

What is a just transition for environmental targets?



Overview

- Justice and human rights issues may arise from action to protect the climate and environment.
- Issues can be 'procedural', where affected people have not had an adequate say in the process; or 'distributive', where costs and benefits of changes have not been fairly distributed.
- Failure to adequately consider both types of issues can exacerbate inequalities, affect support for action to address climate change and biodiversity loss, and lead to legal challenges. Ultimately this can impact policy implementation.
- There are several UK Government and devolved government commitments to achieve a 'just transition' to pre-empt or resolve such justice issues. These include legislative and non-legislative provisions such as the creation of the Just Transition Commission in Scotland.
- Some stakeholders have called for further action from the UK Government, including strengthening company reporting rules on human rights and environmental due diligence in their supply chain, and addressing climate injustices with developing nations.
- To successfully implement a just transition in the UK, a range of questions will arise and will need to be addressed by policymakers and society more broadly.

Background

The UK has set a target to achieve net zero carbon emissions by 2050,¹ which requires a low-carbon transition for all economic sectors as well as societal behaviour change.²⁻⁵ Global economies and societies will similarly need to make changes to limit, and adapt to, the effects of climate change, and restore degraded biodiversity.⁵ These transitions will have costs and benefits for different actors and members of society that will not necessarily be distributed fairly.^{6,7} These may be considered as unjust if the required changes result in disproportionate burden or reward for certain groups.⁸

The concept of a 'just transition' originated from US trade unions in the 1980s, when new regulations affected industries that contribute to air and water pollution, which had potential knock-on impacts on workers' jobs and livelihoods.⁷⁻⁹ At a similar time, 'environmental justice' was used to describe minority ethnic groups' disproportionately high exposure to environmental hazards and pollution in the US.¹⁰

Both phrases have evolved and now overlap in areas. For example: 'environmental justice' may now include concepts like 'climate justice';^a and 'just transition(s)' has been applied more widely to consider inequalities created or exacerbated by climate policy on consumers and communities.^{9,12-16}

'Just transition' gained traction in multilateral discussions in the 2010s, and most widely accepted definitions focus on job security for workers during transitioning, alongside proper consultation between governments, businesses and trade unions.^{9,17}

The Earth Commission^b is considering what is 'just' in terms of all elements of Earth system: from climate to water, and biodiversity to nutrients.¹⁸ What is a 'safe' global limit is not necessarily a 'just' one.^{19,20} The United Nations Environment Programme sets out the human right^c to a clean, healthy and sustainable environment.²²

Types of justice

The aim of 'just transitions' is to address potential sources of unfairness to provide better outcomes for groups of people.^{17,23}

Relating to action on climate change and biodiversity loss, there is academic literature on different types of justice (or injustice) that can apply to different groups of people, such as indigenous peoples.^{18,19,24-29} Many of the most prominent issues arising from implementing net zero and biodiversity loss actions fall into the categories in Table 1.

^a Generally defined as less developed nations' disproportionately high exposure to the effects of climate change, requiring some form of compensation.¹¹

^b The Earth Commission is an international team of natural and social scientists that aims to scientifically define safe and just boundaries for society to function on planet Earth. It is funded by a variety of philanthropic organisations as part of the Global Commons Alliance.

^c The UN Special Rapporteur on Human Rights and the Environment also concluded "that a safe climate is a vital element of the right to a healthy environment and is absolutely essential to human life and well-being".²¹

Table 1: Types of transition-related justice

What? – the factors of society	
Environmental justice	Fair distribution of environmental risks and hazards between societal groups ³⁰ , such as flood (PN 647) or wildfire risk (PN 603), sewage discharge hazards or exposure to air pollution (PN 691)
Climate justice	Fair compensation and help for countries that have contributed least to climate change, but will suffer greater consequences ³¹
Social justice	Broad concept relating to fair distribution of opportunities and privileges within a society (local, national or global)
How? – the functioning of society	
Procedural justice	Fair and transparent decision-making institutions and processes, enabling people to fairly participate and raise objections or protestations ^{32,33}
Substantive/distributional justice	Fair allocation of specific costs and benefits, and fairly sharing rights, resources and responsibilities between societal groups ^{25,34}
Retributive or corrective justice	Those causing harm to the environment are punished (for example, fined) and/or compensate for (environmental or climate) harm done ¹⁹
Recognition justice	Fairly accounting for the views and knowledge of marginalised groups (such as women or indigenous peoples) ^{35,36} or recognising where there is unfairness or harm done ^{37,38}
Epistemic justice	Ensuring marginalised groups that are affected by change do not have their knowledge and perspectives ignored, blocked or undermined ^{32,39}
Who? – the relationships between societies^d	
Intergenerational justice	Ensuring resources and the environment are not degraded, so future generations are not unfairly disadvantaged ^{19,40,41}
Intragenerational justice	Ensuring fairness between present-day people in communities, groups, and internationally ^{42,43}
Interspecies justice	Considers a fair relationship between humans and nature, and the right of nature to exist for itself, not for humans, whilst respecting the contribution of nature to society's functioning ^{44–46}

^d These three types form the “3Is” formulated by the Earth Commission.¹⁹

There will be a combination of justice types at play, with some more prominent than others. For example:

- **Climate and corrective justice** – some of the world’s least developed nations have contributed the least to climate change, but will be adversely affected sooner or to a greater degree, and might request financial assistance from climate change contributors so that they can adapt.^{47,48}
- **Recognition, distributional, and procedural justice** – deprived communities that are heavily reliant on fossil fuel industries for jobs risk higher unemployment and increased inequality as these industries are phased out.⁴⁹ Poorer communities are also less able to afford adaptation measures, while having contributed far less to climate change.
- **Recognition, distributional, and procedural justice** – increased demand for critical minerals for electronic products and batteries will create economic opportunities for some, but can damage the environment (including pollution of water supplies, biodiversity loss and air pollution) and violate indigenous peoples’ collective land rights.⁵⁰ ([PB 45](#))
- **Intergenerational justice** – many academics have highlighted the need to not delay action on climate change, as this defers costs of transitions onto future generations. Deferring costs will also increase them, as faster future action will be needed to meet global targets.^{8,19,40,43,45,51}

What is a ‘just transition’?

Multiple bodies have defined a ‘just transition’, which entered global climate change (UNFCCC^e) negotiations in 2011.⁹ The 2015 International Labour Organization (ILO) guidelines defined a just transition as ensuring the creation of “decent green jobs”^f, social protection for job losses, and strong social consensus on “pathways to sustainability” with “informed consultation”^g.^{17,53,54} This definition of just transition was included in the preamble to the 2015 Paris Agreement.

