The Electricity Directive should be amended to require a 20 percent reduction of emissions by the end of 2020, 40 percent by 2021, 60 percent by 2022, 80 percent by 2023, and 100 percent by the end of 2024. Private energy companies must make the necessary investments before paying shareholders dividends, or risk being out-competed by publicly-owned community initiatives.

In addition, the scandal of energy companies converting coal-fired power stations into wood burning stations must end. Bioenergy — an energy source that fuels deforestation and the destruction of natural systems — has seen a massive increase in recent years. Biomass now contributes to 65 percent of the EU's energy inputs classified as 'renewable', and forest biomass — the new and major biomass feedstock of choice — increased 140 percent between 1990 and 2016.[171] In countries such as Latvia and Estonia, with around half of their land forested, rapidly increasing pellet production is an intense environmental threat.[172]

This has led to deforestation, and little more than creative accounting. It was said that trees consumed carbon while growing, and this neutralised burning wood for power. As a result, the Renewable Energy Directive allowed member states to not count wood burning power stations in their carbon budgets. But the scientific evidence shows that emissions from wood burning are worse at the point of production. Moreover, the production and shipping of timber cannot be regarded as sustainable.[173] Because wind and solar are cheaper, it is time to remove this great carbon scam from the Renewable Energy Directive.

This also extends to hydro power, where the significant expansion of dams has damaged and divided ecosystems.[174] In the Balkans, some of the wildest rivers in Europe and a hotspot for freshwater biodiversity are under threat from around 2,800 planned hydropower plants projected to be built over the next few years.[175]

Gas must also be removed from our energy system, by amending the Gas Directive.[176] Gas is used for heating

168 See the Transnational Institute's research into cities that are taking control of public utilities, often following a public vote. In Munich, Germany, the local council brought local energy generation into public hands to accelerate decarbonisation. It aims to meet the city's energy needs entirely through renewables by 2025 — a pace that was inconceivable for the private sector. S. Kishimoto and O. Petitjean (eds.), 'Reclaiming Public Services: How cities and citizens are turning back privatisation', The Transnational Institute, June 2017, https://www.tni.org/en/publication/reclaiming-public-services, (accessed on 5 August 2019).

169 Electricity Directive 2009/72/EC

170 Wind Europe, 'Wind energy is the cheapest source of electricity generation' (29 March 2019).

171 EU Biomass Case (2019) Applicants Submissions for Annulment. Accessible at: http://eubiomass-case.org/wp-content/uploads/2019/08/EU-Biomass-Case-Main-Arguments.pdf

172 Global Agricultural Information Network (2019) EU Biofuels Annual 2018. Accessible at: https://gain.fas.usda.gov/Recent%20GAIN%20Publications/Biofuels%20Annual_The%20Hague_EU-28_7-3-2018.pdf

173 Michael Le Page, 'The renewable energy scam making global warming worse' (21 September 2016) 231 New Scientist 20-21. Justin Catanoso, 'EU sued to stop burning trees for energy; it's not carbon neutral: plaintiffs' (6 March 2019) Mongabay.

174 Save The Blue Heart of Europe (2019) Accessible at: https://balkanrivers.net

175 A. Nelsen, 'Balkan hydropower projects soar by 300 percent putting wildlife at risk, research shows', The Guardian, 27 November 2017, https://www.theguardian.com/environment/2017/nov/27/balkan-hydropower-projects-soar-by-300-putting-wildlife-at-risk-research-shows, (accessed 6 November 2019).

176 Gas Directive 2009/73/EC

of buildings and home across Europe, but much of it is sourced from Russia, whose exports are around 50 percent fossil fuels. The concentration of resource wealth in post-Soviet Russia has meant an oligarch economy, and political despotism. This makes energy independence a matter of European security. Targets for removing gas must be set in accordance with the speediest possible timeline for retrofitting buildings and homes to shift to fully electric energy.

The EnU must also, finally, phase out Europe's fossil fuels and all 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.[177] In the EU, direct and indirect fossil fuel subsidies exceed €200 billion[178] annually. At least €4 billion of these subsidies come from the EU itself.[179]

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 — so all targets must be clearly achievable, fully funded, and profitable in the short to medium term.

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 templates, 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.[180] 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:

1. Encourage taking energy utilities back into public ownership using the Open Method of Coordination, and require public voting rights in public utilities.

2. Amend the Electricity Directive, Renewable Energy Directive, and Gas Directive to require 100 percent clean and sustainable energy generation.

3. Introduce robust fossil fuel subsidy reporting standards under the NECP.

4. Link GPW funding to fossil fuel subsidy withdrawal during a transitional period.

4.3.4 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. By amending the Consumer Rights Directive,[181] at a minimum, these rules should require:

- a right for products to be of 'lasting and durable quality';
- a right to repair within a minimum statutory warranty;
- mandatory recyclability;

Within supply and food chains, supermarkets play a leading role, along with other major department stores. They account for a high proportion of unnecessary

177 S. Teske (ed), Achieving the Paris Climate Agreement Goals, Springer International Publishing.
178 Gas Directive 2009/73/EC
179 ODI & Climate Action Network Europe, 'Phase-out 2020: Monitoring Europe's fossil fuel subsidies', September 2017, https://www.odi.org/sites/odi.org.uk/files/resource-documents/11762.pdf (accessed 21 October 2019), p. 22.
180 O. Sartor, T. Spencer, 'Fossil fuel subsidies and the new EU Climate and Energy Governance Mechanism', Institut du développement durable et des relations internationales, Working Paper No 9, 16 July 2016, https://www.iddri.org/sites/default/files/import/publications/wp0916_os_fossil-fuel-subsidies-eu.pdf, (accessed 20 July 2019), pp. 12-16.
181 Consumer Rights Directive 2011/83/EU

waste, whether in food, packaging, or in driving consumer demand that may be detrimental to human and environmental health. A new Supermarkets and Stores Directive should apply to businesses with over €1 billion in turnover (a figure that can be progressively decreased). Duties will include:

- traffic light coloured labelling (red-amber-yellow) for the carbon impact of every product;
- traffic light labelling for the nutritional value of all food and drink products;
- ensuring all packaging is recyclable in the locality where it is sold;
- eliminating plastic unless strictly necessary according to the member state regulator;
- decarbonising all transport used for delivery and in supply chains;
- ensuring all meat purchased by supermarkets is based on high sustainability and ethical standards developed at an EU member state level with the involvement of animal rights activists, farmers and supermarkets;
- ensuring agricultural producers and workers receive living wages in collective agreement; and
- enforcement in derivative claims by shareholders, employees, supply chain workers, representative environmental groups and the relevant member state regulator.

