GREENPEACE

HOW GOVERNMENT SHOULD ADDRESS THE CLIMATE EMERGENCY

INTRODUCTION

"The Rt. Hon. Gentleman asked about the declaration of a climate emergency. The thing is, I do not know what that would entail. I could stand here and say, "I believe there is a climate emergency," and he could say that, too…The question is: what are we going to do about it?"

The Rt Hon Claire Perry MP,
Minister of State for Energy and Clean Growth, April 2019[4]

We are in the midst of a climate emergency. The world is nowhere near meeting the internationally agreed goal to limit global warming to 1.5 degrees. The last five years were the hottest ever recorded. There are a growing number and intensity of extreme weather events[1]. These are causing millions of people - particularly some of the most vulnerable communities across the world - to suffer huge losses to homes and livelihoods[2]. In fact, we are currently on track to see at least three degrees of warming, which will see billions more people's lives affected. Coral reefs will disappear, crops will fail, people and animals will go hungry.

The UK holds a unique place in history as the home of the industrial revolution and one of the greatest historic emitters of greenhouse gas emissions. We have been the birthplace of some of the greatest innovations, feats of engineering and cutting edge entrepreneurship in the world. We are now one of the leading creators and makers of the new technologies that can massively cut our carbon footprint, power our homes, factories and offices, and protect, harness and utilise the land, wind, waters and sun that are abundant on these isles. Talent, creativity and optimism is needed now more than ever before to avert the very worst impacts of climate breakdown.

The world needs instigators; those who can inspire and pioneer a modern revolution that changes the way the world works. If we are one of the countries that rise to this global challenge, future generations could prosper and flourish. We have the chance now to help lead the world to finally act.

The Intergovernmental Panel on Climate Change has made clear that global emissions must be cut by 45% by 2030 to set us on the right track. Climate scientists have spoken with one voice; we must listen and we must act.

To inspire and help create global change, we need to throw our weight behind our innovators, engineers and builders to transform our economy and society. We need to bring our electricity, transport and heating systems into the 21st century. We need to dramatically increase renewable power, and ensure that communities reap the rewards by creating thousands of new, decent, secure jobs for workers in clean industries. We need to climate proof our homes, factories and offices, making them warm in winter and cool in the summer, which will cut carbon and our bills. We need to protect, nurture and enhance our land and oceans so they can absorb greenhouse gases and allow a wide range of plants and animals to thrive. We need to maintain healthy and sustainable food production, resilient in the face of a changing climate. And we need to consume less in order to cut our global carbon footprint.

Acting locally will have an impact globally. That's why we need to support and properly fund local authorities and communities to deliver the transformation on the scale required. Mistakes made during the dismantling of the UK's coal mining industry must not be repeated. Reskilling workers and supporting their transition from older, more polluting industries to the new green economy should be prioritised. The new industrial revolution could have no better home than here, where the old one took root. But this must not be entrusted to the whims of an unregulated market. It needs to be done fairly and to be steered by a visionary and responsible Government, supported with significant investment.

Finally, the decarbonisation plan must not cut corners through relying on international offsets[3]. Nor should the way we count our emissions ignore aviation and shipping, or the climate impact from imports of palm oil, industrial animal feed or manufactured goods. Any plans to suck carbon dioxide out of the air should be based on what we know works - reforestation, improving soil carbon storage capacity, and habitat restoration, including peatland.

Solar panel technician with drill installing solar panels on roof ©zstock/shutterstock

"If there was ever an idea that we could approach this as a 'sequential' transition – moving from power, to transport, to heat, to industry and agriculture – then that thought needs to be re-examined… We will need to shift from the current piecemeal approach, relying on departments and sectors to make incremental improvements, to something much more broad-based."

Chris Stark, Chief Executive, Committee on Climate Change, March 2019[5]

ROADMAP

Below is a snapshot of the immediate action across multiple sectors needed from Government to take responsibility for our emissions and put us on track to help limit global warming to 1.5 degrees. A cross-economy, joined-up strategy is required. These actions need to be underpinned by a legislative framework requiring delivery of 'net zero' greenhouse gas emissions significantly sooner than 2045, including emissions connected to things we consume like food, which have a global footprint through their supply chain. New Government procurement rules should be introduced immediately to prohibit any future contracts with providers whose business plans are not compatible with limiting global warming to 1.5 degrees.

These measures can be used as an indicator of whether those in power are taking up the challenge to lead international efforts to tackle the climate emergency.

1. END NEW FOSSIL FUEL EXTRACTION AND PHASE OUT EXISTING PRODUCTION

There are more fossil fuels already discovered than can be burned for a safe climate. Searching or drilling for more is simply not an option. The real challenge is supporting those people and communities dependent on existing fossil fuel extraction to have a sustainable economic future.

- Halt new coal, oil and gas exploration and development, including banning fracking
- Refuse all permissions for new or extensions of existing coal mining. All thermal coal mining should cease by 2024
- Cancel the 31st (and subsequent) offshore oil and gas licensing rounds and existing oil and gas licenses on which no work has yet been carried out
- Repeal the duty on the Oil and Gas Authority to maximise economic recovery of petroleum
- Review how fast existing oil and gas production facilities need to be phased down to achieve net zero carbon well before 2045 - and implement phase-down accordingly
- Turn the proposed oil and gas industrial strategy sector deal into the oil and gas transition sector deal. The sector deal should focus on reskilling people to work in renewables and other low-carbon growth sectors
- Terminate all subsidies for oil and gas production, including transferable tax credits and other tax breaks introduced over the last ten years as part of the Government's late-life policy for supporting the fossil fuel industry
- End UK government export finance to any projects that are not compatible with a global zero carbon economy, within the framework of sustainable livelihoods for all citizens. This includes an end to all support for fossil fuel extraction. Fossil fuels currently dominate export finance[6]

2. TRIPLE RENEWABLE POWER FROM WIND AND SOLAR BY 2030

The next decade is critical for extending UK carbon reductions across every sector of the economy. This needs to be driven by the electricity sector, which needs to almost totally decarbonise. The only cost-effective and actually deliverable way to do this is to roll out renewables - in particular wind and solar - so that nearly 80% of our power is generated from renewables by 2030.