The Intergovernmental Panel on Climate Change has stated that a just transition requires “ensuring no people, workers, places, sectors, countries or regions are left behind” in decarbonisation. This should include respect for vulnerable people, fairness in energy access, and democratic consultation, including with indigenous peoples.^{5,29}

In Scotland, the Just Transition Commission emphasises the need for skills training and education for decarbonisation, a focus on creating whole-supply chain benefits (for people in Scotland), empowering communities and resourcing local authorities (for example, [PN 703](#)). It also specifically mentions sharing benefits of market

^e United Nations Framework Convention on Climate Change

^f The ILO defines “decent jobs” as work that is productive and paid fairly, with a secure workplace, freedom to express concerns, organize and participate in the decisions, and equal opportunity and treatment for all women and men; “green jobs” refers to work that supports decarbonisation⁵²

^g The ILO defines “informed consultation” as with a “tripartite” of the government, businesses and trade unions negotiating the transition together¹⁷

reforms with consumers, and ensuring that mitigation and adaptation costs are distributed on the “basis of ability to pay”.⁵⁵

The European Commission has a “Just Transition Mechanism” that aims to support “regions, sectors and workers most affected by the transition” by offering different forms of investment and funding. Funds are available to “alleviate socio-economic costs” of decarbonisation, such as upskilling workers or investing in clean energy.^{56,57}

Given ongoing international negotiations and academic discourse on ‘just transition(s)’, agreement is unlikely on a final definition of this phrase and the phrase’s scope is broadening.^{10,58,59}

What could be in scope?

Administrations’ focus of just transition programmes differ, but there are several different categories considered under the broadest frameworks (Table 2).

Table 2: Different scales of just transitions	
	LARGEST SCALE
International	“Common but differentiated responsibilities” between richer vs poorer nations, or compensation to undertake climate adaptation ^{60–63}
National	Inequalities between a country’s regions, how a country’s Nationally Determined Contribution (NDC) to reducing carbon emissions may affect some parts of the country more than others ^{64,65}
Regions & Cities	Exacerbation of inequalities within areas, phasing away from major regional industries or consequences of major changes for rural and urban areas (such as heavy industry or agriculture) ^{14,64}
Communities	Consideration of whether transitions increase deprivation, or how communities, or socio-economic groups, can benefit ⁶⁶
Individuals & Households	Job security, household income and household dependents, value for consumers or human rights
	SMALLEST SCALE

Every economic sector will have to undergo changes to achieve sustainability.^{67–70} However, certain industries are likely to have more challenging justice issues: energy, agriculture & food, mining/extractives, transport, and buildings and construction.^{71–74}

These industries are required to proactively achieve net zero carbon emissions, halt and reverse biodiversity loss, realise ‘circularisation’,^h and achieve relevant Sustainable Development Goals (SDGs).^{75,76} Because these industries are interrelated,

^h Reduction of material use by redesigning, reusing and recycling products – by ensuring close to zero waste and reducing the amount of inputs required into industries.

some commentators have suggested joined-up whole-systems approaches to avoid missing knock-on justice impacts.⁶

Justice issues can arise from proactive climate action undertaken to tackle climate change, but also from reactively adapting to the impacts of unpreventable climate change and biodiversity loss (Figure 1). Individuals' vulnerability is a combination of these. Action may place unaffordable costs on people and nations who are the most politically, socially and economically marginalised.⁷⁷⁻⁷⁹

Major considerations in the UK

In the UK, just transition already has some devolved legislative basis:

- The Climate Change (Scotland) Act 2019 embeds just transition principles of sustainable jobs, social consensus, "decent jobs", and economic approaches to address inequality and poverty as cornerstones of Scotland's climate targets⁸⁰
- The Climate Change (Northern Ireland) Act 2022 takes a similar approach, but additionally explicitly references supporting the agricultural sector, eliminating gender inequality, and accounting for future generations⁸¹
- The Well-being of Future Generations (Wales) Act 2015 requires Welsh public bodies to consider long-term impacts of decisions, and creates a Future Generations Commissioner^{82,83}

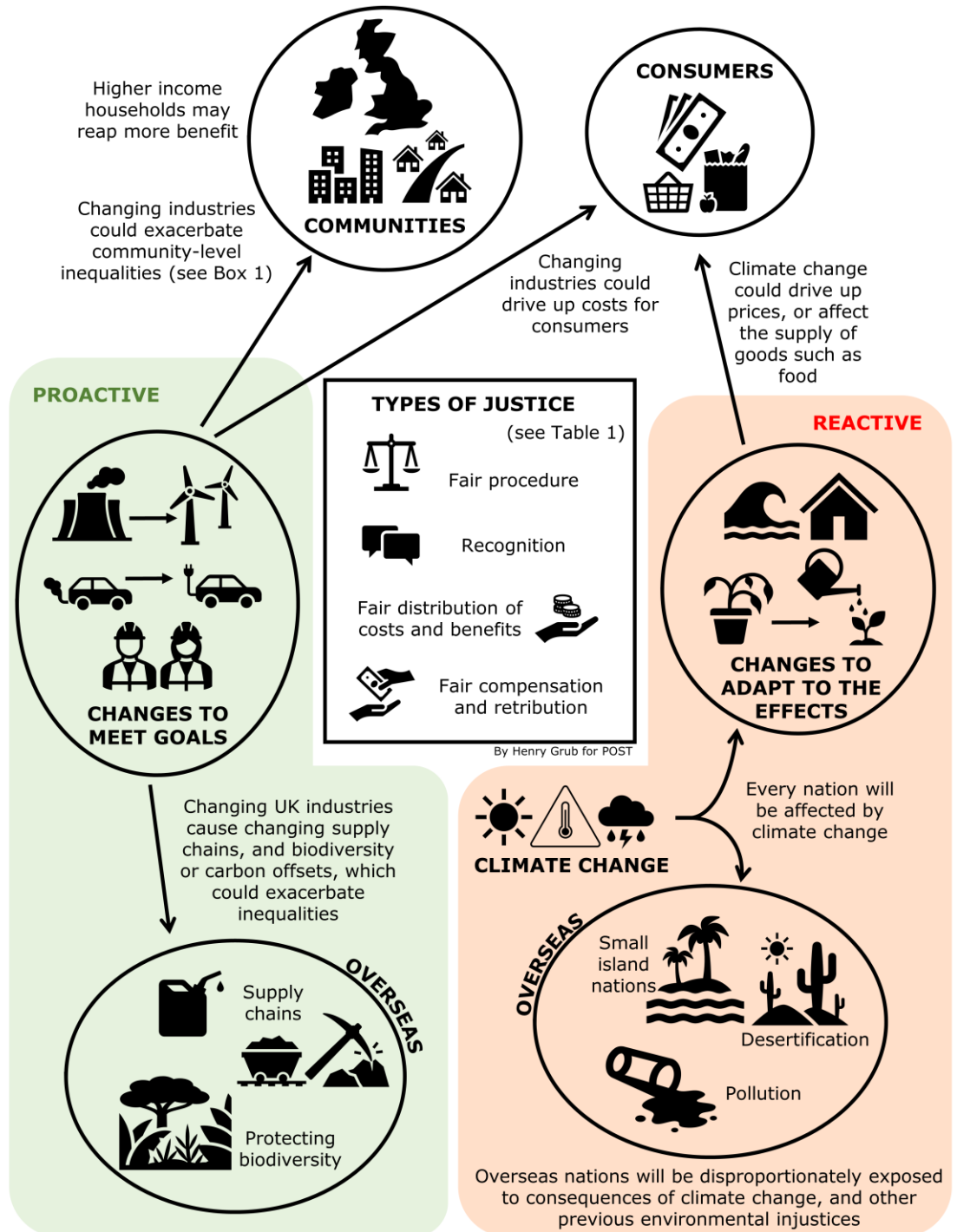
In addition to these legislative frameworks, all devolved governments have policies or are considering enacting just transition principles:

- Just Transition Commissions – commissions are non-statutory independent advisory bodies, often led by academic experts. Scotland's Commission has produced its first report,^{55,84} Northern Ireland is in the process of creating a Commission (as provided for in the 2022 Act),⁸⁵ and Wales is reviewing consultation responses on setting up a Just Transition Framework.⁸⁶
- In January 2023, the Scottish Government launched a draft energy sector just transition plan,⁸⁷ and in June 2023 launched 'discussion papers' for consultation on a just transition for the construction, transport, and agriculture sectors⁸⁸⁻⁹⁰ in response to the main report of its Commission.

Most UK just transition policies focus on decarbonising the energy sector, and the consequences for those workers and communities directly involved. The devolved nations are beginning to expand this to other sectors but the focus remains on decarbonisation.^{85,86,91}

In the UK generally, just transition climate and biodiversity issues have arisen in the three major strands below. Evidence suggests these unresolved issues are a barrier to progress towards targets.⁹²⁻⁹⁴

Figure 1: What does a 'just transition' include? A just transition will be driven by achieving the different types of justice a) in relation to the proactive changes in industry and economic activity that aim to meet climate and biodiversity goals (left hand side), and b) when reacting to the effects of unstoppable climate change (right hand side) – both here in the UK and abroad.



Adapting to climate change

Climate change is highly likely to increase flood, heatwave and drought risks.^{95–97} Adapting will affect some communities more than others, such as coastal settlements.⁹⁸ Some may not be able to afford adaptation measures, such as air conditioning. Food, energy, and insurance costs may rise, which poorer communities are less able to adjust to.^{99–101} Heat stress is also likely to reduce outdoor working hours and earnings.^{102–105}

The UK Government 2023 National Adaptation Programme has been criticised by the Committee on Climate Change (CCC) as “lacking the ambition or urgency to deal with the problem”.^{106–109}

Labour market changes

As certain fossil fuel-based industries are phased down, their current workforce may need retraining or reskilling (Box 1).¹¹⁰ This may be unaffordable, or the supply of new jobs may not be sufficient. This could also apply to industries affected by changes in environmental policy or shifting consumer demand, such as livestock farming or fishing.^{49,111,112}

Box 1: Case study – offshore oil & gas

The UK has a significant offshore oil and gas industry. To meet the net zero carbon emissions 2050 commitment, it is likely that this industry, which directly employs 30,000 people, will have to change how it operates.¹¹³

A 2020 UK-wide survey of 1383 workers in this industry found widespread concern about job security, both within oil and gas and also in renewables.¹¹⁴ The same survey also found 53% of workers are interested in moving into offshore wind. There is currently limited transferability of qualifications between offshore work in oil and gas and wind, and most workers have to pay for their own training costs.^{114,115} The technical skills are transferable to areas such as carbon capture and sequestration, but industry bodies need to recognise qualifications.¹¹¹

In a worst-case scenario, there could be significant unemployment in Scottish communities where workers live.^{115,116} The North Sea Transition Deal 2021 between the UK Government and industry bodies aimed to address some potential justice issues by creating transferable all-energy training and standards,¹¹⁷ building on the 2022 Integrated People and Skills Plan.¹¹⁸

Future issues to be addressed may include ensuring the affordability of retraining and guaranteeing pathways to re-employment.^{55,114,116,119}

Impacts on consumers

Proactive national or local government sustainability policies may affect consumer choice or costs. Abating emissions in certain sectors, such as food (PN 702), may affect consumer lifestyle choices.¹²⁰ However, major justice issues are most likely to arise when there is a perception of unfairness, where groups are disproportionately disadvantaged or advantaged, or if measures are not accessible to all (Box 2).⁹³

International considerations for the UK

The UK Government has signed several international agreements relating to a just transition (Table 3).

The Foreign, Commonwealth and Development Office (FCDO) has signed “Just Energy Transition Partnership” (JETP) deals with four countries to date: South Africa, Indonesia, Vietnam, and Senegal, alongside the International Partners Group.ⁱ These aim to mobilise funding to deploy renewable energy in those countries; these partnerships are worth over \$45bn.^{121–126}

Box 2: Case study – retrofitting housing stock

The UK’s current housing stock is a major source of carbon emissions. The CCC has estimated that, to achieve net zero by 2050, 15 million homes will need loft, wall or floor insulation, and 8 million more will need draughtproofing by 2028.¹²⁷ Fossil fuel heating systems will need to be replaced, but alternatives such as heat pumps only make up 1% of UK homes (PN 699).

Costs are a widely reported barrier, as they are currently borne by the consumer.¹²⁸ There have been various government support schemes providing funding for homeowners, although retrofit rates are still below net zero compliant levels (PN 650).

Low- to middle-income households cannot afford to retrofit, but there is no requirement for them to do so. However, to meet targets, governments will have to reduce costs or offer other incentives.^{129–131} Higher-income households may be able to retrofit and gain a financial benefit from lower energy. Changing regulations to make retrofitting mandatory may bring justice issues to the fore without sufficient support schemes in place.

In addition to just transition language in the COPs, there is multilateral and academic discussion on how just transition principles can be applied to Sustainable Development Goal (SDG) implementation and future international biodiversity targets.^{136–139} The phrase ‘just transition’ may be expanded to apply to other multilateral agreements, such as the Convention on Biological Diversity.^{140,141}

ⁱ The International Partners Group currently comprises: United States of America, Japan, United Kingdom, Germany, France, the European Union, Canada, Italy, Norway and Denmark. Not all members are signed up to each of the four JETPs, but the UK is a signatory to all four.