There should also be:

- 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 3.4.2 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 dispossession 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. Any technology developed as part of the GPW must also be grounded in these principles — for instance ensuring that electric vehicle batteries are sustainably manufactured and rare earth materials are recycled.

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 Recommendations:

1. Enhance consumer rights to products of lasting and durable quality, while enshrining in law a right to repair and recyclability.
2. Pass a new Supermarkets and Stores Directive to require traffic light labelling for carbon and nutrition, no unnecessary plastic, decarbonising transport, a living wage for agricultural workers, and effective enforcement.
3. 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.

4.3.5 Corporate finance, governance and competition

As this report outlines in section 3.2, 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. Europe's existing capital framework for financial institutions not only hinders these investments, but also supports investment in fossil fuels at the expense of renewable energy and technology[182] This exposes the financial system to

182 M. Liebreich and A. McCrone, 'Financial regulation – biased against clean energy and green infrastructure?' Bloomberg New Energy Finance Clean Energy White Paper, 2013.

systemic risk, as non-renewables face both physical damage and transition risk.

The prudential framework introduced after the financial crisis to regulate banks and insurers[183] defines climate-related financial risks narrowly, and does not require social, environmental or climate-related risks to be included in the risk-weighting for exposures. 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. This is also true of other companies that are not required to account for the costs of climate damaging assets.

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

First, the Accounting Directive, which sets standards for all companies, must be amended to require that companies (including insurance firms or banks) account for the full clean up costs resulting from climate damage, fossil fuel pollution, and all prospective climate-related risks.[184] These must be calculated on the presumption that it is unlawful to contribute to damage, either civil or criminal, to the environment. The Company Law Directive must be amended to require that companies holding fossil fuel assets, subject to specific and temporary exemptions made by the Commission, set aside reserve capital to cover clean up costs.[185]

Second, 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 aim of the taxonomy is to create a set of tools that helps investors understand the climate and environmental impacts of their investments. It sets out a list of economic activities and criteria for assessing their impact in six areas: climate change mitigation; climate change adaptation; sustainable use and protection of sustainable water and marine sources; transition to a circular economy, waste prevention and recycling; pollution prevention and control; and protection of healthy ecosystems. But the taxonomy is not binding and investors are free to use a different disclosure method.

The outputs of this work must be more ambitious than currently envisioned. Firstly, the taxonomy must identity environmentally-destructive activities, ensuring that companies engaged in such activities face direct impacts on their finances. Secondly, the taxonomy must look more holistically at the climate and environmental impacts of business activities; those that contribute to the transition to a low-carbon economy should not be viewed favourably if they exacerbate climate or environmental breakdown in other ways. Thirdly, it must move away from a binary model in which the taxonomy either does or does not apply to a given activity, and instead identify degrees of greenness and brownness.[186]

When developed, the taxonomy must be linked to mandatory climate-related disclosure requirements under a revised prudential framework. Public disclosures based on a robust taxonomy of green and brown investments would enable investors and consumers alike to make more informed choices, accelerating the financial sector's divestment of non-fossil-fuel assets. Under the emergency legislation introduced as part of the Environmental Union, the mandatory disclosure regime must be extended to non-bank financial institutions to capture institutions like pension funds and other institutional investors that might be materially exposed to climate risks. 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.[187]

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.[188]

Building from the taxonomy, the EnU makes 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. These rules are a core part of the Basel III package of post-crisis reforms (as implemented in the EU through the Capital Requirements Regulation and Directive, CRD IV). They require banks to hold an amount of capital relative to their risk-weighted assets. The capital acts as a financial buffer against economic downturns or defaults on loans.

Capital requirements affect banks' incentives to lend: the higher the requirement, the more expensive it is to make

183 Credit Institutions Regulation (EU) No 575/2013 and Credit Institutions Directive 2013/36/EU, and the Insurance Directive 2009/138/EC.
184 See Accounting Directive 2013/34/EU article 6.
185 Company Law Directive 2017/1132/EU article 45.
186 This model is proposed by D. Gabor et al in 'Finance and Climate Change: A Progressive Green Finance Strategy for the UK', available at https://labour.org.uk/wp-content/uploads/2019/11/12851_19-Finance-and-Climate-Change-Report.pdf, (accessed 10 November 2019).
187 This is discussed in section 2.2.4 above.
188 The decline in this investment model must be accompanied by reparative action. As discussed in other parts of this report, this can be achieved through technology transfers, and other rehabilitative and restorative action.

a loan. Other requirements, like the countercyclical capital buffer, require banks to hold additional capital during economic booms to ensure their financial viability during downturns. These requirements are currently ill-suited to the climate and environmental impacts of assets held by firms.

The EnU recalibrates the prudential framework for sustainability. It introduces a 'brown penalising factor'[189] that implies a significant increase in risk weights for non-renewable assets and an enhanced countercyclical capital buffer that further limits 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. These will be accompanied by the introduction of 'brown penalising' haircuts and margins for securities financing (including repurchase agreements and securities lending) — ensuring the sustainability of non-banking investment activities.

Third, the EnU accelerates 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.

But it is not enough to protect consumers. The Green New Deal for Europe calls for the expansion of democracy to all areas of the economy. Under the EnU, then, members of communities around Europe must be empowered and in the driving seat in the transition towards sustainable finance. Today, asset managers and banks take shareholder voting rights on 'other people's money', mostly from workers saving for retirement in pensions, life insurance and mutual funds. They have used voting rights in companies to support management who have done far too little to stop climate or environmental damage, concentrating on short-term quarterly profits. As part of an Economic Democracy Directive, asset managers, banks and any other form of financial intermediary will be prohibited from voting on their clients' money, unless they have received specific instructions from elected representatives of the true investors.[190] All instructions must be followed, and pensions and other collective funds will have a duty to develop a voting policy on decarbonisation and environmental sustainability.

To support these changes, the EnU will include new powers for Europe's financial regulators in respect of multinational banks to ensure the smooth implementation of the new requirements. 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.

The mandate of Europe's financial regulators to monitor progress against climate and environmental indicators will also be expanded. Specifically, this should include a mandate to monitor and mitigate for transition risks arising from green finance policies and broader macroeconomic factors, and tools to recalibrate prudential measures to dynamically discourage non-sustainable investments while diverting funds towards green projects.

Firms must also account for the environmental and climate impacts of their day-to-day operations. Under the EnU, the Company Law Directive must be amended to codify a duty on company directors and controlling shareholders have to shift to renewable energy, zero-emission transport, sustainable buildings, and other practices by making the necessary investments. Directors who fail to do so must be regarded as negligent and personally liable to pay the actual or foreseeable difference in costs between present energy, transport, buildings or other practices and sustainable forms. Damages must increase by 100 percent for each year of delay. This should be enforceable by investors, employees, creditors or representative environmental groups.