The Thanet Offshore Wind Farm is located off the coast of Thanet district in Kent, England. ©Will Rose/Greenpeace

OVERARCHING MEASURES

- Release funds more frequently and in larger amounts from the £557m pot already committed for Contracts for Difference (CfD), to enable renewables expansion on the scale required
- Apply the polluter pays principle and make users pay for the CO2 they put into our atmosphere by raising the carbon floor price in the power sector from £18/tonne CO2. The existing policy of raising the price to £70/tonne CO2 in 2030 should be implemented as far as is required to decarbonise the power sector. The money raised must be channelled into reducing the impact of the price rises on the less well off, for example delivering home energy efficiency
- Establish a long term policy framework for renewables as they move towards delivering 100% of the UK's power needs, guaranteeing stable revenue, even when below market price[7]
- Create a demonstrator pathway for tidal, wave, geothermal and other forms of renewables which have the ability to head down the cost curve with greater deployment
- Ofgem should abandon the Targeted Charging Review of network costs, which loads more costs onto renewable power and does not fully value local and community energy
- Ofgem should be given an overall mandate to speed the transition to a net zero carbon economy

OFFSHORE WIND

- Set a target for at least 45GW by 2030[8]
- Create a commercialisation pathway (through innovation funding and Government financial support) for floating offshore wind, which will significantly enlarge capacity and lower biodiversity impacts
- Provide public support and investment into key parts of the supply chain (e.g. docks and fabrication yards), to enable more rapid deployment and increase local content
- Conduct strategic assessments relating to environmental impacts (to minimise biodiversity impacts), and the potential for shared offshore grid connections to land. Strategic development of offshore connections to lower costs of power transmission could save up to €40bn if offshore wind is developed at scale[9]
- The Crown Estate should make more seabed available for offshore wind development, ahead of other uses such as aggregates, fishing and oil and gas exploration/ extraction (which should in any case be phased out)

SOLAR

- Set a target for at least 40GW by 2030[10]
- Mandate a floor price for the new export guarantee for solar, equivalent to or greater than the average annual spill price paid to large generators. The original export guarantee and Feed In Tariff scheme should also run until the new scheme begins
- Remove unfair business rates tax treatment on solar
- Implement the provisions the UK has agreed to in the EU 2030 package on protecting the rights of citizens to become producers of power

ONSHORE WIND

- Set a target for at least 30GW by 2030[11]
- Reform planning guidance for local authorities to clarify that objections from a minority of people should not be given undue weight in planning decisions
- Allow onshore wind to bid for contracts for power delivery at least cost

3. MAKE SURE THE ELECTRICITY GRID IS EQUIPPED TO COPE WITH A HIGH PERCENTAGE OF RENEWABLES

It is important to ensure the electricity system works efficiently and reliably with a high volume of variable renewable power. This means deploying a range of existing and new technologies to upgrade the grid and balance and store power.

OVERARCHING MEASURES

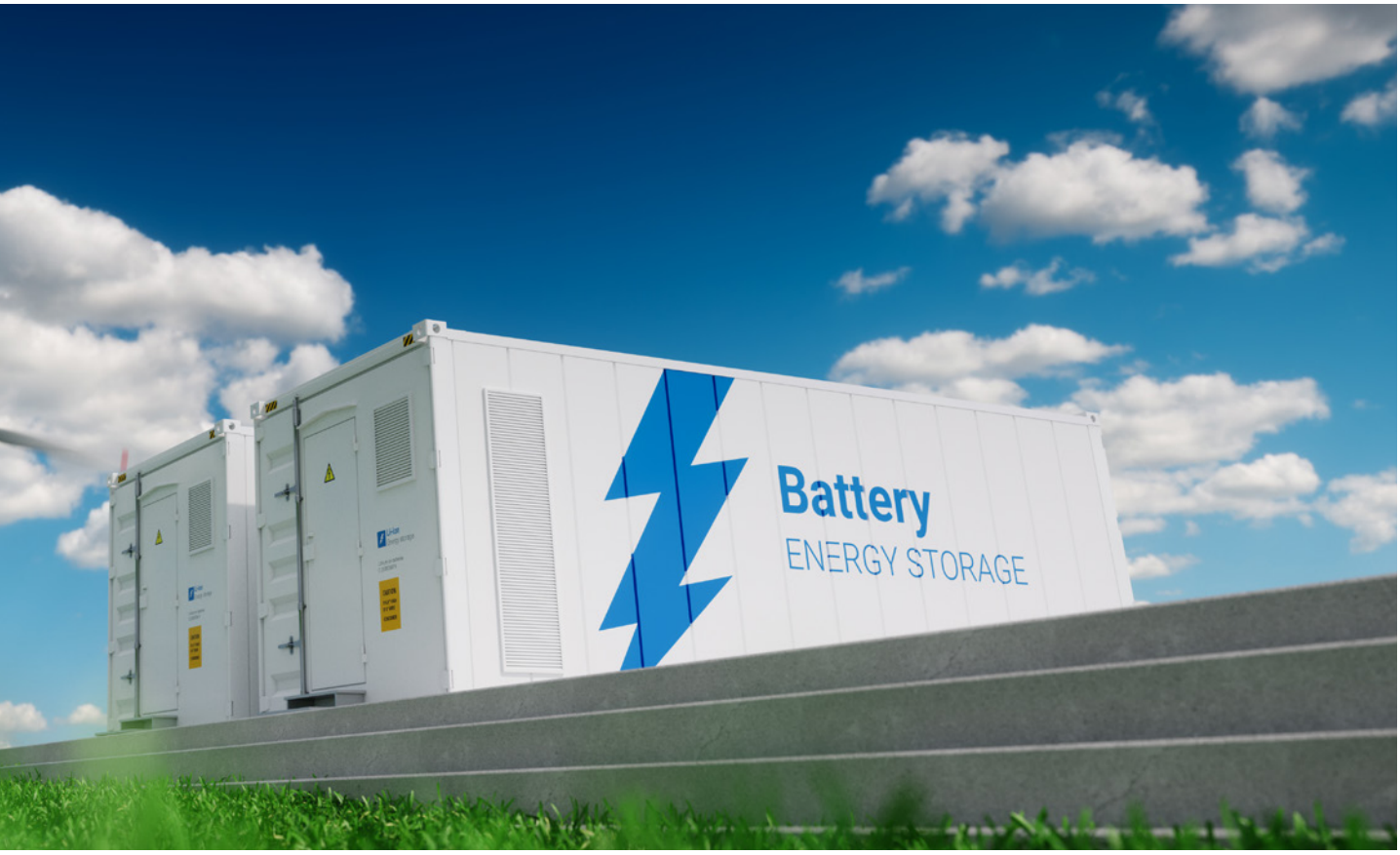
- Drive investment in storage, smart energy and interconnection with other countries right across Europe to allow our grid and those of other countries to better handle large amounts of variable renewables. Indicative targets should be set for 2030 of 15GW for interconnection, 38GW of storage and 18GW of Demand Side Response (DSR)
- Change capacity market rules so that new technologies like storage and DSR are able to compete fairly, following the EU legal decision that judged the UK to have been biased towards fossil fuel back up generation
- Support an expansion in the role and function of regional grid operators, so that they are more actively involved in managing the energy system - including local trading and balancing, procurement of flexible services like storage etc. - rather than just allowing power to flow on their lines. In effect, Distribution Network Operators (DNOs) should shift to Distribution System Operators (DSO)
- Introduce a flexibility market, compatible with existing auctions for power,