Table 3: UNFCCC Conference of Parties (COP) agreements

COP	Agreement	What it says
COP22	Paris Agreement 2015	Just transition of the workforce and creation of decent jobs needs to be “taken into account” ¹³²
COP24	Silesia Declaration 2018	Ensure a decent future for workers impacted by transition, need sustainable development with community renewal, and note the importance of representative social dialogue processes ¹³³
COP26	Glasgow Declaration 2021	Support workers transitioning to new jobs; promote social dialogue; deal with local ecological impacts of transition; create inclusive jobs; respect human rights, including of indigenous peoples; and consider environmental and social impacts within global supply chains ¹³⁴
COP27	Sharm el-Sheikh Implementation Plan 2022	Emphasised the urgent need for just transition partnerships, and formed a work programme on just transition – with annual high-level ministerial roundtables on the topic; just “and equitable” transition includes other socioeconomic dimensions alongside the workforce ¹³⁵

Beyond international agreements, there are a variety of justice issues that have arisen and will arise for the UK or UK entities abroad.

Justice in the supply chain

There are well documented human rights abuses in the supply chains of UK-destined products and materials.^{142–149} There is concern that industries scaling up overseas to meet increasing transition demands will lead to further justice and human rights issues, such as in mining for cobalt.^{150,151}

UK-based companies are required to report environmental, social and governance considerations in their supply chains.¹⁵² However, several NGOs and businesses advocate for mandatory human rights and environmental due diligence to prevent abuses (through a proposed Business, Human Rights and Environment Bill).^{153–156} A government-convened taskforce and a select committee report have both recommended tightening rules and advice for companies’ human rights and justice supply chain issues.^{157,158} Other governments may also put requirements on UK-based companies^j to address supply chain justice issues.¹⁶³

NGOs have identified that both carbon and biodiversity offsetting overseas have created human rights and justice issues.^{164–169} For example, the Forest Peoples Programme highlights how the use of protected areas for deforestation carbon credits has infringed the land rights of indigenous communities, such as the Kichwa peoples

^j For example, the European Union has passed the Corporate Sustainability Due Diligence Directive, the Corporate Sustainability Reporting Directive, and the Deforestation-Free Products Regulation, which will all apply to companies of a certain size operating in the EU (whether EU-listed or not).^{159–162}

in Peru, and that their right to free, prior and informed consent has not been respected or protected.^{169–172}

The UK Government can support capacity building in developing nations to achieve a just transition, especially where the UK has supply chain points of origin.^{173,174} This could have additional benefits for partner nations' security and resilience (PN 680). For example, the JETPs are early types of this form of diplomacy.^{175,176}

Compensation for past injustices

For some groups, there are outstanding, unrectified injustices domestically or overseas resulting from damage or actions in the past by the UK state or companies. These include cumulative UK carbon emissions that have caused and will cause climate change impacts.^{177–180}

Some countries, such as many small island nation states recently led by Barbados, have argued for financial compensation for past injustices – for example, the “Loss and Damage” fund^{140,181} set up in the UNFCCC.^k Others may accept ‘softer’ approaches such as recognition of damage and help with capacity building.^{37,182}

There is disagreement on whether compensation should be dealt with separately from just transition issues, as it relates to historical rather than future injustices.¹⁸³ However, for many marginalised peoples, addressing just transition issues would require these to be addressed and remedied.^{58,177,183,184} Alongside this, the UN Special Rapporteur highlights that indigenous peoples' knowledge and cultures, which are proven as effective for sustainable management, need to be protected.²¹

Addressing just transition issues

There are various options to address just transition issues. Procedural and distributional justice issues are two of the most common and require different approaches.^{8,25,183,185} The former focuses on how policies are made, and the latter addresses the substance of sustainability policies.

Achieving procedural justice

Procedural justice can be achieved if stakeholders feel they have had a fair say in the design of policies.²⁵ Procedural injustice, (where groups of people may feel their rights or viewpoints have been ignored^l or not considered in the first place, or their concerns have not been adequately addressed)^{188–191} may require addressing power imbalances.

These are imbalances between policymakers and communities, who traditionally have little opportunity to meaningfully access or participate in policy processes, but will be

^k United Nations Framework Convention on Climate Change (UNFCCC), to which the UK is a party. The new fund is intended to be funded by more-developed nations to distribute funding to less-developed nations in compensation for loss and damage incurred from the effects of climate change.

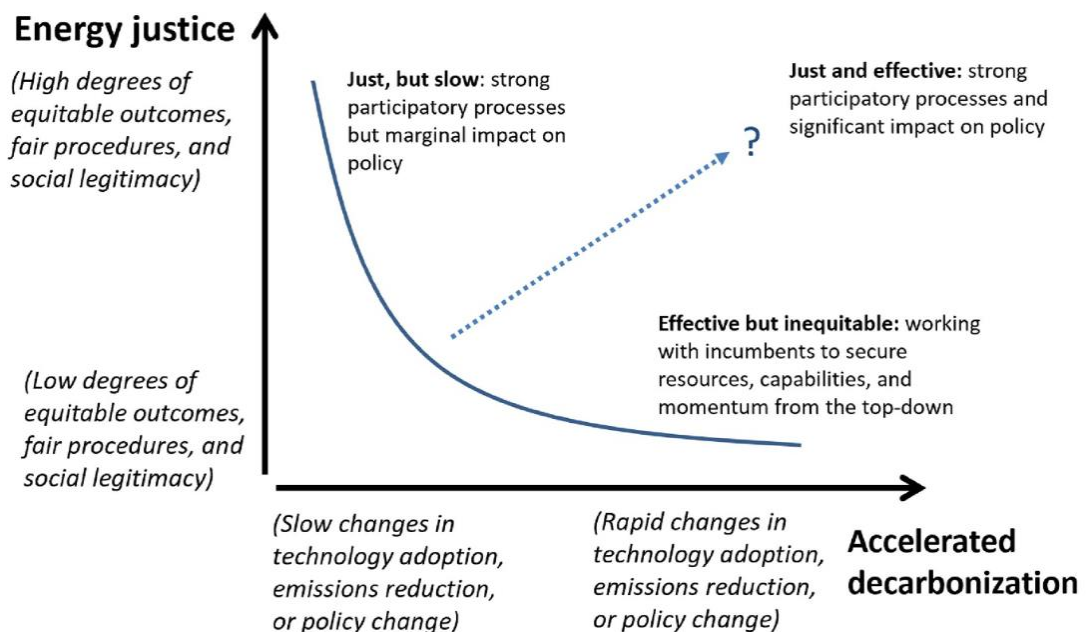
^l For example, indigenous peoples' right to free, prior and informed consent (FPIC). FPIC is a safeguard that aims to protect the underlying fundamental rights of indigenous peoples.^{186,187}

affected by sustainability transitions.^{185,192–195} There is ongoing discussion among academics and NGO advocates about what constitutes “meaningful consultation”, especially with marginalised stakeholders, which goes beyond the standard method of government self-selecting consultations.^{196–202}

Consultation could include collaboration with stakeholder groups, such as labour organisations, on sustainability policy design (Box 3).^{7,17,23,173} Additional methods that have been used include ‘citizen juries’ or assemblies,^m which aim to help the wider public participate in the development of, and generate buy-in for, policy solutions, such as Climate Assembly UK.^{64,204–207}

Some academics highlight trade-offs between the speed at which policies are developed and implemented, and inclusive procedurally just consultative processes (Figure 2).^{208–211}

Figure 2: The theoretical relationship between rapid and just energy transitions. In this case, ‘energy justice’ and ‘energy transitions’ can be broadened to be applicable to other types of sustainability transitions. However, there may be some cases – for example, a fast cost-effective rollout of housing insulation – that could achieve fast decarbonisation and equitable outcomes (for those in poorly insulated homes).