Finally, a new Environmental Cooperation Directive is needed to let all organisations and businesses work together to eliminate their greenhouse gas emissions, and stop pollution of our environment. No business should suffer a competitive disadvantage for playing its part to save our planet. The Directive should make clear that all agreements, transparently published online, between business or other undertakings to eliminate emissions, stop waste or pollution are exempt from competition rules.[191]

Policy Recommendations:

1 Require companies to account for climate risks, and reserve capital fossil fuel assets, on the assumption of paying full compensation for damage caused.

2 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.

3 Introduce emergency amendments to Europe's prudential rules to penalise investments in non-renewables, based on the new taxonomy. In addition to introducing a new 'brown penalising factor' for banks and insurers, the principle

189 Given the expanded role of public finance envisioned by the Green New Deal for Europe, this paper does not call on the introduction of a 'green supporting factor'. Preferential capital treatment for renewable investments could carry significant financial stability risks if it results in a significant expansion of, for example, the market for green collateralised loan obligations. This paper does not foresee a meaningful role for private finance in the green transition.

190 The Shareholder Rights Directive 2007/36/EC article 10 will be amended accordingly.

191 Treaty on the Functioning of the European Union article 101(3).

must be extended to securities financing transactions, introducing 'brown penalising' margins and haircuts for these transactions.

4 Legislate for the separation of commercial and investment banking.

5 Empower people in an Economic Democracy Directive to exercise control through elected representatives over voting rights attached to investments on their money.

6 Expand the mandate of Europe's financial regulators to monitor progress against climate, environmental and social indicators — and to support the smooth implementation of the new requirements.

7 Amend the Company Law Directive to codify a duty on directors to invest in renewable and sustainable energy, transport, buildings and other practices, with multiplying damages for delay, enforceable by investors, employees, creditors and representative environmental groups.

8 Empower businesses and others to make transparent agreements to eliminate greenhouse gas emissions, waste and pollution, exempt from competition rules.

4.4
Legislating for Solidarity

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.[192] 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.

4.4.1 Agriculture

About a decade ago it was estimated[193] 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 estimated[194] 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.[195]

As discussed in section 3.4.7 above, the EU spends close to half its budget on agricultural subsidies through the Common Agricultural Policy (CAP). A significant part of these subsidies is paid out to large landowners, heavily mechanised industrial farms and agribusiness whose agricultural methods are encouraged by law to be both input-intensive and energy-intensive, leading to high GHG emissions, soil and water depletion, eutrophication and biodiversity loss. EU farmers also have high surpluses which has historically resulted in wasted food, and today is dumped on international markets.

As a first step we must amend the Common Agricultural Policy Regulations to require that large farmers maintain more land as an 'ecological focus area'. These areas are dedicated to natural forests, meadows, peat bogs or other areas where life can flourish once more, without being farmed. Currently, farming businesses with over 15 hectares must maintain five percent of land as an ecological focus area.[196] All farms with over one to five hectares must maintain at least 20 to 50 percent of land as ecological focus areas, with the exact thresholds set by EU member states.

192 'Council recommendation on the economic policy of the euro area', Consilium, 23 January 2018, https://www.consilium.europa.eu/en/press/press-releases/2018/01/23/council-recommendation-on-the-economic-policy-of-the-euro-area/, (accessed 1 August 2019).

193 U. Hoffmann, 'Assuring food security in developing countries under the challenges of climate change: Key trade and development issues of a fundamental transformation of agriculture', UNCTAD Discussion Paper No. 201, 2017, UNCTAD, Geneva, https://unctad.org/en/docs/osgdp20111_en.pdf, (accessed 25 July 2019).

194 J. Stiglitz, 'Making Globalization Work for Developing Countries', Sir Winston Scott Memorial Lecture, Central Bank of Barbados, November 2007, https://www8.gsb.columbia.edu/faculty/jstiglitz/sites/jstiglitz/files/Making_Globalization_Work.ppt, (accessed 25 July 2019).

195 M.A. Rakotoarisoa, M. Iafrate and M. Paschali, 'Why has Africa become a net food importer? Explaining Africa agricultural and food trade deficits', Food and Agriculture Organisation of the United Nations, 2011, http://www.fao.org/3/a-i2497e.pdf, (accessed 25 July 2019).

196 Common Agricultural Policy Regulation EU (No) 1307/2013 article 46.

A second step is to reorganise the subsidy payment systems. Currently these do not distinguish sufficiently between environmentally beneficial and harmful farming practices. The Common Agricultural Policy Regulations must be amended to prioritise carbon-reducing land uses.[197] This should, as a minimum include soil, tilling and fertilisation practices that retain carbon. With a reduction in pesticides and heavy machinery from unnecessary ploughing, significant environmental gains can be made.

CAP subsidies help to keep agricultural commodity prices artificially low, often below production costs, facilitating the dumping of cheap produce on global markets.[198] In developing countries — in stark contrast to the EU — an average of 60 percent[199] (ranging from 20 to 90 percent)[200] of the population is employed in agriculture. Small farmers and agricultural labourers comprise 70 percent 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 percent of farms globally are estimated to have undertaken some form of 'system redesign'.[201] 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.[202] 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)[203] have contributed further to preventing small farmers in the Global South from benefiting from agricultural production — by demanding the dismantlement of national policy measures[204] 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 year[205] 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.

This is why, as a third step, agricultural subsidies for big businesses, which drive export dumping to the detriment of the global south must be completely reformed. While a shift toward regenerating our environment will do this, we must phase out all subsidies for big business farms receiving over €150,000 upon completion of rewilding by 2030.[206] As subsidies are withdrawn large landowners, the best practice in member states should be to require maintenance of rewilded land for natural uses.

