WORKERS' LIBERTY

FOR WORKERS' CLIMATE ACTION

CLIMATE CHANGE, CAPITALISM AND WORKING-CLASS STRUGGLE

For Workers' Climate Action
Climate Change, Capitalism and Working-Class Struggle

A collection of articles and reviews by activists in Workers' Liberty

Fourth edition, December 2021

Contact us or get involved:

workersliberty.org

awl@workersliberty.org

020 7394 8923

20E Tower Workshops
Riley Road
London SE1 3DG

fb.com/workersliberty

twitter.com/workersliberty

instagram.com/workersliberty

youtube.com/c/WorkersLibertyUK

See workersliberty.org/publications for more publications

Printed by Mixam
6 Hercules Way, Leavesden, Watford WD25 7GS

Fourth edition (paper, ebook, PDF) ISBN: 978-1-909639-60-7
Third edition (paper, ebook, PDF) ISBN: 978-1-909639-59-1

Third and fourth editions edited by Zack Muddle

Contents

Many of these articles were published first in the socialist newspaper produced by Workers' Liberty, *Solidarity*. Workers' Liberty is a revolutionary socialist organisation active in the working class, among students and in many campaigns and struggles.

Stop the fossil fuel reboot!

Adapted from* Solidarity *610's editorial, October 2021

"Build back better, blah blah blah. Green economy, blah blah blah. Net zero by 2050, blah blah blah… Climate neutral, blah blah blah." This is all we hear from our so-called leaders. Words. Words that sound great but so far have not led to action. Our hopes and ambitions drown in their empty promises… They've now had 30 years of "blah blah blah" and where has that led us? Over 50% of all our CO_2 emissions have occurred since 1990, and a third since 2005.

— Greta Thunberg, 28 September 2021

After a summer of fires, floods, and freaky weather, the gap between widespread green rhetoric and the facts of fossil-fuel reboot is starkly inescapable.

The problem isn't that the world is being "too slow" in reducing greenhouse emissions. It's bloodcurdlingly worse: we're moving in the wrong direction.

The changes forced by the Covid pandemic — a pandemic birthed, in part, by environmental destruction, and pursuit of profit before health — caused a temporary slight downturn in global emissions. Yet, already, 2021 seems set to be second only to the pre-pandemic 2019. Indeed, this spring, global emissions from power generation, industry and housing were already at least as high as the same period in 2019.[1]

Worse is in the pipeline. Russia's gas goliath, Gazprom, has increased its production and exports so far in 2021 to close to a historic high. This October, the Chinese state has ordered over 70 coal mines in Inner Mongolia alone to increase production by around one hundred million tonnes;[2] their six-point plan for tackling the energy crisis centres on ramping up coal.[3] Meanwhile, Qatar Gas Company is announcing a new project to ramp up natural gas extraction.[4] In the UK, many have called for increased gas reserves.

Yet it *is* possible to rapidly turn off the industrial-quantity pumping of greenhouse gases into the atmosphere, while keeping the lights on, avoiding energy crises like recently in the UK and China, and maintaining a high quality of life.

Renewables and electrification

A rapid expansion of solar, wind, hydroelectric, nuclear, and geothermal power, coupled with a phasing out of fossil energy, could meet our energy needs. This expansion and transition requires large upfront public investment in power generation. An artificial market in energy, with electricity transported and distributed using outdated technology, is inefficient, ineffective, and unjust. A more sophisticated and democratically co-ordinated energy grid than the current one is necessary to reduce energy waste and tackle energy poverty. This will be doubly so when more of energy production is weather-dependent, or scales up and down short-term less easily.

The interests and pursuits of powerful and profitable sections of the energy sector can no longer dominate. Their interests must be ignored: their activities actively suppressed. This all cuts against the forces and logic of the current economic regime.

Fossil carbon is also used directly for transportation of people and goods, for heating of buildings and water, for cooking, and for industrial heat. These processes can be electrified, the energy use reduced — and then powered by renewable and nuclear energy.

Quality of life and the environment would be helped by efficient electric low-cost long-distance rail and local public transport, and policies to support walking, cycling, and shorter necessary journeys. This applies to goods as well as people. Flights and fossil car use should be repressed. Halt airport expansion, phase out most short-haul flights, introduce a punitive frequent flyer tax or rationing. Immediately ban sale of new hydrocarbon powered cars, coupled with a car-scrappage or retrofitting scheme to make electric vehicles available where necessary.

This would require substantial public funding; overriding markets in transport, freight, and vehicle production; and tackling entrenched lucrative industries and companies — aviation, car production, even overpriced private railway companies — head on.

Johnson's latest scheme on home heating provides a model of how not to approach the transition. The government will be offering £5,000 for homeowners to install "low carbon heating technologies like heat pumps… when the time comes to replace their old boiler."[5] An atomised house-by-house approach is necessarily much less energy efficient, requiring more electricity overall. Crucially, this scheme is far too slow and ineffective.

Most estimates place the installation of an air source heat pump at considerably above £5,000. Ground source higher still, and a boiler costs perhaps £400-£2,500.

Heat pumps typically last longer than a boiler, and will probably save energy bills, so overall may be cheap-

er. But that considerable upfront cost will be a barrier to most working-class homeowners and short-termist landlords. And with boilers typically lasting 10-15 years, the policy, even if universally adopted, implies many homes still heated by fossil gas well into the 2030s. Johnson's article in *The Sun* gives us a flavour of this approach to transition.[6]

Wealth and resources

There are plenty of resources and reservoirs of wealth available for these much needed and expensive transitions. Johnson's scheme is committing a mere half billion. Labour's "five demands to 'keep 1.5 degrees alive'" published 13 October call for a paltry "£28bn every year until 2030 to tackle the climate crisis", up from Corbyn's £25bn/year but with no mention of public ownership. The more ambitious "One Million Climate Jobs", originally published one decade ago and supported by many unions, calls for £66bn/year.

Official figures of tax avoidance, fraud, and non-payment alone — likely a serious underestimate — put it at £35bn this year.[7] Much of that will be avoidance by the rich: closing loopholes could more than cover Labour's demands. That, in turn, is dwarfed by conventionally legal theft by the super-rich. In Spring 2021 the *Sunday Times Rich List 2021* found that "annual rankings saw the wealth of each of the UK's 250 richest people grow at an average rate of more than £1 million a day".[8] That is a total of £1bn every four days, or £91bn in a year. And this is before we consider hidden wealth, pre-existing wealth, or wealth of those multi-millionaires unlucky enough to not make the top 250.

Climate change is the biggest threat facing humanity: we must wield the resources currently stolen and hoarded by the rich to halt and reverse it, and accommodate to its unavoidable impacts.

We have seen, time and time again, the ruling class resist tooth and nail any attempts to regulate industries they control, if it will curb their profits.[9] We cannot leave them in control — as Labour's five demands propose — with the power, leverage, and desire to evade and fight back against even the most minimal measures necessary to start moving things in the right direction. We must confront their power head on.

Significant and powerful sections of and tendencies within the capitalist class will fight every major change that is necessary to stop climate catastrophe.

This is reason not for despair, but for urgency in the radical action and organising that can win the changes we need to limit the destruction.

A world limited to 1.3°C this century will be almost unimaginably better than a world limited to 1.5°C; a world limited to 3°C in turn unimaginably better than one limited to 4°C. And how society will be structured, what climate interventions and what infrastructural adaptations to the changing world are made, matters just as much.

Workers and class struggle

We — the organised working class, and socialist environmentalists within that — will be the decisive force in determining which future is realised.

The rich's economic power, and from that their political and ideological power, is created by workers in the workplace. Of the vast wealth we produce, they give us wages enough to survive by, and take the rest for themselves. It is here — where the shape of society, the wealth of humanity, the power of the rich, and the greenhouse pollutants, are largely produced — that these can be transformed, redistributed, tackled. Workers, organising at work, are the key to stopping climate change. We cannot look for environmental change to "businesses", which are controlled, warlord-like, by our class enemies.

Nor can we look to "the state" as if it is a neutral body, which after this or that election can bring the changes we need. The state as it currently exists serves the interests of the ruling class, and its power rests upon institutions which are tied to that class. It is no coincidence that, around the world, governments have failed to take meaningful action. They will fail, once more, in COP26.

As workers organising in workplaces and trade unions, where production happens, we have the interest and power to transform society from the ground up.

We are kindling that fight now: joining protests and youth climate strikes, and bringing workplace, student, and union delegations with us; organising around environmental issues at work or beyond; bringing bold motions to the Labour Party and our unions; taking working-class and socialist politics to our local XR groups, and national rebellions.

And engaging in Workers' Liberty's environmental events and publications — such as this pamphlet — to arm ourselves with the ideas needed for the fight.

References and notes

[1] UNEP's *United In Science 2021*: bit.ly/unep-2021

[2] "China orders coalmines to raise production to address power crunch" *The Guardian*, 8 Oct. 2021: bit.ly/china-cm

[3] *Carbon Brief*, 13 Oct. 2021: bit.ly/cb-china
See also "From fossil-fuel bottlenecks to planned rundown", *Solidarity* 609, 13 Oc. 2021: bit.ly/ff-bottle

[4] arabnews.com/node/1950036/

[5] gov.uk/government/news/plan-to-drive-down-the-cost-of-clean-heat

[6] "GREEN PM Boris Johnson tells Sun readers 'Boiler Police are not going to kick your door in & seize your trusty combi'" *The Sun*, 18 Oct. 2021: thesun.co.uk/news/16460774/

[7] "Measuring tax gaps 2021", HMRC, 16 Sep. 2021: bit.ly/

tax-g-21

[8] "Rich List 2021: calls for wealth tax after billionaires enjoy Covid jackpot", The Sunday Times, 22 May 2021: bit.ly/rich-21

[9] Covid-19 has, at the time of writing, infected one in ten people in the UK, and killed one in two hundred. Faced with such a serious and imminent threat and crisis, the government has been unwilling to go as far as necessary in public spending on healthcare and PPE, or interfering with the sanctity of the market with restrictions. The ruling class has been particularly averse to granting workers crucial rights such as full self-isolation and sick pay, even though many more have got ill and died as a result. A right that workers may fight to keep, and build upon, is a cost worse than blood. The power of rich friends of the Tories has resulted in billions being siphoned to the likes of G4S to comprehensively fail to provide a track-and-trace service. Rather than spending on services supporting those who need to isolate, the government throws handouts via a "Eat Out to Help Out" scheme, fuelling further spread.[10] The picture is more comprehensively true with climate change, which requires deeper management of what currently falls under the purview of private profit, and greater reclaiming of wealth from the ruling class.

[10] *Subsidizing the spread of COVID-19: Evidence from the UK's Eat-Out-to-Help-Out scheme*. Thiemo Fetzer, University of Warwick bit.ly/eat-out-help-virus

The fight on climate adaptation

Zack Muddle wrote this article in **Solidarity** *579, January 2021, during the UK's third Covid-19 lockdown*

Fish returning to ponds not spotted in in decades, birdsong becoming more audible, goats invading Welsh towns, and pterodactyl spotted flying above the river Tyne. Such were the reports of the ecological bounce back in the first UK lockdown of 2020. Indeed, the most featured climate paper of the year in mainstream and social media was on reduced global CO_2 emissions, globally, due to lockdowns.[1]

Nonetheless, emissions were still vast, and built on years and decades of ever-accelerating greenhouse gas emissions, to deliver the joint-highest global surface temperatures on record — alongside 2016. For ocean heat, the highest.[2]

Despite many acclaimed bourgeois economists, institutions, and politicians calling for it, there are no serious signs of a "green recovery".[3] Instead, a bounce back and a fossil-fuelled reboot seems currently on the cards — not to mention other types of pollution and environmental degradation. We should not expect more from the MPs' letter on 25 January to the Bank of England urging a green recovery;[4] nor from the IMF head simultaneously encouraging greater support for climate adaptation.[5]

On the same day, Monday 25 January, a new review article[6] has found that global ice loss has been accelerating faster than ever, tracking the "upper range" of scenarios predicted by the IPCC (see *Solidarity* 560: bit.ly/s-560).

This dire predicament makes radical class struggle environmentalism more important and urgent than ever. We can still halt, then start to reverse, the environmental crises which we are experiencing. We must simultaneously acknowledge that *some* catastrophic climate change is happening *now*, and will continue.

> *"[The] world must increase efforts to adapt. 2020 was not only the year of the COVID-19 pandemic. It was also the year of intensifying climate change: high temperatures, floods, droughts, storms, wildfires and even locust plagues. Strong action is needed now to reduce greenhouse gas emissions to meet the Paris Agreement goals of holding global warming this century to well below 2°C and pursuing 1.5°C. Adaptation — reducing countries' and communities' vulnerability to climate change by increasing their ability to absorb impacts and remain resilient — is a pillar of the Paris Agreement."*

So said the UN Environmental Programme, publishing their "Adaptation Gap Report 2020".[7] This "finds that while nations have advanced in planning, huge gaps remain in finance for developing countries and bringing adaptation projects to the stage where they bring real protection against climate impacts such as droughts, floods and sea-level rise." They emphasise the need for "nature-based solutions".

Recognising that the ruling class and their institutions cannot be relied on, the environmental and labour movements must fight for a just and necessary adaptation (bit.ly/sea-r).

Environmentalists have often shied away from raising adaptation. We are wary of being *perceived* as accepting defeat, as giving up on drastic carbon reductions. We do not want to give an easy get-out for those who want to kick the can down the road, belching out yet more greenhouse gasses with the promise of a future solution.

Understandable concerns: tackling climate change at its root remains our central task. We cannot limit ourselves to administering palliative sticking plasters. No matter how well we adapt, if we carry on driving the climate change juggernaut at comparable speeds, it will rapidly overwhelm us. We will be left playing an endless and futile game of catch-up. Yet the two are not mutually exclusive: indeed, they *can be* intimately linked. Technologically — rewilding and afforestation *can* reduce river flooding while promoting biodiversity and sequestration — but more crucially, politically linked.[8]

Adaptation can seem like a more immediate and scalable response to environmental catastrophe. The impacts of carbon emissions are dispersed — unevenly — over the whole planet and ensuing century. But the impacts of whether or how adaptations have been made can't help but stare you in the face as the water climbs through the streets and laps around your ankles.

This makes its class nature and division more obvious. We know that under capitalism the impacts of climate change will be disproportionately burdening the exploited classes: locally and internationally. But when working class homes are getting destroyed while unaffordable elite abodes remain protected, it may be that bit more visceral.

Adaptations to the harms caused by environmental crises, even more visibly than the attempts to limit or "mitigate" the crises themselves, are not a politically neutral one-dimensional scale running from "no ad-

aptation" up to "maximum adaptation". By whom? For whom? The answers to these questions shape adaptation in its entirety.[9]

Adaptation and mitigation are both necessary, and will happen one way or another. We must campaign *for* them, and contest *how* they are done. Starting from the immediate struggle around concrete environmental issues facing working-class people — campaigning over adaptation — could be a route into wider class-struggle environmentalism, and building the mass movement we need.

References

[1] carbonbrief.org/analysis-the-climate-papers-most-featured-in-the-media-in-2020

[2] carbonbrief.org/state-of-the-climate-2020-ties-as-warmest-year-on-record

[3] workersliberty.org/story/2020-06-10/fossil-fuel-reboot

[4] theguardian.com/environment/2021/jan/25/bank-of-england-green-recovery-covid-mps-climate-change-governor-net-zero

[5] theguardian.com/environment/2021/jan/25/helping-poorest-tackle-climate-crisis-will-boost-global-growth-says-imf-head

[6] Slater, T. *et al*. "Earth's ice imbalance", *The Cryosphere*, 15, 233–246, https://doi.org/10.5194/tc-15-233-2021, 2021

[7] unep.org/resources/adaptation-gap-report-2020

[8] workersliberty.org/story/2020-02-26/what-should-be-done-about-floods

[9] workersliberty.org/four-climate-futures

Fighting climate crises

Workers' Liberty conference document, passed January 2020. We submit, discuss, and debate documents and amendments to those documents at our annual all-member conferences. These documents shape and clarify our activism and political approach in the following period; reflecting on that preceding. "Fighting climate crises" was written in 2019's wave of climate activism — Youth strikes, XR, Reclaim the Power, Labour for a Green New Deal, and more — and before the general election which made us postpone our conference slightly. We passed it just before Covid-19 became a significant force in society. It is a wide-ranging document on the activist strategy and political perspectives needed in the fight against climate change. (See also features throughout this pamphlet on organising in and around climate strikes, XR, LGND/Labour.)

1. The engine driving climate change

§1.1 The first research demonstrating that carbon dioxide released through burning fossil fuels would drive global warming was published well over a century ago, the first government warnings in the 1960s, and the first IPCC report in 1990. Now, the scientific consensus about serious human-driven climatic heating — with far-reaching effects — is over 99%. It is the greatest danger facing both humanity and the success of the socialist project.

§1.2 Beyond global warming, there are several major independent environmental threats. Biodiversity loss and species extinction undermine many important ecosystems, leaving plants we are reliant on more susceptible to widespread disease. Water pollution has contributed to hundreds of marine "dead zones" to wildlife. The WHO estimates that air pollution is at dangerous levels for 90% of the world's population, killing seven million people every year. Depletion of natural resources, soil degradation, deforestation all bring further dangers, notably to food production.

§1.3 These environmental crises, and the social crises which they fuel and will fuel, have in turn social roots. Fossil fuels are available to use as a result of social relations and pass through the "social metabolism" again as they are combusted.

§1.4 A Marxist analysis can elucidate these roots. It is necessary to explain the ever-greater acceleration towards severe and widely acknowledged climate catastrophe. It points the way out of this predicament: how to organise to halt global warming. Workers' Liberty has studied, developed, and will continue to debate and refine our Marxist analyses of the forces driving climate crises.

2. How to halt climate change

2A. What is needed

§2A.1 Capital's exploitation and degradation of nature goes hand-in-hand with its exploitation of labour.

§2A.2 The working class is the agent with the capability and interest in transforming society: through immediate reforms as well as in the battle for democratic, rational control of the economy and society as a whole.

§2A.3 The gravity of current and imminent change crises makes the necessity of independent working-class politics *more* urgent.

§2A.4 We argue for a socialist environmentalist transitional programme to be fought for within workplaces, and more widely in the Labour Party, environmental movement, and beyond, using a united front approach.

§2A.5 This is most urgent in workplaces and industries with high emissions and key roles in the fossil economy, such as transport and energy. Beyond these sectors, widespread workplace environmental action is important for a society-wide transition, for sparking and spreading class struggle, and for stoking working-class environmentalism on the political front of the class war.

§2A.6 We will undertake environmental agitation in universities and colleges as a means of winning young people to socialism and creating a student movement which can act as a political beacon to the workers' movement. This includes making environmental demands of universities and colleges.

§2A.7 We want to work with the radical environmental movement as a whole and win it to our perspectives. But we want to move the focus of that movement from direct action by small, self-sacrificing groups to mass action. For that reason we regard the climate strikes as the most important opening in the new round of climate struggles in the UK. We need urgently to build mass working-class participation in these strikes and raise their political level. We will use the climate strikes as means of cohering environmentally-minded workers around our activists in workplaces.

2B. "Reform vs revolution"?

§2B.1 We have no confidence in the capitalist class, or their states, to stop climate change. Powerful sections

of the capitalist class will fight to stop a green transition. But significant reforms, including environmental reforms, can be and have been won under capitalism. These can limit the speed of climate change, reducing harm and buying us time.

§2B.2 Confronting climate change is not simply a win-or-lose fight: greater emissions mean greater dangers, faster destruction, greater harm.

§2B.3 The IPPC warned, in 2018, that, aiming to limit warming to 1.5°C above pre-industrial levels, global net greenhouse emissions should be reduced to half by 2030 and zero by 2050. We must respond with this urgency, but 1.5°C is itself worse than 1°C, 2°C worse still, and 2.5°, 3°, 3.5° each progressively more catastrophic.

§2B.4 There is no cut-off point beyond which abandoning the fight to curb global warming would be rational.

§2B.5 Significant and powerful sections of and tendencies within the capitalist class will fight every major change that is necessary to stop climate catastrophe. We recognise the dangers of "green-washing". Even sincere liberal and bourgeois attempts to limit climate change are, as a rule, woefully insufficient.

§2B.6 Ultimately, a fully and genuinely green capitalist society is impossible, just as a fully democratic or equal capitalist society is.

§2B.7 Within the immediate fights to curb capitalism's devastation of nature, we promote a working-class programme and working-class independence, insisting on measures that are adequate to meet the challenge of climate change, in the knowledge that such measures lead to confrontations with the power of capital and its agents in the workers' movement.

§2B.8 United front methods using transitional environmental demands are necessary both to win immediate environmental reforms and overthrow capitalism to ultimately stop climate change.

2C. Our programme

§2C.1 Humanity needs a major transition to achieve net zero greenhouse gas emissions, internationally, as fast as possible: a 2030 target.

§2C.2 We denounce bogus "offsetting" used as green-washing by many capitalists and politicians, or offsetting used an excuse for inaction. We aim for radical transitions across the board internationally. Zero CO_2 emissions, at all, is an impossibility as humans emit CO_2 by breathing out. That means that genuine offsetting is necessary, and for honesty and precision we demand "net zero" — as a step to net negative.

§2C.3 We support the demands of a "socialist Green New Deal", as advocated by the FBU and the Clarion, as one initial step.

§2C.4 All major industries should be socialised — taken into public ownership, under democratic control of workers — to facilitate transition. Expropriating the banks, and the wealth of the rich, would make available resources to fund rapid transition and adaptation.

§2C.5 Our programme must and does aim to improve people's lives, to a comfortable standard of living.

§2C.6 This is necessary for a sustainably classless, democratic society. Without it, the contest for an adequate standard of living, for essentials, will rekindle: a basis of class society. Class societies have exposed themselves as no basis for environmental sustainability. People must be empowered to participate in consciously and collectively running society.

§2C.7 To maintain extensive high living standards requires strong and developed productive forces, and advanced technology.

§2C.8 We demand an immediate ban on fracking, tar sands, other "extreme energy", and any new fossil power plants. We advocate the least polluting — which to first approximation means fastest — possible phasing out of all fossil-fuelled power stations, heating, and transport.

§2C.9 In general we oppose biomass-fired power stations. Burning biomass produces more CO_2 per unit energy than burning coal. Its profligate consumption of vegetation causes deforestation and soil degradation, releasing further CO_2 and limiting the ability to grow new forest.

§2C.10 "Carbon Capture and Storage" is not a solution, although we do not oppose its introduction. At best, it provides a sticking plaster, mitigating the worst from power stations which we aim to shut down as soon as possible.

§2C.11 Renewable energy production should be expanded. An integrated and coordinated electricity system using "smart grid" technology would maximise efficiency and reliability.

§2C.12 We support nuclear power, which is much safer than fossil fuels. We fight for the scrapping of Trident and all nuclear weapons, internationally. Without the siphoning-off of by-products from power stations to make these abhorrent weapons, nuclear power could be even more efficient.

§2C.13 Our support for nuclear is not unconditional. Nuclear fuel is finite; nuclear power bears its own risks; and it would be possible to construct a future power infrastructure without nuclear energy. In many cases, internationally, other energy sources are more appropriate. We support it as a stopgap measure in the medium term.

[More debate...]

See our 2013 conference document, included in this pamphlet, for more on nuclear power. See bit.ly/08-c-change for our 2008 conference document with alter-

nate views. You can find much more debate on this by searching our website.

§2C.14 Energy generation projects are not necessarily better for being "local". Large, integrated electrical systems are generally more efficient.

§2C.15 In the energy sector, as in others, we champion a transition organised on the basis of worker planning, and in particular the retraining of workers from polluting or obsolete roles into socially-useful jobs.

§2C.16 We advocate public programmes of insulation, electrification of cooking, and electrified large-scale heating systems.

§2C.17 We support a moratorium on airport expansion, advocating an expansion of high-speed, affordable, electrified and efficient rail, and policies to radically reduce flights. We support increased taxation on flights and phasing-out of short-haul flights where there are less-polluting alternatives, with flights rationed on the basis of need.

§2C.18 We seek an expansion of local free or low-cost good-quality electrical and efficient public transport, and policies to support cycling and walking. Alongside this, we advocate a public programme to — where workable — retrofit cars with electric or hydrogen engines, or to recycle them; and collectivise greener cars into car-rental schemes.

§2C.19 Many changes to the food industry would reduce its negative environmental impact, while enabling nutritionally good, diverse and enjoyable diets. We support the application of science and technology to food production, and increased output per unit land and per unit human labour is, all else being equal, a good thing. We do not fetishise ahistorical notions of "natural" food production or "traditional" agricultural lifestyles, nor do we oppose synthetic chemicals in themselves. However, substantial use of chemical fertilisers and pesticides, and intensive monoculture, generally have harmful environmental effects, such as air and water pollution, soil degradation, and damaging surrounding ecosystems through excessive nutrient levels or through pesticide poisoning. We support crop rotation and scientific methods to enable more sustainable and environmentally friendly agriculture.

[More debate...]

The first sentence of §2C.20, in italics, was referred back to the coming National Committee for further discussion, rather than being voted on straight away. For much more debate on this topic, see: workersliberty.org/animals-environment

§2C.20 *Crucially, too, we advocate the phasing out of almost all animal products (with the added benefit of reducing the needless extreme suffering of billions of sentient beings).* Animal-based food production is more energy- and land-intensive and so has a higher environmental impact than directly plant-based food production, which would also free up substantial land for carbon sequestration through tree-planting. We advocate seriously funded research and development into substitute foods to facilitate a society-wide transition. Genetic engineering is in itself not problematic, and genetic engineering of low-emissions substitute foods is positive.

§2C.21 "Geoengineering" is advocated as a future technical fix to problems which are better solved politically. Most proposals have horrendous side effects, typically for areas in the global south. Global weather patterns and ecosystems are so complex that it would cause unintended consequences.

§2C.22 We demand huge public investment in an ambitious programme of ecological restoration — and mass tree planting — to increase biodiversity and natural carbon sequestration. Internationally, we should aim for over one trillion — that is, one million million — native saplings to be planted, covering over one tenth the world's land area, which could remove hundreds of billions of tonnes of CO_2 from the atmosphere.

§2C.23 The fight against climate change can only be won internationally.

§2C.24 We stand in solidarity with workers and movements fighting their hard-right governments in Brazil, China, India, the USA, and elsewhere. This solidarity is crucial in the fight against climate change, given the alarming policies pursued by these governments for the environment.

§2C.25 Climate crises will create hundreds of millions more climate refugees. Anti-migrant politics will be stoked by climate-driven movements of people. We advocate freedom of movement and equal rights for migrants as the only alternative to a hell of borders.

§2C.26 We stand for socialism, internationally, and international co-operation to halt climate change. As well as expropriating the wealth of the ruling classes, and taking collective control of it, in every society, we advocate a huge redistribution of wealth from the richest to the poorest countries. Wealth from the global north can help societies in the global south develop to support a high quality of life on a low-emissions, environmentally-friendly basis.

§2C.27 We recognise that no movement currently exists to make this a reality in the imminent future. Work towards these aims should not be postponed until the point at which workers' governments, let alone socialism, are more immediately viable. International action against climate change is important both because we need low net global emissions and because international co-operation can help this aim. We do not have faith in the current international and inter-governmental in-

stitutions to bring about the needed changes, nor do we look to them as the agents of such change. Nonetheless, we do not oppose such measures, and we criticise them for their limitations. For example, we highlight the insufficiency of the Paris climate accords, we oppose the USA's withdrawal from them, but do not see the solution to climate change as beefed-up Paris accords.