Concept of energy storage system. Renewable energy - photovoltaics, wind turbines and Li-ion battery container in fresh nature. © Getty Images/iStockphoto

to incentivise demand response and reduction as a tool for providing system security, rather than simply relying on additional power generation for back-up - with a view to phasing out the capacity market completely.

GRID STORAGE AND BALANCING TECHNOLOGIES

- Smart storage: Remove regulatory barriers to smart power and storage. This should include removing restrictions on "stacking" of revenues for storage projects in the capacity market. This would make it possible for storage projects to secure revenue from several policy mechanisms
- Interconnection: Establish a market framework for interconnection that has lower risks for investors, allowing for further developments whatever the Brexit outcome. For the longer term, draw up a strategic plan for an offshore grid connecting the UK with offshore wind farms and other European countries to maximise offshore wind delivery at lower transmission cost
- Pumped storage: Establish a market framework for pumped storage development, potentially mimicking that for interconnectors
- Green hydrogen: Invest significantly in innovation for green hydrogen and larger-scale energy storage, to support their expansion as a grid balancing option. There are plans to deploy green hydrogen at scale in Germany and the Netherlands[12]



4. DELIVER ZERO CARBON EMISSIONS FROM ROAD TRANSPORT

Transport is now the sector with the greatest carbon emissions. These emissions have remained stubborn in recent years, so there needs to be strong political action now to address the issue. Overall there needs to be a major shift to lower carbon modes of transport - public transport, walking and cycling - which need significant support, plus decarbonisation of all vehicles that remain. Underpinning this should be a recognition that 'transport' is not a good in itself. Communications and connectivity are required for a thriving and healthy 21st century economy; moving people around is only one way to deliver that.

In terms of road transport, technology for decarbonisation is at different stages for different vehicle classes. The challenge for cars and vans is cost of electric vehicles and availability of charging infrastructure. Consequently there is a need to move costs progressively onto fossil fuel emissions, whilst providing reassurance about the availability of charging. Fully zero emission heavy goods vehicles (HGVs) are not available yet, so there is a need for legislation that bears down on emissions whilst providing support for manufacturers to innovate and develop the technology.

Black Electric cab ©Greenpeace

PHASE OUT CARBON INTENSIVE ROAD TRANSPORT

- Ban the sale of new cars and vans with petrol and diesel engines by 2030, with an intermediate target of 35% of car sales by 2025 being zero emission
- Ban all sales of new petrol and diesel HGVs before 2040[13], with compulsory interim CO2 cuts for new HGVs of at least 15% by 2025, and 40% by 2030[14]
- Require compulsory CO2 cuts for new off-road machinery and construction equipment that are diesel powered - of at least 40% by 2030
- End the sale of HGVs requiring on-board diesel-powered cooling by 2025
- Stop any biofuels coming into vehicle fuels that are not derived from genuine waste material
- Unfreeze and gradually increase fuel tax over the next decade - the freezing of this tax has cost the Treasury £46bn since 2011[15]
- Increase Vehicle Excise Duty (tax on the cost of new cars and vans) by £300 per year, every year, for high emitting vehicles, with a sliding scale for lower-emitting vehicles[16]
- Develop and move to a new model for paying for road use, which is not dependent on fuel duty, as revenues progressively fall - e.g. road pricing, with lowered rates for rural car drivers
- Introduce a targeted scrappage scheme for households on lower incomes and small businesses in the most polluted urban areas, to support them to switch from their polluting vehicles to cleaner alternatives - potentially a 'mobility allowance' that incentivises active travel and public transport above private vehicle use

SPEED UP THE TRANSITION TO ELECTRIC VEHICLES

- Set a purchasing guideline target for local authority cars to be 90% electric by 2025, and vans to be 90% electric by 2027
- Require that all new cars entering the Whitehall ministerial fleet of vehicles are electric by 2022
- Introduce a comprehensive package of government support and financial assistance to retrain and re-skill workers in the auto industry. 88% of existing workers have skills that are directly transferable[17]
- Work with vehicle manufacturers, unions and local authorities to deliver and invest in a joint-industry production facility for vehicle battery manufacture in the UK

ROLL OUT A NATIONAL NETWORK OF ELECTRIC VEHICLE CHARGING INFRASTRUCTURE

- Require that all new developments with private parking have a minimum of 30% of spaces with charge points. All existing public parking facilities (e.g. NCP, supermarkets, shopping centres, commercial developments etc) must also provide at least 10% of spaces with charge points by 2021. These are initial targets that may need further scaling up depending on how the car market develops
- Require all new homes with off-road parking to have a smart electric charging point
- Ensure the full budget of £530 million (comprising a combination of both public and private funding) is available for the public charging network to 2030[18]
- Require distribution network operators and local authorities to identify suitable charging sites where grid costs will be low, whilst giving powers and money for local authority costs to be recouped if necessary
- Ensure that as soon as possible all home charging units are smart and can shift charging times depending on supply pressures/surplus
- Require that Ofgem builds in flexibility to the electricity grid, and allows grid companies to invest ahead of the immediate need to stimulate and effectively accommodate faster update of EVs (and electric heating in buildings)