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

197 Common Agricultural Policy Regulation EU (No) 1307/2013 article 32 contains the present rules.
198 For example, EU poultry exports are also undercutting the livelihoods of African producers, and have been linked to rural poverty and out-migration by the Ghanaian president. C. Ward, 'EU chicken dumping starves Africa,' Mail & Guardian, November 10, 2017, https://mg.co.za/article/2017-11-10-00-eu-chicken-dumping-starves-africa (accessed 25 July 2019).
199 J. Dixon, A. Gulliver and D. Gibbon, Farming Systems and Poverty, Food and Agriculture Organisation of the United Nations and World Bank, 2001, http://www.fao.org/3/ac349e/ac349e03.htm, (accessed 25 July 2019).
200 M. Roser, 'Employment in Agriculture', Our World in Data, 2019, https://ourworldindata.org/employment-in-agriculture, (accessed 25 July 2019).
201 J.Pretty et al., 'Global assessment of agricultural system redesign for sustainable intensification', Nature Sustainability, vol.1, no.8, 2018, p. 441.
202 For example, growth in EU beef, pork, and dairy exports has been promised by the European Commission in the recently signed FTA with Japan. See: European Commission, 'EU and Japan sign Economic Partnership Agreement', Press release, 17 July 2018, http://europa.eu/rapid/press-release_IP-18-4526_en.htm, (accessed 31 July 2019).
203 A. Shah, 'Structural Adjustment—a Major Cause of Poverty', Global Issues, [web log], 24 March 2013, http://www.globalissues.org/article/3/structural-adjustment-a-major-cause-of-poverty, (accessed 15 June 2019).
204 O. De Schutter, 'Report of the Special Rapporteur on the right to food: Addendum, Mission to the World Trade Organisation', 25 June 2008, A/HRC/10/5/Add.2, Human Rights Council, Geneva; M. Khor, 'The Food Crisis, Climate Change and the Importance of Sustainable Agriculture', Environment and Development Series 8, Penang, Third World Network, Paper presented at the High-Level Conference on World Food Security: The Challenges of Climate Change and Bioenergy, Rome 3-5 June 2008.
205 UNCTAD, 'Trade and Environment Report 2013. Wake up Before it is Too Late: Make Agriculture Truly Sustainable Now for Food Security in a Changing Climate', UNCTAD, Geneva.
206 Common Agricultural Policy Regulation EU (No) 1307/2013 articles 10-11 contain the current rules.

resources or a fair distribution of public goods.[207] 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 chemicals[208] and air pollution[209]), as well as the socio-economic costs of poverty, malnutrition, and the marginalisation of small-scale farmers in the Global North and south.[210] 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.

Addressing these problems requires a whole new approach. This is why the EnU includes a Common Food Policy:[212] 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 3.4.7 above), it will accelerate the agroecological transition and will ensure that it pays to farm sustainably in the EU and around the world.

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." [213]
>
> 1991 memo from Larry Summers, then-Chief Economist at the World Bank

Policy Recommendations:

1 Make agricultural subsidies conditional upon increasing 'ecological focus areas' with forests, meadows and rewilding, from five percent to 20-50 percent of farmed land.

2 Make agricultural payments conditional upon sustainable land practices, including eliminating all unnecessary tilling, fertilisation, pesticides, and machinery, to prioritise retention and reduction of carbon.

3 During a transitional period, phase out subsidies for big farming corporations and businesses upon the completion of restoration in the natural environment — redirecting the funds towards sustainable food production.

4 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.

4.4.2 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

207 D.L. Weimer, A.R. Vining, Policy Analysis—Concepts and Practice, Upper Saddle River: Prentice Hall, 1999.

208 Total population exposure to EDCs has been estimated to cost the EU €163 billion per year (equivalent to 1.28 percent of EU GDP). L. Trasande et al., 'Burden of disease and costs of exposure to endocrine disrupting chemicals in the European Union: An updated analysis', Andrology, 4, 2016, pp. 565–572.

209 Agriculture is responsible for some 90 percent of EU ammonia emissions, a major contributor to the air pollution that kills 400,000 Europeans each year. See EEA, 'Air Quality in Europe,' 2017, https://www.eea.europa.eu/publications/air-quality-in-europe-2017/at_download/file (accessed 31 July 2019).

210 C. Rocha, 'Food Insecurity as Market Failure: A Contribution from Economics', Journal of Hunger and Environmental Nutrition, 1(4), 2007, pp. 5-22.

211 In February 2019, the International Panel of Experts on Sustainable Food Systems (IPES-Food) published a detailed blueprint for an EU Common Food Policy, based on a three-year process of participatory research and deliberation involving over 400 food system actors. Integrated food policy approaches have also been endorsed by official EU bodies such as the European Economic and Social Committee and the Committee of the Regions. See: IPES-Food. 2019. Towards a Common Food Policy for the European Union: The policy reform and realignment that is required to build sustainable food systems in Europe. International Panel of Experts on Sustainable Food systems.

213 D.N. Pellow, Resisting Global Toxics: Transnational Movements for Environmental Justice, MIT Press, 2007, p. 9.

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.[212] These are often produced in a context characterised by deep power imbalances and the influence of multinational corporations.[213]

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 WTO[215] because the latter still offers them some flexibility[216] 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 campaigns[217] 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.[218] Instead, the EU should push to amend the General Agreement on Tariffs and Trade to allow members of the public and democratic representative groups to bring enforcement actions to the World Trade Organisation Dispute Settlement Body.

Secondly, the EU will work to actively reshape WTO rules in accordance with its new international and trade priorities. It should enable trade sanctions against WTO members that fail to decarbonise their economies on a timescale proportionate to the Paris Agreement under the UN Framework Convention on Climate Change of 2015. 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. The EU must push to integrate sustainability in the WTO. It should begin by requiring the WTO rules follow human rights, and explicitly incorporate the universal right to share in the benefits of science, as well as all international labour and social rights.[220]

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 2030 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.

214 P. Bouwen, 'Corporate lobbying in the European Union: the logic of access,' Journal of European Public Policy, 9, no. 3, 2002, pp. 365-390; C.G. Gonzalez, 'Trade liberalization, food security and the environment: the neoliberal threat to sustainable rural development,' Transnational Law and Contemporary Problems, 14, 2004, pp. 419-500.

215 M. Khor, 'Bilateral and Regional Agreement: Some Critical Elements and Development Implications', Doha and Beyond: Incorporating Human Development into Trade Negotiations, UNDP Regional Trade Workshop, 17-18 December 2007, Penang, Malaysia.

216 O. De Schutter, 'Report of the Special Rapporteur on the right to food. Agribusiness and the right to food', A/HRC/13/33, 2009, Human Rights Council, Geneva.

217 See, for example, 'Trade Justice Movement', http://www.tjm.org.uk/about-us/current-members.html, (accessed 21 July 2019); and 'Make Poverty History',http://www.makepovertyhistory.org/trade/, (accessed 21 July 2019).

218 Public Citizen's Global Trade Watch, 'Case Studies: Investor-State Attacks on Public Interest Policies', Public Citizen, 6 March 2015, https://www.citizen.org/wp-content/uploads/egregious-investor-state-attacks-case-studies_4.pdf, (accessed 15 October 2019).

219 Universal Declaration on Human Rights 1948 article 27(1) and the International Covenant on Economic, Social and Cultural Rights 1966 article 15(1)(b).

220 UDHR 1948 articles 20-26 and the ICESCR 1966 articles 6-13.

Finally, the EnU will also lay the groundwork for relocalising manufacturing in Europe, according to neutral and nondiscriminatory principles based on decarbonisation. 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, for the lowest carbon footprint; (c) 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 European manufacturers.