Source: Newell et al. (2022) Navigating tensions between rapid and just low-carbon transitions. *Environmental Research Letters*²⁰⁸

Evidence suggests that not addressing procedural injustice significantly increases the risks of a policy failing at a later stage.^{71,212–214} Failure could arise from legal challenges or resistance from relevant groups that have not bought-in to the policy.

^m Citizen juries are inclusive, deliberative discussion groups where evidence is presented and examined; citizen assemblies are often larger groups.^{203,204}

Academics suggest some decisions required to achieve sustainability goals may be unpopular in the short or medium term.²¹⁵ Procedural justice should take account of different viewpoints and allow people to understand why decisions have been made,ⁿ even if they disagree.^{6,217–220} It should also create mechanisms to address distributional injustices that may arise.

Achieving distributional justice

Policies and instruments needed to achieve distributional justice will vary on a sector-by-sector basis, but should ensure that there is a perception of fairness around who pays, who is helped with costs^{8,221}, and who benefits (Table 4).

Box 3: Case study – Scottish Just Transition Commission

In 2019, the Scottish Government set up a Just Transition Commission to provide “practical, affordable, actionable” recommendations to Ministers on climate action, fairness, and opportunities. It consulted and built consensus among trade unions, businesses and academics on suggestions, and produced its first report in March 2021.⁵⁵

Two of the main recommendations were to pursue an “orderly, managed transition to net zero”, and that producing “roadmaps” for industries will “give direction and confidence” to invest. Another was empowering local communities by devolving powers and funding, and taking lessons from Scotland’s Climate Assembly, so people perceive they have had a say in policy.

In 2023, the Scottish Government published a draft just transition plan for energy, and “discussion papers” for agriculture, transport, and construction.^{87–90} There will be further consultations before draft roadmaps are published.⁹¹

Careful consideration will be needed about the costs of sustainability transitions, when public money should be used, and whether other responsible parties should share costs.^{228,232–234}

Academics debate the effectiveness of using environmental policies to address distributional justice. Policies and decision making need to consider both efficiency and equity.^o These are typically related;^{236,237} for example, there are situations where decarbonisation policies can either enhance equity²³⁸ or impose higher costs on poorer households.²³⁹ Academic literature suggests it is challenging to deliver more than one objective using a single policy measure,²⁴⁰ and they may need to be addressed through separate policies.²⁴¹

ⁿ Well-designed feedback mechanisms should make it very clear what the scope of engagement is, what parts of the policy are non-negotiable and what parts of the policy can change, and should explain why public recommendations have been included or have not been included.²¹⁶

^o Where efficiency refers to the level of benefits generated from a given amount of (government) resources (that is, public money) and equity refers to the distribution of benefits and costs among society.²³⁵

Table 4: Potential policies to address distributional injustices

Labour Markets	Reskilling and upskilling schemes that have government/authority oversight and are publicly or privately funded would prevent cost burdens being put on workers that need to change sector; these have been widely endorsed by industry bodies (Box 4). ^{49,112,114,118}
Consumers	Those less well-off have contributed the least to climate change but will be most affected by the costs of changes required. If public funding for subsidies is required, this will have distributional effects for different groups. ^{55,222} For example, some academics have suggested that progressive future taxation, especially of those who are more affluent, will be needed. ^{208,215,223–226}
Financial Gains	When gains are made by industries taking advantage of new sustainable methods, authorities can firstly ensure human rights are not being infringed upon and local inequalities are not being widened, and secondly use financial benefits to reduce inequalities, as recommended by several expert bodies. ^{55,136,173,227}
Cost Burdens	For future burdens, such as to pay for adaptation to climate change, these costs could be paid by those who caused harm. For example, academics and campaigners have stated that taxing companies who profited from environmental harms may create a sense of distributional fairness. ^{228–231}

If distributional justice issues are not addressed, or distributional injustices are created for certain societal groups, the backlash may cause policies to fail.⁶ An example is the 2018 *Gilets Jaune* protests in France, partly caused by the proposed carbon tax increases on diesel fuel.²⁴² Many were angry about the perceived injustice of a heavy tax burden on individuals with lower incomes, while carbon-intensive businesses were offered tax exemptions.^{243–245} Subsequently, the French Government cancelled the tax increases.²⁴⁶

Box 4: Case study – coal phase-out

In 2005, Canada used 56 million tonnes of coal for electricity generation, but in 2016 the Canadian Government committed to phasing out all coal-fired power plants by 2030.^{247,248} The Government set up the Task Force on Just Transition for Canadian Coal Power Workers and Communities to help support workers and their communities. The Task Force was a collaboration between labour organisation representatives of the coal industry, local communities, and sustainable development experts.^{198,249}

Based on its recommendations, the Government committed public money to the transition in its 2019 Budget. This included worker transition centres, community diversification activities, and a CA\$150 million infrastructure fund to support affected communities.²⁵⁰

Similarly, the European Commission (EC) has set up the “Just Transition Fund” as one “pillar” of its Just Transition Mechanism, which aims to support parts of the bloc that will be most impacted by decarbonisation (which currently focuses on moving away from coal). The fund has a €20 billion budget for 2021–27.^{56,57} This

will be spent on reskilling of workers, environmental rehabilitation and clean energy installations.^{251–253}

The EC also funds the Secretariat Technical Assistance to Regions in Transition (START) programme, implemented in nine countries, which helps coal regions with governance and stakeholder engagement for a more orderly transition.²⁵⁴

Future areas for consideration

The Paris Agreement says countries “should, when taking action to address climate change, respect, promote and consider their respective obligations on human rights, the right to health, the rights of indigenous peoples, local communities, migrants, children, persons with disabilities and people in vulnerable situations and the right to development, as well as gender equality, empowerment of women and intergenerational equity.”¹³²

The implementation scope for achieving such a just transition appears very broad. Society and policymakers will face a variety of issues in seeking a just transition including:^{216,235,255–259}

- How does the UK create policies in ways that minimise backlash, non-compliance and policy failure?
- How can policies be perceived as fair – is this a matter of which policies are implemented or their design?
- In line with recommendations from the CCC, what should the ‘clear vision’ for a justly adapted UK look like?
- How can compensation for extraterritorial past and current injustices be integrated into these transitions?
- What responsibility do private companies have to ensure their transitions are just and respect human rights?
- How can the UK globally advance justice and fairness with partner nations, local civil society and indigenous peoples?^p
- Who should pay for climate change adaptation costs (in the UK), and how should these be balanced with mitigation costs?