5. SHIFT AWAY FROM CAR BASED TRAVEL, THROUGH MAJOR INVESTMENT IN PUBLIC TRANSPORT, WALKING AND CYCLING

We're no longer living in the days when cars can be considered king. Clean energy is a valuable commodity which should be used very efficiently if for private transport. Roads should not continue to be extended in urban areas to the detriment of communities and wider public health. In designing our towns and cities there needs to be a shift in mindset in favour of public transport – which is more equitable and comes with considerable social benefit. Road space should be preferentially allocated away from cars and towards the lowest energy types of transport, and those which are healthiest, prioritising walking and cycling.

Shifting the UK to a less car-based transport model is a huge job requiring multiple interventions. Even since 2010 the cost of bus travel has gone up much more than the cost of car travel[19]. Better and lower cost public transport is crucial, as is greater investment in walking and cycling, and a shift of power and money to the local level for effective delivery.

Enviro Bus ©Alexander Dennis.com

OVERARCHING MEASURES

- Support a general realignment of transport modes, away from private vehicle use, towards public transport, walking and cycling. Alternative modes should have significant investment and a target should be set to reduce overall UK-wide car mileage by 3% per year - delivering a 30% reduction by 2030[20]
- Require minimum standards for public transport in towns - for example, ensuring every town has an hourly or more regular bus service, operating 7 days a week along major roads and to nearby villages
- Incentivise radical experimentation in public transport access and use appropriate for UK regions. For example, the programme in Tallinn, Estonia, a city approaching half a million people, which has made all bus and tram travel free and delivered economic benefits as a result[21]

FINANCIAL AND PLANNING MEASURES

- Immediately end the £56bn HS2 project[22] and the £15bn new road building programme[23] - releasing funds for local public transport and new / upgraded regional rail networks, especially in the Midlands and the North
- Introduce a target to spend at least 10% of transport expenditure on walking and cycling by 2024[24]. This would allocate around £3.1 billion per year[25] - consistent with recommendations from the National Infrastructure Commission[26], and in line with the amount of investment required to meet the government's existing target to double cycling activity by 2025[27]
- Mandate a workplace parking levy in town centres, generating cash for upgrades to cycling, walking and public transport facilities[28]
- Boost funding for local authorities to reconfigure road space, prioritising greater use and access for public transport, walking and cycling, relative to private vehicle use. Over time, local authorities should also redesign/ re-green key areas of existing road space, as road use reduces overall, in line with the modal shift away from private vehicle use
- Increase local authority funding for bus services back to at least 2010 levels, to ensure greater service reliability and regularity[29]. In practice the amount of money required may well be more, given the requirement to significantly increase public transport provisions. Funding will also come from other local sources like parking levies
- Revise the National Planning Policy Framework and planning guidance to give priority to development on brownfield and urban sites that have accessible public transport links, as opposed to new green site development[30]. Urban planning should ensure that new developments have easy access to medical services, schools and shops to minimise generated transport journeys

RAIL TRANSPORT

- Support regional rail networks to expand, electrify and produce solar power on their own land[31] (which rail networks have the power to do[32])

BUS TRANSPORT

- Re-regulate buses to allow for simpler delivery of a national bus strategy, including requiring all new buses to be fully electric from 2025
- Immediately provide free bus travel for those on income support or low incomes. This service should be extended to more people e.g. students, young people etc. over time, as road space is reconfigured and public transport services increase in reliability and regularity
- Allow local authorities and city mayors to regulate bus services in major urban areas to allow coordination, stability, network effects and single ticketing (like London Oystercard)[33]

FREIGHT

- Eliminate some of the carbon footprint of freight through a concerted strategy to move onto (electrified) rail and e-cargo bikes for 'last mile' delivery

6. ENSURE ALL UK BUILDINGS ARE ZERO CARBON

Making buildings more sustainable is probably one of the toughest sectors to deal with because they are so close to people's everyday lives. Joined-up action between improving building efficiency and heat supply is essential and can only be done effectively at a local level as local authorities are best placed to find the most appropriate way to reduce energy needs and make the heat zero carbon. In turn this means a step change in empowerment, funding and support for local authorities as they develop, gain consent and deliver projects.

UK buildings are generally draughty and leak a lot of energy. Efficiency has some of the greatest potential to improve people's quality of life, through warmer homes and easing the costs of energy bills. Our existing housing stock requires considerable improvement, coupled with stopping building anything that will then need retrofitting in the next 25 years. Both new and old properties need proper inspection and enforcement of standards, which has historically been very weak.

The strategy for supplying green heat is more complex because we need to support the development, trials and cost-reduction of new technologies. We need to scale up known solutions (heat pumps for buildings off gas grid and district heating), trial at scale promising technologies (hydrogen and hybrid systems), and support research and development for new alternatives. District heating gives options in denser urban areas (e.g. geothermal heat). It is currently often deployed using gas, but will need to transition to other zero carbon fuels in the next two decades.