Policy Recommendations:

1 Terminate all Investor State Dispute Settlement agreements, and introduce the right of the public and democratic representative groups to bring claims to enforce trade rules.

2 Renegotiate the World Trade organisation rules to include human rights, including the right to the benefits of science, a clean environment and labour standards.

3 Recalibrate EU trade rules to support diversified, self-sustainable economies in Europe and around the world, according to the principle of decarbonisation.

4.4.3 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.[221] 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 4.4.1).

Policy Recommendations:

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

4.4.4 The Environmental Abuse Directive

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

In 2008, the Justice and Home Affairs Council formally adopted the Environmental Crime Directive, which EU member states were required to transpose in 2010.[222] 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 percent of global greenhouse gas emissions.

This is why the EnU 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.

First, a new Environmental Abuse Directive must ensure that any person or corporation who makes a significant

221 N.M. Mason and S.T. Tembo, 'Is FISP Reducing Poverty among Smallholder Farm Households in Zambia?', IAPRI, May 2015, http://www.iapri.org.zm/images/PolicyBriefs/ps_71.pdf, (accessed 21 July 2019).

222 Environmental Crime Directive 2008/99/EC

contribution to climate damage, measured in megatons of greenhouse gas emissions, is jointly liable to compensate for the damage. For intentional or reckless behaviour that is calculated to make a profit, there must be effective penalties, with a standard penalty (but not a limit) applied to corporations of 20 percent of global group turnover. Directors and stockholders with significant control must be personally liable.

Climate damage is criminal damage. So second, the Environmental Abuse Directive should recognise the crime of climate damage. Anyone who intentionally or recklessly contributes significant damage to the climate, measured in megatons, through greenhouse gas emissions calculated to make a profit commits climate damage. Further there must be a new 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."[223]

Third, the EU should negotiate for an amendment of the Rome Statute for the International Criminal Court to codify climate damage on a scale that amounts to ecocide as a 'crime against humanity'.[224]

Policy Recommendations:

1 Introduce an Environmental Abuse Directive to codify the civil wrong for contributing towards climate damage, with personal and punitive liability for those who profit from pollution.

2 Recognise that climate damage is criminal damage, and that ecocide is also a crime.

3 Renegotiate international criminal law to recognise climate damage that amounts to ecocide is a 'crime against humanity'.

223 'Ecocide Law', https://eradicatingecocide.com/, (accessed 24 July 2019).
224 Rome Statute article 7(1)(k).

5 Environmental Justice Commission

5.1 Introduction

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.[225]

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.

> "By leading with international accountability, EJC sets the stage for bodies like the United Nations to lead a broader, global Green New Deal."

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, gender identity, age, dis/ability, nationality, immigration status, sexuality, religion or education. 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:

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

225 N. Haeringer, 'Gilets Jaunes: tackling climate change means addressing inequality and building resilience', 350+, December 2018, https://350.org/gilet-jaunes-tackling-climate-change-means-addressing-inequality-and-building-resilience-to-climate-change/, (accessed 15 July 2019).

5.2 Institutional Design

5.2.1 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.

a. Distribution

Environmental justice requires a fair and equitable distribution of 'goods' and 'bads.'[226] 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.

b. 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."[227]

c. Participation

Environmental justice cannot come from the top-down. Rather, justice is served only when every resident of the community 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.[228]

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.[229] The EJC is guided by this rich sense of environmental justice and an eye toward where its different components intersect to prevent its implementation.

Policy Recommendation:

1 Ensure that the EJC is guided by principles of equal distribution, recognition, and participation of communities across Europe.

5.2.2 Governance

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

a. Chairpersons

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.

b. 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.

226 Dobson, A. Justice and the Environment: Conceptions of Environmental Sustainability and Dimensions of Social Justice. 1998. Oxford: Oxford University Press.
227 C. Taylor, Multiculturalism, (Amy Gutman, ed.). Princeton: Princeton University Press, 1994.
228 IPCC Report 2018
229 D. Schlosberg, 'Three dimensions of environmental and ecological justice', European Consortium for Political Research Annual Joint Sessions, Grenoble, pp. 6-11.

c. 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.

d. People's Panels

The EJC advocates a definition of environmental justice that puts public participation at the core of its activities. The EJC therefore commissions the random selection of people's 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.

Policy recommendation:

1 Structure the EJC across four tiers, from Chairpersons elected to represent EU member-states down to People's Panels that inform the EJC's work.

5.2.3 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:

a. 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 people 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.

b. 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.

c. 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 Environmental Union (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.

Policy Recommendation:

Empower the EJC to investigate issues pertaining to environmental justice and propose recommendations to legislative bodies both inside Europe and around the world to address them.

30 See, for example, U. von der Leyen, 'A Union that strives for more - My agenda for Europe', 2019, https://ec.europa.eu/commission/sites/beta-political/files/political-guidelines-next-commission_en.pdf, (accessed 4 August 2019).

31 'Public Investment in Europe', ECB Economic Bulletin, Issue 2, 2016, https://www.ecb.europa.eu/pub/pdf/other/eb201602_article02.en.pdf, (accessed 9 July 2019), p. 5.

32 M. C. Klein, 'Italy Embraces China, and Europe's Elites Have Only Themselves to Blame', Barron's, 5 April 2019, https://www.barrons.com/articles/europes-elites-have-only-themselves-to-blame-for-italys-embrace-of-china-51554481025,

5.3 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.

5.3.1. 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.[230] 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.

a. 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.[231]

The EJC will assess areas of international trade that inhibit environmental justice and propose new directions forward for its realisation, including:

i. 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.

ii. 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.

iii. 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.[232] The EJC will investigate whether a similar case can be made against subsidies for fossil fuel companies that keep extractive industries afloat.

230 United Nations Development Program, 'Rising Tides, Rising Capacity: Supporting a Sustainable Future for Small Island Developing States,' 2017, https://www.undp.org/content/undp/en/home/librarypage/poverty-reduction/rising-tides-rising-capacity-supporting-a-sustainable-future-for.html, (accessed 15 July 2019).

231 R. Baron, J. Garrett, 'Trade and Environmental Interactions', OECD, June 2017, http://www.oecd.org/sd-roundtable/papersandpublications/Trade%20and%20Environment%20Interactions%20FINAL.pdf, (accessed 15 June 2019).