^p For example, the UK can also support civil society and indigenous peoples directly with official development assistance.

References

1. Hirst, D. *et al.* (2019). Net zero in the UK. House of Commons Library.
2. Hanna, R. *et al.* (2021). Marking the decarbonization revolutions. *Nat. Energy*, Vol 6, 568–571. Nature Publishing Group.
3. Geels, F. W. *et al.* (2017). Sociotechnical transitions for deep decarbonization. *Science*, Vol 357, 1242–1244. American Association for the Advancement of Science.
4. Demski, C. (2021). Net zero public engagement and participation: a research note. Department for Business, Energy & Industrial Strategy.
5. Pathak, M. *et al.* (2022). Working Group III Mitigation of Climate Change Technical Summary. in *Climate Change 2022: Mitigation of Climate Change. Contribution of Working Group III to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change*. Cambridge University Press.
6. Abram, S. *et al.* (2022). Just Transition: A whole-systems approach to decarbonisation. *Clim. Policy*, Vol 22, 1033–1049. Taylor & Francis.
7. Lee, S. (2022). Issue Brief: Just Transition. United Nations Development Programme.
8. Newell, P. *et al.* (2013). The political economy of the 'just transition'. *Geogr. J.*, Vol 179, 132–140.
9. Beuermann, C. *et al.* (2021). Just transition in national climate plans: an analysis of case studies from South Africa, Costa Rica and Ukraine. Friedrich-Ebert-Stiftung.
10. Perez, A. C. *et al.* (2015). Evolution of the environmental justice movement: activism, formalization and differentiation. *Environ. Res. Lett.*, Vol 10, 105002. IOP Publishing.
11. Gabbatiss, J. *et al.* (2021). In-depth Q&A: What is 'climate justice'? *Carbon Brief*.
12. World Future Council (2021). What is just transition? *World Future Council*.
13. Spence, L. *et al.* (2023). Just transition and net zero: People, organisations and places. *Saïd Business School*.
14. British Academy Just Transitions in Cities. *The British Academy*.
15. International Institute for Environment and Development (2023). Sowing the seeds for a just transition.
16. Byskov, M. F. *et al.* (2021). An agenda for ethics and justice in adaptation to climate change. *Clim. Dev.*, Vol 13, 1–9. Taylor & Francis.
17. International Labour Organization (2015). Guidelines for a just transition towards environmentally sustainable economies and societies for all. International Labour Organization.
18. Rockström, J. *et al.* (2023). Safe and just Earth system boundaries. *Nature*, 1–10. Nature Publishing Group.
19. Gupta, J. *et al.* (2023). Earth system justice needed to identify and live within Earth system boundaries. *Nat. Sustain.*, 1–9. Nature Publishing Group.
20. Humphreys, S. (2023). How to define unjust planetary change. *Nature*.
21. UN Special Rapporteur on Human Rights and the Environment (2019). A Safe Climate: Human Rights and Climate Change. Office of the

22. United Nations High Commissioner for Human Rights. United Nations Environment Programme *et al.* (2023). [What is the Right to a Healthy Environment?](#) UN Environment Programme.
23. UNFCCC (2016). [Just transition of the workforce, and the creation of decent work and quality jobs.](#) UNFCCC Secretariat.
24. Upham, D. P. *et al.* (2022). [Just transitions for industrial decarbonisation: A framework for innovation, participation, and justice.](#) *Renew. Sustain. Energy Rev.*, Vol 167, 112699.
25. Newell, P. *et al.* (2021). [Toward transformative climate justice: An emerging research agenda.](#) *WIREs Clim. Change*, Vol 12, e733.
26. Nature Editorial (2023). [A measure for environmental justice.](#) *Nature*, Vol 618, 7–7.
27. Sikor, T. *et al.* (2014). [Globalizing environmental justice?](#) *Geoforum*, Vol 54, 151–157.
28. WWF UK (2023). [Nature in Transition Plans: Why and How?](#) WWF UK.
29. Intergovernmental Panel On Climate Change (2022). [Climate Change 2022 – Impacts, Adaptation and Vulnerability: Working Group II Contribution to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change.](#) Cambridge University Press.
30. Dirth, E. *et al.* (2020). [What do researchers mean when talking about justice? An empirical review of justice narratives in global change research.](#) *Earth Syst. Gov.*, Vol 6, 100042.
31. Macquarie, R. (2022). [What is meant by 'climate justice'?](#) *Grantham Research Institute on climate change and the environment.*
32. Ruano-Chamorro, C. *et al.* (2022). [Advancing procedural justice in conservation.](#) *Conserv. Lett.*, Vol 15, e12861.
33. Tschakert, P. *et al.* (2023). [Methodological lessons for negotiating power, political capabilities, and resilience in research on climate change responses.](#) *World Dev.*, Vol 167, 106247.
34. Lamont, J. (2012). *Distributive Justice.* Routledge.
35. Anderson, S. *et al.* (2022). [Gender equality and informality in low-carbon transitions: a review of evidence to identify transformative outcomes.](#) International Institute for Environment and Development.
36. Satyal, P. *et al.* (2021). [Addressing multi-dimensional injustice in indigenous adaptation: the case of Uganda's Batwa community.](#) *Clim. Dev.*, Vol 13, 529–542. Taylor & Francis.
37. Martin, A. *et al.* (2016). [Justice and conservation: The need to incorporate recognition.](#) *Biol. Conserv.*, Vol 197, 254–261.
38. Leach, M. *et al.* (2018). [Equity and sustainability in the Anthropocene: a social–ecological systems perspective on their intertwined futures.](#) *Glob. Sustain.*, Vol 1, e13. Cambridge University Press.
39. Fricker, M. (2007). *Epistemic Injustice: Power and the Ethics of Knowing.* Clarendon Press.
40. Tremmel, J. C. (2009). *A Theory of Intergenerational Justice.* Routledge.
41. Fornwagner, H. *et al.* (2022). [Climate Action for \(My\) Children.](#) *Environ. Resour. Econ.*, Vol 81, 95–130.
42. Khelifa, R. *et al.* (2022). [An intersectionality lens is needed to establish a global view of equity,](#)