§2C.28 This programme entails class struggle. An adequate programme to curb climate change and preserve civilised conditions contains many elements that are not acceptable to the bourgeoisie. The "labour lieutenants of capital" in the union and Labour bureaucracies are already fighting to keep such an adequate programme from their masters' doors.

3. The situation today and what to do

3A. The landscape

§3A.1 Climate change has already caused or exacerbated droughts and heatwaves, storms and hurricanes, sea level rise and displacement, crop failure and spread of diseases, all around the world. Tens of thousands of people are already killed by the effects of climate change every year, if not more. Environmental threats are already fuelling and heightening conflicts. Every year, of the last few, tens of millions of people have been displaced by weather-related "natural" disasters, which have tripled — in reported statistics at least — since the 1960s. Most of these are "internally displaced" within the same state, but many become (international) refugees.

§3A.2 Global and local inequalities, underdevelopment, and competing capitalist states are the backdrop to climatic disasters and responsible for the severity of their effects.

§3A.3 Awareness and concern are increasing across the global north, and beyond, and we are witnessing a renewed "wave" of climate activism. Strong words around anthropogenic climate change have become widespread amongst politicians.

§3A.4 The official advice on the UK's emissions reductions, published by the Committee on Climate Change (CCC) in May 2019 argued for a target of net zero emissions by 2050, noting that the government was already failing on existing targets. The UK government legislated for a 2050 net zero target, but without concrete policies that would make it possible to meet this target.

§3A.5 Labour movement bodies and trade unions have, for the most part, advocated *comparatively* bold programmes to tackle climate change, with more of a class dimension. But this has only translated into very limited real-world action, and reactionary sectional attitudes are alive and well. See, for example, the stances of Unite and GMB on airport expansion and fracking, their successful pushes to enshrine energy union sectionalism in policy, and GMB's opposition to a 2030 or even 2050 net zero target.

3B. Labour

§3B.1 The left-wing surge within Labour over since the election of Corbyn as leader has created openings for socialist environmentalism.

§3B.2 Labour's 2017 manifesto, and 2018 Green transformation documents were steps forward from previous policy. To render Labour's policy adequate, the membership will have to assert itself against the leadership and break with Blair-style office-led policy development.

§3B.3 The policy itself was seriously insufficient, even by the standards of the broader labour movement: quantitatively, in money committed, qualitatively, in challenging rule of capital in key industries.

§3B.4 For example, while it called for nationalising energy transmission and distribution, the market dominating energy generation was to be left intact, but with state-supported alternatives competing within it. It had no serious working-class orientation, other than vague token commitments to work with unions.

§3B.5 "Labour for a Green New Deal" (LGND) is currently the most prominent environmental tendency within Labour. Its existence raises the profile of the idea of a progressive environmental programme. Where Labour had implicitly committed to net zero by 2050, with only 60% low carbon or renewable energy within 12 years, LGND pushed for "zero carbon emissions by 2030 and a rapid phasing out of fossil fuels". LGND also advocate "[s]upporting developing countries' climate transitions by increasing transfers of finance, technology and capacity;" and "[w]elcoming climate refugees".

§3B.6 LGND is a Momentum-supported initiative, and has the character of a "loyal opposition". Its policies are a more ambitious version of Labour's: a "state-led" (not worker-led) transition, again lacking concrete policies. It has no democratic structures and is run by a small and opaque group of self-appointed "directors", nationally. (After Labour conference, there have been moves to set up local LGND groups, or at least WhatsApp groups.) These directors' strategy revolves around diplomacy with a fundamentally hostile bureaucracy — diplomacy which will tend to require them to discipline their supporters and liquidate their programme.

§3B.7 The "Socialist Green New Deal" motion, promoted through the *Clarion* and passed by the FBU, marked a start in bringing concrete class politics into the Green New Deal.

§3B.8 Our activists got a *workers-led* "just transition", repeal of anti-union laws, a fracking ban, socialisation of and investment in energy production and transport,

and more, into the patchy policy passed by Labour Conference 2019. However, socialisation of finance and a ban on airport expansion were not included in either of the two composites taken and passed; and the Conference Arrangements Committee prevented conference from discussing and voting on these issues by binning a third motion after it agreed it would be taken.

§3B.9 The 2030 target, which LGND regarded as the main prize at conference, suffered from compromise. It survived compositing in a tentative, watered-down form.

§3B.10 Whatever its political weaknesses, Labour for a Green New Deal marks the best attempt at injecting discussions around a specific political programme into the broader radical environmental milieu, from XR to the Climate Strikes. Its programmatic approach marks a step forward for the movement. We will work with LGND wherever possible and assist in the development of local LGND groups, while trying to push for a better programme, a better and less sectarian democratic culture, and a more uncompromising attitude towards the labour movement bureaucracy. The fight to get conference policy into the Manifesto marks a first step here.

§3B.11 Momentum's own "Bankrupt Climate Change" campaign was very politically limited, and seems to have been retired. SERA, Labour's oldest environmental campaign, is run like an NGO or think-tank and is politically very conservative, siding with the GMB against LGND at Labour conference.

§3B.12 Red Green Labour is a small initiative, associated with Socialist Resistance and established in early 2018. It is a loose organisation or network, generally to the left of the previously mentioned campaigns. It has an insufficiently combative attitude towards the leadership of Labour and the trade unions. It aims to intervene within SERA. We will keep an eye on its developments, and work with it where appropriate. However, due to its small size, seriously intervening in it is not a priority.

§3B.13 We seek to win a broad section of our class to a radical environmental programme. We will continue and increase our agitation and organisation around environmental transitional demands. We will use the sections of the policy passed at Labour conference as a springboard for promoting a radical, socialist Green New Deal. In particular, the sections that were inserted by the SGND motion, the lines on internationalism and refugees from LGND, and the additional policy passed on fracking, car scrapping, and ecological restoration.

§3B.14 Additionally, we continue to argue for the necessity of, expropriating finance, and ending airport expansion, and fleshing out a *socialist, working-class* internationalist environmentalism. These will be a core part of the programme of environmental transitional demands that we agitate for immediately.

§3B.15 We have a particular history and tradition of international solidarity, which we should bring into environmental activism, standing in solidarity with workers and activists fighting environmentally destructive regimes elsewhere. We will also draw links, in both directions, between environmental crises and migrants' rights.

§3B.16 We continue to argue for a rational non-conspiratorial approach to nuclear energy and a proportionate assessment of its pros and cons. We call for it to be part of, or a potential part of a low-GHG emissions energy mix. However, immediately, we do not treat it as a necessary and central part of a socialist environmentalist programme.

§3B.17 To fight for this minimum SGND programme and beyond, we will seek, with others, to develop a campaign with independent life and democratic structures, with one foot in the Labour party and one foot in the unions — including non-affiliated unions. We'll pursue such a campaign with assertive united front tactics.

3C. Trade Unions

§3C.1 On paper, almost all trade unions recognise climate change as a grave danger, and demand state action to combat it, with workers having a role in 'a just transition'. For the most part the policies are close to those of the "One Million Climate Jobs" (OMCJ) by the "Campaign Against Climate Change" (CACC), from most of a decade ago.

§3C.2 CACC often functions to "outsource" climate activism from the labour movement itself.

§3C.3 Some unions, and the TUC, have policy supporting youth climate strikers, and called for 30 minute stoppages on the 20 September. We want to make union support for the climate strikes real, and see grass-roots union activists bring delegations of workers to climate protests, or hold their own, following the model of Salford refuse workers and the "Workers' Climate Action" initiative carried out by our comrades in Cambridge.

§3C.4 We will work with colleagues to formulate and agitate for environmental changes that could be made at work, environmental demands that can be made of our bosses. We contextualise these and keep them in proportion, chiefly through organising around a wider SGND programme.

§3C.5 To this end we will become or engage with workplace environmental reps, and networks of environmental reps.

§3C.6 TUC congress 2019 resolved "to campaign for national and regional Just Transition Commissions including full union and education representation to develop, monitor and implement the process."

§3C.7 We want to make such Just Transition Commissions real at the level of industry and local govern-

ment. We advocate representative, activist bodies made up of workers' representatives which make their business the property of local communities and the broad labour movement.

§3C.8 We seek to nourish the embryos and cohere a network of workplace environmentalists, to fight for independent working-class environmentalism in workplaces and the labour movement.

3D. Environmental movement: a new "wave", two "poles"

§3D.1 After the 2009 Copenhagen Summit, a big wave of climate struggles in the UK petered out. Big ecological struggles have gone on around the world in the intervening ten years and NGOs have organised fair-sized demonstrations. But ecological struggle has returned to the UK on a mass scale only in the last 18 months or so.

§3D.2 Extinction Rebellion and the Climate Strikes could broadly be described as the two "poles" of the new "wave" of climate protest. XR, for all its vitality and all the self sacrifice of many of its activists, represents a survival of the middle-class minority-heroism school of ecological activism. The Climate Strikes are centred around the idea of mass involvement, and hint at the solution that is really needed: mass workers' action. So far worker participation in these strikes has been very limited. But we think that the radical potential of the Climate Strikes far outstrips that of any other contemporary or recent form of ecological protest. We want to realise that radical potential and build a strategy that centres on spreading, deepening and radicalising the Climate Strikes.

§3D.3 Extinction Rebellion (XR) has massively helped to raise the urgency of tackling climate change, and of courageous and audacious actions against it. It has drawn in many thousands of people into environmental activism, many politically active for the first time. Beyond those drawn into it already, many look to it as *the* climate movement.

§3D.4 The dominant (even, defining) XR strategy relies on a middle class pattern of heroic individuals getting arrested. The dominant strand of politics in XR erases class dynamics in society, speaking of being "beyond politics" and advocating "citizens' assemblies" drawn by lot. XR presents no genuine political programme which a government could agree to implement, or not. They also have and perpetuate an incredibly benign attitude towards the police.

§3D.5 XR is, however, open, and tremendously diverse socially and politically. We will engage with XR actions and local groups, make the case for class-struggle environmentalist strategies for these groups and to individuals engaging in those groups. It is possible to create local or even national Extinction Rebellion "affinity groups". It may — or may not — be worth establishing such groups as part of an intervention.

§3D.6 Youth climate strikes are the other major aspect of the resurgent environmental movement. UK Student Climate Network (UKSCN), the main associated organisation in the UK, has substantial left-wing currents within it and its leadership, and some democracy. They — and Greta Thunberg — the international "leader" of the youth strikes, have pointed out the need for workers, for trade unionists, to take action on the environment. UKSCN advocate a form of "Green New Deal". We will continue to engage with it in local areas and campuses; through Student Left Network and their *Icecap* zine about climate change, class struggle, and the student movement; and through activists we know in the leadership of UKSCN.

§3D.7 We want to help the Climate Strikes develop two crucial elements: a clear programme, and mass workplace participation.

§3D.8 That means, on the one hand, developing a political culture of democratic forums within which a programme could be debated and agreed; and on the other, breaking through the token participation of left-wing trade union officers and organising real and direct workplace agitation to bring groups of workers out as conscious, leading participants in Climate Strikes.

§3D.9 Where organised groups of workers have really participated in the Climate Strikes, as in Cambridge, Salford or Lambeth, we will trumpet their example and seek to extend it. Where well-meaning trade union officers propose inadequate activity, we will help make it adequate; where green-washing bosses allow (or oblige) their employees to participate in Climate Strikes, we will seek to organise the latter against the former.

§3D.10 In universities, we strive to build student walk-outs, engaging with staff, with other workers in nearby workplaces, and with youth strikers across their town or city.

§3D.11 Divestment campaigns have been the dominant environmental activism on university campuses for some time. We support them while critiquing their limitations and pushing for more radical politics. These often associate with People and Planet, a left-wing campaigning organisation which lacks any democratic structures.

§3D.12 Reclaim the Power is in many ways the successor to the Climate Camps. Its politics are more explicitly anti-capitalist and pro-migrant. Its politics are anarchist-influenced, and lack serious orientation to the working-class. Its response to the revived climate movement has been largely aloof and sectarian and RtP has failed to lead.

§3D.13 We will continue to engage with it, advocating for it to turn outwards to win a wider audience, and to

pursue class politics.

§3D.14 Green Anti-capitalist Front is a new and small initiative, largely an alliance between ultra-left anarchists and Stalinists, who engage in and around XR, Youth Strikes, RtP and the like. We work with it where we come across it but make no extra efforts beyond that.

3E. The revolutionary left

§3E.1 On much of the anarchist and would-be Trotskyist left, radical "mood music" ("system change not climate change"; "one solution: revolution"; "socialism is the answer") drowns out the "words" of coherent programme. The result is vagueness from the left which allows labour opportunists to get away with programmatic murder — as with the story of Labour Green New Deal.

§3E.2 Likewise, abstract recognition of the links between capitalism and climate change, for some would-be revolutionaries, fails to progress to the next logical step: the centrality of the working class in combating it. "Movementist", popular-frontist, and statist approaches to fighting climate change are, combined, more common amongst would-be revolutionaries than independent working-class approaches.

§3E.3 The SWP, to their credit, have organised debates in the labour movement about how to support Climate Strikes, and have thrown many of their trade union cadres into that work (such as the CCCTU). But their efforts on the industrial front have been inadequate and superficial. Politically, they are the same SWP: controlling, sectarian, covering opportunistic lack of programme with "revolutionary" sloganeering. As events develop, they will become a hindrance to the democratic debate, programmatic clarity, and effective workplace organising which we advocate.

3F Our tradition, perspectives, activism

§3F.1 There are rich traditions of both working-class environmental action, and Marxist environmental thought, that we seek to uncover, and build upon.

§3F.2 We set up and ran Workers' Climate Action (WCA), over the period of the last major upsurge in climate activism, 2006-11. WCA aimed to bring radical class-struggle environmentalism into environmental movement and the labour movement: intervening in the "Climate Camp" movement across that period; engaging with Kingsnorth power station workers from a nearby Climate Camp; standing in solidarity striking aviation workers and raising environmental dimensions; initiating and stoking agitation against the closing of Vestas wind turbine factory, culminating in an occupation of the factory against its shutdown — demanding its nationalisation by the Labour government.

§3F.3 The Vestas struggle, in particular, represents the pinnacle of WCA's struggle, and a part in which we were central. It is replete with lessons for today, and documented in our pamphlet on the topic.

§3F.4 With the downturn in the climate movement, we let climate politics slip too far from focus for some years. Around the beginning of 2017, our student fraction initiated the "Nationalise the Big Six!" (NtB6) campaign. As well as labour movement, Labour party and environmental movement oriented propaganda and petitions, NtB6 organised delegations to anti-coal and anti-fracking protests, and a Climate Camp in Germany. The campaign fizzled out due to insufficient central resources.

§3F.5 From 2018 we increased our focus on climate change again, in our publications, events, and activities.

§3F.6 All our members should — and hopefully do — see class-struggle socialist environmentalism as a crucial part of our, and their, work. To aid increased climate activism, we have started convening an AWL climate committee.

§3F.7 As a cornerstone of our politics, we integrate our class-struggle environmentalism into many of our other areas of struggle: the fights for free trade unions and working-class control of industries; for internationalism and against Brexit; for free movement and migrants' rights; for socialism more generally.

§3F.8 As well as the interventions and activity described so far in this document, we will promote class-struggle environmentalism through our publications and meetings. We will organise a day school on the topic in early 2020. Members and supporters should read or re-read the latest edition of our climate pamphlet, "For workers' action on climate change", from late 2018, replenish their stocks, and then discharge them again.

4. Summary of resolves of climate document

§4A. We will seek with others to develop a socialist Green New Deal campaign, with independent life, which fights within both unions and the Labour Party, and works with "Labour for a Green New Deal". See especially §3B.10-17

§4B. We work for real union support for Climate Strikes: for grass-roots union activists to bring delegations of workers to climate protests, or to hold their own. See especially §3C.3, §3D.9-11

§4C. We want youth climate strikers to work with workplace activists to build a clear programme and mass workplace participation. We support youth strikers, and agitate for this perspective, in local areas and campuses; through the Student Left Network; and through activists in the leadership of UKSCN. See especially §3D.6-11

§4D. We work to build struggles around workplace environmental demands, including on campuses; to

link these up; and to contextualise them within a wider socialist Green New Deal programme. See especially §3C.4-8

§4E. We see environmental activism as a crucial part of our work, integrate it into our other areas of struggle, and will continue to convene a Workers' Liberty environmental committee. We will promote our perspectives on class-struggle environmentalism through our future publications, sales of our existing booklets, meetings, and a day-school. See especially §3F.6-7

XR's #CEE bill — not a "big" solution

Adapted from* Solidarity *561, September 2020

From mid-2020, Extinction Rebellion (XR) has been campaigning to get the "Climate and Ecological Emergency" (CEE) bill passed in Parliament.

"The climate and ecological crisis is the greatest problem of our times — the CEE Bill is the solution", announced XR Bristol. "our economic and political systems aren't fit to save us from the climate and #EcologicalEmergency. *Big* problems need *big* solutions. Enter the #CEEbill."

But, aside from the difficulties of getting onto the floor of Parliament via the "private members" channel, the CEE bill falls far far short of the solution we need. Primarily it reads as a series of legal corrections to the current framework; through which, for example, the Committee on Climate Change (CCC) currently operates and brings out reports. Additionally, CEE bill mandates the creation of a "Citizens' Assembly".

The bill would enshrine legal commitment to international "Common but Differentiated Responsibilities and Respective Capabilities", reflecting the need for richer, more polluting and more industrialised nations to take greater steps to tackle climate crises. It mandates that overseas emissions and ecological impacts in the supply chains of imported goods be taken into account. Carbon sequestration, removal of carbon dioxide from the atmosphere, should only be factored in insofar as it relies on currently possible methods. That is, planting forests and rewilding rather than speculated future technologies.

Changing the legal framework, and thus future CCC models, can impact wider discussions and potentially policy around climate change. Legal commitments were used as *one* useful weapon in the decades long battle against Heathrow expansion.

However, tightening up the existing regime by creating various new duties is inadequate. While a step forward in many ways from previous vagueness in XR's demands, it still amounts to demanding of the government, with useful additional constraints, that "something must be done!"

We must organise to fight for and win, not changes to the rules, but a concrete plan, socialist environmental demands. We must win public ownership under workers' control of the energy, transport, food, and other major industries, for the fastest possible transition to green energy, efficient electric affordable transport, and more, funded through expropriating the banks and the wealthy.

We do need greater democracy in designing, fighting for, and implementing the necessary major environmental changes. But not in the form of a citizens' assembly, "citizens" randomly selected and so unaccountable, steered by experts and "professional facilitators", so strongly influenced by the more longstanding elements of the state. Assemblies, that is, which "will empower MPs to take bold decisions and allow people to have a real say [sic]", relying on the existing parliament, government, and state apparatus to implement the decisions.

The democracy we need for environmental transition is of workers fighting in their workplaces and industries for the needed changes, of democratic movements debating, deciding upon, fighting for and implementing the necessary economic, social, and political changes.

• See "The lessons from Genoa, Climate Camp and Vestas", by Todd Hamer, *Solidarity* 487, November 2018, on XR and previous environmental movements' strategies: bit.ly/l-gccv

Environmentalists in Singapore, on May Day

Sara Lee wrote this for Workers' Liberty,
May 2021

On May Day, Singapore Climate Rally, a youth-led environmentalist organisation, held an online public meeting "Workers Rights = Climate Action". The meeting marked Labour Day and the hand-in of SGCR's petition for the rights of food couriers and ride-hailing app drivers.

The petition was started in response to the government's new petrol tax hike, announced in its Budget as an environmentalist policy. Ironically, the same Budget allocated $870 million to Singapore Airlines.

The petrol tax hike caused some anger amongst couriers on motorbikes and ride-hailing app drivers. The tax rebates were only partial and limited to a year. SGCR's petition demanded that the rich be taxed to fund generous subsidies for green vehicles. It argued that climate change was caused by the rich, that the working class shouldn't pay for it.

There were other important demands too: that couriers and drivers be given a guaranteed income, that they not be made to pay for their own uniforms and equipment, that they be given a full rebate on the petrol tax hike, and that roads be made safer for pedestrians, couriers and drivers.

Important lessons can be drawn from the petition.

First, SGCR, in its petition, articulated "bread-and-butter" issues affecting couriers and drivers while still articulating the working class's long-term interests in combatting climate change.

Second, the petition was not just against the petrol tax hike, but it was for certain concrete, positive demands. It did not merely say "no to the petrol tax hike" but it demanded green cars be subsidised by taxing the rich. The only way we will stop climate change is by articulating positive politics. We are not only against capitalism, we are *for* socialism. We are for democratic control by the working class.

Moments before the event began, the petition was delivered to five government agencies, with the signatures of 19 civil society organisations and 2063 individuals. About a hundred people watched the event on the livestream, while about 90 attended the meeting on Zoom. The fact that this event took place on Labour Day was significant in the Singapore context. Trade unions in Singapore are entirely co-opted by the National Trade Unions Congress, which has cosy corporatist ties with the repressive ruling People's Action Party. For a group of environmentalists to be expressly reclaiming May Day for the independent working class in Singapore, was remarkable.

There were a number of guest speakers, including a food courier, Yi Hung, who is also a member of SGCR. Yi Hung spoke about the hyper-exploitative conditions of delivery work, which compels couriers to risk their lives and ride in extreme weather conditions in order to earn a living.

The event had a number of speakers on migrant worker rights, despite food couriers and ride-hailing app drivers being predominantly Singaporean. Nessa, an activist for migrant domestic worker rights, drew striking similarities between gig workers and migrant domestic workers. A migrant worker, Ripon, who works at a shipyard, spoke about a recent spate of migrant worker deaths due to workers being transported in the backs of lorries.

Xiang Tian, a young environmentalist, gave shocking numbers on the amount of corporate tax that the likes of Shell and ExxonMobil pay — or rather, don't pay — in Singapore. As the meeting went on, the class politics that were being articulated only got sharper: despite Singapore lacking an organised left.

It was also significant because the meeting was open and democratic. Open and public meetings are essential to democratic organising, but rare in Singapore, compounded by fear of repression.

It is significant that the meeting was not tightly stage-managed. One needn't fear occasional silences or that people will say the 'wrong' things.

The meeting went smoothly. But it was obvious that the organisers were also prepared to sacrifice some of that 'sleekness' for a sense of democracy if they needed to. This was right. Activists shouldn't see their role as pulling off slick, corporate-style events.

In hindsight it was a good thing that SGCR had campaigned not only on the petrol tax hike but also on more general issues like pay, uniforms, safer roads. No matter how quickly the conversation moved away from the petrol tax, the petition's demands were always relevant. More importantly, SGCR's activists were able to make the link between workplace heath and safety and climate change — the exploitation of natural resources, including human bodies and human labour, for profit. They were also able to make the argument that safe

working conditions for couriers cannot be disaggregated from wider demands for better pay. The fact that the food courier who died was killed by a drunk driver showed that being on the road all day, every day carries inherent risk: risk for which workers should be paid.

Ultimately this was a petition that SGCR activists were able to defend politically because of their political education. And indeed, they did defend it, by going on the streets and talking to couriers and drivers about the petition, making links with them and inviting them to meetings. In a state with no independent trade unions, these environmental activists' commitment to building an independent fighting labour movement that can fight and win on the issue of climate change is something we can take inspiration from.

Building workers' action at climate strikes

From articles in September 2019

On 20 September 2019 there was a call for workers to join students in the youth climate strike, and in several workplaces they did.

This was an important step for workplace environmental activism. Climate strikes are restarting after the pandemic, and we need to build on their previous successes.

The initiative of *Solidarity* supporters and UCU members in Cambridge, below, is an important model.

Lambeth council workers and Unison members have created another.

Workplace and environmental activists demanded of the council that they take no punitive action and deduct no pay for participating in the climate strike: for holding a rally at lunchtime then marching to join a wider march. The council, under pressure, partly acquiesced.

The activists leafleted different sections of the council workforce in the run up to the climate strike. As a result of this, they got a turn out of perhaps fifty workers.

They formed a workplace climate committee and lobbied for it to be recognised by their employer, the council. They have even won facility time, time paid by their employer for members to work on the union climate committee rather than in their regular jobs.

The climate committee has been working on environmental demands. Most employees work in one set of offices, which is a new-build and pretty energy efficient day-to-day.

However, the committee is pressuring the council to provide free meeting space and otherwise support environmental activists. It has, seemingly with some success, made environmental demands around new council house-building. Their workforce has a high proportion of migrants.

A Cambridge UCU activist wrote the following. Our advice to other workers, based on our experience in the 20 September climate strike, is:

1. Begin with a very low-stakes, but highly visible, action. In our case, this was simply a group photo in front of a banner during what would otherwise be most people's lunch break, taking advantage of the 20 minute walkout that the TUC had backed.

2. Go into workplaces and ask if you can put up posters/leave leaflets. This is perhaps easier on the site we targeted as we had several university departments, a vet surgery, and a construction site all in close proximity.

3. If your union officially backs the climate strikes, then ask them to advertise your event via their own channels.

4. Have literature that you can hand to people on the day. We made a simple bulletin, which included a QR code linked to our email account for people who want to stay in touch.

The 29 November 2019's climate strike coincided with the UCU strikes. Leicester's climate strike that day was the biggest they have had yet — hundreds, in a relatively small city — and energetic. The climate strike marched to the UCU picket lines, met up with it, and then all marched together. They had a UCU contingent of around 100.

Many other actions took place on that day. Some transport workers or apprentices made a video, coupled with a small demonstration: bit.ly/vid-cs

If after all it looks like no collective action will take place on the next climate strike, then there are lots of other important ways of supporting the development of these strikes! First of all, take the day off work, where possible, and join the protests.

Escalating pandemics: Capital abides no limits

Camila Bassi wrote this on her blog, August 2020. An abridged version was published in **Solidarity** *571, November 2020.*

Introduction

The outbreak of SARS Coronovirus 2 or Covid-19 proceeds an escalation of recent epidemics and proto-pandemics: notably, H5N1 or Avian influenza, SARS, MERS, Swine flu, Ebola, and Zika. We are not currently experiencing a pandemic, Mike Davis (2020) pronounces, we are living in an age of pandemics. Rob Wallace (2020) explains this trend as the consequence of interrelated changes in economic geography and ecological geographies: a widening circuit of agricultural production, consumption and exchange that is pushing deeper into forests and back out into cities; with subsequent changes in the ecologies of host species that historically would have been confined to deep forests, which are now transported to peri-urban regions with high concentrations of human bodies. Traversing a globally integrated air traffic network, pathogens previously not on the global stage are being brought to it.

Davis (2020), citing a study from *Science* magazine, illustrates the context of Ebola and other diseases emerging in and from West Africa (currently the fastest urbanizing area in the world). The population of West Africa has traditionally relied on fish protein, however, commencing in the 1980s, European, Russian and Japanese factory fleets have trawled and significantly reduced this biomass.

Concurrently, multinational logging companies have increased their operations; to keep their costs down, they hire professional hunters to kill mammals in their path. With fish becoming too expensive for West African city dwellers, the population has turned to the consumption of bushmeat (originally just practised in the logging camps) as the major source of protein. In sum, this widening commerce of bushmeat hunting alongside the destruction of rainforest have generated new viral exposures and pathways to humans of previously isolated pathogens.

In this essay, using the case studies of HIV/AIDS and SARS, I explore the nexus between capitalist political economy, nature, and emergent infectious diseases; concluding that, without radical change to how we organise and run our world, our future will be locked into this trajectory of escalating pandemics.