232 WTO Dispute Settlement, 'India — Certain Measures Relating to Solar Cells and Solar Modules', DS456, 2018, https://www.wto.org/english/tratop_e/dispu_e/cases_e/ds456_e.htm, (accessed 15 June 2019).

iv. 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.

v. 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, whether direct or by proxy.

b. Migration

IPCC has long warned that one of the fundamental impacts of a changing climate would be the displacement of population,[233] with the International Organisation for Migration reporting that between 25 million and one billion people might be forced to move because of the climate by 2050.[234] 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 supported via international obligations.[235] In 2018, the UN finally adopted its Global Compact for Migration, which acknowledges the role of climate change in migration[236] — but the compact was voluntary and nonbinding. And even then, nine EU member states either abstained or voted against its passage.[237]

EJC will consider migration a core component of international justice. It will develop the world' 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.

c. 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 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.[238]

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

i. International Financial Institutions (IFIs): 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.

ii. 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.

iii. Tax Justice: Evaluate the connection between tax evasion and environmental injustice and advise EU institutions on how to redress it.

d. Transnational Corporations

The environmental toll of transnational corporations (TNCs) is well documented.[239] 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.

233 IPCC, AR1 - Working Group II: Impacts Assessment of Climate Change, 1990.
234 International Organisation on Migration, 'A Complex Nexus', https://www.iom.int/complex-nexus, (accessed 29 July 2019).
235 Joanna Apap, 'The concept of 'climate refugee' - Towards a possible definition', European Parliamentary Research Service, PE 621.893, 2019, https://www.europarl.europa.eu/RegData/etudes/BRIE/2018/621893/EPRS_BRI(2018)621893_EN.pdf, (accessed 20 June 2019).
236 International Organisation on Migration, 'The Global Compact for Migration,' endorsed by the UN General Assembly in December 2018.
237 UN News, 'General Assembly officially adopts roadmap for migrants to improve safety, ease suffering', United Nations Department of Economic and Social Affairs, December 2018, https://www.un.org/development/desa/en/news/population/roadmap-for-migrants.html, (accessed 20 June 2019).
238 V. Galaz et al, 'Tax havens and global environmental degradation', Nature Ecology & Evolution, volume 2, 2018, pp. 1352–1357, https://www.nature.com/articles/s41559-018-0497-3?WT.feed_name=subjects_environmental-studies, (accessed 5 August 2019); Tax Justice Network Africa, https://taxjusticeafrica.net/, (accessed 5 August 2019).
239 P. Griffin, 2017.

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:

1 Policy Recommendation: The EJC should investigate the international dimension of environmental justice, ranging from trade relations to the rules of the game for transnational corporations.

5.3.2 Intersectional Justice

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.[240] As the International Panel on Climate Change (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."[241]

> "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 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:

a. 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.[242] 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.[243] Such impacts tend to be focused in lower-income areas with less visibility, and among vulnerable groups with less time to voice their concerns.[244]

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.[245] 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.

240 R.A. Tsosie, 'Indigenous People and Environmental Justice: The Impact of Climate Change', University of Colorado Law Review, Vol. 78, p. 1625, 2007, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1399659, (accessed 15 July 2019).

241 R.K. Pachauri and L.A. Meyer (eds.), 'Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change', IPCC, Switzerland, 2014, pp. 151, available https://www.ipcc.ch/report/ar5/syr/, (accessed 6 August 2019).

242 A. McMichael et al., 'Global environmental change and health', BMJ, 336(7637), pp. 191–194, 2008, https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2214484/, (accessed 15 July 2019).

243 C. Nellemann et al. (eds.), 'The rise of environmental crime: A growing threat to natural resources, peace, development and security', UN Environment and Interpol, 2018, https://www.unenvironment.org/resources/report/rise-environmental-crime-growing-threat-natural-resources-peace-development-and, (accessed 5 August 2019).

244 J. Amon, K. Rall, 'COP21: The Impact of Climate Change on the World's Marginalized Populations,' Human Rights Watch, 27 October 2015, https://www.hrw.org/news/2015/10/27/cop21-impact-climate-change-worlds-marginalized-populations, (accessed 4 August 2019).

245 'Climate Change Impacts Human Health', United Nations Climate Change, 12 April 2017, https://unfccc.int/news/climate-change-impacts-human-health, (accessed 7 August 2019).

b. 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.[246]

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.

c. 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.

d. 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 marginalised groups.

Policy Recommendation:

1 The EJC should address intersectional inequalities inflicted by the environmental crisis and its variable impact on communities in Europe.

5.3.3 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."[247] The EJC is tasked with driving Europe to deliver it.

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

a. 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."[248]

The EU has already created tools to compensate for "victim's rights".[249] But these largely omit references to Europe's role in resource extraction and land dispossession.

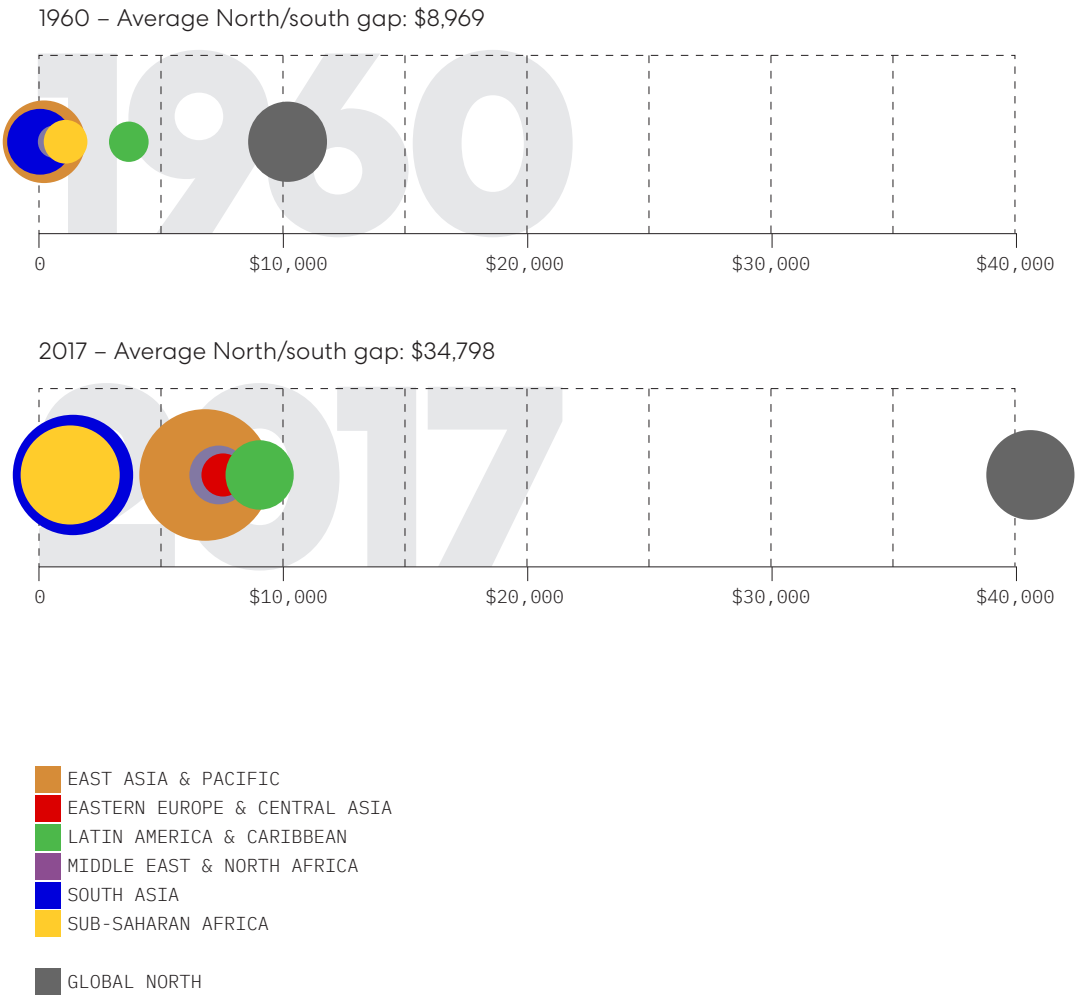
246 V. Escudero et al., 'An Employment-oriented Investment Strategy for Europe', International Labour Organisation, 2015, https://www.ilo.org/global/publications/ilo-bookstore/order-online/books/WCMS_338674/lang--en/index.htm, (accessed 15 July 2019).