Man installing thermal roof insulation layer - using mineral wool panels. Attic renovation and insulation concept © Getty Images/iStockphoto

OVERARCHING MEASURES

- Establish a Delivery Agency for UK buildings to oversee, coordinate and support delivery of fully decarbonised building stock well before 2045
- The Delivery Agency should establish an inclusive, comprehensive process to involve and orient stakeholders as a national plan is developed, which identifies strategies for different locations and building types, as well as skills development focused on those whose existing skills in fossil fuel heating will be rendered redundant
- The Agency should act as a centralised compliance and enforcement body to ensure delivery against building efficiency standards in new-build but also projects in existing buildings such as enforcement of regulations in the rental sector. Construction below existing standards is already costing new home owners £70-£260 per year extra in fuel bills[34]
- Mandate and support local authorities to produce local plans for delivery of zero carbon buildings

MAXIMISE ENERGY EFFICIENCY

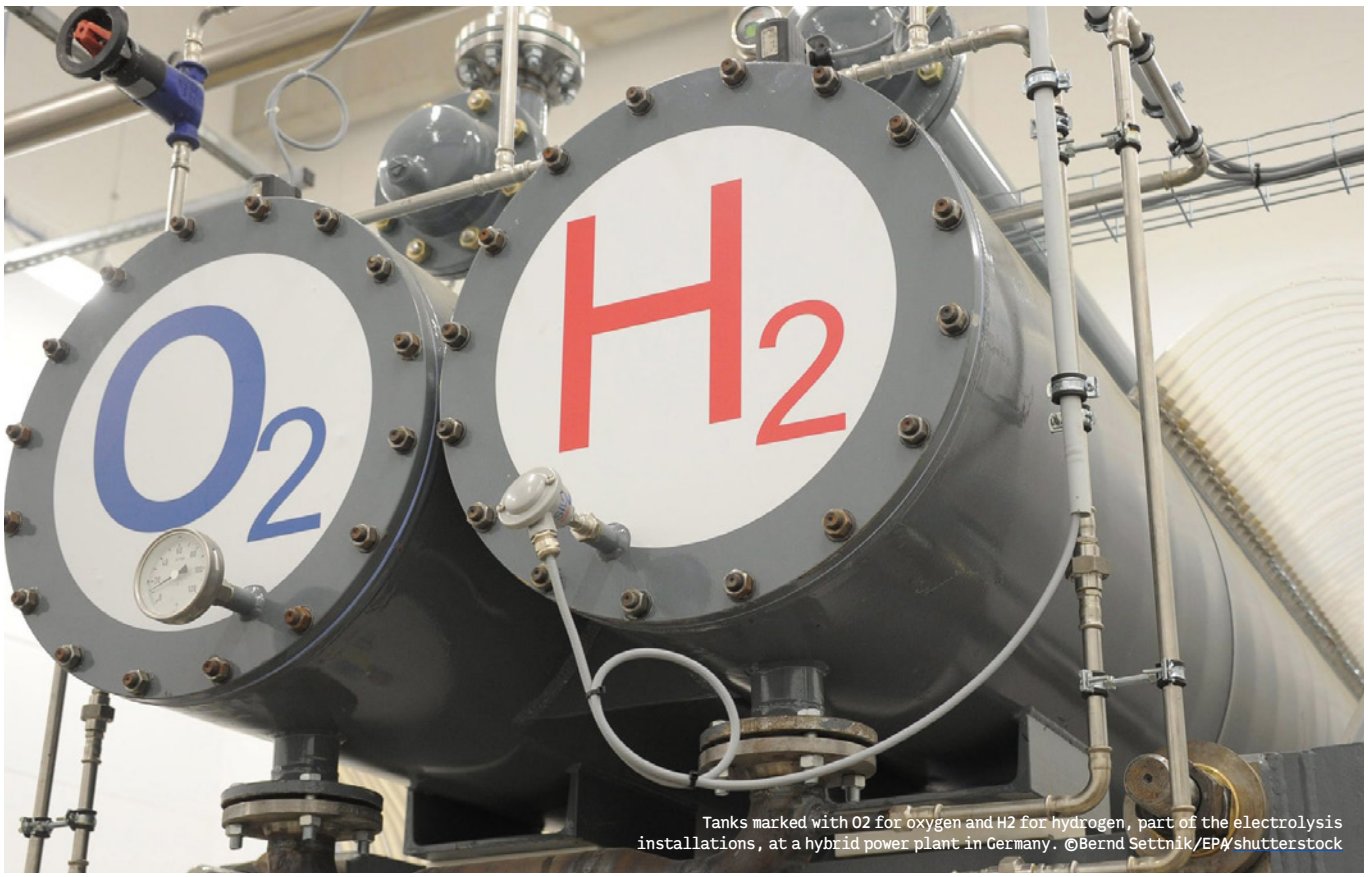
- Match and go beyond EU Eco-design regulations on energy efficiency in electrical appliances[35] - which has thus far arguably been the most effective policy for UK CO2 emissions cuts[36]
- Introduce regulations for new homes to be equivalent to passivhaus standard, and commercial buildings to the same equivalent standard by 2025
- Introduce a regulation for net zero energy in new buildings by 2030 - including development of solar on all suitable new-build roofs
- Make energy efficiency in existing buildings an infrastructure priority and provide funding of £1.7 billion per year for delivery of Government's existing target of EPC band C for all properties by 2035, ideally earlier[37]. This money must focus on fuel poor and social housing in the first instance but then leverage private funds into the able to pay sector. A target should be introduced to deliver insulation in all suitable cavity walls, lofts and solid walls, funded from the £1.7bn/ year pot
- Fund additional innovation projects of around £300 million per year like the roll-out of Energiesprong to drive energy efficiency in existing houses and commercial buildings[38]

MAKE BUILDING HEATING SYSTEMS ZERO CARBON BY 2045

- Ban the use of fossil fuel heating, including gas boilers, in new homes from 2025, in line with the Committee on Climate Change's recommendation[39]
- Set a date for the end of new installations of oil and LPG boilers in existing buildings in off-gas grid locations
- The Delivery Agency should initiate and oversee a large programme of 'action research' to determine the best way to decarbonise UK heating. Suitable processes must be established to learn and evolve solutions from trials, particularly given technological and behavioural/citizen changes and uncertainties
- Establish a programme of large scale trials for both low carbon electrical and hydrogen usage, and provide £3.5bn government investment in district heating over the next decade[40]
- Place an obligation on gas distribution companies to progressively reduce to zero before 2045 the carbon content of the gas they supply
- Provide support for local authority experiments in local empowerment and governance to determine how street and area based solutions can be delivered with local consent
- Establish a new regulatory regime and investment framework for heat, to ensure fair distribution of costs for new infrastructure, and guarantee early adopters are not disincentivised[41]. This could be done via taxation rather than regressively increasing consumer energy bills
- Ensure any bio-energy feedstocks for green gas/ anaerobic digestion are confined to genuine wastes

7. SPEED UP DECARBONISATION OF INDUSTRY, AND ENSURE THE SECTOR IS ZERO CARBON AND CIRCULAR BEFORE 2045

The industrial sector is one of the hardest sectors to fully decarbonise and make more sustainable in its resource use. Each of the many industrial sectors needs to develop its own expertise to find the best approach. In the short term, improving materials use - sometimes known as resource productivity - can minimise emissions. Radical decarbonisation technologies (such as Carbon Capture and Storage (CCS) for low-carbon cement, or steel produced using hydrogen and renewable energy) need to be developed alongside creating markets for them to expand and push down costs (e.g public procurement or introducing new building standards).