HIV/AIDS

HIV-1 and HIV-2 originate from the Simian Immune-deficiency Viruses (SIV) of chimpanzees and sooty mangabeys in Central and West Africa (Honigsbaum, 2019), with the probable zoonotic leap, from one chimpanzee to one human hunter of bushmeat (through a cut or wound), no later than 1908 (Quammen, 2013). From here, the virus travelled. At this moment, put in historical context, previous epidemiological dead ends were no longer so: the virus travelled because of changes in conditions of existence propelled by a capital-fuelled colonial age. Mark Honigsbaum (2019) points to the emergence of steamship transportation and road and railway construction during the colonial period of the Congo, and the relentless pursuit of profit by logging and timber companies, intersecting with social and cultural phenomena (bushmeat hunting and consumption, and prostitution by the labour camps of railway and timber companies), as the central early drivers in the journey of HIV/AIDS.

While official Belgian colonial rule of the Congo ran from 1908 to 1960, the groundwork for colonial expansion began in the late nineteenth century. Given the need of capital to self-expand and thus the impetus for greater mobility of both capital and labour, the 1892 steamship service from Léopoldville (later renamed Kinshasa) to Stanleyville (later Kisangani) and 1898 Matadi-Kinshasa railway (linking the port of Matadi to Léopoldville) provided geographical connectivity and concentration of populations previously separated. With a consequent influx of labour migrants and Belgian administrators, a rapidly urbanizing Léopoldville became the capital of the Belgian Congo in 1923, running domestic flight services and by 1936 a direct international flight route to Brussels. Further geographical connectivity and concentration of capital and labour came under French colonial administration, notably, the construction of the Congo-Ocean railroad in the 1920s, which — cutting through forest — brought labourers into rural territories home to the Simian Immune-deficiency Viruses. Once built, this railroad provided a constant flow of Africans and Europeans between Brazzaville (the new capital of the French colonial federation) through

Léopoldville to Pointe-Noire at the coast. What's more, road construction through the Congo Basin by timber companies pushed bushmeat hunters deeper into the forest and encouraged the growth of prostitution near the labour camps (Honigsbaum, 2019). One way or another, through new viral pathways that were new transport pathways driven by capital accumulation, by the 1920s, Léopoldville was home to HIV.

Both Honigsbaum (2019) and Quammen (2013) draw on research by Jacques Pepin to explain how the virus amplifies from here into an eventual global pandemic: sex and medical technology — specifically, the reuse of ineffectively sterilized hypodermic needles and reusable syringes in public and humanitarian health campaigns in Africa, and blood banks and transfusion services — were the key amplifiers of HIV. By the 1920s Léopoldville had a large male labour force, with economic migrants discouraged by the Belgian colonial administration from bringing their families with them; consequently, men outnumbered women four to one and prostitution was widespread (Honigsbaum, 2019). The virus likely amplified through a campaign by the Congolese Red Cross which established a clinic in 1929 in Léopoldville to treat sexually transmitted diseases; this campaign ran throughout the 1930s and 1940s and peaked, in terms of the number of administered injections, in 1953 (Quammen, 2013). Another possible amplification was during the 1930s through the vaccination campaigns along the railways against yaws and sleeping sickness, and against malaria in southern Cameroon (Honigsbaum, 2019).

HIV-1 group M subtype B, around 1966, travels from Léopoldville to Haiti and, in or around 1969, from Haiti to the United States. Honigsbaum (2019) and Quammen (2013) again draw on the work of Pepin for a plausible answer as to how. Congo's independence in 1960, marred by civil war, led to an influx of refugees into Kinshasa and an expansion of prostitution (Honigsbaum, 2019). Another outcome was the exodus of a Belgian expatriate skilled middle class. This vacuum of labour supply was addressed by campaigns to bring in skilled labour from elsewhere. Overseen by the WHO and UNESCO, recruits came from Haiti in the early 1960s. By the late 1960s and early 1970s however, the political instability of the state ideological campaign known as Zairianisation or Authenticité — to rid the Democratic Republic of Congo (later renamed Zaire) of colonialism and Western influences — drove many of this labour force back to Haiti. It would have taken just one of these returnees to have carried HIV with them. In January 1972, *The New York Times* broke a story of the commodification and export of Haitian human blood plasma and a political economy involving both US based capital and the Haitian government. The article states:

> *"PORT-AU-PRINCE, Haiti, Jan 26 — An American-owned company here is buying blood plasma from impoverished Haitians who need the money and exporting 5,000 to 6,000 liters of it every month to the United States. [...] Hemo Caribbean is owned by Joseph B. Gorinstein, stockbroker with interests in New York and Miami. He has a 10-year contract with the Haitian Government that was negotiated with President Francois Duvalier, who died last April. Werner H. Thill, the company's technical director, said that the Haitian Government received no money from Hemo Caribbean. Reliable sources here say that the principal agent between the Government and Hemo Caribbean was Luckner Cambronne, the Minister of Interior and National Defense, who is said to be one of the most influential persons here. [...] Mr. Thill says that applicants are rejected if they are known to have hepatitis, but he adds that he is not especially concerned about those who may slip through the screening process with venereal disease or malaria. The freezing process used on the plasma "kills those bacteria," he says. The Haitians, many in rags and without shoes, crowd into Hemo Caribbean six days a week from 6:30 A.M. to 10 P.M. They spend about an hour and a half to two hours in screening and actually giving blood. [...] The plasma is frozen and shipped to the United States by Air Haiti, Mr. Cambronne's airline."*

"Capital is dead labour", which, Marx (1867) tells us, "vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks". Luckner Cambronne, because of his central exploitative role in the selling of blood plasma of Haitian donors to the United States, was widely coined both in Haiti and overseas, "The Vampire of the Caribbean" (Davison, 2006). Via either one infected person or one infected container of blood plasma, around 1969, HIV travels from Haiti to the United States; from there, it later travels to Canada, Argentina, Colombia, Brazil, Ecuador, the Netherlands, France, the United Kingdom, Germany, Estonia, South Korea, Japan, Thailand, and Australia; it also travels back into Africa (Quammen, 2013). Since the first cases of acquired immunodeficiency syndrome were officially reported in 1981 in the US, worldwide, 76 million people have been infected with HIV and 33 million people have died (World Health Organization, 2020).

A popular narrative (as represented through Randy Shilts' *And the Band Played On*) that either politically stigmatizes or reclaims the association of HIV/AIDS with queer sexuality is only one part of the historical story, specifically, how the virus amplified once it arrived in the United States. In the wider historical narrative I have relayed, capital is a leading actor. Marx (1857) observes in *Grundrisse*:

"Capital by its nature drives beyond every spatial barrier. Thus the creation of the physical conditions of exchange — of the means of communication and transport — the annihilation of space by time — becomes an extraordinary necessity for it."

From possibly just one human exposure in southeastern Cameroon, HIV/AIDS made its way into and later out of Kinshasa through the new transportation routes of a colonial era and a globalizing era; because capital abides no geographical limits, former epidemiological dead ends were no more and new viral pathways were generated.

SARS

In the period since 1979 known as opening and reform, the Chinese Communist Party has overseen the entry of foreign capital into the country. Through the 1980s, especially the 1990s, and into the early millennium, China has experienced a staggering pace and degree of economic growth and urbanization. Guangdong, a coastal province in southern China, has been at the centre of this rapid capitalist transformation. Home to the earliest Special Economic Zones, Shenzhen, Zhuhai and Shantou, and to the Pearl River Delta Economic Zone, Guangdong is now the largest provincial economy and population in China, with Guangzhou (its capital) and Shenzhen global megacities and the country's top two cities for GDP output. This has driven two ecological effects: the development of industrial-scale poultry farms to supply Guangdong's huge labour force, growing from an estimated 700 million chickens in 1997 to, by 2008, one billion so-called high quality broiler chickens annually; and the orientation of smaller livestock producers and rice farmers to fattening domestic chickens and ducks to sell in "wet markets" that exist on the edges of Guangdong's urban areas (Honigsbaum, 2019). Wet markets are markets that, along with fruit and vegetables, stock live animals for slaughter as fresh meat and fish. Davis (2005) explains:

"Thanks especially to the prevalence of wet markets in the cities, the urbanization of Guangdong has probably intensified rather than decreased microbial traffic between humans and animals. As income has risen with industrial employment, the population is eating more meat and less rice and vegetables. [...] An extraordinary concentration of poultry [...] coexists with high human densities, large numbers of pigs, and ubiquitous wild birds. [...] Moreover, as the urban footprint has expanded and farm acreage has contracted, a fractal pattern of garden plots next to dormitories and factories has brought urban population and livestock together in more intimate contact. [...] Guangdong is also a huge market for wild meat."

Quammen (2013), referencing Karl Taro Greenfeld, observes that the wild animal trade within the Pearl River Delta is less to do with limited resources, need, or ancient traditions, and more attributable to the capitalist boom and related rise in conspicuous consumption. The contemporary Era of Wild Flavour, most prevalent in southern China, draws from earlier traditions and goes beyond them; Wild Flavour (*yewei*) is regarded as a way of gaining "face", prosperity, and good luck. To supply Guangdong's wet markets to meet the demand of a burgeoning affluent class frequenting the Wild Flavour restaurants of the province's cities, there has been an increase in the volume of wild animal trade, with greater cross-border commerce (both legal and illegal) from other South East Asia countries (Vietnam and Laos, for example) into southern China and a rise in captive bred animals on unregulated small farms (Honigsbaum, 2019; Quammen, 2013). This is what Mike Davis, in 2005, coined the monster at our door, and, in light of SARS Coronavirus 2, states as the entirely familiar monster that has now walked through our front door (Davis, 2020). He elabourates, super urbanizing animal populations by factory farming is artificially creating the optimal conditions for the emergence of newly infectious diseases, speeding up the evolution of new strains, and guaranteeing the advent of pandemics (Davis, 2020). Following the work of Rob Wallace, an article from the Chinese *Chuang* journal (2020) argues that emergent infectious diseases arising in and out of China are best understood through a wider economic geography innate to capitalism, specifically, "the evolutionary pressure cooker of capitalist agriculture and urbanization", which:

"provides the ideal medium through which ever-more-devastating plagues are born, transformed, induced to zoonotic leaps, and then aggressively vectored through the human population. To this is added similarly intensive processes occurring at the economy's fringes, where "wild" strains are encountered by people pushed to ever-more extensive agroeconomic incursions into local ecosystems. The most recent coronavirus, in its "wild" origins and its sudden spread through a heavily industrialized and urbanized core of the global economy, represents both dimensions of our new era of political-economic plagues."

The exceptional coming together of multiple species, which would not have otherwise crossed paths in nature yet are now stacked up together in crowded conditions in dense urban environments, is, as Quammen (2013: 189) puts it, "zoological bedlam". It should be of no surprise then that a wet market of Guangzhou was the source of the zoonotic leap of SARS in 2002, and a

wet market in Wuhan, Hubei province in south central China, the source of the spillover of SARS Coronavirus 2 in 2019. The natural reservoirs of both SARS Coronaviruses are likely bats. While SARS had a higher mortality rate, a critical difference between SARS and SARS Coronavirus 2 is the latter's higher viral load prior to the onset of symptoms, which makes the effort to contain its spread much more difficult.

Conclusions

In narrating two stories about HIV/AIDS and SARS, I want to warn against geographically limiting one's attention to Africa and Asia when thinking about pandemic threat. Instead, a focus on the intersection of the local and the global is key: local conditions of existence and capitalist political economy shape viral evolution, thus have meaning in explaining and predicting emergent infectious diseases, but the local intimately intersects with the global networks and processes of capitalist political economy. Eskew and Carlson (2020: e216) note, "due to globalisation, industrial agriculture, and the ubiquity of viral biodiversity, a pandemic can emerge practically anywhere." For instance, the 2009 H1N1 influenza pandemic, which originated from a pig farm in the United States. At the same time, influenza is also emergent, as Wallace (2016: 29) states, "by way of a globalized network of corporate poultry production and trade, wherever specific strains first evolve". Furthermore, in the context of the biosecurity of a globalized agribusiness, in which, for example, mass vaccination of poultry is itself generating, in reaction, more evolutionary virulent strains of influenza (Wallace, 2016), a myopic focus on Africa and Asia takes our attention away from the fact that richer countries "routinely outsource their biodiversity threats to other nations" (Eskew and Carlson, 2020: e215). Or, as David Harvey (2010: 3) remarks, "capitalism never solves its crisis problems, it moves them around geographically". At all scales, states and capitals are involved in the covering up and downplaying of emergent infectious diseases because pathogens are "enmeshed" within "the political economy of the business of food" (Wallace, 2016:48). Moves by the World Health Organization to a new system of nomenclature, away from specifying geographic or animal origin, is precisely because of political pressure by powerful states and industries (Wallace, 2016).

There is a conceptual error that can be found in much work exploring ecological crises (both on pandemics and on climate change). The Anthropocene, for example, effectively presents humanity as a single homogenous bloc, outside of historical forms of society with distinct socio-economic relations, which, as Andreas Malm recognizes, re-naturalizes ecological crisis as an outcome of human disposition (see Kunkel, 2017). Marxist ecology applies a crucial insight and steer to the relationship between human socio-economic relations and nature, by understanding that capitalism "produces conditions that provoke an irreparable rift in the interdependent process of social metabolism, a metabolism prescribed by the natural laws of life itself" (Marx, cited in Vernadsky, 2019). The problem is capitalism, as such the solution is a global system change that has at its centre a "socialised humanity" that "govern[s] the human metabolism with nature in a rational way, bringing it under their collective control, instead of being dominated by it as a blind power" (ibid). If we are to find ourselves out of a current trajectory of escalating pandemics, we need a socialist politics that is radical and visionary (Marx, 1844):

> *"The view of nature attained under the domination of private property and money is a real contempt for, and practical debasement of, nature. [...] It is in this sense that [in a 1524 pamphlet] Thomas Münzer declares it intolerable 'that all creatures have been turned into property, the fishes in the water, the birds in the air, the plants on the earth; the creatures, too, must become free.'"*

References

Chuang (2020) "Social Contagion: Microbiological Class War in China", chuangcn.org/2020/02/social-contagion

Davis, Mike (2020) "Mike Davis on Coronavirus Politics", *The Dig* podcast.

Davis, Mike (2005) *The Monster at Our Door: The Global Threat of Avian Flu*. The New Press: London.

Davison, Phil (2006) "Obituary: Luckner Cambronne". *Independent*, bit.ly/obit-lc

Eskew, Evan A and Carlson, Colin J (2020) "Overselling wildlife trade bans will not bolster conservation or pandemic preparedness". *The Lancet*, Volume 4, Issue 6, e215-e216, bit.ly/wild-ban

Harvey, David (2010) "RSA: The Crisis of Capitalism", bit.ly/rsa-harvey

Honigsbaum, Mark (2019) *The Pandemic Century: One Hundred Years of Panic, Hysteria and Hubris*. Hurst & Company: London.

Kunkel, Benjamin (2017) "The Capitalocene". *London Review of Books*, 39(5), 22-28.

Marx, Karl (1867) *Capital: Volume One*, marxists.org/archive/marx/works/1867-c1/ch10.htm

Marx, Karl (1857) *Grundrisse*, marxists.org/archive/marx/works/1857/grundrisse/ch10.htm

Marx, Karl (1844) *On The Jewish Question*, marxists.org/archive/marx/works/1844/jewish-question

Quammen, David (2013) *Spillover: Animal Infections*

and the Next Human Pandemic. Vintage Books: London.

Severo, Richard (1972) "Impoverished Haitians Sell Plasma for Use in the U.S." *The New York Times*, 28th January 1972, nytimes.com/1972/01/28/archives/impoverished-haitians-sell-plasma-for-use-in-the-us.html

Vernadsky, Paul (2019) "Marx and the environment", *Workers' Liberty: Reason in Revolt*, bit.ly/marx-enviro

Wallace, Rob (2020) "How Global Agriculture Grew a Pandemic", *Smarty Pants* podcast.

Wallace, Rob (2016) *Big Farms Make Big Flu: Dispatches on Infectious Disease, Agribusiness, and the Nature of Science*. Monthly Review Press: New York.

More articles

- On a similar topic, see "Coronavirus and climate change" by Angela Driver, *Solidarity* 534, February 2020: bit.ly/covid-c-c
- On epidemics which impact plants, and so food production, see "Why banned pesticide is being used" by Zack Muddle, *Solidarity* 577, January 2021: bit.ly/banned-p
- Related to that article, see "Insect armageddon" by Les Herne, *Solidarity* 455, November 2017: bit.ly/insect-a
- For many more articles on COVID-19, its impacts, political responses, our campaigning, and more, see workersliberty.org/covid-19

What we stand for

Today one class, the working class, lives by selling its labour power to another, the capitalist class, which owns the means of production.

Capitalists' control over the economy and their relentless drive to increase their wealth causes poverty, unemployment, blighting of lives by overwork; imperialism, environmental destruction and much else.

The working class must unite to struggle against the accumulated wealth and power of the capitalists, in the workplace and wider society.

The Alliance for Workers' Liberty wants socialist revolution: collective ownership of industry and services, workers' control, and a democracy much fuller than the present system, with elected representatives recallable at any time and an end to bureaucrats' and managers' privileges.

We fight for trade unions and the Labour Party to break with "social partnership" with the bosses, to militantly assert working-class interests.

In workplaces, trade unions, and Labour organisations; among students; in local campaigns; on the left and in wider political alliances we stand for:

- Independent working-class representation in politics
- A workers' government, based on and accountable to the labour movement
- A workers' charter of trade union rights — to organise, strike, picket effectively, and take solidarity action
- Taxing the rich to fund good public services, homes, education and jobs for all
- Workers' control of major industries and finance for a rapid transition to a green society
- A workers' movement that fights all forms of oppression
- Full equality for women, and social provision to free women from domestic labour. Reproductive freedoms and free abortion on demand.
- Full equality for lesbian, gay, bisexual and trans people
- Black and white workers' unity against racism
- Open borders
- Global solidarity against global capital — workers everywhere have more in common with each other than with their capitalist or Stalinist rulers
- Democracy at every level of society, from the smallest workplace or community to global social organisation
- Equal rights for all nations, against imperialists and predators big and small
- Maximum left unity in action, and full openness in debate

If you agree with us, take copies of Solidarity to sell — and join us! See: workersliberty.org/join-awl

Socialist politics and climate change

Neil Laker wrote this introduction to the 2018 (second) edition of this pamphlet

Since the first edition of this pamphlet in 2015, little tangible progress has been made in preventing climate change. Fossil fuels remain dominant in the global economy. Capitalist governments refuse to take serious action to make the required energy transition in anything close to the 12 years the Intergovernmental Panel on Climate Change (IPCC) has calculated as the window to avoid dangerous, escalating and irreversible climate change. Liberal ideas about how to overcome these challenges dominate the left and the climate movement.

But there is still time. Through the organisation of the working class as a socialist movement, lasting inflictions such as climate change can be limited and adapted to; and the damages of capitalist exploitation on human lives and the Earth stopped altogether.

Fossil fuels and global capitalism

Since 1880 the global climate has warmed by an average 0.8°C. 2016 was the hottest year on record, and 16 of the 17 warmest years on record have been since 2000. These and other undeniable signs of capitalist-driven climate change have led to increased discussion in the scientific community about the danger of a 'hothouse earth' scenario. This is where a number of tipping points are in danger of amplifying the greenhouse effect further, and quicker. For example, the melting of Siberian permafrost which stores huge amounts of methane, CH_4, (20 times more powerful per molecule at causing the greenhouse effect than CO_2); the acidification and warming of the ocean, inhibiting its capacity to absorb carbon; a similar effect in the soil, transforming it from a carbon sink to a carbon-emitter. A number of other factors identified in the August 6 *Proceedings of the National Academy of Sciences* paper on the danger of the 'hothouse earth', such as the loss of the Amazon, could be accelerated and triggered within a short period of time unless emissions are dramatically reduced.

Politically, it is only the socialist movement that can take the measures necessary to minimise the coming storm. International agreements have been a monumental failure: since the first IPCC report in 1990, CO_2 emissions have risen by 60%. The same total volume of emissions from 1751 to the publication of that report were produced in the time from then to 2016. More than half of the emissions since the foundation of the IPCC in 1988 were made by just 25 corporate and state-owned entities, and over 70% were produced by the top 100 companies.

The COP21 in Paris in 2015 committed to holding the increase in the global average temperature to well below 2°C, which would require vast decarbonisation by 2030. The agreement made no commitments about how this should be achieved, other than reassurances of flexibility and a restatement of faith in the emissions trading schemes — whose achievements to date in terms of reductions are negligible, if not actively harmful — and wide adoption of Carbon Capture and Storage technologies which are largely untested on such a scale and remain surrounded by scientific controversy. Indeed scientists have estimated that even if all the pledges of the Paris treaty are kept, global temperatures will rise to 2.7°C above pre-industrial levels. To make matters worse, since then, Trump has pulled the US out of the treaty. President-elect Jair Bolsonaro in Brazil, whose background lies in agribusiness, has promised to cut down the Earth's largest carbon sink, the Amazon rainforest. His election strengthens the populist right-wing movement against action on climate change.

There has been a recent flurry of excitement over signs that energy production may be beginning to shift in favour of renewable power. Renewable generation rose by 9% in 2016 and was the source of just over half of new capacity added worldwide. As demand for renewables is rising, production costs fall, as seen in the decline in the cost of wind turbines by a third and solar panels by 80% since 2009. However this is but a glimpse of the bigger picture. In 2015, wind and solar power accounted for just 4.4% of global electricity. The real expansion of fossil fuel generation continues faster than that of renewables, even while the installation costs of renewable energy are cheapening in relative terms. This is because the overall volume of fossil fuel production is so much greater than renewables, that despite steadily increasing investments into renewable energy capacity, the expansion in total energy consumption in 2015 and 2016 — which is of course predominantly produced by fossil fuels — equalled the total 2016 renewable energy production. The expansion in fossil fuel production alone from 2012 to 2016 is greater than the total 2016 wind and solar production. This means that while wind and solar are added energy to the total consumption pool, they are not really replacing any fossil fuels. This reflects David Harvey's observation that "fixed capital confines the trajectory of future capitalist development, inhibits further technological change and coerces cap-

ital precisely because it is 'condemned to an existence within the confines of a specific use value'".[1] Even with renewable technology cheapening, as long as fossil fuels remain highly profitable, capitalists will continue to exploit them, even in the face of devastating environmental impacts.

The UK economy mirrors the global trend of rising renewables failing to unseat fossil fuels. As renewable capacity rises, there are new natural gas power facilities being planned, alongside Tory-backed fracking projects to provide some of the fuel. Drax power station in North Yorkshire is proposing the largest ever UK gas units, financed by huge government subsidies. In its own environmental impacts report on the project, Drax confesses that it will "represent a significant net increase in greenhouse gas emissions and have therefore negative climate impacts".

Corbyn's Labour Party and climate change

Politically there have been openings as well as setbacks. While the government plans new fossil fuel energy, the Labour Party has undergone dramatic shifts. In 2017 it proposed an energy price cap, manufacturing and energy jobs through large renewable energy projects, for "publicly owned, locally accountable energy companies and co-operatives to rival existing private energy suppliers, with at least one in every region". Labour intended for those companies to be able to buy grid infrastructure, to create "public ownership over time".[2]

A new policy outline, *The Green Transformation*, appeared at the Labour conference in September 2018. For all the talk of — and need for — democratic control, these proposals came from above, and are less ambitious than the 'One million climate jobs' document produced by the Campaign for Climate Change Trade Union group a decade ago. *The Green Transformation* instead proposes 300,000 climate jobs; 60% of all UK energy from low carbon or renewable sources within 12 years of Labour coming to power (a nod to the IPCC recommendation time-frame); development of tidal lagoons; policies towards decentralised renewable energy such as public ownership of transmission and distribution networks; a ban on fracking and retrofitting of poorly insulated housing stock. Though Labour proposes a semi-public, semi-co-operative alternative, there is little acknowledgement of the role that capitalist energy systems have played, and will continue to play, in creating emissions unless the energy market, and fossil fuel companies are confronted. As Paul Burkett has argued, "the energy transition requires an *active* suppression of fossil fuels, not just adding renewables as 'another slice to an ever growing energy pie'".[3] For example, *The Green Transformation* refers to how UK housing stock is among the most costly to heat in Europe—but fails to mention the role of private big six energy companies, whose profits increased tenfold between 2007 and 2016, in causing fuel poverty and inaction on fossil fuels.

What is needed is the abolition of the market in energy through public control of the energy companies and decommissioning of their fossil fuel assets. Labour suggests that it will "work closely with energy unions to support energy workers and communities through transition".[4] It should guarantee those workers support and compensation through expropriation of the profits of the fossil fuel sector. Moreover this line reveals their understanding of fossil fuel workers as a group to be managed—alongside, and in the control of the interests of businesses—rather than as a leading force, let alone recognising them as the only group able to change power relations and end fossil fuel production in the timescale needed. These are historic and pressing responsibilities which Labour is currently avoiding, in a wider strategy which aims at radical change but does not intend to challenge the economic relations of capitalism. As Will Steffen *et al.* state in the *National Academy of Sciences* journal:

"Incremental linear changes to the present socioeconomic system are not enough to stabilize the Earth System. Widespread, rapid, and fundamental transformations will likely be required to reduce the risk of crossing the threshold and locking in the Hothouse Earth pathway".[5] Labour's current platform is insufficient in urgency, scale and ambition. We need democratic control of energy as a measure both to fulfil our obligations to minimise climate change and as a positive step towards full socialist ecological planning. Labour's strategy leaves emissions reduction to the dynamics of a market, rather than taking control of that process.

Climate change underlines the need for the development of the British left towards unapologetic class politics and transformation of the economic relations which have led to ecological crisis. But the current approach from Labour on energy reflects the impasse of their wider economic strategy. Their approach seeks to avoid confrontations with powerful interests (in this case the Big Six; in a wider sense the super-rich and financial class) in order to appear amicable to both the wealthy and the dispossessed. On aviation, they propose categories by which to accept airport expansion which does not acknowledge that any airport expansion contradicts even the current insufficient targets on emissions reduction. Moreover Labour "commits to supporting climate mitigation and adaptation efforts led by the countries in the Global South, and to supporting countries severely affected to cope with associated loss and damage," without making the connection between the climate crisis and migration.[6] There exists a pressing need for open

borders, for positively preparing for mass migration if we really mean to achieve climate justice.

Advancing workers' interests and delivering on climate justice with the necessary urgency requires initiative to organise workers in polluting industries, while supporting climate justice politics in their unions. It requires ending the private ownership model which makes carbon emissions and the destruction they entail profitable. It means a shift to a new, Marxist and humanist way of looking at the world based on the value of lives and ecosystems; it means expropriation, democratic ownership and ecological planning in industry. This begins with a turn within the labour and climate movements towards the workers of fossil fuel sectors in order to shut them down for good.

The climate movement

There has been an important continuation of mobilisations and direct action on climate change in the last five years. In the UK the climate movement has mostly been focused on opposing fracking in Yorkshire (with success) and Lancashire (ongoing). In Germany there has been an impressive growth of the *Ende Gelände* protests, where thousands of activists from across Europe have occupied coal mines and infrastructure in the Rhineland and the Lausitz. Similar climate camps have been organised in Wales, the Netherlands, and elsewhere, and are growing in numbers. We have supported and participated in these mobilisations, while arguing for them to have an orientation to workers in fossil fuel industries (the main piece from our bulletin at the Ende Gelände camp in August 2017 is reproduced in this pamphlet). Without such an orientation, indeed without a political programme at all, these actions are limited.