247 United Nations, 'Only 11years left to prevent irreversible damage from climate change, speakers warn during general assembly high-level meeting', March 2019.

248 J. Hickel, 'Enough of aid — let's talk reparations', The Guardian, 27 November 2015, https://www.theguardian.com/global-development-professionals-network/2015/nov/27/enough-of-aid-lets-talk-reparations, (accessed 15 July 2019).

Figure 9
Global inequality, 1960 + 2017.
The gap between the global north and its former colonies has magnified.

Source: World Bank, Jason Hickel



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 considered 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.

b. Preparing the Future

Future generations will suffer on account of their parents' disregard for the environment that they will inherit.[250] 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.

Policy Recommendation:

1 The EJC should pay particular attention to the challenge of intergenerational justice — both looking addressing past injustices and promoting tools to ensure that future generations inherit a habitable world.

249 Directive 2012/29/EU of the European Parliament and of the Council of 25 October 2012 establishing minimum standards on the rights, support and protection of victims of crime, and replacing Council Framework Decision 2001/220/JHA.
250 United Nations Climate Change, 'UN Climate Change Annual Report 2017', United Nations Framework Convention on Climate Change, 2017, https://unfccc.int/resource/annualreport/, (accessed 20 July 2019).

Appendix 1 Geoengineering

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.[251]

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."[252]

This appendix outlines the main geoengineering options available, and explains why they alone are not an appropriate solution to the climate and environmental crises. However, some of these solutions, combined with the policies set out in the paper, may become necessary to ensure that global heating is limited to sustainable levels.

1 CO2 or GHG removal (CDR or GGR) options

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 hazards[253] 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,[254] which undermines any sequestration gains and raises concerns about water contamination. Reports of damage to rock formations and the activation of geological fracture zones[255] 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.

251 K.J. Wetter and T. Zundel (eds.), 'The Big Bad Fix: The Case against Climate Geoengineering', ETC Group, November 2017, https://www.etcgroup.org/content/big-bad-fix, (accessed 4 August 2019).

252 K. Anderson and G. Peters, 'The trouble with negative emissions', Science, Vol. 354, Issue 630, 14 October 2016, pp. 182-183. https://science.sciencemag.org/content/354/6309/182, (accessed 4 August 2019).

253 W. Schakel, 'Understanding environmental trade-offs of carbon capture, utilization and storage', 2017, https://www.publicatie-online.nl/files/4015/0892/8662/15014_-_Schakel_BNW_ONL.pdf, (accessed 6 August 2019).

254 P. LaFleur, 'Geochemical soil gas survey, A Site Investigation of SW30-5-13-W2M,' Weyburn Field, Saskatchewan, Monitoring Project Number 2, 16 March 2011, http://www.gasoilgeochem.com/reportcameron%20jane%20kerrfebruary2011survey.pdf, (accessed on 6 August 2019).

255 A.L. Stork, J.P. Verdon and J.M. Kendall, 'The microseismic response at the In Salah Carbon Capture and Storage (CCS) site', International Journal of Greenhouse Gas Control, 2015.

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.[256]

A vast amount of land will be needed to produce the necessary biofuel crops — more than 40 percent of all arable land, which is likely to exacerbate land-grabbing and conflict with food crops and food sovereignty[257] that has already and invariably followed the large-scale cultivation of biofuel feedstock.

Furthermore BECCS deployment could cause up to 10 percent reduction in global forest cover and biodiversity.[258] 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.[259] Within safe boundaries, BECCS can compensate for less than one percent 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.[260] 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.[261]

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,[262] who use it for subsistence farming, livestock grazing and many other purposes. The quest for biofuel feedstock has already led to transgressions on marginal land.[263] The expansion of monoculture plantations has been associated with increased poverty rates[264] and the displacement of indigenous and other communities in the Global South.

The benefits of protecting existing forests cannot be overestimated, and this should be a key priority of all environmental policies; massive afforestation can not be a substitute for significant cuts in greenhouse gas emissions. However, with the involvement of local communities, forest ecologists and conservationists, well-planned reforestation and rewilding programmes can limit global warming by removing CO2 from the atmosphere, while reversing biodiversity loss.

Direct Air Capture (DAC)

Experiments have shown it is possible to suck carbon dioxide directly from the air, converting it into fuel pellets

256 A compilation of peer reviewed literature is available here: Biofuel Watch, 'Resources on Biomass', 2019, http://www.biofuelwatch.org.uk/biomass-resources/resources-on-biomass/, (accessed on 4 August 2019).
257 AFP, 'Crisis management: Seven ways to engineer climate', phys.org, 8 October 2018, https://phys.org/news/2018-10-crisis-ways-climate.html, (accessed on 6 August 2019).
258 D. Dunne, 'Geoengineering carries 'large risks' for the natural world, studies show', Carbon Brief, 22 January 2018, https://www.carbonbrief.org/geoengineering-carries-large-risks-for-natural-world-studies-show, (accessed on 6 August 2019).
259 V. Heck et al, 'Biomass-based negative emissions difficult to reconcile with planetary boundaries', Nature Climate Change, 8, 2018, pp. 151–155, https://www.nature.com/articles/s41558-017-0064-y, (accessed on 6 August 2019).
260 G. Popkin, 'How much can forests fight climate change?', Nature, 15 January 2019, https://www.nature.com/articles/d41586-019-00122-z, (accessed 5 August 2019).
261 K.J. Wetter and T. Zundel (eds.).
262 vestock and the environment — meeting the challenge, Food and Agriculture Organisation of the United Nations, the United States Agency for International Development and the World Bank, 1999, http://www.fao.org/3/x5304e/x5304e04.htm, (accessed 5 August 2019).
263 L. Cotula, N. Dyer and S. Vermeulen, 'Fuelling exclusion? The biofuels boom and poor people's access to land', FAO and IIED, 2008.
264 K. Andersson, D. Lawrence, J. Zavaleta, M.R. Guariguata, 'More Trees, More Poverty? The Socioeconomic Effects of Tree Plantations in Chile, 2001–2011,' Environmental Management, Issue 57, 2016, pp. 123-136.

or storing it underground.[265] 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.[266] 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.[267]

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.[268]

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.[269]

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 percent of sunlight back into space. The technology involved is daunting.