Tanks marked with O2 for oxygen and H2 for hydrogen, part of the electrolysis installations, at a hybrid power plant in Germany. ©Bernd Settnik/EPA/shutterstock

OVERARCHING MEASURES

- Ban consumption of all fluorinated gases by 2026. Doing so would be amongst the most powerful policy levers the Government could follow immediately to curb UK emissions
- Create a clear plan with tangible deliverables for decarbonising all heavy industry sectors over the next two decades - building upon and strengthening the existing Roadmaps[42]

INNOVATION AND MARKET DEVELOPMENT

- Support development, testing and market growth for new technologies through establishing and sufficiently funding a network of low carbon heavy industry clusters by 2030, likely to include the locations of South Wales, Humberside and Teesside. This would build on the initiative announced for the first cluster in December 2018[43]. Funding should be focused particularly on supporting innovation in steel and cement decarbonisation, as well as retraining and reskilling workers from the existing sector, to guarantee UK leadership and high quality jobs as the global market for these products is set to expand
- Boost public procurement where possible to encourage the establishment of early markets for low-embodied carbon materials or substitution
- Launch a major cross-sectoral collaborative push with government, local authorities, business and academic institutes in order to develop and test next-generation low-carbon materials[44]
- Support the use of new data sharing and AI technologies to accelerate learning and performance testing
- Mandate markets for low embodied carbon materials, especially in construction as demonstrated by commercial manager Landsec[45]

CIRCULAR ECONOMY

- Set a target to double resource productivity significantly sooner than the Government's current target of 2050[46]. In contrast, Germany has a target of doubling resource productivity by 2020. This would mean that every bit of metal, energy, wood, glass, cotton or plastics consumed delivers twice as much use to society
- Design a metric for embodied carbon in products, especially construction, automotive, and electronics which can be used as enforceable product standards
- Extend the standards currently in EU Eco-design standards so that manufacturers need to improve the resource efficiency of all products and appliances by more than 2% per year through increased lifetime/durability, ability to be repaired and recycled
- Place an obligation on manufacturers of products and appliances to immediately start covering 100% costs of recycling and reuse (and in the short-term waste management) of the materials embedded in them

8. SIGNIFICANTLY REDUCE MEAT AND DAIRY CONSUMPTION AND REFORM OUR AGRICULTURAL SYSTEM

This sector has to respond to a number of emergencies: climate, biodiversity and public health, to name just three. These issues can only be solved through rethinking our food and agricultural system in the round, which is global in nature. We cannot simply focus on improving the efficiency of food production to reduce carbon emissions. The destruction of ecosystems, air and water pollution, disruption of local livelihoods and public health challenges (such as nutritional deficiencies and obesity) must also be factored in and addressed. Ultimately, this means giving land back to nature to store carbon and restore wildlife, shifting away from environmentally destructive agriculture, dependent on high inputs of pesticides, nitrogen fertilisers and industrial animal feed. A more sustainable, healthy and local food and farming model needs to be incentivised that is largely plant-based. All intensively produced meat and dairy should be phased out.

However, this transition needs to go hand in glove with proper safety nets and a transition plan. This means supporting our farming communities to shift to more sustainable production methods, and ensuring that people on lower incomes or in more precarious circumstances have access to affordable, healthier, more sustainable food. Given the scale of change required in this sector, these proposals are just initial suggestions to shift the system. It is vital that Government keeps a close eye on developments and adjusts as we go, being prepared to intervene sharply where the need becomes clear.

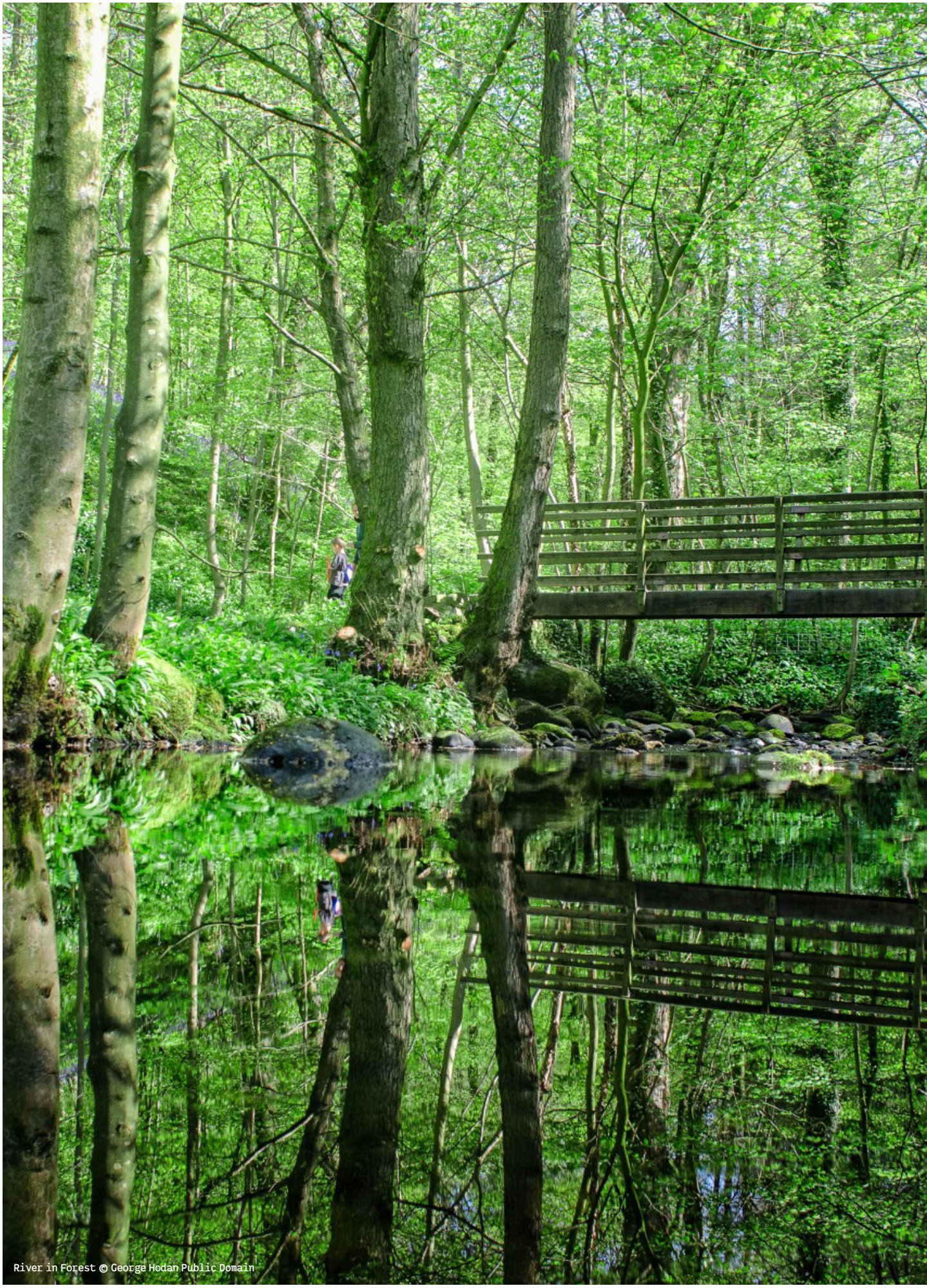
UCSC farm rows, 24 July 2008 ©David Silver/ (CC BY-SA 2.0)