- diversity and inclusion. *Ecol. Lett.*, Vol 25, 1049–1054.
43. Okereke, C. (2006). Global environmental sustainability: Intragenerational equity and conceptions of justice in multilateral environmental regimes. *Geoforum*, Vol 37, 725–738.
 44. Eckersley, R. (2004). *The Green State: Rethinking Democracy and Sovereignty*. MIT Press.
 45. Hickey, C. *et al.* (2020). Planetary justice: What can we learn from ethics and political philosophy? *Earth Syst. Gov.*, Vol 6, 100045.
 46. Srinivasan, K. *et al.* (2016). Political ecology, development, and human exceptionalism. *Geoforum*, Vol 75, 125–128.
 47. Hickel, J. *et al.* (2022). National responsibility for ecological breakdown: a fair-shares assessment of resource use, 1970–2017. *Lancet Planet. Health*, Vol 6, e342–e349. Elsevier.
 48. Schlosberg, D. *et al.* (2014). From environmental to climate justice: climate change and the discourse of environmental justice. *WIREs Clim. Change*, Vol 5, 359–374.
 49. Alvis, S. *et al.* (2022). Closing the UK's green skills gap. Green Alliance.
 50. Kelly, L. (2023). Putting miners at the heart of the just transition. *Green Economy Coalition*.
 51. Treves, A. *et al.* (2018). Intergenerational equity can help to prevent climate change and extinction. *Nat. Ecol. Evol.*, Vol 2, 204–207. Nature Publishing Group.
 52. International Labour Organization Decent work. *International Labour Organization*.
 53. Gabbatiss, J. (2023). Jobs created by net-zero transition will 'offset' fossil-fuel job losses in Republican US states. *Carbon Brief*.
 54. International Institute for Sustainable Development (2021). *Just Transition to a Green Economy*. Deutsche Gesellschaft für Internationale Zusammenarbeit.
 55. Skea, P. J. *et al.* (2021). *The Just Transition Commission*. Energy and Climate Change Directorate.
 56. European Commission Just Transition Mechanism. *European Commission*.
 57. European Commission Just Transition funding sources. *European Commission*.
 58. Otlhogile, M. *et al.* (2023). The evolving just transition: definitions, context, and practical insights for Africa. *Environ. Res. Infrastruct. Sustain.*, Vol 3, 013001. IOP Publishing.
 59. Johansson, V. (2023). Just Transition as an Evolving Concept in International Climate Law. *J. Environ. Law*, Vol 35, 229–249.
 60. Peel, J. *et al.* (2017). A Rights Turn in Climate Change Litigation? *Transnatl. Environ. Law*, Vol 7, 37–67. Cambridge University Press.
 61. Gupta, J. *et al.* (2022). Equity, justice and the SDGs: lessons learnt from two decades of INEA scholarship. *Int. Environ. Agreem. Polit. Law Econ.*, Vol 22, 393–409.
 62. Pauw, P. *et al.* (2019). Subtle differentiation of countries' responsibilities under the Paris Agreement. *Palgrave Commun.*, Vol 5, 1–7. Palgrave.
 63. Martin, A. *et al.* (2020). Environmental Justice and Transformations to Sustainability. *Environ. Sci. Policy Sustain. Dev.*, Vol 62, 19–30. Routledge.
 64. Sovacool, B. K. *et al.* (2022). Equity, technological innovation

- and sustainable behaviour in a low-carbon future. *Nat. Hum. Behav.*, Vol 6, 326–337. Nature Publishing Group.
65. Glynn, P. J. *et al.* (2020). Incorporating Just Transition Strategies in Developing Countries Nationally Determined Contributions. in *Handbook of Climate Change Management: Research, Leadership, Transformation.* (eds. Leal Filho, W. *et al.*) 1–21. Springer International Publishing.
66. Mijin Cha, J. *et al.* (2022). A Green New Deal for all: The centrality of a worker and community-led just transition in the US. *Polit. Geogr.*, Vol 95, 102594.
67. European Environment Agency (2021). Building the foundations for fundamental change.
68. Díaz, S. *et al.* (2019). Pervasive human-driven decline of life on Earth points to the need for transformative change. *Science*, Vol 366,
69. Ripple, W. J. *et al.* (2022). World Scientists' Warning of a Climate Emergency 2022. *BioScience*, Vol 72, 1149–1155.
70. Caniglia, G. *et al.* (2021). A pluralistic and integrated approach to action-oriented knowledge for sustainability. *Nat. Sustain.*, Vol 4, 93–100. Nature Publishing Group.
71. Sovacool, B. K. *et al.* (2019). Decarbonization and its discontents: a critical energy justice perspective on four low-carbon transitions. *Clim. Change*, Vol 155, 581–619.
72. Blattner, C. (2020). Just Transition for Agriculture? A Critical Step in Tackling Climate Change. *J. Agric. Food Syst. Community Dev.*, Vol 9, 53–58.
73. Evans, G. *et al.* (2016). Transition to a post-carbon society: Linking environmental justice and just transition discourses. *Energy Policy*, Vol 99, 329–339.
74. Colli, F. (2020). The EU's Just Transition: three challenges and how to overcome them. Egmont Institute.
75. Skidmore, C. (2023). *Mission Zero: Independent Review of Net Zero.* Department for Business, Energy & Industrial Strategy.
76. Schröder, P. (2020). *Promoting a Just Transition to an Inclusive Circular Economy.* Chatham House.
77. Fibieger Byskov, M. *et al.* (2021). Introducing the Multi-Dimensional Injustice Framework: a case study in climate-related health risks. *J. Br. Acad.*, Vol 9s7, 63–84.
78. Coggins, S. *et al.* (2021). Empirical assessment of equity and justice in climate adaptation literature: a systematic map. *Environ. Res. Lett.*, Vol 16, 073003. IOP Publishing.
79. Watkiss, P. (2023). The Costs of Adaptation, and the Economic Costs and Benefits of Adaptation in the UK. Climate Change Committee.
80. Stationery Office (2019). Climate Change (Emissions Reduction Targets) (Scotland) Act 2019.
81. Government Printer for Northern Ireland (2022). Climate Change Act (Northern Ireland) 2022.
82. Stationery Office (2015). Well-being of Future Generations (Wales) Act 2015.
83. Future Generations Commissioner for Wales The Future Generations Commissioner for Wales – Acting today for a better tomorrow.
84. The Scottish Government (2021). *Just Transition: A Fairer, Greener Scotland.* The Scottish Government.
85. Department of Agriculture, Environment and Rural Affairs