265 AFP.
266 AFP.
267 K.J. Wetter and T. Zundel (eds.).
268 AFP.
269 'Enhanced Weather - Technology Factsheet', Geoengineering Monitor, 9 May 2018, http://www.geoengineeringmonitor.org/2018/05/enhanced-weathering-factsheet/, (accessed 6 August 2019).

Space Mirrors

Space mirrors positioned in exactly the right place could reflect one to two percent of sunlight back into space. But computer models suggest mixed results[270] the technology is prohibitively expensive and, so far, also impossible.

3 Drawbacks

Each of these options has its own specific problems, but all share the following drawbacks and implications[271]:

- 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 injustice[272] 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.[273]

- Deployment of geoengineering violates UN treaties and rulings like ENMOD, the Convention on Biological Diversity (CBD) and the London Convention/Protocol.

270 Rachel Kaufman, 'Could Space Mirrors Stop Global Warming?' InnovationNewsDaily and LiveScience, 8 August 2012, https://www.livescience.com/22202-space-mirrorsglobal-warming.html, (accessed 18 June 2019).
271 K.J. Wetter and T. Zundel.
272 K.J. Wetter and T. Zundel
273 James Rodger Fleming, Fixing the Sky: The Checkered History of Weather and Climate Control, New York: Columbia University Press, 2010.

Appendix 2
A brief primer on the science

1 The Climate

Since 1988, humanity has emitted half of all historic GHG emissions. 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.

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 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.

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-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. 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 none of the scientific models currently assumes such changes.

2 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 threatened, with up to one million species facing extinction, many within decades. 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.

274 P. Griffin.
275 E. Gamillo, 'Atmospheric carbon last year reached levels not seen in 800,000 years', Science, 2 August 2018, https://www.sciencemag.org/news/2018/08/atmospheric-carbon-last-year-reached-levels-not-seen-800000-years, (accessed 8 August 2019).
276 S. Russo, J. Sillmann and A. Sterl, 'Humid heat waves at different warming levels', Scientific Reports, volume 7, 7477, August 2017, https://www.nature.com/articles/s41598-017-07536-7, (accessed 8 August 2019).
277 S. Russo, J. Sillmann and A. Sterl, 'Humid heat waves at different warming levels', Scientific Reports, volume 7, 7477, August 2017, https://www.nature.com/articles/s41598-017-07536-7, (accessed 8 August 2019).
278 IPBES, A5.

- **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..."

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.

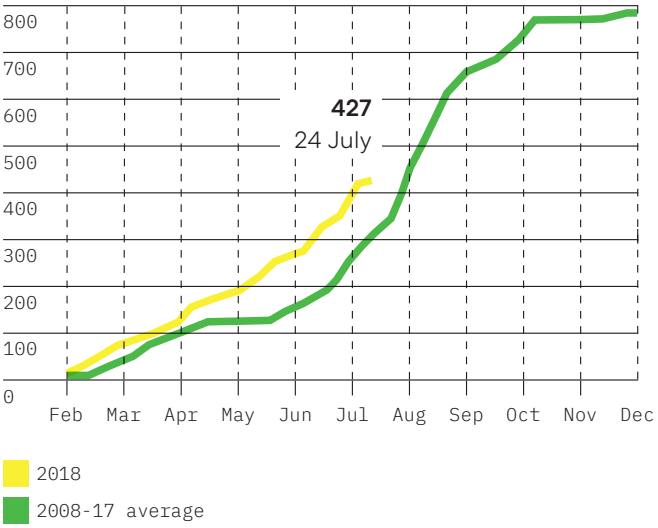


Figure 10
Average number of fires in EU countries
2008-17 average compared with 2018.

Source: European Commission, Copernicus EMS, European Forest Fire Information System

279 IPBES, B4.

Appendix 3
The Planetary Boundaries Framework

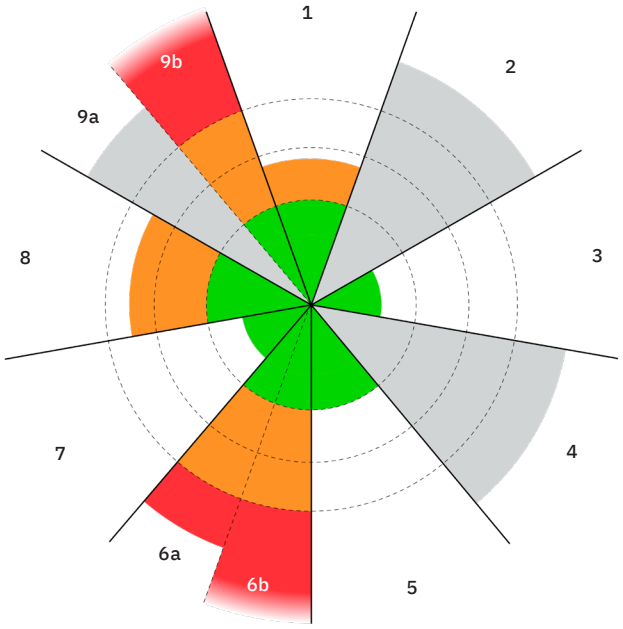
The 'planetary boundaries framework', developed by the Stockholm Resilience Centre, defines the 'safe operating space for humanity' across key natural systems, as shown in the figure above. The planetary boundaries framework uses three central concepts to describe the risks of human impacts on natural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



KEY

1 Climate Change
2 Novel entities
3 Stratospheric Ozone Depletion
4 Atmospheric Aerosol Loading
5 Ocean acidification
6 Biochemical flows
  a. Phosphorus
  b. Nitrogen
7 Freshwater use
8 Land-system change
9 Biosphere integrity
  a. Functional diversity
  b. Genetic diversity

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

Figure 11
Planetary boundaries framework.
Nine planetary boundaries within which we can continue to develop.

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to develop solutions to the crises
that plague Europe today.
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