PHASE OUT AGRICULTURE THAT DESTROYS THE NATURAL WORLD

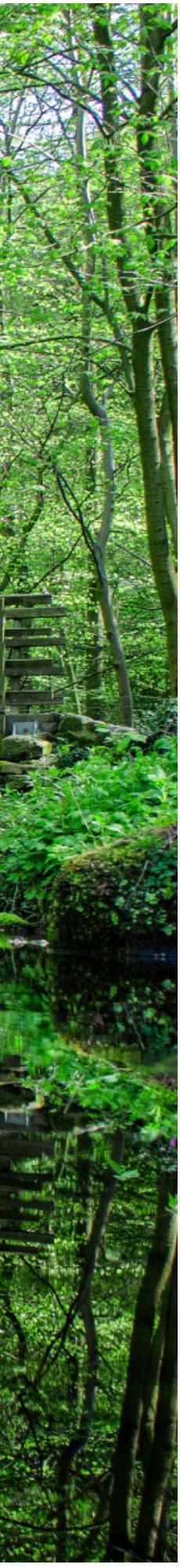
- Introduce a tax on industrial animal feed, which is driving the destruction of ecosystems locally and globally[47]. The tax should rise steadily over time, towards an ultimate phase-out of industrial animal feed by no later than 2030.
- Introduce a tax on artificial nitrogen fertiliser, which would increase over time, learning from examples in Austria, Sweden and Netherlands[48]
- Introduce a taxation regime to reduce pesticide application by at least 50% by active weight over the next 10 years, as achieved in Denmark, with a view to ultimately phasing out pesticide use altogether. In addition, reform pesticides regulation to immediately rule out the most polluting and carcinogenic substances[49]
- Revenue from nitrogen and pesticide taxation should fund a public extension service to support farmers in moving away from high agricultural inputs towards agroecological methods. The Government should also establish a Commission on Farming to ensure the transition away from nature-destructive agriculture including diversification and retraining where required – recognising the integral role of farming and food production to rural economies
- End new permits for large-scale intensive animal production and limit density of animals on pasture fed systems
- Establish consumption based greenhouse gas emissions accounting, where products like palm oil or soya consumed in the UK but produced abroad include the impact of greenhouse gases emitted, in order to deliver a genuinely net zero economy [50]

REDUCE MEAT AND DAIRY AND TRANSITION TO A NEW FOOD AND FARMING MODEL

- Put a target in law of net zero emissions from agriculture and land use by 2040 at the latest[51]
- Introduce targets to significantly reduce meat and dairy consumption, in line with scientific advice (e.g. EAT-Lancet report, which recommends a reduction of red, white and processed meat by 80% from current levels)[52]
- Immediately reform Public Health England and other official UK health guidelines for meat and dairy consumption, in line with scientific advice (as above)
- Use Government spending and fiscal powers to incentivise plant based diets and decrease per capita consumption of meat and dairy. Emphasis should be on reducing consumption of factory-farmed meat and dairy products, with exemptions allowed for local pasture-fed, ecological livestock
- Revenue from fiscal measures to incentivise plant based diets and the tax on industrial animal feed should fund extensive purchase or other support for sustainable, and where feasible locally-sourced, plant based food for public institutions. Public procurement for schools, hospitals, prisons and other public institutions, conform with EAT-Lancet recommendations
- Redirect £3bn of current agricultural subsidy support towards public goods such as agroecology, agroforestry, woodland creation, projects to build soil carbon in degraded agricultural soils and natural ecosystem restoration. Some of these funds should be earmarked specifically for innovation in agricultural techniques and production systems that reduce greenhouse gas emissions
- Progressively reduce and ban biodegradable waste going to landfill by 2025
- Allow treated waste food to be used for animal feed in agroecological pig farms



River in Forest © George Hodan Public Domain



9. RESTORE NATURE TO BOOST CARBON STORAGE

Aside from the intrinsic value of natural landscapes and habitats across the world that we urgently need to restore and protect, ecosystems are a significant store and potential sink for carbon. Restoring nature means taking pressure off the land through a reduction in extractive activities, including demands for fuel, feed and mining. It also means protecting our oceans. The world's oceans absorb almost as much CO2 as all land-based forests and plants combined. If it wasn't for marine creatures removing carbon from the atmosphere as they feed at the water's surface and transferring it to the deep sea, the atmosphere would contain an estimated 50% greater concentration of CO2 and the world would be far hotter. We need to protect and restore space on land and at sea to revitalise wildlife and maximise carbon storage.