Beyond demanding 'system change not climate change,' the climate activist movement is still characterised by an absence of a political programme. In the words of Mann and Wainwright, this means that "most of the time, the tacit assumption is that 'system change' means a green, renewables-based capitalism."[7] This is true of the Extinction Rebellion protests, the bravery of which does not compensate for the lack of strategy to overcome the power of fossil fuel capitalism.

A tactic of mass arrests is not to be sneered at, but it will not lead to systemic change. That lies in the hands of the working class, and the key to mobilising their power remains the task of connecting ecological Marxist politics with the workers' movement. Therefore a fundamental element of the movement against climate change must be political education to empower workers and activists to organise collectively to overthrow it.

As Rosa Luxemburg argued at the Stuttgart congress of the SPD, 4 October 1898: "the only violent means that will bring us victory are the socialist enlightenment of the working class through day-to-day struggle." In face of climate change this means connecting working class demands of green jobs, housing, and democratic control of the fossil fuel industries with direct action to speed up the end of fossil fuels—through mobilising the power of workers across all industries. This pamphlet is a collection of articles contributing to that process.

References

[1] David Harvey *The Limits to Capital*, Verso 2007 (quoting Marx, *Grundrisse*)

[2] Labour manifesto *For the Many Not the Few*, 2017, pp.20-22

[3] Paul Burkett 'An eco-revolutionary tipping point?' *Monthly Review*, May 2017.

[4] *The Green Transformation*, Rebecca Long-Bailey and Sue Hayman, September 2018, p.9

[5] Will Steffen *et al* 'Trajectories of the Earth system in the Anthropocene', Proceedings of the *National Academy of Sciences* August 2018

[6] On climate migration from Syria see for example Andreas Malm, 'Revolutionary Strategy in a Warming World' *Socialist Register* 2017.

[7] Geoff Mann and Joel Wainwright, *Climate Leviathan*, Verso 2017.

For a Socialist Green New Deal

We promoted a model motion "Climate emergency — For a Socialist Green New Deal" in the run up to Labour conference 2019, and got much of it passed. This page documents that fight, and beyond.

We worked with Fire Brigades Union activists to take a "Socialist Green New Deal" motion to FBU conference, May 2019. We then drafted a model motion based on it, and organised to get it passed at several Constituency Labour Parties; as well as by the FBU.[1] Working with other Labour Party activists, we then fought for its contents to be included in the composited motions to be heard and voted on. This was against the pressure from GMB, Unite, Labour's leadership and others; and with the directors of the official "Labour for a Green New Deal" (LGND) campaign willing to abandon almost all of even their, weaker, motion. We got much of it through, which was then passed by conference itself. The original motion is below:[2]

Climate emergency — for a Socialist Green New Deal

Conference notes:

1. To prevent the worst effects of climate change, we must keep the global temperature increase below 1.5°C.

2. Over 1°C has already occurred, causing floods, droughts, heatwaves, pollution, and hundreds of thousands of deaths. Tackling climate change is indivisible from social, racial and economic justice.

3. 100 corporations are responsible for the majority of carbon emissions. The Tories are deregulating fossil-fuel industry while cutting support for renewables.

Conference believes:

1. Labour should build on support for the climate strikes and Extinction Rebellion by campaigning for a Socialist Green New Deal — demands for decarbonisation and transformation of the economy that attacks inequality while curbing global warming, based on public ownership, public investment and democratic control.

Conference calls on the next Labour government to implement:

- A target of net-zero UK carbon emissions by 2030.
- Creation of millions of public, well-paid, unionised green jobs.
- Public ownership of energy including expropriating the Big Six, creating an integrated, democratic system. Large-scale investment in renewables, phasing out fossil fuels.
- Public ownership of transport — expanded, integrated, free or cheaper.
- A public program manufacturing, installing and training in renewable technologies and eliminating waste. Mass insulation and building and retrofitting zero-carbon council housing and public buildings.
- A workers-led 'just transition' from high-emission jobs to alternatives; public investment guaranteeing communities and living standards.
- Democratic public ownership of banking and finance, providing resources and economic leverage.
- Ending airport expansion.
- Repeal of all anti-union laws, so workers can take action over social and political issues including climate change.

Results

Most of this model motion — and more good commitments besides —made it into the second of three composites, which was then passed.[3] Although a third, more radical version with a clearer emissions target, opposition to airport expansion and support for public ownership and democratic control of finance was carved out by the Conference Arrangements Committee, this result is a definite victory and step forward.[4]

Regrettably, the Corbyn-led Labour Party then ignored much of this policy, and their manifesto in the election shortly after missed much of it out. Yet the fight to get it passed was important for winning activists around to these ideas. It made clear the hostility to many of these demands even in sections of the labour movement which claim to be on the left and to take climate change seriously.

2021

Starmer's leadership then rowed back further. But, in getting the motion passed in 2019, we had pushed the envelope on the left and across Labour. For 2021's conference, LGND's model motion was considerably more left wing. We promoted a motion with more internationalist demands; and helped the fight once again for good policies in compositing — with considerable success.[5]

References

[1] theclarionmag.org/2019/07/30/eight-radical-climate-green-new-deal-motions-to-labour-conference/
[2] theclarionmag.org/2019/06/02/for-a-socialist-green-new-deal-motion-for-labour-party-conference/
[3] theclarionmag.org/2019/09/24/labours-socialist-green-new-deal-policy-passed-by-conference/
[4] theclarionmag.org/2019/09/23/green-new-deal-labour-cac-bans-motion-for-2030-target-and-no-airport-expansion/
[5] See the final composite bit.ly/final-gnd-21 and a delegate's speech bit.ly/21-sgnd

What is socialism?

Mohan Sen wrote this for* Solidarity *601, July 2021.
It accompanies the articles "Socialism vs capitalism" bit.ly/soc-v-cap and "Get socialists organised!" bit.ly/get-so

We fight for emergency policies, like taxing the wealth of the super-rich and public ownership of key industries and corporations, to allow action to halt and reverse ever-greater inequality and to slow down climate change. We fight to build a stronger workers' movement, including trade unions, to win these steps.

But the wealth of the super-rich and their power to increase it are deep-rooted in the fact that they own and control the main systems for producing wealth, giving them control over the labour-power of billions.

The only really sustainable answer is for workers, in every country and worldwide, to take control of the whole system of producing wealth away from the plutocrats, converting it into collective social property and creating a new system run for human needs, not profits. That is what we mean by socialism.

Eliminating the profit-motive through social ownership, democratic planning and workers' control of resources, a socialist society could take much quicker and more decisive action to suppress carbon emissions; and to mitigate the damage already caused and certain to be caused further in coming years by climate change and destruction of ecosystems. It could re-establish a sustainable relationship between humanity and nature. It could ensure the costs of tackling these problems are decided democratically and spread equally, rather than reducing emissions being done at workers' expense.

A socialist society run by the workers could use the gigantic wealth it has taken from the capitalists to abolish poverty and continually slash inequality. It could guarantee a good standard of living and rights — including good food, housing, healthcare, all kinds of services and facilities — for everyone, not just in richer countries, but everywhere worldwide. It could repeatedly cut down the working week, to improve people's lives and allow us to more easily be involved in democratic decision-making and control.

With everyone freed from the pressures of working hard for long hours to make money for bosses, and provided with opportunities and resources to develop their interests, we would surely see a flourishing of education, culture, individuality, diversity, and rights for those who have been marginalised and downgraded in class societies.

A society in which workers have united to overthrow capitalist inequality, and which is getting progressively more equal and liberated, would be the best possible environment for struggles to defeat racism, sexism and other forms of oppression. It would make any large-scale violence inconceivable, let alone the kind of brutal oppression and bloodshed we see in today's world. It would tend to dissolve barriers and borders between nations, while also ending oppression of some nations by others.

Such a system would have little in common with the kinds of "socialism" which previously existed in Russia and Eastern Europe, and still exist in Cuba, North Korea, Vietnam and China. In those systems, a bureaucratic ruling class controls the state and through it the economy. Workers are still exploited and have no more power than under private capitalism: in many ways less.

That model comes from the bureaucratic counter-revolution which overthrew the workers' government in post-revolutionary Russia in the 1920s. Despite that huge defeat, the 1917 Russian Revolution shows that workers can take power away from the capitalists.

Even a developed socialist society would still face difficulties and disputes. Differences in people's natures and capacities would inevitably still have an impact. Not everyone would be happy all the time! But it would be liberation compared to the capitalist system with its combination of vast wealth and sprawling misery, and its squandering of so much human potential.

Workers' action for climate justice

Article from Workers' Liberty bulletin at Ende Gelände climate camp in Germany, August 2017. We took a delegation of activists there, raising class struggle ideas and distributing the bilingual bulletin: bit.ly/eg-2017

In 2016's Ende Gelände, 4,000 people occupied coal diggers in Lausitz, blocking coal mining infrastructure for over 48 hours. This kind of climate activism challenges the coal industry and raises awareness of the urgency of ending it. It contributes to building a mass movement that takes direct action to challenge climate change, while capitalist states and market "solutions" completely fail to. We must build and expand this movement, but crucially we need to link with workers in the energy sector, including coal, to end coal and transition to a sustainable society.

There is a little-known but inspiring history of workers organising to take environmental action, that we can learn from and build on:

- Builders organised "Green Bans" in Australia in the 1970s, organising company-wide strikes to successfully prevent environmentally destructive construction projects, sometimes working with community activists.
- In the UK in 2009, previously un-unionised workers at a large wind-turbine factory were supported by environmentalists to occupy the factory for nearly a month, demanding that the factory should not be closed down but instead be kept open, and taken into public ownership. Whilst ultimately unsuccessful, it pressured the government and gathered lots of support from trade unionists and trade unions, and community campaigners and beyond.
- The Lucas Plan was advocated and campaigned for by workers across the factories of an arms company, Lucas Aerospace. The plan set out a blueprint for a transition to making environmental, and socially useful, technology using the company's pre-existing technologies and the workers' skills.

The workers' movement can and must replicate and build on these cases to fight for a transition to a zero-carbon society. In these examples, and others, environmental activists — both workers, and activists in solidarity with these struggles — raised the possibility and urgency of such actions, sometimes bringing environmental angles to originally non-environmental disputes.

The unlimited drive for more profit within capitalism means that ultimately climate change cannot be effectively tackled without overthrowing capitalism, and creating a democratic and sustainable alternative. Whilst the climate crisis threatens most of humanity, its roots in capitalism and so the exploitation of the working-class means that workers must play a central role in stopping it. The working-class alone has the power and interest to replace capitalism with a democratic alternative that is socially just and ecologically sound. Capitalism's unlimited profit drive necessarily also drives it for the greatest possible exploitation of workers. This in turn pushes workers towards organising and fighting in defence of their interests and against exploitation. These struggles as they increase in strength tend to increasingly challenge capitalism, and point towards a society beyond it. As workers and the whole working-class perform the labour which keeps society running, they have the potential to overthrow capitalism, and are the only class with the power to build a new, democratic society.

Not only do working-class climate actions — such as green bans and worker-led transition plans — prevent environmental destruction and support sustainability, but they build towards overthrowing capitalism and creating a new society. Through these struggles workers build their collective organisation and strength, and simultaneously challenge the idea that their industries and society should be run by the capitalist boss in the interest of profit. Actions like these raise the possibility of industries and societies run by the workers themselves, in the interest of humans and environmental sustainability — and demonstrating that this is possible.

We need working-class orientated revolutionary environmentalism within both the workers' and environmental movements. As an environmental movement we need to engage with and support workers' struggle. In our activism we must raise demands and slogans which reflect this. Not only to shut down coal mines and coal-fired power stations, but for investment in green energy and technology that will replace the energy and jobs produced by the coal industry. Energy workers must be part of leading this transition. We should link to and engage with workers in RWG [RWE AG is a German Multinational Energy Company] and beyond, finding activists and potential activists, and taking up jobs in the sector to organise for this. This kind of activism is difficult as workers in such industries, feeling their jobs threatened, are often encouraged by their bosses to feel hostility to environmentalism. But such activism is necessary to stop climate change and build a better society.

Marx, ecology, and science

Paul Hampton reviews Kohei Saito's* Karl Marx's Ecosocialism: Capital, Nature, and the Unfinished Critique of Political Economy*, in* Solidarity *523, October 2019

Marx's theory of metabolism is the starting point for explaining how capitalism generates ecological problems through the insatiable drive for capital accumulation.

Kohei Saito's book, *Karl Marx's Ecosocialism: Capital, Nature, and the Unfinished Critique of Political Economy* (2017), is the most extensive study to date of the roots of Marx's ecology.

Saito exhaustively combs through Marx's published works, as well as his excerpt notebooks. The book draws out the dialogue between Marx and natural scientists of his epoch. It successfully explains the influence of natural science on Marx, but also how Marx developed new innovations as a result of this reading. Saito convincingly demonstrates the origins of Marx's metabolic theory.

The concept of "metabolism" (Stoffwechsel) was first employed in physiology at the beginning of the nineteenth century. Marx appears to have learned about it from Roland Daniels, a doctor and Communist League member.

On 8 February 1851, Daniels sent Marx his book manuscript, *Mikrokosmos: Entwurf einer physiologischen Anthropologie*. Marx critically evaluated the manuscript and replied on 20 March 1851.

Marx first wrote about the concept of metabolism in his London Notebooks of March 1851:

> *"Unlike ancient society where only the privileged could exchange this or that [item], everything can be possessed by everybody [in capitalist society]. Every metabolic interaction can be conducted by everyone, depending on the amount of money of one's income that can be transformed into anything: prostitute, science, protection, medals, servants, cringer — everything [becomes a] product for exchange, just like coffee, sugar, and herring.*
>
> *"In the case of rank [society], the enjoyment of an individual, his or her metabolic interaction is dependent on a certain division of labour, under which he or she is subsumed.*
>
> *"In the case of class [it is dependent] only on the universal means of exchange that he or she can appropriate...*
>
> *"Where the type of income is still determined by the type of occupation, and not simply by the quantity of the universal medium of exchange like today but by the quality of one's occupation, the relationships, under which the worker can enter into society and appropriate [objects], are severely restricted, and the social organ for the metabolic interaction with the material and mental productions of the society is limited to a certain way and to a particular content from the beginning."*

Shortly after his discussion with Daniels, Marx read Justus von Liebig's book, *Die Organische Chemie in ihrer Anwendung auf Agriculture und Physiologie*. This reading in July 1851 sparked two decades of engagement with Liebig's work.

Although that edition of the book used the term only twice, in the course of several revised editions Liebig developed metabolism as the basis of his explanation of soil exhaustion. In particular the seventh edition (1862) had a great impact upon Marx's theory.

In 1865, Marx returned to studying natural sciences for his investigation of ground rent. Marx told Engels, in a letter of 13 February 1866, about his fascination with the rapid development of chemistry:

"As far as this 'damned' book [Capital] is concerned, the position now is: it was ready at the end of December. The treatise on ground rent alone, the penultimate chapter, is in its present form almost long enough to be a book in itself. I have been going to the Museum in the daytime and writing at night. I had to plough through the new agricultural chemistry in Germany, in particular Liebig and Schönbein, which is more important for this matter than all the economists put together..."

Marx's excerpts of 1856-66 document why the seventh edition of *Agricultural Chemistry* must have been particularly insightful, because Liebig also altered his arguments in the new Introduction and reinforced his critique of the robbery system of modern agriculture.

Liebig pointed to "the terrifying fact that Great Britain is not producing food necessary for her 29 million population". He argued that "the introduction of water-closets into most parts of England results in the irrecoverable loss of the materials capable of producing food for three and a half million people every year." This made "the progress of cultivation and civilisation" dependent on urban toilets.

Marx repeated his praise publicly in the first edition of *Capital* volume 1 (1867):

"To have developed from the point of view of natural science the negative, i.e., destructive side of modern agriculture, is one of Liebig's immortal merits. His historical overview of the history of agriculture, although not free from gross errors, contains more flashes of insight than all the works of modern political economists put together."

After *Capital* was first published, Marx continued to study natural sciences seriously. Carl Nikolaus Fraas holds a unique position in Marx's notebooks.

Fraas's "agricultural physics" emphasised the "climatic influences" on vegetation and on human civilisation. Fraas first appears in Marx's notebook December 1867-January 1868, when he notes Fraas's *Die Ackerbaukrisen und ihre Heilmittel* (1866), a polemic against Liebig's theory of soil exhaustion. In a letter to Engels dated 3 January 1868, Marx asked for advice from their friend, the chemist Carl Schorlemmer:

> *"I would like to know from Schorlemmer what is the latest and best book (German) on agricultural chemistry. Furthermore, what is the present state of the argument between the mineral-fertiliser people and the nitrogen-fertiliser people? (Since I last looked into the subject, all sorts of new things have appeared in Germany.)*
>
> *"Does he know anything about the most recent Germans who have written against Liebig's soil-exhaustion theory? Does he know about the alluvion theory of Munich agronomist Fraas (Professor at Munich University)? For the chapter on ground rent I shall have to be aware of the latest state of the question, at least to some extent..."*

Marx wrote in another letter to Engels on 25 March 1868:

> *"Very interesting is the book by Fraas (1847):* Climate and the Plant World Over Time: A Contribution to the History of Both*, namely as proving that climate and flora change in historical times. He is a Darwinist before Darwin, and admits even the species developing in historical times... The first effect of cultivation is useful, but finally devastating through deforestation, etc.*
>
> *"This man is both a thoroughly learned philologist (he has written books in Greek) and a chemist, agronomist, etc. The conclusion is that cultivation — when it proceeds in natural growth and is not consciously controlled (as a bourgeois he naturally does not reach this point) — leaves deserts behind it, Persia, Mesopotamia, etc., Greece. So once again an unconscious socialist tendency!"*

Fraas repeatedly argued that rational agriculture must seriously take climatic factors into account:

> *"To the extent that favourable climatic conditions are missing to the cultivated plants and cannot be replaced somehow, we must open up the sources of nutrition in the soil, that is, we must dung better. [It is] not because cereals consume more ash constituents (mineral constituents) than meadow plants, but because they are alien to our climate and do not have enough warmth to assimilate salts of the soil as well as gases of the air into our desired amount of organic substance within an artificially and naturally measured time of vegetation."*

Fraas called Liebig's theory of soil exhaustion a variety of "quietism". Soils without manure can provide successful crops over a long time period under certain conditions of climate. Marx quoted Fraas in his notebook:

> *"In southern Europe cereals (barley) can be quite successfully cultivated on the same land every year for many years even without rotation and without manure, maybe not corn and cotton, but at least melons.... Cereals are thus soil-exhausting plants in the cold temperature zone as they strongly require favourable climate, particularly corn, durra, wheat, barley, rye and oat, legumes and buckwheat less so, and clovers, our pasture, asparagus etc. not at all.*
>
> *"In the warm and moderate temperature zone cereals and legumes are no longer soil-exhausting plants with exception of corn, rice and durra, but hardly tobacco that is already cultivated often without manure."*

Even if Liebig was correct in predicting that "one day" soils all over the world would be exhausted due to the robbery system of agriculture and would be unable to provide enough food for growing populations, Fraas believed that this was a long way off, particularly if the enormous lands in North America and South Russia were factored in.

Fraas also opened up a way to the rational arrangement of metabolism between humans and nature, through "alluvion", the use of sediment from rivers to fertilise the soil.

Marx's interest in Fraas's theory was not limited to soil exhaustion. His comments about an "unconscious socialist tendency" relates to Fraas' book, *Climate and the Plant World Over Time*.

Fraas posed the same question as Liebig concerning desertification in areas such as Persia, Mesopotamia, and Egypt that used to have very fertile lands. But Fraas explains the emergence and collapse of old civilisations from changes of "natural climate" (physikalisches Klima).

Fraas described how civilisations were transformed by climate over a long period. It is not robbery of a certain mineral substance in the soil but changes in climate that cause such a great disturbance in the metabolic interaction between humans and nature:

> *"Great damage of natural vegetation in a region results in a deep transformation of its entire character, and this modified new state of nature is never so favourable to the region and its population as before; certainly, people change with it.*
>
> *"Such great transformations of the natural state of the region can hardly remain without effects, or, if they occur extensively and together with many regions, never remain without effects, and, of course, the old state of affairs cannot be rehabilitated."*

Fraas summed up his ecological critique:

> *"Man in various ways changes his environment, on which he is quite dependent, and he changes nature more than one usually imagines. In fact, he is able to change nature to such an extent that later it completely malfunctions as the indispensable means for the realization of a higher level of mental and physical development, forcing him to confront extreme physical obstacles... There is no hope of overcoming this reality."*

Fraas's historical investigation opens up an even more expanded vision of ecology than Liebig's theory of soil exhaustion.

Climate change is a new and important element for Marx's investigation into the historical disturbances in natural metabolism caused by humans. Fraas made Marx aware that this development of modern capitalist production accelerates the disturbance of metabolism between humans and nature, due to a more massive deforestation than previously in human history.

Marx documents a passage in his notebook in which Fraas laments the rapid forest decrease in Europe. Fraas argued the only solution was to regulate the speed of deforestation as much as possible:

> *"Civilised states with dense population inevitably need to add artificial constructions to meadow and forest that damage nature, replace forests with fields for farming, dry out swamps and marshes, and burn peat and forests that sustain humidity. In short, without such supports civilised societies cannot be what they are. However, without actual necessity such changes of the state of nature should never be carried out....*
>
> *"That is, trees in mountain areas should never be cut down without the highest necessity because they are most influential."*

Marx was sufficiently influenced by Fraas to modify the second edition of *Capital* published in 1872-73.

Liebig was still praised: "His historical overview of the history of agriculture, although not free from gross errors, contains flashes of insight." However Marx deleted the statement that Liebig was more insightful "than all the works of modern political economists put together."

Though Marx continued to praise Liebig's contribution, the tone definitely became more sober. His engagement with Fraas had opened a wider vista.

Study guide and debate

- See workersliberty.org/kohei-saitos-study for a study guide of Kohei Saito's book, written for a four-part course
- We may run the course again. Get in touch, or keep an eye on workersliberty.org/events if you are interested.
- See workersliberty.org/metabolism-debate for a debate about the implications, usefulness, and meanings of "metabolism" and "metabolic rift" in Marxist ecology

XR: Take the rebellion into workplaces

Zack Muddle wrote this for **Solidarity** *604, September 2021*

From 23 August, environmental activists from across the UK descended upon London for thirteen days of bold and creative direct action against climate change and its financing, XR's "Impossible Rebellion". It was smaller than previous pre-Covid rebellions, but still numbered thousands every day. And not just for a single march, then a coach home: for marching, actions, and confrontation with the police all day long, day after day.

Class-struggle and workplace activists, from Workers' Liberty, "Empower the Unions", and beyond, have been participating: supporting the protests, while trying to raise the urgency of organising at work and in trade unions to fight climate change.

Activists who had come down for the rebellion, sympathisers of XR who had heard it was in the area and popped by, curious passers-by, all were open to conversations about the need for radical working-class climate action.

The minimal political basis upon which XR organises — climate change is bad, something must be done, but we won't directly say what — and their historic visibility have brought in people from a wide range of political backgrounds. XR has offered them ideas which have been rudimentary, politically light, and often not-very-left-wing.

But many activists, seeing environmental emergencies becoming sharper, and XR's successes being limited, have a thirst for discussion and answers as to how we can actually halt it.

Our stall, draped with a "fight climate change, organise at work" message, attracted people for discussions. We handed out leaflets on climate change, class struggle events in the rebellion, and the fight to abolish the anti-union laws. We sold pamphlets on different environmental topics.

And we collected many signatures for a petition "Fight climate change — Expropriate the banks!" (bit.ly/fcc-eb)Workers' Liberty had an additional stall and activists circulating through the crowd, likewise drawing activists and sparking debates.

We organised two street meetings during the rebellion, and one delegation of climate activists to a nearby strike.

The strike — organised by the PCS and UVW unions, and over sick pay, conditions, and redundancies — was of outsourced Royal Parks workers, cleaners and attendants for many of London's beautiful parks. Supporting strikes, by building workers' confidence and power, is important in itself for the fight against climate change. This strike had a workers' rights element; a public health element, the demand for full sick pay; an anti-racist element (outsourced Royal Parks workers, on worse conditions, are disproportionately more BAME than in-house workers); and an environmental element, as the workers look after important green spaces.

There was a lot of enthusiasm for the two street meetings: "How workers can fight climate change", co-hosted by Empower the Unions and Free Our Unions; and "Break the finance-fossil fuel link — Expropriate the banks!", co-hosted by Workers' Liberty and Extinction Rebellion. (For the latter meeting, XR pulled out from publicly advertising it at the last minute as it was "too political" — i.e. too left wing!)

On Monday 30, as Hurricane Ida, second in power only to Hurricane Katrina in Louisiana's recorded history, left a million without electricity and forced thousands to evacuate, we held our meeting on banks by the steps of the Bank of England. Perhaps 150 police officers lined up surrounding us, and our speaker had to shout over the helicopter circulating ahead. As she pointed out, all that reminded us of the importance the state places on defending high finance.

In the end, the turnout to the meetings was not great. With the fraught excitement of XR's actions, and the heavy police presence, lots of participants in the rebellion were caught up in the moment. They were not checking their watches as to when they needed to walk over to our street-meetings. Because of the necessary secrecy in XR planning actions, the timing and location of our street meetings relative to other activities was sometimes off. Nonetheless, the meeting on the banks was very valuable.

As XR's tactics are working less well than previously, the importance of rethinking them becomes clearer. Where previously XR was garnering widespread media attention, this time the media showed less interest, despite on some reports over 300 arrests. The net disruption, too, was significantly lower.

Environmental activists must organise and build democratic power in the workplace, where we can create widespread disruption in a productive way, and force change without relying on favourable coverage from the billionaire media as our intermediary.

Towards an independent working-class climate movement

Daniel Randall and Paul Hampton wrote this article for the American socialist journal **New Politics** *(2011)*

Our politics — working-class self-emancipation — are given a new urgency by the danger of catastrophic climate change. The need to transition society to, at the least, a low-carbon economy, based on production for need rather than profit, is extremely urgent.

But one of the many tragic legacies of Stalinism has been the virtual disappearance from Marxism of the nuanced ecological politics and analyses that were once integral to it. Stalin's hyper-industrialisation drives, for example, left little room for the subtle understanding of humanity's relationship to nature developed by Marx and others. As a result, many ecologists believe that the working class and the organised labour movement, the privileged agents in the Marxist world-view, are irrelevant to tackling environmental degradation — if not part of the problem.

But beneath the excrement generated by Stalinism runs a rich seam of independent working-class ecology, which we believe has a great deal to offer the fight to tackle climate change. We argue that class is central to the fight for a coherent ecological politics in the twenty-first century. A Marxist approach provides both the vital analysis of structures and causes, and the focus on working-class agency that is necessary to successfully revolutionise society to tackle climate change.