RURAL AREAS AND FORESTS

- Work closely with devolved authorities to create a climate and nature-friendly land use strategy for the UK
- Deliver a peatland restoration plan to get all degraded peatland back to favourable conservation status by 2030
- Introduce an immediate ban on burning of blanket bog[53]
- Plant at least 700 million trees by 2030, ensuring species are suitable for local habitats and ecosystems[54]
- Introduce a zero global deforestation footprint target for UK consumption by 2020 - extending to direct supply and indirect trade
- Establish a legal requirement for companies to be transparent about where their commodity supply chain originates - including palm oil, soya, cocoa, beef & leather, pulp & paper and timber
- End land used for supplying industrial animal feed to the UK in order to boost carbon storage and biodiversity in global ecosystems
- Ban biofuels based on food crops for transport, including aviation
- End imports and use of woody biomass for energy, including for Bioenergy Carbon Capture and Storage, unless demonstrated to be from genuine wastes
- Require in the National Planning Policy Framework the creation and enhancement of urban green spaces so that even urban communities can play a part in carbon savings and nature restoration

OCEANS

- Advocate internationally for a strong UN Global Ocean Treaty capable of creating a network of ocean sanctuaries covering at least 30% of global oceans by 2030
- Deliver at least 30% fully protected marine protected areas (covering representative ecosystems) in UK domestic waters, and UK overseas territories, by 2030
- Introduce an immediate moratorium on deep sea mining through halting all further activity within UK exploration contracts, until implementation of a strong UN Global Ocean Treaty providing protection for at least 30% of the world's oceans (covering the full range of marine habitats, biodiversity and ecosystem functions)

Greenpeace activists climb onto the top of a Manchester–London plane after it parked at London Heathrow Airport's Terminal One and cover the tailfin with a banner that reads "Climate emergency NO 3rd runway" in protest against the airport expansion for short haul flights. ©Nick Cobbing/Greenpeace

10. CONSTRAIN DEMAND FOR AVIATION AND SHIPPING AND REDUCE THEIR CARBON FOOTPRINTS

Neither the aviation nor shipping sectors have simple technological solutions for emissions but will, along with all other sectors, need to be net zero carbon well before 2045. Alongside meat consumption, this is a sector where in the absence of clear solutions, demand needs to be constrained whilst investigation of technology and alternative approaches for genuinely low carbon solutions are explored.

The situation is complicated because as international transport sectors, both shipping and aviation are governed by international agencies rather than national governments. These agencies have historically been lacklustre (or worse) about tackling their environmental footprint, despite supposedly having climate protection in their remit. Parts of the shipping industry seem determined to tackle the climate problem. Very little of the aviation industry is.

The Government cannot simply rely on the sectors themselves to self-regulate. More affirmative leadership is urgently required to constrain demand within UK national boundaries and set a global example - particularly because the UK has one of the highest emissions per capita from flying in the world[55].

- Ban all new UK runways, including at Heathrow
- Establish a Frequent Flier Levy - one tax free return flight a year per person then increase tax progressively for each flight beyond that, so that the burden of taxation falls on those who fly most frequently[56]
- Channel funds from the Frequent Flier Levy to an aviation emission reduction fund which can support projects for technological development the aviation industry wouldn't e.g. hydrogen or electric planes - and share the results internationally
- Ensure all UK domestic shipping is zero carbon well before 2045, building on Sweden's lead[57]
- Lead international efforts to create roadmaps for sharp reductions in actual aviation and shipping sector emissions, with a view to being zero carbon well before by 2045[58]

Community pic ©Dave Fuller/repowering

11. UK GOVERNMENT LEADERSHIP AND RESPONSIBILITY IN ENSURING A FAIR AND DELIVERABLE LOW-CARBON TRANSITION

A transition to a low carbon future that doesn't have fairness embedded in it is far less likely to succeed, and will have much less legitimacy. It is also undesirable in and of itself. Yet it is not a given that a rapid climate transition will lead to the creation of high volumes of decent, secure new work here in the UK. A proactive and well-funded strategy is required, led by central Government, working in collaboration with empowered local authorities, unions and other relevant stakeholders, so that the green transformation is also one in which UK communities feel engaged and can flourish.

INTERNATIONAL RESPONSIBILITY

- Ratchet up the UK's international contribution under the Paris Agreement (Nationally Determined Contributions for 2030), to ensure it is in line with containing global warming to 1.5C, and reflective of the need for international leadership from the UK, given its historic emissions
- Continue to deliver the full allocation of climate finance for less developed countries, agreed under UNFCCC rules

RESPONSIBILITY TO UK COMMUNITIES

- Sufficiently fund central and local government to support and facilitate a just, fair and democratic transition from industries like fossil fuels to renewables
- Develop and sufficiently fund regional industrial diversification strategies, including investment in training, reskilling and relocation where required and where local consent is obtained, for areas that are currently dependent on high carbon sectors (particularly oil, gas, coal, high intensity farming and vehicle manufacture). This will ensure that the next generation can access economic opportunities, and prevent a repeat of the social devastation caused by the shutdown of the coal mines
- Work with unions to ensure greater protection in new low carbon sectors, to ensure that jobs in clean energy are safe, secure and receive a decent wage. Past examples where workers were paid half the minimum wage to help construct an offshore wind farm should not be repeated[59]
- Ensure significant local content proportions for clean technology deployment. This includes ensuring a steady pipeline of infrastructure projects (e.g. through the wind and solar capacity targets above), as well as using levers like public procurement, regulation and investment to support supply chains to expand in the UK

LOCAL AUTHORITIES

- Ensure local authorities have the necessary powers, money, skills, expert support and reporting/ evaluation/ enforcement functions to deliver on local dimensions of the transition to a net zero carbon economy. This is particularly pertinent for delivery in sectors like low carbon heating and transport infrastructure.

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