Exploiting workers, subsuming the planet

Marxism has a sophisticated view of the relationship between human society and nature, starting with the concept of metabolism (Stoffwechsel). Burkett and Foster have explained how labour mediates the relationship between society and nature; how the metabolic rift conceptualises the breakdown in humanity's broken relationship with nature under class society; and how socialism will reconstruct this metabolism in a more rational way.[1]

Similarly, Smith's "production of nature" approach draws into sharp relief the impact of capitalism in reshaping, remaking and reworking nature all the way down. Smith argued that, "No part of the earth's surface, the atmosphere, the oceans, the geological substratum or the biological superstratum are immune from transformation by capital" and that "the alteration of climate by human activity" was an expression of this relatively new phenomenon of the social production of nature.[2] The chief virtue of this Marxist approach is the emphasis on changing social relations to tackle ecological problems. The idea of the production of nature implies an historical future that is still to be determined by political events and forces.[3]

Marxist political economy of class societies provides a wealth of insights into the drives that cause ecological damage. In particular Marx understood that the unlimited drive to amass profits for capital accumulation overrode other imperatives such as human need or environmental sustainability. Central is the Marxist conception of classes, defined under capitalism by the exploitation of waged labour by capital. The forms of exploitation — the creation of absolute surplus value, (or the formal subsumption of labour to capital) and relative surplus value (or the real subsumption of labour to capital) — explain the dynamism of the system but also simultaneously the enormous power of workers within it.

Some Marxists have extended these insights about exploitation to ecological degradation, and introduced the concepts of the formal and real subsumption of nature into capital. Under the formal subsumption of nature, "firms confront nature as an exogenous set of material properties and bio-/geophysical processes, but are unable to directly augment natural processes and use them as strategies for increasing productivity". In contrast, "under the real subsumption of nature, limited to biologically based industries, firms are able to take hold of and transform natural production, and use this as a source of productivity increase". In adapting these concepts, they "highlight some of the different ways in which biophysical systems are industrialised and, in some cases, can actually be made to operate as productive forces in and of themselves". Under real subsumption "capital circulates through nature (albeit unevenly) as opposed to around it. Biological systems are made to act as actual forces of production".[4]

The parallels between the real subsumption of labour and the real subsumption of nature should be clear. It is precisely the same mechanisms that give rise to worker exploitation (longer working day, the reorganisation and mechanisation of the labour process, etc.) that also give rise to ecological damage. These analogous, simultaneous processes have a common root in the drives of

capital.

Workers as strategic ecological actors

A further conclusion from this political economy is to elevate the working class to a unique position as the essential progressive agent of social change under capitalism. Workers have the power and the interest to found a democratic collectivist alternative to capitalist (and Stalinist) class society that is socially just and ecologically sustainable. Therefore workers, who have the historical incentive to mitigate and ultimately abolish their own exploitation, also have a significant and privileged stake in abolishing the processes that give rise to the degradation of the natural environment. The working class is the agency capable of embracing the general, universal interest of ecology as its own special interest.

The specific impacts of ecological degradation on working-class communities also provide an immediate motivation for workers to resist climate change. Obach argued that, "it has been established that lower-income groups suffer disproportionately from the effects of environmental degradation in terms of its negative health consequences and other quality of life issues". He added that, "research has demonstrated that, sometimes as a matter of policy, hazardous, environmentally undesirable facilities are sited in or near low-income communities. The health implications for communities surrounding such facilities are well established". Similarly, "policies designed to protect the natural environment also tend to impose a greater economic burden on the working class".[5]

Throughout the history of capitalism organised working-class movements across the globe have at times displayed a tremendous and inspiring willingness to tackle ecological questions. In the United States, that tradition includes the OCAW strike and boycott against Shell Oil in 1973 and the alliance of Teamsters and "Turtles" which disrupted the WTO meeting in Seattle in 1999. There are tremendous examples from "water-wars" in South Africa in Bolivia, as well as oil struggles in Nigeria, landless worker and peasant movements in Brazil and in countless other places, South and North, where workers have led progressive ecological struggles in their own interests.

Green bans and workers' plans: strategies in working-class ecological struggle

The movement led by Australian building workers in the 1970s is perhaps the most inspiring example of workers organising to take action in defence of the planet. In the first half of the 70s, the New South Wales Builders' Labourers Federation (NSW BLF) imposed around 50 green bans in and around Sydney. The term "green ban" — refusing to work on environmentally injurious constructions — was coined by NSW BLF secretary Jack Mundey as a more appropriate description of a refusal to work, previously known as "blacking".[6]

The first green ban was introduced at Kelly's Bush in June 1971. After a corporate developer attempted to re-zone the parkland, The 'Battlers for Kelly's Bush' community group was formed to oppose it. The Battlers contacted the BLF, who agreed to impose a ban on redevelopment. The struggle to save the Rocks, Sydney's first area of European settlement, from proposed redevelopment was considered the most important green ban. The Rocks Residents Group developed a 'People's Plan' for the area after the BLF introduced a ban.

Woolloomooloo, probably the most successful green ban, saw local residents establish an action group after the local state issued plans to demolish housing to build high-rise office blocks. The BLF imposed a green ban and, with pressure from the local residents, a satisfactory community solution was reached. Other green bans included Victoria Street, the Sydney Opera House car park, the Newcastle hotel, the fight to prevent the North West freeway cutting through the inner-city suburbs, and the struggle to save the Theatre Royal from demolition. Some green bans were permanent, some achieved their aims, while others were lifted at the request of local resident action groups or the National Trust.

The struggle to transform the NSW BLF itself was crucial to its development of radical ecological politics. Most of the NSW BLF leadership at the time were dissident communists, receptive to new left ideas. The period before the "green bans" movement had seen a rank-and-file caucus oust corrupt, conservative bureaucrats and push the union to fight on the immediate day-to-day concerns of its members. It was through the process of resisting the ways in which capitalism exploits workers that BLF activists were able to develop an understanding of the ways in which capitalism exploits the planet, and of how that environmental exploitation is in turn underpinned by and premised on the exploitation of workers.

The BLF showed that a militant, political labour movement was well placed to achieve radical environmental ends. As Mundey put it: "Trade unions must become involved with environmental issues, and environmentalists must become more concerned with the importance of promoting trade union struggles for socially useful production and consumption. Too few people question the products we make." Mundey also emphasised that ecology is a vital matter of working-class self-interest: "The myth that the environment movement is the preserve of the do-gooding middle class must be exploded. It is, in fact, the workers who are most affected by the deterioration of the environment and it is therefore up to the trade union movement to give it a higher priority

to fighting to improve it."[7]

During the same period in Britain, a large number of union branches and rank and file organisations — faced with employer-led restructuring and job losses — produced "workers' plans" for the reorganisation of production in their workplace. These plans invariably questioned the logic of capitalist production for profit and asserted the need for "socially-useful production", often making explicit proposals for "green" production.

Probably the most famous was the Lucas Aerospace Corporate Plan, published by a cross-union combine committee in 1976. The document detailed plans for heat pumps, solar cells and fuel cells, windmills and flexible power packs, as well as a road-rail public transportation vehicle, a new hybrid power pack for motor vehicles and airships. It stated: "New, renewable, sources and more efficient methods of conversion must be developed. Solutions to the problem based on nuclear power give rise to new problems of health, safety and even survival. Instead R&D should focus on new sources of energy and new types of energy conversion transmission and storage."[8]

Organised workers in major military contracting firms such as Vickers and Rolls-Royce produced similar initiatives. Chrysler car workers also developed this approach, demanding diversification into public transport and agricultural vehicles. A statement from Chrysler stewards stated: "The widespread ecological and environmental criticism of the private petrol-driven car as a socially irresponsible form of transport suggests to us that we must explore the feasibility of new kinds of products of a socially useful kind to harness the skills of the existing plant and machinery, and direct it away from a commodity whose profitability and usefulness is rapidly declining."[9]

Other workers' plans also emphasised renewable and environmentally friendly technologies. Workers at GEC Trafford advocated wave, wind and nuclear power. Its report noted: "In the Severn Estuary, with its 40ft tidal range, Britain has one of the world's best sites for tidal power… Once built, this barrage would supply this energy almost free of charge. With no fuel costs to meet, the only major cost would be the maintenance and overseeing of the equipment."

Although these plans were snuffed out by the employers' offensive and the wave of austerity imposed by Thatcher, they indicate the potential power of a militant working-class movement to relate constructively to pressing ecological issues.

Ecology without class: the limits of the "Green New Deal" and "ecosocialism"

A class-struggle response to environmental destruction is still a minority idea within the environmental and labour movements. Even on the left, a response that puts workers' agency, self-organisation and struggle at its centre competes with models that look elsewhere for agents of change — states, NGOs or nebulous alliances of "social movements".

The Green New Deal is one such approach. Writing in New Politics, Ashley Dawson argued for such a model — yet workers hardly get a look-in. While he calls for the creation of a "Green Corps, a millions-strong army of workers trained in environmental stewardship and the creation and deployment of green technology", workers in currently-existing jobs (rather than jobs we might wish to see created in the future) are absent from the picture and presumably have no specific agency other than as one component part of a "broad variety of social movements" which can lobby governments to implement the emissions-restriction measures.[10]

In Britain, the Green New Deal report, authored by prominent Green politicians, NGO officials, media personalities and business people, demanded the price of fossil fuels be driven up until they're "high enough to tackle climate change effectively by creating the economic incentive to drive efficiency and bring alternative fuels to market."[11] The authors appeared to have forgotten about fuel poverty, or that a dramatic rise in fuel prices will hit working-class people hardest. Higher prices are, of course, the classic market 'solution' to almost any problem.

The listed agents for change identified in the British Green New Deal report speaks volumes about its project. It seeks to bring "diverse social and industrial forces together, leading to a new progressive movement," and looks to the "exciting possibility of a new political alliance: an alliance between the labour movement and the green movement, between those engaged in manufacturing and the public sector, between civil society and academia, industry, agriculture and those working productively in the service industries."[12] This is the politics of the green popular front; while the climate crisis might pose a threat to the bulk of humanity, the crisis's roots in class exploitation mean that the resistance to it must have working-class leadership.

Undoubtedly, amongst this growing mass of supporters there will be more and less radical conceptions of what the Green New Deal means. But they share a common starting-point in that they all identify top-down measures implemented by existing states as the key weapon for combating climate change. The explicit affinity with Roosevelt is telling. His New Deal was a top-down, state-capitalist solution to an economic crisis that contemporary Marxist critics rightly identified as "aiming at the restoration of capitalist profits". "New Deal" models are, fundamentally, about saving capitalism from itself.

A less explicit but similarly mistaken retreat from class is beaten by the Belem Declaration and the "ecosocialist" milieu around it. Although its authors and supporters are ostensibly revolutionary socialists, there is a lack of clarity about the role of the working class as an ecological actor. At least one of them, Joel Kovel, is quite explicit that there is "no privileged agent of eco-socialist transformation" or any "privileged role to be played by the international proletariat".[13]

The Declaration contains a great deal of legitimate and useful criticism of "market solutions", and is right to emphasise that a revolutionary anti-capitalism is the only ultimate alternative to climate crisis. But the Declaration's anti-capitalism and "ecosocialism" lack a sharp focus on class. While it alludes to "the struggles of labour", the closest it gets to identifying a specific agency for anti-capitalist change is naming "the poor and indigenous peoples".[14] Without question, peasant and indigenous movements in places most immediately threatened by the consequences of climate change have a vital role to play. But in a world in which capitalist labour relations predominate almost everywhere (even in those countries where the wage-working class is still a minority), it is only as part of an alliance led by organised workers that those movements can hope to have a significant impact.

To emphasise the necessity of working-class leadership is not to downplay, dismiss or de-legitimise the struggles of other oppressed or exploited groups; it is simply to acknowledge that we live in a capitalist world, where working-class struggles do have a privileged role and position, and certainly not only within the advanced-capitalist "global north". For Chinese and Korean auto-workers, Bangladeshi garment workers, Nigerian, Iranian and Iraqi oil workers and many others, the need to develop a working-class programme for tackling climate change may very soon become a matter of life-and-death urgency.

The quote from Evo Morales which acts as the Belem Declaration's epigram betrays an incoherence on the question of agency. Morales may be a radical reformer, but he remains the head of a bourgeois government administering a capitalist state. In a book to promote the Declaration and its "ecosocialist" approach, edited by another of its authors, the contrast is clear. The book contains four contributions from members of the Cuban ruling bureaucracy (a state in which independent trade unions and political parties are illegal), one from Morales and another from a supporter of Hugo Chavez's government. Few entries point towards the ecological potential of workers' struggles. The emphasis is on top-down action by the leaders of states; the fact that the states in question spuriously pretend to some species of anti-capitalism is only evidence that the malign influence of Stalinism in the left and the labour movement still needs combating.[15]

None of this is to suggest that it is wrong to demand action from existing states or that state measures cannot produce progressive results. It is not to make a fetish of the "bottom-up" as against the "top-down". The question is one of agency: is the state itself to be looked to as the agent for change, or is that agent to be the working-class — which may well place demands and force concessions from capitalist states, but from within a framework of self-organisation and class independence.

Working-class climate action in the UK: the significance of Vestas

A modest contribution towards developing a working class-based ecology perspective has been made in Britain. The Workers' Climate Action (WCA) network was founded in 2007 by a group of class-struggle activists (including Trotskyists, anarchists and others) working in the climate and labour movements. It fights for working-class environmentalism and revolutionary ecology within both movements, and as a direct-action solidarity network to engage with and catalyse workers' struggle, with a particular focus on workers in high-emissions industries such as aviation and energy. When the 2008 Camp for Climate Action took place near the Kingsnorth coal-fired power station, WCA supporters participating in the Camp marched with a banner reading "Yes to Kingsnorth workers, No to E.on bosses". When British Airways workers struck against pay cuts and job freezes in 2010, WCA activists organised solidarity to connect the workers' immediate struggles to questions of transition and conversion. The environmental profligacy of BA bosses was clear: they flew empty jets in order to diminish figures for the number of planes grounded by the workers, in an attempt to play down the strike's impact. By involving itself in the strike on the basis of working-class solidarity, WCA was able to begin to develop ecological politics around a dispute that had no ostensible 'environmental' angle (and indeed could be seen as pro-emissions). WCA has also sought a close relationship with transport workers' unions, particularly the RMT (which represents workers on the London Underground and is arguably Britain's most industrially-militant union), in order to raise demands for the expansion of public transport.

Perhaps the most significant struggle in which WCA has played a leading role was at Vestas, on the Isle of Wight (a small island of less than 150,000 people off the southern coast of England). Vestas is the world's largest producer of wind turbines and was the single-biggest private sector employer on the island. Despite turning record profits, the firm announced the closure of its manufacturing plants in 2009. Although objective so-

cial conditions cried out for the factory to remain open to continue producing vitally-needed renewable energy equipment, its bosses closed it due to a lack of sufficiently-responsive markets. This came as the then-Labour government began making lofty promises about a "green energy revolution" and the creation of hundreds of thousands of green jobs.

The plant was not unionised, but following factory-gates agitation by WCA supporters and large public meetings, a group of workers developed sufficient confidence to occupy the main factory site, which lasted for nearly a month. Although workers were not strong enough to restart production under their own control or, ultimately, to save the plant from closure, they cohered an alliance of trade unionists, community campaigners and radical environmentalists. They exposed the disgusting hypocrisy of the Labour government and the callously anti-worker (and, necessarily, anti-planet) practices of even a so-called "green" employer like Vestas. They provided a living, breathing model of working-class ecology and turned a sleepy island into a flashpoint of class struggle.

Vestas was a tragic but chemically-pure demonstration of the specific ways in which wage-labour and the profit motive necessarily lead to environmental degradation, and of the way in which the environmental damage capitalism causes is inextricably bound up with its exploitation of workers. The Vestas struggle came in the same year as a number of other workplace occupations, including a particularly long-running one at the Visteon car plant in north London. There too, issues of sustainability and just transition were discussed. Across the UK, union reps in schools and colleges, central and local government, in the health service and in private industry, workers are taking action on ecological issues.

In the struggles ahead, activist networks like Workers' Climate Action will become even more important for developing a working-class response to the ecological and economic crises. Struggles like the green bans, Lucas and Vestas developed battles over day-to-day conditions into struggles for workers' control. They posed, as Trotsky put it in *The Transitional Programme*, "the question of who is the boss in the factory: the capitalist or the workers?" They asked which interests should predominate — the interests of profit, or the interests of human need and environmental sustainability? And they asked why it was, if it was the workers who possessed the skills to develop plans to run their workplaces sustainably, justly and democratically without bosses, why they could not in fact run them? And, if they could run their workplaces along such lines, why couldn't they similarly run a whole industry? A whole city? The whole world? It is time for the organised labour movement and its supporters in the ecology movement to ask, and answer, those questions again.

References

[1] Paul Burkett *Marx and Nature* (London: Macmillan, 1999); John Bellamy Foster *Marx's Ecology* (New York: Monthly Review, 2000).

[2] Neil Smith *Uneven Development* (Oxford: Blackwell, 1984), p.56

[3] Noel Castree "Marxism, Capitalism and the Production of Nature" in *Social Nature: Theory, Practice and Politics*, ed. Noel Castree and Bruce Braun (London: Blackwell, 2001) p.203

[4] William Boyd, Scott Prudham and Rachel Schurmann "Industrial Dynamics and the Problem of Nature", *Society and Natural Resources*, 14, 7 (2001) pp.555-570 (p.557, p565)

[5] Brian Obach *Labor and the Environmental Movement: the Quest for Common Ground* (Cambridge, MA: MIT Press, 2004) p.29

[6] Meredith Burgmann and Verity Burgmann *Green Bans: Red Union: Environmentalism and the New South Wales Builders Labourers' Federation* (Sydney: New South Wales Press, 1998) p.8

[7] Verity Burgmann "The social responsibility of labour versus the environmental impact of property capital: the Australian Green Bans movement", *Environmental Politics*, 9, 2 (2000), pp.78-101. (p.98)

[8] Hilary Wainwright and Dave Elliott, *The Lucas plan: a new trade unionism in the making?* (London: Allison & Busby, 1982) pp.101-102

[9] Wainright and Elliott (1982) p.142

[10] Ashley Dawson "Why We Need a Global Green New Deal", *New Politics*, Winter 2010, Vol XI-4, Whole #48. Online at: newpol.org/fromthearchives?nid=180

[11] Caroline Lucas, Larry Elliott, Tony Juniper et al *A Green New Deal* (2008) Online: neweconomics.org/2008/07/green-new-deal

[12] Lucas, Elliott, Juniper et al (2008)

[13] Joel Kovel *The Enemy of Nature* (London: Zed Books, 2007) p.241, p.257

[14] The Belem Ecosocialist Declaration (2008) Online at: climateandcapitalism.com/?p=597

[15] Ian Angus (ed.) *The Global Fight for Climate Justice* (London: Resistance Books, 2009)

More

- Workers' Climate Action created a briefing on the Lucas Plan. Download it: bit.ly/wca-lucas
- Paul Hampton wrote an article — bit.ly/g-bans — on the Green Bans; see also bit.ly/red-g-ban

The politics of carbon drawdown

Todd Hamer reviews **Under a White Sky** *by Elizabeth Kolbert and* **After Geoengineering** *by Holly Jean Buck,* **Solidarity** *599, June 2021*

Elizabeth Kolbert's new book *Under a White Sky* describes a pattern in the relationship between human beings and our environment that we can observe being played out at different scales and on different terrains throughout recent history.

The reversing of the Chicago River to solve Chicago's sewage problem was initially successful. A canal diverted Chicago's waste into the Des Plaines river rather than Lake Michigan.

It had the unintended consequence of connecting two of the world's largest river basins, "upending the hydrology of roughly two thirds of North America". When one of those river basins became overrun by invasive species — Asian carp — the US Army Corps of Engineers was instructed to build a barrier of bubbles, bright lights and electricity. "First you reverse a river, then you electrify it".

Kolbert tells a number of tales describing the same pattern. In Louisiana, they are building the 12th biggest river in America, a two and a half mile straight channel that will dump sediment in the Mississippi delta and halt land erosion accelerated by New Orleans flood defence system.

In Nevada they have created an artificial rock pool home for an endangered pupfish whose original home was destroyed by private enterprise draining the desert's aquifer in the (failed) attempt to create viable farmland.

There is an ever-repeating pattern of human activity causing unintended harm to human and extra-human nature that then needs to be fixed by more aggressive intervention: "If there is to be an answer to the problem of control, it's going to be more control. Only now what's got to be managed is not a nature that exists — or is imagined to exist — apart from the human. Instead, the new effort begins with a planet remade and spirals back on itself — not so much the control of nature, but the control of the control of nature."

It is true that the "control of nature" is out of control and that there is no going back to the world before humans became a geological force. However, Kolbert removes the class dynamics from her analysis, so the environmental chaos she describes appears to be the result of bumbling scientists who blindly plough ahead with ill-conceived projects, unleashing unforeseen consequences in their wake.

This picture is wrong on two levels. First as Professor David Keith is keen to stress, not all environmental modification goes wrong. "'To people who say most of our technological fixes go wrong, I say, "Okay, did agriculture go wrong?'"

Second, human work is currently organised according to the blind logic of unceasing profit-making. The capitalist organising principle lays waste to both human and non-human natures. Restrictions placed on it, and clean-up operations for it, have to be imposed by the state or organised by voluntary and not-for-profit organisations.

Karl Marx wrote about this process of laying waste to human and extra-human nature nearly 150 years ago. In 1860 a report on conditions in the lace industry found that: "Children of nine or ten years of age are dragged from their squalid beds at two, three, four o'clock in the morning and compelled to work for a bare subsistence until ten, eleven or twelve at night, their limbs wearing away, their frames dwindling, their faces whitening, and their humanity absolutely sinking into a stone-like torpor."

In the potteries, children as young as seven years old would work 15 hour days. Unrestrained, the profit motive devoured the vital energy of the land and the people.

"[The English Factory Acts] curb capital's drive towards a limitless draining away of labour-power by forcibly limiting the working day on the authority of the state, but a state ruled by capitalist and landlord. Apart from the daily more threatening advance of the working-class movement, the limiting of the factory labour was dictated by the same necessity as forced the manuring of English fields with guano.

"The same blind desire for profit that in the one case exhausted the soil had in the other case seized hold of the vital force of the nation at its roots. Periodical epidemics speak as clearly on this point as the diminishing military standard of height in France and Germany."

Environmental regulation

The evolution of the capitalist state since this time has created a library's worth of regulations that seek to protect human and environmental health from capital's insatiable appetite for exploitation. Class struggle plays a part in winning this legislation, but it "sticks" because of the imperative to maintain stable conditions for capitalist growth. There is a tension here between the indi-

vidual capitalist's desire for unrestricted profit-making and the collective capitalist class interest in maintaining conditions for future growth.

Despite Tory agitation against "red tape", all capitalist states oversee a huge edifice of rules and regulations and institutions designed to limit and direct individual capitals' unremitting thirst for profit so as to sustain the general conditions for profit-making.

Writing around the same time as Marx, Engels describes the impetus that forced the state to intervene into the pestilence and filth of the Victorian slum: "Modern natural science has proved that the so-called 'poor districts' in which the workers are crowded together are the breeding places of all those epidemics which from time to time afflict our towns. Cholera, typhus, typhoid fever, small-pox and other ravaging diseases spread their germs in the pestilential air and the poisoned water of these working-class quarters.

"In these districts, the germs hardly ever die out completely, and as soon as circumstances permit it they develop into epidemics and then spread beyond their breeding places also into the more airy and healthy parts of the town inhabited by the capitalists. Capitalist rule cannot allow itself the pleasure of creating epidemic diseases among the working class with impunity; the consequences fall back on it and the angel of death rages in its ranks as ruthlessly as in the ranks of the workers...

"The philanthropic bourgeois began to compete with one another in noble efforts on behalf of the health of their workers. Societies were founded, books were written, proposals drawn up, laws debated and passed, in order to close the sources of the ever-recurring epidemics."

The pattern that Kolbert identifies is here in Marx and Engels but with the addition of a class analysis: first capitalism lays waste to human and extra-human nature, then at the point it starts troubling the capitalist class, the state and/or voluntary organisations intervene to clean up the mess and regulate to limit further destruction. In the process new markets are created and new terrain of exploitations are crafted that can sustain long-term capitalist growth.

The coronavirus pandemic demonstrates this pattern. It imposed a new necessity on the state to limit social mixing. Science dictated that this could not be achieved solely through restrictions on social gatherings outside of working hours but would also require cessation of "inessential work" and where possible remote working. The state was forced to intervene in the holy of holies of capitalist society — the right of capitalists to exploit "their" workers.

"Kolbert removes the class dynamics from her analysis, so environmental chaos appears to be the result of bumbling scientists"

But: "a state ruled by capitalist and landlord"; so in the UK the government has spent around £140 billion of public money on business support and furlough: ensuring businesses could continue debts and ensuring furloughed workers remained dependent on the good graces of their employers and continued to generate trade for supermarkets, Amazon, Apple, Netflix, Zoom, etc. This "socialism for the rich" involved one of the biggest ever transfers of public money to rich people. Thanks also to the pumping-up of financial markets by government easy-money policies, the latest *Sunday Times* Rich List shows 171 billionaires increasing their wealth by £106.4 billion while millions of zero-hours and insecure workers were pauperised.

At the same time, a study from the International Trade Union Confederation found that just 2% of countries gave adequate support for workers to isolate. Enhancing sick pay would not just cost in the short-term, but tilt the balance of workplace power towards workers in the longer term.

A vicious cycle

Similarly vaccine nationalism and the defence of Big Pharma's intellectual property titles mean that the world's state-sponsored vaccine programs are failing to deliver global herd immunity, consequently increasing the risk that more deadly variants will evolve. Moreover, the underlying cause of the pandemic and future pandemics continues unabated. The rate of deforestation increased by 20% during 2020.

The capitalist mode of production is extraordinarily destructive of human and extra-human natures; and its reactive efforts to restrict this destruction and organise clean-up operations are further hampered by the priorities of the capitalist state.

Kolbert's book argues that the repeated pattern of environmental degradation leading to crisis leading to increased intervention means that solar geoengineering is inevitable. The title of her book, *Under a White Sky*, refers to the way in which spraying sulphur in the stratosphere will turn the sky from blue to white. This Solar Radiation Management has the advantage over all other climate interventions of being both cheap and quick.

Kolbert cites research that suggests development of a global SRM system would cost just $2.5 billion and involve running costs of $20 billion or so per decade. That's around 300 times less than the world currently spends each year on fossil fuel subsidies and well within the budget and technological capacity of dozens of countries and even private individuals.

Such a program would cool the planet within a few months, though with some known harmful effects, e.g. acid rain, and no doubt many unknown consequences.

This established pattern of retroactively fixing envi-

ronmental problems rather than taking proactive measures in response to scientific warnings is not the only basis for expecting geoengineering will be part of the response to climate change. All the Intergovernmental Panel on Climate Change scenarios for limiting warming to 1.5 degrees Celsius, and almost all the scenarios for limiting warming to 2 degrees Celsius, require massive roll-out of technologies to remove carbon dioxide from the atmosphere as well as massive reductions in CO_2 emissions.

Even with steep emissions reductions, we still need a carbon drawdown infrastructure that is comparable in size and scale to the multi-trillion dollar infrastructure currently employed to extract fossil fuels. To make the sums add up, we require a global carbon-capture and storage system capable of drawing down 15 billion tons of CO_2 a year. At the moment we have capacity to drawdown 0.028 billion tons a year and only a fraction of that is verifiable.

BECCS (bioenergy with carbon capture and storage) is the technology of choice for the IPCC. It involves growing plants and then burning them for energy, capturing the CO_2 emissions and storing them underground. There are also a number of other technologies that could be used for carbon drawdown.

After Geoengineering

In her book *After Geoengineering* Holly Jean Buck explores these technologies, many of which are in development stage. This drawdown technology will be especially important in any future that involves SRM as a stopgap.

"If a regime begins solar geoengineering, it needs to keep putting those particles up there year after year, until carbon emissions are brought down. Thus, the hard thing isn't beginning the project, but ending it: ensuring that what comes after geoengineering is liveable. This is the battleground that's currently obscured in most discussions on geoengineering."

Buck takes the view that geoengineering will almost certainly be part of the way we respond to climate change and that the left needs to engage seriously in this debate rather than hoping that it can be avoided.

"Solar geoengineering is not actually 'a technology' — indeed most of these socio-technical systems aren't. The planes and nozzles, and the software that drives and creates solar geoengineering would be technologies, as are the computer models that indicate it would cool the planet. But while solar geoengineering relies on such technology, it would be more than that... Solar geoengineering and carbon removal would be practices that have aspects of infrastructure and social intervention. They must be wrested from the realm of technology — where only experts are permitted — and seen through the prism of projects, programs, and practices if civil society is going to attempt to shape them in a meaningfully democratic way."

"Buck takes the view that geoengineering will be part of the way we respond to climate change and the left needs to engage in this debate"

Buck's book combines accessible discussion of various carbon drawdown technologies with imaginative sci-fi short stories exploring the types of society where these technologies might be deployed. Interestingly she argues that the knowledge and skills needed for many carbon capture technologies are similar to the skills and knowledge currently held by fossil fuel workers, opening possibilities for a credible worker-led just transition for the 1.7 million fossil fuel industry workers.

Buck explores enhanced weathering, ocean sequestration, regenerative agriculture, and various forms of Carbon Capture and Storage. None of those technologies are easy to roll out at scale within a system of competing capitalist states. Carbon removal and solar geoengineering create no new wealth and no commodities. They are the type of ameliorative clean up operations that are usually organised by capitalist states, and a world state does not exist.

It is possible that in the heat of crisis, the capitalist class may well take the revolutionary action necessary to create the institutions and organise this work. But the pattern of reactive state intervention suggests that the impetus for this revolution-from-above will only come when the climate crisis is well underway. All too likely, by the time the capitalist class acts, we will have passed several key tipping points such as the melting of the polar ice caps or the savannahisation of the Amazon.

The world working-class is the only force able to proactively respond to the warnings of scientists before it is too late. Only by workers organising and becoming an independent force can we hope to start the work of a transition from fossil fuels, organise the massive carbon drawdown operation, salvage as much of the earth's ecosystems as possible and ensure we can maintain basic living standards for the world population.

A proper discussion and understanding of SRM and carbon drawdown technology is necessary to prepare the left and workers' movement for the battles ahead.

• See workersliberty.org/geoengineering-readings for more articles and a video on this topic.

Carbon capture and storage? Not a help yet

Zack Muddle wrote this article for **Solidarity** *578, January 2021*

A debate has been smouldering on about what role, if any, "Carbon Capture and Storage" (CCS) technologies should play in ecological transition.

CCS denotes chains of technology for capturing carbon from the chimneys of factories and power plants. The chimney is fitted with solvent filters, which much of the CO_2 dissolves into — CCS's coal industry proponents claim up to 90%. For storage, the solvent is then pumped to somewhere where it is heated up, forcing the CO_2 out again, where it is stored, perhaps underground. A small amount may be used for fizzy drinks, in greenhouses for plants, and for making plastics.

CCS does not refer to carbon sequestration from the atmosphere as a whole: through afforestation, peat restoration, rewilding, and the like.

In November, as part of an extremely limited "ten point plan for a green industrial revolution", Boris Johnson committed to an extra £200 million towards CCS, bringing it up to £1 billion total. This plan would aim to create four facilities by 2030.

Environmentalists have generally been sceptical about CCS. On 11 January, a report was published which was heavily critical of its role in UK government climate plans.[1] It found that global operational CCS *capacity* is currently about 0.1% of annual global emissions from fossil fuels. The UK currently has *no* operational CCS, yet the UK CCC's model for net zero by 2050 relies on the UK capacity reaching four times the current *global* total by that date. It rightly condemns the government for "placing reliance over the next decade on this technology that has a track record of over-promising and under-delivering."

The picture gets worse. There are just 26 operational CCS plants globally. 81% of the carbon that they manage to capture is used for "Enhanced Oil Recovery" (EOR). EOR is an energy-intensive process which squeezes more crude oil from an oil field than would be otherwise possible, using high pressure CO_2 and water. Planned deployment of CCS likewise remains dominated by EOR.

Like fracking, this process can poison water tables and soil. Its higher energy use than conventional extraction requires even more fossil fuels. And much of the liquid hydrocarbon is then, of course, burned, releasing yet more greenhouse gasses. The cycle of doom goes on.

One common criticism of CCS is the risk of leakage.[2] Carbon dioxide can be stored underground beneath an impervious layer of rock, trapped in porous rock, perhaps dissolved in subterranean brine. Leaks can and will, to greater or lesser degrees, happen. This may then seem like kicking some of the problem down the road; or even worse, creating a time bomb for future generations.

In itself, that risk would not be a good reason to avoid CCS. Even if CO_2 did leak, in the worst case scenario, no more carbon would end up released than was injected and, *everything else being equal*, would have ended up in the atmosphere anyway. It won't all leak out, and leaks won't happen simultaneously around the world. And releasing later is always likely to be better than releasing now.

Arguments such as this are used by proponents of CCS, such as those who, on 16 January, "dismissed" the report published earlier that week.[3] These proponents did not, in fact, respond to the report's claims and arguments.

The core problem is that *everything else is not equal*. CCS's captured carbon is mostly used to suck more liquid carbon from the ground. That aside, it is a speculative technology which is primarily used by governments and corporations to justify continuing to emit carbon dioxide.

But if most environmentalists are correct that CCS is touted as a future technological solution to a current political failure, they also make a mirror mistake. They let current political failures make problems of possible future technological aids. An irrational political and economic order, where green technologies are used as a license to emit greenhouse gasses, is not inevitable. The CCS advocates might well be correct — in a different society.

A democratic and rational society, a workers' government, taking power in the next few years, would surely throw resources into some CCS research and deployment. Not as an alternative to preventing carbon emissions in the first place. Rather, as one minor component to reduce the emissions while trying to "decarbonise" as fast as possible.

But for now we must declare inadequate any environ-

mental programme in which it plays a major part.

References

[1] foe.scot/resource/report-carbon-capture-storage-energy-role
[2] theconversation.com/carbon-capture-and-storage-has-stalled-needlessly-three-reasons-why-fears-of-co-leakage-are-overblown-130747
[3] theguardian.com/environment/2021/jan/16/carbon-capture-vital-meeting-climate-goals-scientists-cut-emissions

More

• See also "Strong fossil-fuel reboot, weak plans", *Solidarity* 590, April 2021: bit.ly/f-fuel-r

The shop stewards who represent the future

Martin Thomas reviews* Workers and Trade Unions for Climate Solidarity: Tackling climate change in a neoliberal world*, by Paul Hampton, 2015

Under the carapace of often sluggish official union responses, a network of "thousands of union [workplace] reps [is] making a substantial contribution towards curbing carbon emissions across the UK".

The movement to have workplace reps active on environmental issues, or to elect special environment reps, was stimulated by official union and Labour government policies, and in some workplaces even by bosses wanting to show a green face.

But Paul Hampton's research finds that "even less adversarial union reps tended to go beyond the parameters laid down by government and employers". And sometimes where "the company says it is interested in climate change", still "when proposals are put forward by union reps, they are rejected allegedly on cost ground every time".

"No buy-in from senior management. Seen as trouble-making!"

At least one workplace reports a "greater appetite amongst rank and file members to get involvement with tackling environmental issues than... for... traditional trade union areas. We have no problem recruiting green reps".

The numbers are still in the thousands rather than the hundreds of thousands, and there is always the danger of union reps being channelled into just cajoling workmates about switching off photocopiers and the like. But Paul Hampton finds some workplaces where union initiatives have led to sizeable cuts in emissions, 40%, or 55%.

Official union attention to climate change tends to fade when severe immediate economic problems hit, but Paul Hampton also finds that rank and file reps, once activated, retain their interest even when climate change is out of the news.

His chapter on workplace reps is joined in the book by chapters on the interrelation of climate politics and class politics; on union debates and policies worldwide and in the UK; and on the 2009 Vestas occupation, in which workers at a wind turbine factory in the Isle of Wight occupied the workplace to try to stop closure.

Older union responses tended to be reactive and conservative, focused on defending existing jobs with little regard to long-term social viability. Paul Hampton reports exceptions from long ago, such as the New South Wales (Australia) Builders Labourers Federation's "green bans" in the early 1970s, the action which first gave the name "green" to a strand of politics. But the TUC congress did not debate climate change until 1988.

Soon the idea of "just transition" became hegemonic. Paul Hampton recounts the origins of the idea in the late 1960s, in the thinking of Tony Mazzocchi, a radical left-wing official in the US Oil, Chemical and Atomic Workers Union.

The "GI Bill" of 1944 had provided four years of income, health coverage, and college fees for demobilised soldiers. Mazzocchi argued for similar provision for "demobilised" workers in irreparably-polluting industries.

The formula has gone through many reworkings. It now appears in official UN documents. In 2009, in the same year as it was refusing to save the Vestas factory by nationalising it or to give legal back-up to union environment reps in workplaces, the Labour Government announced a "Forum for a Just Transition" as a joint body of bosses, unions, and government.

Elsewhere, "just transition" has been seen as a matter of pressing for worker-protection clauses in emission-reduction policies which it was assumed capitalist governments would push through anyway, rather than as a matter of the workers' movement formulating and pressing independent policies for emission-reduction.

Most trade union policies operate within the discourse of "ecological modernisation", which Hampton identifies as one of the two main bourgeois responses to climate change (beyond, of course, the out-and-out right-wing response of ignoring it).

Neo-liberal climate-mitigation policies see the answer entirely in terms of tweaking markets, by carbon taxes or emission trading schemes. Ecological-modernisation policies include more direct government action and the nurturing of a "climate change advocacy coalition" around "an awkward alliance of technocratic civil servants, opportunistic environmental NGOs, and profit-seeking financiers".

However, more independent working-class responses continue to emerge. Paul Hampton describes the campaigns for "energy democracy", centred around public

ownership and control of energy industries, and for "one million new climate jobs", to be created by direct employment in a public climate service. He explains the difference between "green jobs", which can be more or less anything, and "climate jobs" working specifically on climate mitigation.

He also describes some unions with more advanced policies. "Considered to have the most progressive union environmental policy" is, perhaps surprisingly, the Australian Manufacturing Workers' Union, which "argues for a comprehensive industrial policy, laying the foundation for a just transition to a low-carbon economy".

The chapter on the Vestas factory occupation in 2009, where Workers' Liberty activists were central in building initial momentum and organising support, tells the story of the most radical recent working-class climate action at a rank and file level.

Framing all the detailed research is an argument against seeing the climate question as one of whether an undifferentiated "we" can save the planet. " 'We' should not assume that the same structures that gave rise to climate change in the first place will continue... 'we' cannot rely on the same business and state actors who caused the problem to tackle it". The working class is the social force which has the strongest interest in tackling climate change, and the embedded sense of social solidarity and social cooperation necessary to tackle it.

Inevitably, the book bears the marks of its origins in a PhD thesis. It has one shortcoming which must be due to that, since Paul Hampton has been trenchant on the question in other writings. The limits and potentialities of trade-union thinking and action on climate change are discussed in abstraction from the issue of building a socialist working-class political party.

But if we have not built such a party, and so long as that party has not won a leading role in the unions, then there is a vacuum. Other parties, other political formations, other ideologies dominate. There will always be sallies and spurts of working-class initiative going beyond those political and ideological influences of the old society, but trade-union organisation of itself, without a socialist political-party backbone, can never stably transcend those influences.

I would also have liked to see more discussion is market-tweaking policies. Paul Hampton makes a convincing argument that current such policies are "at best insufficient and at worst a distraction", and slams the inefficacy of the European Union's Emissions Trading Scheme.

But markets will exist for some time even after a socialist revolution. A workers' government would not only tolerate those markets, but also judiciously manipulate them, for example to make energy from renewables or nuclear cheaper than energy from fossil fuels.

Market-tweaking policies are surely insufficient, but they have to be part of the package even under a workers' government. Which ones are useful (although insufficient), and which ones are merely "a distraction"? They will all have downsides: how can those be mitigated?

Capital, not population, is the culprit

A review of **David Attenborough: A Life on Our Planet** *documentary, by Zack Muddle, in* **Solidarity** *580-581, February 2021*

David Attenborough: A Life On Our Planet, the critically acclaimed late 2020 documentary, is a powerful watch. Awe-inspiring natural beauty, captured on film, is interwoven with his signature emotive narration, plus a personal touch from this infamous presenter. It's no surprise that this environmental call-to-arms caused ripples.

This "witness statement" tracks a lifetime studying nature: and its continual destruction and decline. Humans increasingly dominate and destroy the natural world, consuming more and more of the earth which supports us.

The great disaster he focusses on is biodiversity loss, particularly as caused by direct destruction or over-exploitation of ecosystems. This he intersperses, not clearly demarcating, with interrelated environmental crises of global warming and resource depletion.

These crises are compared to the Chernobyl disaster. That is: bad planning, an innocent human mistake. This false innocence throughout is most clearly exposed when he recounts how, in his youth, no-one was aware of environmental issues or of biodiversity loss.

"All progress in capitalist agriculture is a progress in the art, not only of robbing the worker, but of robbing the soil" — so wrote Marx, in the 1860s. Attenborough is old, but not *that* old. Yet environmental science is not the most important thing that he could learn from the socialist and environmentalist movements. (While Attenborough was on all accounts[1] a late advocate of action on climate change, to be fair to him, *mass* environmental movements only kicked off seriously later in his life.)

As previously, a key issue for this natural historian is population. Transitional clips, as we move from one decade of his life to the next, show the clocking up of world population, followed by increased atmospheric carbon concentration, then dropping remaining wilderness. The visual cues have a clear implication: there is a correlation — nay a *causation*! — between these factors. Increasing population, we may then understand, is driving these environmental crises.

That too many people *existing* is at fault follows naturally from the fairytale notion that humanity is acting in a harmony of interests. Attenborough's film portrays the benefits brought about by chopping down rainforests, the incentives to deforestation, as *generalised*. Benefits by and for "people", as a whole: resistance or contestation is absent.

This is how accelerating environment destruction, keeping pace with accelerating understanding of its harmful impacts, seems a simple mistake. Humanity has got carried away having too much fun.

If, as he contends, humanity has broken loose from our limits, we might ask why, and why now? No answer is forthcoming. A Marxist account can do better — see below.

This witness statement does advocate positive environmental changes: phasing out fossil fuels, limiting fishing, cutting out meat, and afforestation and rewilding.

Yet it is not clear what policies he advocates for bringing these changes about. As for winning such undefined policies in the first place, while he does touch on environmental movements, the focus seems more on communicating the urgency of tackling the climate crisis to the rich and powerful.

The same class, system, and institutions, that is, who have got us into this mess in the first place. And who, in large part, earnestly recognise that climate change poses significant threats, but have responded[2] with inaction, greenwash, and hot air.

A Life On Our Planet offers valuable reminders of the urgency of tackling climate crises: while simultaneously pushing an inert — and therefore harmful — environmentalism.

— 2 —

> *"Things are harder for our generation than they were for our parents. But in one respect we are luckier than our parents.* We have begun to learn and are rapidly learning to fight — *and to fight not as individuals, as the best of our parents fought... but for our slogans, the slogans of our class. We are fighting better than our parents did. Our children will fight better than we do, and* they will be victorious."
>
> — Lenin,
> *The Working Class and Neo-Malthusianism* (1913)

Fossil fuel — mostly coal — was used for heating before capitalism.[3] Coal is considerably more energy-dense than wood or other alternatives, suiting it

as a fuel to be transported into towns and cities. This heating was largely domestic, so fossil fuel use was tied to population size. That population constraint rules out exponential explosion of fossil combustion.

With capitalism, factories developed and expanded as a way of disciplining workers and regularising production. Having a single external energy source driving its machines — rather than muscle — enforces a constant pace, and yet greater discipline. Automation, and with it deskilling, helps capitalists to break workers' industrial power more still. External energy sources become even more profitable.

At crucial points in the development of capitalism, coal-fired steam-power allowed capitalists more freedom to move their factories *where* they wanted, and run them *when* they wanted, than otherwise cheaper and better water power.

The freedom to locate factories within densely populated cities gave capitalists access to a greater pool of available workers, already used to factory discipline, and looking for work. This required a much lower investment of fixed capital than building a factory and village for workers at a good location for a water wheel.

The ability to reliably run factories all day, every day, helps capitalists extract the maximum labour from workers, especially when workers won limits on the clock-time they could be compelled to work for.

The introduction and expansion of fossil fuels, as the energy basis of production, was thus largely a manoeuvre by capital in the offensive against labour.

Huge dams and complex systems involving aqueducts could have provided reliable power, located in a wide range of places, and cheaper than steam-power. However, that involved more technical planning, imposed interdependence on competing capitalists, and required big investments of fixed capital. From the start, the fossil economy was fuelled by the peculiarities of capitalist relations of production.

In the last 200 years, global population has grown by a factor of roughly 7.3, while global emissions have grown over 100 times as fast, by a factor of roughly 730. The *uncoupling* of carbon dioxide emissions from population is precisely the problem. Today, one-sixth of the world population — all low-income people in the global south — make no net contribution to global greenhouse gasses. The global discrepancy in energy use, currently, is significantly higher than 1,000-fold.

Population, contrary to David Attenborough and the Malthusians, is not the problem. "Humanity" as a whole is not to blame for climate change. Capital and the ruling-class, not "us all", have driven it.

Resource depletion and ecosystem destruction are likewise dependent on how society, production, and consumption are organised, much more than how many people populate that society. Indeed, with more people — in a rationally and democratically organised society — comes greater resources of dynamic human labour, which can apply the latest of science to work on environmental issues.

Short of the overthrow of capitalism, we should approach every new person as a potential political agent in transforming society, not simply another mouth to feed.

That all said, the *rate* of global population growth peaked some decades ago. Following current trends it is often predicted that global population will peak in around a century. I would critique many such models, for simplistic extrapolation to future population which elides complex social, political, economic factors. That is, capital's sometimes contradictory quantitative and qualitative demands for labour, combined with reactions and resistance to these drives, shape population. The social complexity involved means that we cannot assume a reliable smooth bell-curve. But such simplistic theories do puncture the even-more simplistic fear of too many people existing, each having too much fun.

Attenborough does not follow some "populationists" in advocate legal restrictions on reproductive rights, such as a "one-child policy". Even less does he follow Malthus, the original populationist, in accepting deaths by famine, war, or disease as necessary to keep population in check. Instead, he advocates tackling poverty and raising the standard of living across the global south, helping girls to stay in education, and empowering them and their reproductive freedoms.

These positive changes would unarguably be key aims of any workers' government; and they would additionally slow population growth. Yet tipping blame towards the global south, where population is growing fastest, or the exploited classes, who form the numerical majority of the global population, lets the real culprits off the hook.

References

[1] See for example carbonbrief.org/the-2004-lecture-that-finally-convinced-david-attenborough-about-global-warming

[2] See for example workersliberty.org/story/2020-06-10/fossil-fuel-reboot

[3] See versobooks.com/books/2002-fossil-capital

Climate change and extreme energy

Workers' Liberty conference document, passed October 2013

1. The world has entered a new geological era — the Anthropocene — where human intervention can drastically affect the planet. This threatens important planetary boundaries: biodiversity, climate change, nitrogen, land use, freshwater, toxics, aerosols, ocean acidification and the ozone layer.

2. The metabolic rift between nature and society is the result of capitalist relations of production. The rational social production of nature requires conscious, collective control — or the ecosystem on which life depends will be altered irrevocably. Climate change

3. IPCC reports confirm that global temperatures have risen by nearly a degree over the last century and may increase by 2-6 degrees C in the next 100 years. They confirm that human activity is the principal cause of climate change, particularly fossil fuel burning in energy and transport, and agriculture.

4. A significant turning point was reached in May this year when the global carbon dioxide concentration briefly hit 400 parts per million. Greenhouse gas emissions have increased by a quarter in half a century and are accelerating. The planet is already heading away from the zone which has sustained life for countless millennia.

5. Floods, droughts, storms and heat-waves are already afflicting societies. Threats of disease, to food, settlements, industry, health and ecosystems have already been registered. These impacts will affect the migration of labour, create climate refugees and generally hit workers hardest.

Capital failure

6. Contemporary climate change politics has reached an impasse. None of the bourgeois fractions of advanced capitalism in energy, finance and industry, nor of their representatives at the head of states and multilateral institutions, has devised a significant plan to tackle climate change. Capital has failed to meet the climate challenge.

7. The efforts of bourgeois states to secure a global agreement failed at Copenhagen in 2009. Despite the promises, at present no deal to reduce emissions is close. The principal market mechanism — the European Union's emissions trading scheme — has floundered. The net result so far has been the over-issue of free permits, the collapse of the carbon price, while generating billions of profits for fossil fuel giants.

8. Capitalism has so far found few technical fixes. Carbon capture and storage (CCS) has not been perfected and rolled out. Nuclear technologies that burn waste products without high carbon emissions (including thorium) are technically possible but their development has stalled. There is some progress with wind technology, with 300,000 turbines worldwide and more jobs, although this is still not adequate. There is still insufficient investment to assist the spread of solar technologies and tidal power, which could provide renewable energy at low cost.

Extreme energy

9. Capitalism does not stand still. A new "golden age" of fossil fuels is emerging. There is a resurgence of oil and gas production, spurred by unconventional sources such as tar sands and hydraulic fracturing (known as fracking), with coal demand growing faster than renewables. If no action is taken by soon, much of the energy infrastructure will be locked in for decades. This 'extreme energy' scenario threatens to derail global efforts to prevent dangerous climate change.

10. The global "carbon budget" — how much oil, coal and gas could safely be burned and still have some reasonable hope of staying below two degrees — is roughly 565 gigatonnes of carbon dioxide by mid-century. However fossil fuel companies have perhaps five times the reserves of coal, oil and gas on their balance sheets and are allocating billions to developing more. The New York and London stock markets are becoming more carbon-intensive. This is the paradox of neo-liberal climate politics: either a carbon bubble leading to financial collapse, or continued profitable fossil fuel burning with dire climate consequences.

Fracking

11. Shale gas is extraction is now profitable because of advances in drilling and other technologies, in the context of higher oil prices. The principal reason to oppose fracking is that the process is at odds with efforts to reduce the greenhouse gas emissions that cause climate change.

12. Gas-fired power stations emit 57% less carbon dioxide per kilowatt-hour than coal-fired plants. However shale gas has higher production-related greenhouse gas emissions than conventional gas. Venting emits damaging 'fugitive' methane, perhaps making shale gas as polluting as coal.

13. Although the expansion of shale gas has coincided with falling emissions in the US, at least half of

the reduction there is due to nuclear and renewables. Although shale gas has displaced some domestic coal burning, coal was exported and will result in emissions elsewhere. "Climate mitigation in one country" is not progress if it simply displaces the emissions.

14. There are other significant environmental impacts of fracking, including water pollution and high water consumption, seismic activity, noise and traffic. Socialists are rightly sympathetic to local communities facing these hazards, which are often imposed without democratic consultation.

Tar sands

15. Another form of extreme energy is the production of tar sands oil, particularly in places like Canada and Venezuela. The TransCanada Keystone XL oil pipeline, announced in 2008, is an addition to the larger Keystone pipeline system. If completed, it will provide a more direct route and will carry about twice the oil. The extraction of oil from tar sands has 12–17% higher greenhouse gas emissions compared to conventional oil. Other concerns include the risks of a pipeline spill polluting air and critical water supplies, as well as impacts on ecosystems.

16. The dangers and possibilities of extreme energy for the labour movement are summed up by the US experience. Four US unions including the Teamsters signed agreements with TransCanada over the Keystone XL pipeline, reflecting an explicit business-labour partnership.

17. However most Canadian unions have opposed the pipeline from the beginning and more recently in the US, some transport, United Steelworkers and SEIU have opposed it. The biggest climate demonstrations yet in the US took place in February 2013, with 40,000 people protesting in front of the White House and more than a thousand arrested in opposition to the pipeline.

Nuclear

18. The urgency of the need to replace fossil-fuel electricity generation makes blanket opposition to nuclear power wrong. The development of solar, wind, tidal, etc. power is an urgent necessity; and so is the redesign of cities and buildings and transport to reduce energy use; but the scale of the task of replacing fossil fuels demands that governments pursue all these changes simultaneously.

19. Nuclear power will be an essential part of any concerted social effort to control carbon emissions and global warming, at least in the next few decades, because it provides baseload power (i.e. power that is available at all hours) and can have facilities constructed in a very wide variety of places. It operates when and where the sun is not shining, the wind is not blowing, the tides are not flowing, etc. It is now, after over 50 years, an established and well-tested technology. Maybe, in time, technologies will be developed which enable sufficient electricity generation from renewables alone (for example, maybe in future we know how to build grids which enable the transmission of power over vast distances with little energy loss). But they do not exist now, and to replace fossil fuels as the baseload form of electricity generation is urgent now.

20. "Pro-nuclear" is not the right word for our stance. Rather, we are not absolutely anti-nuclear. We do not rule out the development of nuclear power technology, just as we do not flatly oppose the development of most other technologies, even under capitalism; instead, we contest the social conditions of the development of the technology (workers' and democratic control, public ownership, health and safety monitoring, workers' rights, etc.)

21. Properly deployed, nuclear fission is a low-carbon substitute for coal as a centralised form of baseload generation. Compared weight-by-weight, uranium 235 delivers a million times more energy than coal: even on the basis of a full life-cycle analysis, nuclear uses much less land than solar photovoltaics (PV) and wind. Biomass uses more than a thousand times the land area of nuclear power.

22. None of this implies being blasé about the problems accompanying nuclear power. It does imply that we should not be blasé about: — the much greater problems accompanying a failure to switch quickly from reliance on fossil fuels for baseload power; — the safety and environmental risks — much less publicised, but often not smaller — which accompany other forms of power. (Solar power, for example, generates a far greater bulk of toxic waste than nuclear power); — the technical difficulties (in the short term, impossibility) of replacing fossil-fuel power fully by solar, wind, tidal, etc.; or — the difficulties (in the short term impossibility, at least in the decades when we hope to see the rest of the world's population levelled up to the standards of comfort and access to technology which even the most frugal of us enjoy in Britain) of dealing with the carbon-emissions problem simply by energy-economy measures.

23. One objection to nuclear is safety. There are problems, but the record of the last 50 years is one of safety and environmental problems very small compared to those of fossil-fuel power. The comparison holds even counting in Chernobyl and Fukushima, though of course we, and for that matter even capitalist governments, will demand of all future nuclear power development that it avoid the safety flaws shown there. Nuclear power stations do not explode. Several times now nuclear installations have been destroyed by bombing, and without catastrophe. The vast majority of studies have

found no link between nuclear power stations and cancer incidence in the local populations of nearly a dozen countries from France to Sweden. After Chernobyl, exhaustive studies of affected populations, firefighters and 'liquidators' who later cleaned up the site, yield an estimated death toll of less than 50. Several thousand children did suffer from thyroid cancer as a result of radioactive iodine doses received after Chernobyl, but only 15 of the estimated 4,000 cases have proved fatal. Chernobyl was a disaster, but not a disaster that puts nuclear power in a different league from other technologies. Probably more people die and get ill every week, in China alone, as a by-product of fossil-fuel power, than have died or got ill from nuclear power over the whole life of the technology. Much greater numbers have died or got ill from accidents or environmental knock-on effects with hydroelectric power. We do not reject hydroelectric power or solar power out of hand, and we should not reject nuclear power out of hand.

24. Another objection to nuclear concerns waste disposal. Once spent fuel rods are removed from the reactor core, they are stored in cooling ponds until their radiation levels decline sufficiently for them to be stored in dry steel casks. The level of radioactivity emitted declines by a thousand times in 40-50 years. In the longer term, geological disposal of waste that cannot be recycled or otherwise put to good use is an engineering challenge, but one that can be solved even with today's technology. The vast majority of waste will in just a few hundred years be no more radioactive than the natural uranium ore that it was originally derived from. A concerted development of nuclear power opens the possibility of developing thorium reactors on a large scale: they can use most of what is currently nuclear waste as fuel and convert it into relatively harmless materials.

25. The objections to nuclear are important, but they are not decisive in the face of the increased threat of dangerous climate change and other planetary boundaries. In the absence of viable alternatives to nuclear in the present and near future and given the limits of energy efficiency — the argument that nuclear power must be part of any effective social effort to control carbon emissions and global warming is convincing.

See bit.ly/08-c-change for our 2008 conference document with alternate views on nuclear power. You can find much more debate on this by searching our website.

Jobs and fuel bills

26. Many of the arguments around extreme energy have been pitched towards workers, with promises of jobs, lower fuel bills and energy security. David Cameron has said 75- 150,000 fracking jobs are possible, while Cuadrilla has promised to create 50,000 jobs across the UK. However Cornell Labor Institute research found that the Barnett Shale in Texas had created only 3,200 construction and energy jobs over ten years, while the Marcellus Shale had created no more than 10,000 new jobs.

27. Similarly, grand promises have been made about lower fuel bills, in the context of over 5 million people in the UK mired in fuel poverty (spending a tenth of their income on fuel bills). However because gas prices are segmented, and Britain an even more "liberalised" market than Europe, it is unlikely that gas consumers would see much, if any, benefit in terms of reduced gas and electricity bills. Energy analysts mostly believe fuel prices will go up in the coming decades.

The labour movement

28. So far UK trade unions have not done much about extreme energy. The TUC Congress 2012 passed a motion opposing it. Some unions have supported an international campaign for "energy democracy", which promotes a sharper critique of fossil fuel firms, while promoting public ownership and democratic control over energy.

29. Organised labour cannot present itself as a progressive social movement while siding with extreme energy corporations against those in the communities jeopardised by dirty energy development. Unions cannot afford to alienate climate justice activists who share our broad social objectives and have been actively engaged in the battles to protect workers' rights and collective bargaining.

30. Beyond supporting direct action protests against fracking, tar sands and other fossil fuel expansion, socialists have significant arguments and strategies to offer. First, privately owned energy firms and bourgeois-state corporations run according to market imperatives continue to invest in fossil fuels at the expense of less polluting sources such as renewables and nuclear. Taking ownership and control of these capitalist energy giants is necessary, so that climate change can be mitigated to the extent necessary and in the time left.

31. Second, private ownership and control of energy makes democratic oversight and accountability much harder. This is true at various scales, from getting a global agreement between states to tackle climate change, to government policies (like the Tory tax-breaks for shale), all the way down to local people who find firms fracking without their say-so. Socialists need to advocate maximum democratic control and planning. The basic answer for workers in extreme energy industries is conversion, paid for by the employers and the state.

32. We advocate and fight for a big programme of research and investment to expand renewable energy generation. We advocate and fight for a comprehensive programme of measures to redesign living spaces, industry,

transport, etc to reduce energy consumption and carbon emissions while protecting and improving living standards. This includes fighting for a shorter working week and longer holidays.

33. What is needed in this situation is a working class-based climate movement. Socialists should articulate a critique of the systemic causes of climate change and the inherent limits of capital's approach. We orientate to the labour movement, aimed at mobilising workers who are the immediate victims of exploitation and environmental degradation and so have a direct material interest in campaigning around climate change.

34. The organised labour movement has immense social, economic and political power to deploy against capital. This means transforming the existing trade union movement, sloughing off the pedestrian, pro-capitalist partnership approach and mobilising union reps for climate action. It means championing efforts like the Vestas occupation in 2009, in which workers' direct action became a magnet for solidarity. It includes support for the Campaign against Climate Change's "One Million Climate Jobs" campaign.

35. A working class movement will have to challenge capital's ownership and control of the means of production, which in the hands of the bourgeoisie are simultaneously the means of climate destruction. Social ownership and workers' control of the major energy firms (as well as the big banks that finance big energy) is a burning necessity to get to grips with climate change. Climate-related employment is also the direct answer to the economy mired in economic stagnation.

36. There is huge scope for forming alliances between the labour movement and climate activists. This includes support for and struggle alongside with anti-fracking and anti-tar sands campaigns, which are taking on the extreme energy agenda. Climate campaigning cannot be a desirable add-on for the left. Either it is an integral part of the struggle for socialism, or we face a future of climactic barbarism.

37. The broadly anti-capitalist climate movement, which reached its height around the 2006-2009 climate camps, has revived somewhat around opposition to extreme energy and fossil fuel expansion. We should get involved in its activities wherever possible, argue for a consistently working-class political focus, and look for opportunities to connect the movement to organised labour.

38. The AWL was highly active in the broadly anti-capitalist climate ferment of 2006-10, including the Climate Camp movement, both in our own name and as part of Workers' Climate Action. We played a central role in a number of attempts to generate links and discussion with workers in environmentally damaging industry and transport, and the central role in sparking the 2009 Vestas wind turbine workers' occupation on the Isle of Wight. During that time, we also did quite a bit of work developing our Marxist ecological theory.

39. AWL comrades should educate themselves in our recent tradition on climate change. AWL branches and fractions should seek to hold public meetings to propagate those ideas and attract new comrades to our ranks. AWL comrades should intervene in international, national and local ecological campaigns and work alongside climate activists.

More

See bit.ly/08-c-change for our 2008 conference document, "Climate change and socialist politics". A significant uptick in broadly anti-capitalist environmental activism happened from 2006 to 2010, notably the "Climate Camps" movement. We were heavily involved, in particular with Workers' Climate Action. "Climate change and socialist politics" touches on many useful topics and ideas. It is also valuable in giving a flavour of the climate movement at the time, our involvement with it, and (through comparison) the development of our environmental ideas since.

Build climate resistance from below

Neil Laker reviews **Burning Up** *by Simon Pirani,* **Solidarity** *484, October 2018*

In his new book *Burning Up, A Global History of Fossil Fuel Consumption* (Pluto Press), Simon Pirani notes that the world economy tripled in size between 1945 and 1973. And the world began to burn as much fossil fuel, every three years, as in the whole of the nineteenth century.

That depended on cheap oil, which averaged at around $1.80 per barrel during the 1960s. In Simon Pirani's view, this period of "transition to an oil- and electricity-dominated system... was not directed at providing electricity access or improving lives; if we can speak of an aim or direction, it was to do with capital accumulation and the concentration of wealth and power".

Then a number of OPEC (Organisation of Oil-Exporting Countries) states took control over oil production from international oil companies operating in their territories, and negotiated price rises with the oil companies in 1973. They responded to western support for Israel in the 1973 war with the Arab states by cutting exports by 10%, plus an embargo on sales to the US.

A barrel of oil rose to $11.65 in 1974, from $3.29 the previous year. Although (as Pirani notes) the US was relatively insulated through its domestic oil production, these events made a major turning point in world energy use. A second shock came with the Iranian revolution in 1979, featuring a two month oil workers' strike, and a peak price per barrel at $36.83 the following year, which contributed to the recession of 1980-82.

Expensive oil stimulated a renaissance in coal, an expansion of natural gas and until 1979 of nuclear energy.

The oil shocks triggered structural changes in the composition of global industry, with a broad movement to "export energy-intensive processes to the Global South where labour was cheaper", while the OECD (Organisation for Economic Co-operation and Development, the advanced capitalist countries) economies began to focus on more profitable fabrication and finishing.

The energy intensity of leading OECD states fell by 4% from 1973-1982, in part by efficiencies prompted by the crisis. But the efficiency innovations undertaken in heavy industries were not replicated in transport. Governments made significant interventions in attempt to keep petrol prices cheap — meaning consumption continued to grow overall post-1973, albeit at a relatively slower rate.

Capitalist states who went to great effort to facilitate capacity of existing forms of fossil fuel infrastructure (as they still do), easing the link, for example, of petrol-based transport to employment regimes through subsidies and cuts to fuel taxes (most generously in the US, but in fact across the OECD). Therefore consumption was "hardly dented". Any efficiencies or technological transformations were outweighed by an increase in the volume of cars.

"The challenge," writes Simon Pirani in *Burning Up*, "is to understand exactly how political, social and economic forces combined to produce a disaster of this magnitude."

Pirani is a researcher at the Oxford Energy Institute, whose work on Russian politics led him to the matter of gas, energy and then climate change. The book is dedicated to the journalist Pavel Sheremet, who was assassinated in Kyiv in June 2016.

Following the second oil shock, the world market in which international oil companies were dominant gave way to a traded commodity market where barrels were increasingly sold on flexible contracts. In the US, efficiency gains of the 1973-83 period were reversed in the re-acceleration of 1983-98.

Research into renewables and conservation prompted by the oil crisis was cut by the Reagan administration. Environmental protections were generally lowered, with the restoration of profit criteria and the drive to deregulate, e.g. to enable easier offshore drilling, and reduce fuel standards. This built the base for powerful "climate scepticism" in the USA.

Huge subsidies paid out to energy companies — $230 billion per year, according to research by the World Bank in 1992. Natural gas was legalised for sale for electricity in US in 1987, and in the EU in 1991, supplied by a new pipeline linking Russian gas to Western Europe. Fossil fuel consumption remained highly concentrated: "In 1987, 90% of coal was consumed by 15 countries; 80% of petroleum products by 28 countries; and 91% of natural gas by 20 countries".

Enormous inequalities are also evident in electricity provision in the developing world: "In the 1970s most of the world's rural population had no electricity — including 96% of Africa's, 85% of Asia's and 77% of Latin America's". As recently as 2013, 237 of around 1250 million Indian people were still left without it.

The neoliberal turn of the 1980s launched a global wave of energy privatisations, with Chile as the prototype. Building on this, the "unbundling" of UK electric-

ity generation, transmission and distribution in 1989 "became the standard model used in 1990s privatisations internationally."

The breakup of generation assets was pursued by the IMF and World Bank, who aided multinational companies to negotiate deals that avoided "the long, arduous business of improving underfunded distribution systems," and kept largest risk elements with the state.

In Nigeria, electrification had been attempted through the National Electric Power Authority (NEPA) from 1972. In the 1990s entire Lagos neighbourhoods "could be left in complete darkness for months," according to Ayodeji Olokuju. The distribution network was in a state of neglect, and corruption widespread in NEPA; opening it up to the market was pushed as the solution.

Following several unsuccessful privatisation attempts, NEPA was broken up and sold from 2005. Of the 23 firms that had bought elements of the infrastructure, only one had done "anything tangible" three years later.

In Russia, the privatisation following the collapse of the Soviet regime had disastrous consequences. In 1975, combined heat and power generation — a way of recycling excess heat from electricity generation by directing it to industry and homes — was being used to heat 42% of urban housing. The privatisations overlooked this, and it was broken up and replaced with inefficient autonomous heating systems.

Industrial restructuring across the global economy led higher fossil fuel intensity in OECD consumption, embodied by the rise of freezers, dishwashers, microwaves, takeaways, fast-food, private transport, computers, and televisions; 80% of OECD households had central heating in 1990 compared to 35% 20 years earlier.

Industry's share of fossil fuel consumption in the OECD fell from 40 to 31% between 1980 and 2015 while in the non-OECD economies it rose from 28 to 52%. In other words, "rich countries 'tend to reduce their domestic portion of materials extraction through international trade, whereas the overall mass of material consumption generally increases'." This forms a further obstacle to minimising climate change in the present, given that industrial globalisation positions energy intensive processes "'out of sight, out of mind' in policy terms" for the leading capitalist states.

Pirani emphasises that "obstructions to the future transition are political and social, more than technological". His argument weighs strongly against consumer-choice-based explanations of climate change that dominate the discussion, such as feature in the work of the Intergovernmental Panel on Climate Change (IPCC).

Pirani is critical of the role technology has played in the twentieth century, citing a study by Joann Vanek which found that for women without paid work outside of the home, hours of housework were not significantly less in the 1970s than they were in the 1920s. This mirrors a trend in the workplace generally, whereby deep and complex integrations of technology into the labour process have produced no resultant reduction in overall work hours.

Readings of bubbles trapped in ice cores at the Soviet Vostok station in Antarctica, and data from new precise computer modelling which suggested a 0.2°C warming effect since the 1960s, moved a conference of scientists of 29 countries at Villach in 1985 to agree that "'significant global warming, caused by the greenhouse effect, was likely during the first half of the twenty-first century, and scientific-political cooperation was needed."

This led to the formation of the IPCC in 1988, which remains central to the scientific-political discussion today. However the first major international agreement — in Rio, 1992 — aligned with the US agenda in stating the aim of stabilising greenhouse gas emissions, but with no targets or coordinated energy policies as scientists were hoping for. "The imperatives of capital accumulation trumped the need for collective state action articulated at Rio". By 2005, "world CO_2 emissions would be not 20% lower than the 1988 level, but 35.3% higher."

The continued growth of the world economy on a fossil fuel basis ran against the hopes of the IPCC scientists. While Europeans had attained the energy consumption levels of the postwar US in the 1970s, Chinese and Indian high-income households reached these levels in the 1980s and 90s respectively. Into the first decade of the new millennium, "global fossil fuel consumption grew at a faster rate than at any time in history."

Expanding coal made up the majority of this growth, predominantly for extra-OECD industry and in particular steel production. China overtook the US in emissions terms in the mid-2000s. One feature of this was a rise in private car ownership from 2 million in 1994 to 8 million in 2001 and 73 million by 2011. Chinese coal consumption accounted for 48% of global coal consumption by 2010, paid for in 23,418 mining related deaths from 2001 to 2008.

The Kyoto Protocol (1997) was the first treaty to establish any concrete targets, aiming at 5% emissions reduction by 2008-12. This was met but mainly irrespective of the agreement, having more to do with the global economic crisis, Clean Development Mechanism swaps, the shifting of many industrial processes to developing economies, and emissions being measured from 1990, just before the major slump in the ex-USSR and Eastern Europe following the collapse of Stalinism.

In 1997 the US Senate voted unanimously against binding reduction commitments, and refused to ratify the Kyoto Protocol. Some attempts at carbon trading were established such as the European Union Emis-

sions Trading System (2005) based on permits to emit. It completely failed in its basic objective to set a price for carbon that was suitably profitable as to be attractive for trade. Too many permits were issued, there was blatant and widespread corruption, and instead of rising, which may have incentivised energy efficiencies, the permit price crashed repeatedly, meaning no market could operate.

In 2007, the European Commission set targets aimed at reducing emissions to 30% beneath the 1990 level by 2020, leading to (limited) institutional support for renewable energy technologies. In China the 11th, 12th and 13th Five Year Plans (spanning 2006-2020) contained "robust"energy efficiency measures, alongside a serious impetus to relocate and reduce coal (though due to urban air pollution rather than concern for global warming), and "substantial investment" in wind power. These measures were accompanied by a failure to agree any actions at the Copenhagen Conference of the Parties in 2009.

Pirani describes the 2010s as a time of extremes, as fossil fuels remain overwhelmingly dominant in global energy composition, and the transition towards renewable energy has hardly begun. The global financial crisis produced a momentary dip in emissions, after which they returned to growth.

There has been a relative decline in the speed of new coal, but it is still growing in overall volume through expansion in south-east Asia, India, Turkey and Ukraine — the latter two opting for coal in order to reduce dependence on Russian gas. "Between 1990 and 2015, renewables' share of electricity generation worldwide rose from 1% to 5%". Despite falling costs, in 2015 they made up just 7% of electricity generation across the OECD.

The COP21 agreement in Paris that same year signalled the end of international targets, as states were allowed to decide their own reductions to limit climate change to 2°C (with only an "aspiration" of limiting it to 1.5°C) through Nationally Determined Contributions. Even worse, climatologists have estimated that "if all the [Paris] pledges were kept, global average temperature will rise by 2.7°C, as opposed to the 1.5–2°C targets (and by 3.6°C if policies are unchanged)". And since then the IPCC has upscaled the risks of a 1.5°C scenario.

The political perspective that Pirani states clearly and concisely at the end builds directly from the preceding scientific and historical research.

These are conclusions reasoned from studying the world economy's dependence on fossil fuels and the failures to change course over the last 30 years. They are not easy answers, but the necessary, difficult, radical ones.

For Pirani, the question is not a technocratic one about the implementation of 'the right technologies', but of being capable to "beat the inertia of existing social and economic systems" that maintain and profit from the continuation of fossil fuel dominated production.

The transition to a sustainable energy system cannot be made in isolation from one towards a sustainable and egalitarian society. It is not just a question of how energy is produced, "but also the technological systems that consume it and the social and economic contexts in which they operate."

Making this societal transition will require the resolve to break the resistance of groups that have an interest in keeping fossil fuels in circulation. It means a break with the idea that the elites who have failed to take meaningful measures to climate change for 30 years are capable of addressing the problem at all.

Any progress to this point has come outside of the Rio/COP framework, from struggles from below that have forced concessions over the provision of energy, such as in India and South Africa. For example, when the apartheid system collapsed in 1994, just 40% of South Africans had electricity access. By 2006 this had risen to 73% because of the efforts of a township-organised protest movement which demanded and forced change from state authorities. They show a way forward.

Pirani is not wrong to suggest that civil society makes change: mass disobedience and direct action are playing a major role in the climate movement. Clearly a wide coalition is needed, and is to some extent starting to take shape. But I would add: that cannot compensate for the weakness of organised labour, the unique force with the potential of making systemic change in the struggle for climate justice. Our discussions of climate change must have an explicit working-class orientation, whatever the state of the workers' movement at present.

Facing the present crisis practically, Pirani offers four proposals. "Remaking the relationship between cities and countryside, by making the divisions between them less extreme, and moving urban built infrastructure away from the currently dominant energy-intensive model"; transformation of urban transport infrastructure; fully integrated, decentralised electricity networks; and moving towards a sustainable consumption by technological change such as basic repairability of goods.

These must be combined with a vision of a future in which social change transforms not only property relations but also the labour process through which humans relate to nature ... such a vision offers the most compelling alternative to the dogma of economic growth and the assumed inevitability of exploitation, inequality, and worse that it implies.

Such a transformation would offer the best conditions for a transition away from fossil fuels.

This is a vital contribution to the climate and socialist movements. We should organise so that its insights are heeded.

COP26 and the credibility gap

Just after COP26 finished, Zack Muddle wrote this article in two parts for **Solidarity** *614-615, November 2021*

Every shop, cafe, and business; every billboard and bus stop; numerous new, temporary, adverts and building-high canvases — all screaming the same, discordant, message.

Glasgow during COP26: divergent corporations, some flashy NGOs, and the UK government; all competing to reassure us that they're taking serious action on climate change. The environmental protestors across the city generally recognised it for the greenwashing it is. Yet our actions were in orbit around the opaque and exclusive negotiations themselves, in which delegates lived inside such a polite, reassuring fiction — that capitalist societies, our corporate overlords, are solving the crises.

The conference recognised "that the impacts of climate change will be much lower at the temperature increase of 1.5°C compared with 2°C, and *resolves* to pursue efforts to limit the temperature increase to 1.5°C [requiring] rapid, deep and sustained reductions in global greenhouse gas emissions, including reducing global carbon dioxide emissions by 45% by 2030 relative to the 2010 level and to net zero around mid-century, as well as deep reductions in other greenhouse gases".

This (slightly stronger) restatement of a 1.5°C goal by 2100 is welcome. It could have gone further: 1.3°C would be an immeasurably better outcome. Today's extreme weather comes as early impacts of just over 1°C. Yet what actually counts isn't net global aims, it is the concrete actions to realise such aims. Here, we find a series of "emissions gaps", built one upon another.

If *every* country met *all* their promises to the COP process, "Nationally Determined Contributions" (NDCs) for 2030, *plus all* promises of "net zero", the planet would, on some calculations peak at 1.9°C mid-century and level out at 1.8°C by the end of the century: with an upper estimate of 2.3°C.[1] This is dangerously above 1.5°C. Yet most commitments for 2030 would *not* even put governments on a path for their net zero targets.[2] Assuming the former alone are *all* completed, we would find ourselves on a path to 2.4°C (up to 3.0°C).

New net zero, NDC, and other climate commitments announced around COP26 shaved around 0.2°C off earlier projections: the picture was even bleaker mere months ago.

Yet actual policies promised by governments, *if fully realised*, would not even reach the net 2030 NDC's reduction. Instead, they would take us to 2.7°C by the end of the century, with an upper bound of 3.6°C, over three times the warming to date. Climate impacts are not linear. Three times as much heating, and with more time for environmental destruction to build, likely places us in a planet more than three times as dangerous, with more than three times as much devastation, and with much greater risks of dangerous feedback loops.

This nonetheless sounds unimaginably better than predictions we may make based only on policies before the 2015 Paris Agreement, which put us on track for 4°C. Are we finally seeing "flattening of the emissions curve"?

The next gap, a "very big credibility gap" for promised specific policies is probably impossible to quantify internationally.[3] Yet it is likely even bigger than the above.

Less than a year after election, Biden's "climate and environmental justice" promises have been shattered by a series of *pro*-fossil fuel policies.[4]

Two years after their election, the Tories' meagre promise of planting 300km^2 of trees per year by 2024 has translated into 22km^2 last year *and falling*.[5] Their "Green Homes Grant" to retrofit 600,000 homes with insulation and "low-carbon heating" was outsourced and mismanaged, and shelved after only 31,900 homes were upgraded. The 2017 government directive for 61 councils to cut air pollution levels as quickly as possible has led to fewer "clean air zones" than I can count on one hand. The UK government's official independent Climate Change Committee found earlier this year a similar picture across the board — once again.[6] Considering the gap between government targets and policy, they found that of 21 key decarbonisation areas only four have "sufficient ambition" and only two have "adequate policies". None of the 34 adaptation priority areas had seen "strong progress".

Internationally, one symptom of similar trends is a failure by richer nations to raise the promised $100bn annual climate funding for poorer nations to transition. For comparison, the — hardly radical — IMF found, two years ago, that $700-800bn is lost per year to tax havens alone.[7] This is before we even consider shrinking other tax loopholes, let alone a real — and necessary — attack on the rich. The ten richest people in the world *each* has more than $100bn to their name.[8]

Bolder promises are welcome, but bigger talk doesn't necessarily translate into more action. The failures are

not primarily due to individual politicians, such as Boris Johnson, who not long ago dabbled in climate change denialism.[9] They are systemic in origin.

Climate action, such as the inadequate promises above, generally costs money, and must be paid for. The bulk of wealth in our society is controlled by our bosses, the ruling class. To fund environmental initiatives, some wealth must be taken or withheld from them. Regulations threaten to place limits upon their insatiable drive for endlessly greater profit. And some particularly powerful sections of the ruling class have great invested interests in continuing to burn fossil fuels and belch out carbon dioxide.

Formal negotiations were to centre on detailed finalising of the Paris agreement "rulebook": including new emissions reporting rules from 2024, and "Article 6" carbon markets. Carbon markets theoretically allow countries and companies to sell reductions in carbon emissions, or carbon removal, to more polluting ones, allowing the latter to "offset them". Previous markets, even their proponents acknowledge, comprehensively failed — often being worse than useless.[10] This new carbon market still financially awards low national targets and historically highly polluting industries: "overachievement" and pollution reductions can be sold. It fails to completely guard against "double counting" and such creative accounting, whereby "emissions savings" could sometimes be counted twice: allowing twice that which was "saved" to be emitted.[11]

Fundamentally, carbon markets rely on non-existent transparency and slow market forces to try to move toward *net* reductions. We need open, democratic and as fast as possible reduction *everywhere possible*; and as fast as workable an expansion of carbon dioxide removal to tackle historic emissions.

COP26 also agreed processes for *working towards* new goals on adaptation, and on finance for climate mitigations and for "loss and damage".

Beyond these agreements in the formal processes, around COP26 many new pledges and deals were announced and agreed to. New NDCs, plus sectoral deals covering coal, deforestation and methane, and a "Glasgow Climate Pact".

These wider pacts have received far more publicity than the formal negotiations. Intensified environmental campaigning, globally, in recent years, has forced at least more concrete-*sounding* greenwashing.

In 26 COPs, dating back to 1995, there has *never* been an agreement on the need to end the burning of fossil fuels, nor even any specific type of fossil fuels. This gobsmacking emission of an almost axiomatic goal, in any form, was *almost* partially remedied this year.

Early drafts would have called for governments "to accelerate the phasing-out of coal". The commitment was vague, and had no specific date. Coal accounts for just under a third of fossil fuels burned by energy, and is the most polluting form. There has been an explosion of construction of new coal-fired power stations in recent decades, centred on China and India.

Yet — largely symbolic — commitment to *ever*-phasing it out seemed too much. This was diluted to a "phasedown" of only those coal power stations which aren't "abated" through Carbon Capture, (Usage,) and Storage. Yet CCS would only ever capture a proportion of carbon emitted. Worse, really existing schemes are overwhelmingly for CCUS whereby the carbon is used for "Enhanced Oil Recovery": an energy-intensive process to pump CO_2 underground and squeeze even more oil out, to then burn.[12] That is worse than useless.

At least 23 countries made new commitments to phase out coal power. Yet these do not include China, India, or the USA; nor Australia which is by far the largest exporter. They only include five of the top 20 burners of fossil fuel.

Oil and gas combined make up over two thirds of fossil fuels: yet they were not mentioned. Further substitution of coal power with gas — a comparatively cheap replacement — would not be a cause for environmental celebration. The agreement did call for a "phase-out of inefficient fossil fuel subsidies", but again, it is not fleshed out with dates or specifics.

Transport

In transport, the biggest focus was on cars. A pledge of dozens of national and regional governments and automobile corporations committed to end the sale of new cars and vans with internal combustion engines by 2040, globally.[13] This far-too-late deadline does not address cars that have already been bought before that date, or retrofitting. It does not aim to reduce the production and usage of this inefficient and environmentally destructive mode of transport, in itself: it doesn't even aim to tackle its extremely rapid growth. Germany, China, the USA, and several several major car manufacturers didn't even sign up to this weak – and non-legally binding – declaration.

No agreements were made in COP26 on promoting walking and cycling, reducing necessary travelling distances, or expansion of efficient and electric trains and public transport. Electric cars will continue to have a much greater environmental footprint than any of those.

Various countries and governments made promises to support moves to supposedly "zero-emissions" shipping routes. The proposed method is using hydrogen, derived from water electrolysis. But this is a very inefficient way of storing energy. And talk of reliance on so-called "green" hydrogen often covers for the fact that the more commonly proposed and economically more prof-

itable way of generating the hydrogen is steam-methane reforming, using natural gas and releasing at least as much greenhouse gas as burning gas would.[14] There was no discussion of modern wind-powered cargo ships. They would be considerably greener, but would require a greater technical change, and adaptation of freight practices from just-in-time to allow for variable weather. Nor was there discussion of global levelling up and coordination to minimise unnecessary shipping of goods and parts around the globe.

Aviation is a particularly dirty form of transport and freight. Unfortunately, large electric and low-carbon planes are unlikely to exist in the near future. Yet a declaration on aviation accepted and took as given that "the international aviation industry and the number of global air passengers and volume of cargo is expected to increase significantly over the next 30 years."[15] It does not even intend to stop airplanes from running on hydrocarbons and belching out CO2. Instead, it aims to "tackle" aviation emissions by "offsetting" them. This would be partly through "Carbon Offsetting Schemes" — with all the problems that carbon markets bring. The other method would be through using "sustainable aviation fuels", i.e. "biofuels", that would supposedly offset emissions when the plants to make the fuels are grown.

Many biofuels are sourced through deforestation, or processes which degrade the soil, undermining any "offset" potential. Even genuine "offsetting" would be the wrong approach. We need to reduce emissions everywhere we can, including by a rapid reduction of aviation, while drawing down *and storing* (not burning and releasing) carbon as fast as we can.

To halt the climate crises, we need to rapidly end all burning of fossil fuels, primarily used in energy, transport, and heating. There was nothing agreed on heating, building temperature regulation, or insulation.

We need also global redistribution of wealth to the global south, to support carbon mitigations, adaptation, and "loss and damage". We need to open borders to climate and all migrants. We need to stop deforestation, and transform agriculture to stop methane and nitrous oxide emissions.

The quantity of wealth wielded is indicates well how serious ambitions to tackle climate crises are. The $100bn per year by 2020 promised *but not delivered* by wealthy nations to the global south would have been woefully insufficient. The conservative International Energy Agency, considering energy alone, estimates $5tn/year by 2030 is needed, globally. This is 50 times larger than the broken promise to date for total finance for *all* carbon mitigation *plus* adaptation for the half of the planet who are in "developing countries".

The "Like-Minded Developing Countries" and the African Group, early in negotiations, did call for $1.3tn per year with a "significant percentage on a grant basis". This did not make it into the agreements itself.

Those ambitions themselves were already severely toned down. The UNFCCC's Standing Committee on Finance recently concluded that these nations would require nearly $6tn up to 2030, including domestic funds, to support just half of the actions in their NDCs.[16]

Global redistribution

As socialists, we fight to take the wealth of the rich and the ruling class into democratic working-class control, with a radical distribution across society and globally. We demand a vast redistribution from the global north to the global south: in grants, not loans.

COP26 has seen steps in sketching processes for these discussions, as part of UNFCCC: but not decisions.

Despite what the Paris Agreement calls for, climate finance to the global south is heavily skewed towards mitigation activities, which are generally seen as better financial investments. COP26 upped aims for spending on climate adaptation, but not as far as called for. While our priority in richer parts of the world is on reduction of emissions,[17] poorer countries produce much less carbon and are disproportionately receiving the brunt of climate change. African nations already disproportionately spend on adaptation.[18] In this context, greater funding on adaptation is a basic component of global climate justice: but one which rich countries generally push back against.

Many were pushing for a facility for "loss and damage" funding, something often seen as akin to "reparations", for poorer countries suffering the terrible impacts of climate change. The EU and US in particular blocked any such agreement.

Who are the rich countries in quesion? The UNFCCC list is based on those who were members of the OECD in 1992, so doesn't include South Korea or the oil-rich Gulf states. These continue to fight attempts to be obliged to provide finance.

Money spent for mitigation and adaptation *within* the richest countries does not directly form part of the COP26 negotiations. Instead, agreements cover specific tangible policies. As seen, these too have fallen far short.

Climate crises are already driving increasing migration, within and between countries. We should aim to undercut the conditions which force people to *involuntarily* migrate. But there is only so much adaptation that can be done to an island going underwater. Mitigating the impacts of climate change must involve welcoming climate migrants. There has been a small amount of discussion about this, but not concrete decisions.[19] Indeed, many of the biggest polluters spend twice as much on border enforcement as on climate finance.[20] The 1951 Refugee Convention hasn't even been expanded to

include people forced to migrate by climate change.

Our sights must be set higher still than that. Any border policy which seeks to permit only certain groups of people necessarily leads to the kind of death and suffering that we see in Calais, at the Poland-Belarus border, and elsewhere. We must fight for free movement and migrants' rights for all.

Agriculture

Little specific was agreed on agriculture within the core COP26 process itself.[21] The Glasgow Leaders' Declaration of over 130 countries did promise to "wor[k] collectively to halt and reverse forest loss and land degradation by 2030". It promised $19.2bn of public and private funding. There was a second "Forest, Agriculture and Commodity Trade" statement.

Within days the government of Indonesia, a signatory and majority-forested country of almost one million square kilometres, denounced the agreement and sought to reinterpret it. If the regulation and policy agreed fails to meet the challenge, so does the funding. One investigation found that banks and asset managers based in the EU, UK, US and China have made deals worth $157 billion with firms accused of destroying tropical forest in Brazil, Southeast Asia and Africa since the 2015 Paris Climate Agreement.

During COP26, the USA and China announced that they had agreed to work more closely on climate change. That announcement has been widely celebrated. They make promises about deforestation, and about methane. Yet the promises they made about coal didn't impel China to even sign up to the commitment to phase out coal; likewise with methane. Xi Jinping, China's president, didn't even show up to COP26.

The even more celebrated launch of the "global methane pledge", with 105 signatories, had a foundational flaw. Signatories don't face individual targets for reducing emissions. Thus they may sign up without drawing up any goals or policies.

Nitrous oxide was not even covered in agreements.[22]

The greenwashing didn't end at the edge of Glasgow. Much of the media have been celebrating the successes of COP26. Even some campaigning NGOs, eager I assume to offer quick gratification to their donors, have played up the successes.[23]

To celebrate COP26 you must first lower your ambitions through the gutter. Yet we can make the so-far empty promises real, and go beyond them. We must and can build a movement to force the needed changes in our workplaces, countries, and internationally.

Baby steps have been made in that direction within the movements built around COP26.

In many cities, and in the COP26 Coalition's "People's Summit for Climate Justice", activities around COP26 took the form of a coalition, of individuals and groups taking action within one area. They did not cohere into a movement. COP26 Coalition was neither democratic nor transparent in its organising. It was not clear who was making decisions, how they were made, or how they could be challenged.

The summit was relatively open with a reasonable range of perspectives and organisations taking part. Yet they were not put in serious dialogue with each other. Instead of working together, debating out differences as parts of a common movement, different groups worked in independent silos alongside each other. That was a big missed opportunity.

Within the discussions, in the meetings we organised, and in wider protests and discussions in Glasgow and beyond, Workers' Liberty activists raised the urgency of a class struggle approach to environmentalism.

There was an appetite for this message. But where we were not making such arguments, they were largely absent.

The left wing environmentalists in the People's Summit generally recognised that capitalism, with its insatiable drive for profit, is the engine behind climate change. Yet they failed to take the next logical step: recognising that workers organised at work, at the place where profit and capital is produced, are the key agents with the power to make change happen.

Even those advocating engagement with workers often saw trade unions as just another movement in a "movement of movements" against climate change. Many trade unionists there advocated a *state-led* "just transition", with "trade-unions" as a homogenous body negotiating a better deal as part of an already occurring transition.

Against this, we advocate a worker-led transition, with grass-roots organising to transform our unions and movement from the bottom to the top, to fight for the environmental changes we need. This struggle will take us into increasing conflict with capital, and with its representatives within the labour movement. We organise and educate to face this conflict straight on, to win it, and to build a better and ecologically sound society.

Environmental organising is no less urgent now than before or during COP26. A radical class-struggle approach to environmental organising remains the only strategy that can win. Check out your local COP26 coalition hub or XR group, which may already be organising next steps, and advocate a workplace orientation. From the other side: raise environmental issues in your workplace, and union.

References

[1] carbonbrief.org/analysis-do-cop26-promises-keep-global-warming-below-2c

[2] unep.org/resources/emissions-gap-report-2021

[3] *Glasgow's 2030 credibility gap,* Climate Action Tracker, November 2021

[4] "U.N. climate summit highlights Biden's broken promises on ending support for fossil fuels", *NBC*

[5] libdems.org.uk/broken-climate-promises

[6] carbonbrief.org/ccc-uk-will-miss-climate-goals-by-huge-margin-without-new-policies

[7] imf.org/external/pubs/ft/fandd/2019/09/tackling-global-tax-havens-shaxon.htm

[8] businessinsider.in/business/news/top-10-richest-people-in-the-world/articleshow/74415117.cms

[9] See *Solidarity* 511: bit.ly/bj-cd

[10] More and an assessment of COP25 at "More needed than carbon trading" *Solidarity* 527: bit.ly/cop25-ct

[11] "COP26: Key outcomes", *Carbon Brief*

[12] "CCS? Not a help yet", reprinted in this pamphlet

[13] "COP26 declaration on accelerating the transition to 100% zero emission cars and vans", Gov.UK

[14] *Solidarity* 590, April 2021: bit.ly/f-fuel-r

[15] https://ukcop26.org/cop-26-declaration-international-aviation-climate-ambition-coalition/

[16] "COP26: Key outcomes", *Carbon Brief*

[17] "The fight on climate adaptation", reprinted here

[18] https://archive.uneca.org/stories/africa-spending-more-its-fair-share-climate-adaptation-new-study-reveals

[19] "Why climate migrants are missing from the debate at Cop26", *New Statesman*

[20] https://impakter.com/emitters-fund-border-over-climate-finance/

[21] "COP26: Key outcomes", *Carbon Brief*

[22] "COP26 fails to tackle nitrogen in farming", *Wicked Leeks*

[23] "COP26 ends in Glasgow", *Greenpeace*

More rail yes, HS2 maybe not

Simon Nelson wrote the article below for **Solidarity** *535, February 2020. Below that is a response, then a reply to that*

More railway lines? Yes. HS2 in particular? Not really.

There are higher priorities: electrification of the railways, many of which are still running diesel trains; increasing capacity on intercity services; improving existing connections; reinvestment in branch lines; newer trains.

A well-staffed and free or cheap integrated rail and bus network is the sort of large-scale infrastructure project that should come before HS2.

Some of the arguments used against HS2 are weak. But there is also good reason to question the arguments made for HS2 as a way to create good jobs, as a way to help the North, and as a green alternative to short-distance flights.

"Time to get on with building HS2", was the headline on the GMB union's website the day before Boris Johnson announced that the government planned to do just that.

By the time the whole project is complete the Financial Times estimates it could have cost £106bn.[1] The GMB champions the jobs that will be created during its construction as well as asking, "Ministers [to] concentrate on making HS2 a model of good employment practice while making sure our members can get on with building world class infrastructure in the Midlands and the North."[2]

The GMB had presumably missed the fact that many of the companies that will be working on the project are former or current blacklisters. 11 firms were originally chosen to undertake the initial building work from July 2017, some of them joint ventures. One which included Carillion got well over £1bn of contracts awarded, despite the government knowing that Carillion was on the verge of collapse.[3] The former head of the infrastructure division of Carillion is now the head of a joint venture of Vinci and Balfour Beatty which was awarded £3.8bn in HS2 contracts.[4]

The trains themselves will be operated by a new franchise, the Westcoast Partnership, which will be responsible for the existing West Coast mainline intercity trains as well as the first phase of HS2. The previous government had already got three bidders who wanted to do it.

The ever-growing cost and the lack of oversight bothers some Tory MPs. One of the 2015 plans for HS2 included large swathes of property that would need to be purchased with no price given. Unforeseen delays or hiccups are likely to bring increases in cost, and for a project which on current estimates won't have trains running on it until 2028.

Crossrail, a comparatively much smaller project and one much nearer completion, is already delayed by nearly three years.

Several newer Tory MPs are in opposition to HS2. Some of their concerns are reasonable.

Public transport is poor in the North, and outside London more generally. And HS2 won't fix that.

HS2 will in the first instance only give a speedier non-stop journey between Birmingham and London. In the future it is due to have extensions to Leeds and Manchester. There is talk of a future high speed connection from Liverpool to Hull, the so-called Northern Powerhouse Rail.[5] Some see that as dependent on HS2, some as an alternative.

Connections by bus or local train services between outlying towns and major centres like Manchester and Leeds are poor, and employers in those areas, as well as working-class people, are aware of that. The nationalisation of Northern Rail shows the government knows the problem, too.

Trains are currently only 9 kph faster between cities in the North like Leeds, Manchester, Liverpool or Newcastle than road. 500,000 people commute over 30km every day to work in London. Only 250,000 people commute those distances to the Liverpool, Manchester, Middlesbrough, Newcastle, Leeds and Sheffield city regions. Outlying areas of Greater Manchester and Merseyside have poor connections to the city centres.

Business people in towns like Warrington or Wakefield are increasingly concerned that people working in Liverpool or Leeds who have poor train services and overcrowded and continually cut bus services, and won't or can't commute by car (only 63% of people aged 20-29 today have learned to drive: it was 75% in 1994[6]), will move to those cities and out of the outlying towns.

A report commissioned by the government and headed by Lord Oakervee, a former Chair of HS2, was always likely to favour continued construction. Supporters of HS2 argue that the new HS2 line will free capacity on existing lines to run more frequently-stopping services, and that it will shift journeys from air to rail.

Yet only a tiny proportion of journeys between London and Birmingham are by air, and not many between London and Manchester or Leeds. To replace internal flights, you need rail services from Birmingham and London to Exeter, and London to Aberdeen.

Constructing high-speed rail lines for relatively short trips (like London-Birmingham) and in a relatively small, densely-populated country has a different calculus from constructing them in France or China.

The environmental argument against HS2 is also weak: some ancient woodland will be destroyed, but it is a tiny percentage (0.001%) of Britain's overall total, and no more than for the construction of just 14 miles of new motorway for the Lower Thames Crossing.[7]

"Ancient woodland" is woodland that has existed continuously since 1600. It subsists in patches dotted around Britain. No new railway line of any length or route could avoid some ancient woodland. HS2 promises to replace the woodland destroyed and to increase the number of trees after its completion. But a much smaller investment could reduce the journey time between Leeds and Hull from an hour to less than 40 minutes and run twice the number of trains.

The Financial Times believes that despite the growing cost, the long term benefits of HS2 are worth the risk.[8] The eastern extension of the Jubilee Line ran over budget, but is credited with facilitating over 100,000 new jobs in the London docklands, which had lost over 80,000 jobs in the 1960s.[9]

But really HS2 is focused on getting people to London quickly. As the dissenting voice, Lord Berkeley, said in the government's report in HS2: "Getting to London is secondary for most people except for MPs and the managing directors of companies."[10]

References

[1] "Britain's green light for HS2 is worth the risks", *Financial Times*, bit.ly/hs2-ft

[2] "Time to get on with building HS2" *GMB* bit.ly/gmb-hs2

[3] "HS2 signed 1.3 bn Carillion contracts after profit warning", *New Civil Engineer*,bit.ly/hs2-bn

[4] "Ex-Carillion boss to take over £2.5bn Balfour Beatty Vinci HS2 contracts" *RTM*, bit.ly/25bn-hs2

[5] "Transport for the North" transportforthenorth.com/northern-powerhouse-rail

[6] "Are young people going cool on cars?", *BBC*, bit.ly/y-cars

[7] "'A remarkable achievement': the environmental case for building HS2" citymetric.com/transport/remarkable-achievement-environmental-case-building-hs2-4887

[8] "Britain's green light for HS2 is worth the risks", *Financial Times*, bit.ly/hs2-ft

[9] "HS2 will spark regeneration, say city leaders on the route", *The Guardian*, bit.ly/hs2-regen

[10] "HS2: parliament misled about true cost, says Labour peer", *The Guardian*, bit.ly/hs2-misled

More Rail: yes! HS2 and HS3: yes!

Mark Catterall's response

While there is much to agree with in Simon Nelson's article I believe that Simon is wrong in opposing HS2.

If the line was just about allowing Northerners to get to London in a shorter time, maybe he would have a point. However probably the main reason for constructing HS2 is the limited capacity of the existing network.

There is a limit on how many more longer or more frequent services can be carried on the current network. HS2 (should we call it Congestion Line 1?) will take away large numbers of express trains from the current overcrowded lines, allowing more commuter and regional services to run across the Midlands and North West.

Poor Northern services are no reason to cancel HS2. Our response should be to call for a Congestion Line 2 (HS3) from Liverpool to Hull/ Newcastle, alongside the construction of HS2, and freeing up the existing network for more local services.

That should go along with removing current bottlenecks such as Manchester Piccadilly to Oxford Road, and recreating the broken links in the network like Skipton to Clitheroe, cut in the "Beeching" era.

It will massively help in decarbonising the transport economy and allow workers cut off in transport black spots to commute more easily to employment.

For many years improvements to railways have been done on a stop-start basis; teams of designers, engineers, and construction workers are brought together, trained and then sacked at the end of the project.

While the cost of HS2 and HS3 and the other necessary rail projects would be large, rolling programmes, with skilled teams moving from project to project, would help in reducing costs and keep large numbers of workers in employment.

The inflation in the costs on current rail projects is in large part construction companies being told to include Treasury (government) contingency costs in their budgeting. In the case of HS2 that increased the initial cost of £32 billion to £44 billion. The bill may increase

to £106 billion (contingencies on top of contingencies, and guesses at inflation).

The construction companies have no incentive to reduce costs, but they pocket any savings that come their way. Nationalised Network Rail should control new rail construction, with an incentive to reduce costs.

We need a long-term new railways national rail infrastructure plan for Nationalised Network Rail. This plan would incorporate rolling electrification across the network, linked to massive capacity improvements on the existing network and the reopening of the many closed "Beeching" lines now desperately needed.

Any such plan by necessity needs to link into local and regional transport plans. More Rail: yes! HS2 and HS3: yes!

No strong case for HS2

Simon Nelson's reply

There is a lot to agree with in Mark Catterall's letter — but I am less optimistic about the capacity argument for HS2.

High speed direct rail services between major cities could help to free up congestion, but at this rate the second stage of HS2 could be completed somewhere between 2035 and 2040, far too late to have significant impact on carbon emissions and reduce the amount of freight and commuters moved by road.

And where will capacity will be freed up? As I read it HS2's congestion relief to the WCML is compromised by the failure to provide interconnection with the WCML. Given it will only run on two tracks, it cannot possibly serve all the cities in its zone of influence.

I agree about electrification of all existing railways. Back in 2011 Network Rail was investigating the complete electrification of the York to Hull line, but that was officially abandoned in 2016 by the then Rail Minister Paul Maynard.

Further reading

We have a weekly environmental column in *Solidarity*, and hundreds of climate articles on our website. There are countless books we might recommend, beyond those reviewed and mentioned so far. But there are a few notable areas which we wanted to cover in this pamphlet, but couldn't because of space.

What is the ruling class likely to do in response to climate change, in the coming decades? We read and discussed a book, *Climate Leviathan*, that we were heavily critical of, but which is nonetheless thought provoking. See two reviews: "Against Leviathan, a workers' plan" bit.ly/against-leviathan and "Four climate futures" bit.ly/4-climate-f

How may global warming play out? David Wallace-Wells' *The Uninhabitable Earth* attempts to sketch answers. "Climate disaster is already with us" is a review of this book. There have been some critical replies, and a debate, following this. The interlocutors both agree the book is worth reading. See the articles: bit.ly/w-wells

Fossil Capital: The Rise of Steam Power and the Roots of Global Warming by Andreas Malm attempts to chart the rise of steam power and its links to the development of capitalism. We are critical of much of his politics. See workersliberty.org/malm-debate for several differing reviews on Malm's writings, a debate, plus a critical study guide.

We read and discussed several different readings on "Degrowth" from a Marxist perspective. Readings and videos at workersliberty.org/readings-degrowth

Stay updated

The climate, and related science, politics, and activism are constantly changing. This pamphlet will start going out of date as soon as we publish it. We work to make that happen: to build a climate movement to move us onto a different track. Here are some ways to keep up to date:

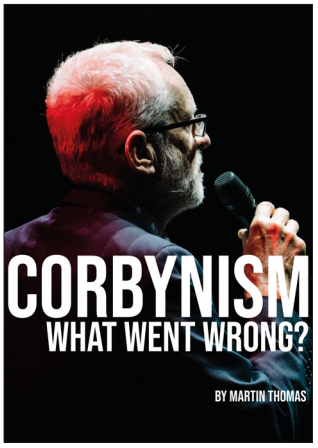
- Our website, workersliberty.org
- Articles at workersliberty.org/climate-change
- Subscribe to receive our weekly newspaper *Solidarity*, and support our work, for only £5 per month, at workersliberty.org/sub
- Events, including our socialist environmental studdy group, at workersliberty.org/events
- Contact us, and get more involved. Call 020 7394 8923, email awl@workersliberty.org or find us on facebook, twitter, or instagram: @workersliberty

BUY OUR BOOKS!

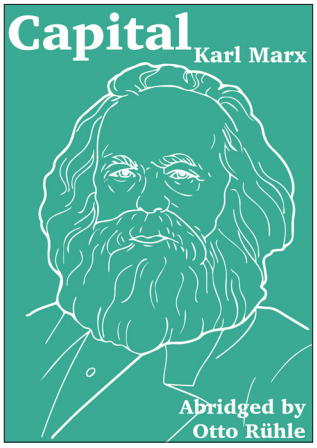
Order from workersliberty.org/publications

Browse, basket, and buy books, pamphlets, and publication bundles — and find more info, related resources, study guides, reviews and so on, from the same place. Some books are free to download or as audiobooks.

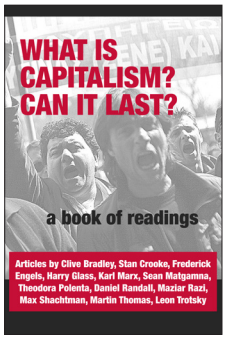
Prices listed exclude postage and packaging: £1 for small items, £3 for larger items, free over £30. Every third publication is half-price and 15% off over £50.



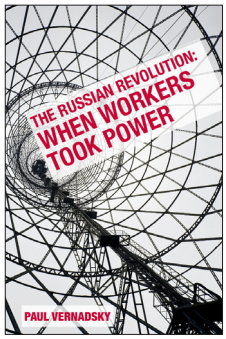
Lessons for socialist and left activists. **60 pages, £4**



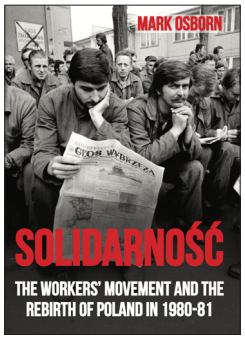
Rühle's abridgement is a good intro. **131 pages, £6**



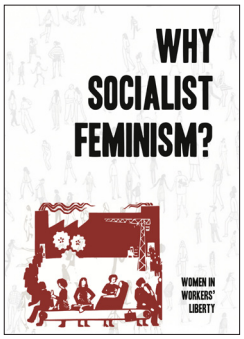
Socialist readings to understand and fight capitalism. 128 pages, **£5**



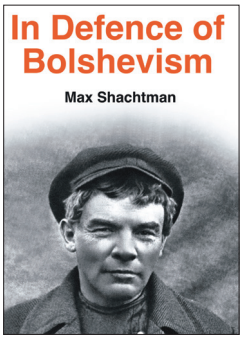
The 1917's revolution's real history, and lessons. 374 pages, **£12**



The history of Solidarność, from its dawn until the coup. 116 pages, **£5**

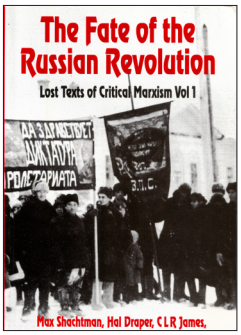


A socialist approach within recent "waves" of feminism.
102 pages, **£5**

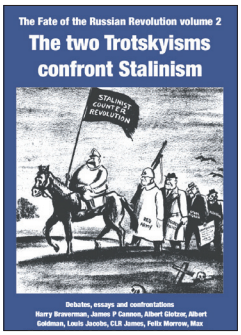


Defending the Bolsheviks and their relevance today.
312 pages, **£10**

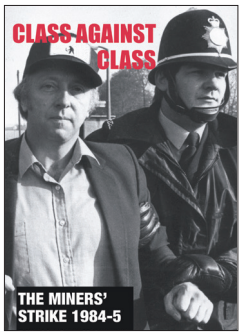
Can Socialism Make Sense? **£8**



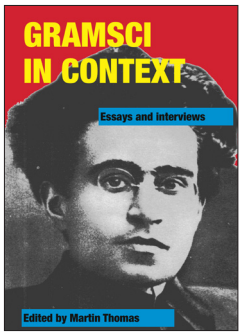
Fate of the Russian Revolution vol.1 **£8**



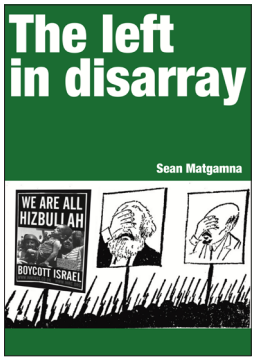
FRR vol. 2: The Two Trotskyisms **£20**



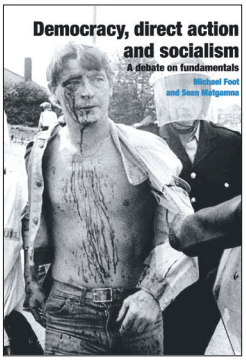
The Miners' Strike 1984-5 **£9**



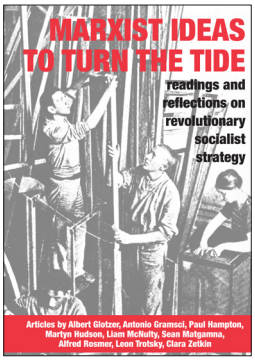
Gramsci in Context **£6**



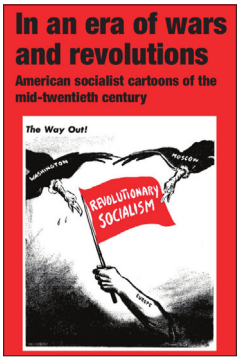
The Left in Disarray **£12**



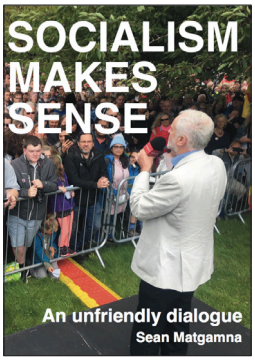
Democracy, direct action and socialism **£5**



Marxist ideas to turn the tide **£5**



In an Era of Wars and Revolutions **£9**



Socialism makes sense **£5**

From wildfires and hurricanes in the US, to floods in Bangladesh and Europe, and droughts throughout Africa, climate change — 1°C already — is hitting hard. Yet in extreme weather, the years ahead look worse still. Ever-increasing use of fossil fuels and inaction on climate change puts us on a trajectory to more chaotic and destructive extreme weather, and numerous irreversible changes.

This calls not for despair, but for urgency in the radical action and organising that can win the changes we need to limit the destruction. A world limited to 1°C will be almost unimaginably better than a world limited to 1.5°C; 3°C unspeakably better than 4°C.

We — the organised working class, and socialist environmentalists within that — will be the decisive force in determining which future is realised. This pamphlet seeks to arm activists with the ideas necessary to win this fight, to halt and reverse climate change. It demonstrates the centrality of workers' action, with articles and reviews on a broad range of topics.

9 781909 639607

£3

4th edition, December 2021