- (2023). The Climate Change Act (Northern Ireland) 2022 - Key elements. DAERA.
86. The Welsh Government (2022). Just Transition to Net Zero Wales: Call for Evidence.
87. The Scottish Government (2023). Draft Energy Strategy and Just Transition Plan. The Scottish Government.
88. The Scottish Government (2023). Just transition for the transport sector: a discussion paper. The Scottish Government.
89. The Scottish Government (2023). Just transition for the built environment and construction sector: a discussion paper. The Scottish Government.
90. The Scottish Government (2023). Just transition in land use and agriculture: a discussion paper. The Scottish Government.
91. The Scottish Government Policy: Climate change Just transition. gov.scot.
92. Denton, F. *et al.* (2021). Blind Alleys and Bright Prospects: Africa navigating stranded assets and just transitions. UNU INRA.
93. Institute for Public Policy Research (2021). Fairness and Opportunity: A People-Powered Plan for the Green Transition. Institute for Public Policy Research.
94. Jenkins, K. E. H. *et al.* (2020). Politicising the Just Transition: Linking global climate policy, Nationally Determined Contributions and targeted research agendas. *Geoforum*, Vol 115, 138–142.
95. Climate Change Committee (2019). 2019 Progress Report to Parliament.
96. National Grid Electricity Transmission (2021). Climate Change Adaptation Report.
97. Souto, L. *et al.* (2022). Power system resilience to floods: Modeling, impact assessment, and mid-term mitigation strategies. *Int. J. Electr. Power Energy Syst.*, Vol 135, 107545.
98. Surminski, S. *et al.* (2020). Flood risk is rising and so must our resilience to it. *Grantham Research Institute on climate change and the environment*.
99. Sustain (2022). Unpicking food prices: Where does your food pound go, and why do farmers get so little? Sustain.
100. The World Bank (2023). Food Security Update.
101. Sovacool, B. K. *et al.* (2019). The whole systems energy injustice of four European low-carbon transitions. *Glob. Environ. Change*, Vol 58, 101958.
102. Anderson, E. (2021). Climate Change Raises Risk For Outdoor Workers. *KPBS Public Media*.
103. Moda, H. M. *et al.* (2019). Impacts of Climate Change on Outdoor Workers and Their Safety: Some Research Priorities. *Int. J. Environ. Res. Public Health*, Vol 16, 3458. Multidisciplinary Digital Publishing Institute.
104. Vivid Economics (2017). Impacts of higher temperatures on labour productivity and value for money adaptation: lessons from five DFID priority country case studies. UK Department for International Development.
105. International Labour Organization (2019). Working on a warmer planet: The impact of heat stress on labour productivity and decent work.
106. Department for Environment, Food & Rural Affairs (2023). The Third National Adaptation Programme (NAP3) and the Fourth Strategy for Climate Adaptation Reporting. Department for Environment, Food & Rural Affairs.
107. Environmental Audit Committee (2023). Oral evidence: Mapping

- [the path to net zero, HC 104](#). House of Commons.
108. Climate Change Committee (2023). [A lack of leadership is preventing essential investment to prepare the UK for climate change](#). *Climate Change Committee*.
109. Smith, A. *et al.* (2023). [Scaling up Nature-based Solutions in England's National Climate Change Adaptation Programme](#). University of Oxford.
110. World Business Council for Sustainable Development (2023). [Achieving a just transition in the energy system](#). World Business Council for Sustainable Development.
111. Climate Change Committee (2023). [A Net Zero workforce](#).
112. Climate Change Committee (2023). [Skills and Net Zero \(Expert Advisory Group\)](#).
113. UK Offshore Energies Association Limited (2022). [Workforce Insight 2022](#).
114. Jeliazkov, G. *et al.* (2020). [Offshore: oil and gas workers' views on industry conditions and the energy transition](#). Greenpeace.
115. Friends of the Earth Scotland (2021). [Tickets & Training: The Hidden Costs For Offshore Oil & Gas Workers](#). Friends of the Earth Scotland.
116. Stop Climate Chaos Scotland (2022). [A managed wind down of North Sea oil & gas production in line with a Just Transition](#). Stop Climate Chaos Scotland.
117. Department for Business, Energy & Industrial Strategy (2021). [North Sea Transition Deal](#).
118. OPITO (2022). [North Sea Transition Deal: Integrated People and Skills Strategy](#).
119. Environmental Audit Committee (2023). [Accelerating the transition from fossil fuels and securing energy supplies](#). House of Commons.
120. Clark, M. A. *et al.* (2020). [Global food system emissions could preclude achieving the 1.5° and 2°C climate change targets](#). *Science*, Vol 370, 705–708. American Association for the Advancement of Science.
121. COP26 Presidency (2021). [Political Declaration on the Just Energy Transition in South Africa](#).
122. COP26 Presidency (2022). [Indonesia Just Energy Transition Partnership Launched at G20](#). *GOV.UK*.
123. Foreign Commonwealth and Development Office (2022). [South Africa Just Energy Transition Investment Plan: joint statement](#). *GOV.UK*.
124. Foreign Commonwealth and Development Office (2022). [International agreement to support Vietnam's ambitious climate and energy goals](#). *GOV.UK*.
125. Foreign Commonwealth and Development Office (2022). [Political declaration on establishing the Just Energy Transition Partnership with Viet Nam](#). *GOV.UK*.
126. Foreign Commonwealth and Development Office (2023). [Senegal and the International Partners Group announce Just Energy Transition Partnership](#). *GOV.UK*.
127. Climate Change Committee (2020). [The Sixth Carbon Budget: The UK's path to Net Zero](#). .
128. Fotherby, J. *et al.* (2022). [Locked out: Helping low to middle income households benefit from net zero](#). Green Alliance.
129. Green Finance Institute (2020). [Financing energy efficient buildings: the path to retrofit at scale](#). Green Finance Institute.

130. Britchfield, C. (2023). [Cutting Energy Bills and Raising Standards for Private Renters](#). E3G.
131. Royal Institute of British Architects (RIBA) (2020). [Greener Homes: Decarbonising the housing stock](#).
132. UNFCCC Secretariat. (2015). [COP22 Paris Agreement](#).
133. COP24 Presidency. (2018). [COP24 Solidarity and Just Transition Silesia Declaration](#).
134. COP26 Presidency. (2021). [COP26 Glasgow Just Transition Declaration](#).
135. UNFCCC Secretariat. (2022). [COP27 Sharm el-Sheikh Implementation Plan](#).
136. Filipović, S. *et al.* (2022). [The green deal – just transition and sustainable development goals Nexus](#). *Renew. Sustain. Energy Rev.*, Vol 168, 112759.
137. Franks, P. (2021). [Global Biodiversity Framework: equitable governance is key](#). International Institute for Environment and Development.
138. de Lange, E. *et al.* (2023). [A global conservation basic income to safeguard biodiversity](#). *Nat. Sustain.*, 1–8. Nature Publishing Group.
139. Archibald, C. L. *et al.* (2023). [Weaving nature into social safety nets](#). *Nat. Sustain.*, 1–2. Nature Publishing Group.
140. Roe, D. *et al.* (2023). [Loss and damage finance should apply to biodiversity loss](#). *Nat. Ecol. Evol.*, 1–3. Nature Publishing Group.
141. Secretariat of the Convention on Biological Diversity. (2022). [COP15 Kunming-Montreal Global Biodiversity Framework](#).
142. Human Rights Watch (2016). [Human Rights in Supply Chains](#). *Human Rights Watch*.
143. de Witte, M. (2022). [This is how we can stamp out supply-chain slavery](#). *World Economic Forum*.
144. International Labour Organization [Forced labour, modern slavery and human trafficking](#). *International Labour Organization*.
145. Whoriskey, P. *et al.* (2019). [Hershey, Nestle and Mars won't promise their chocolate is free of child labor](#). *Washington Post*.
146. Channel 4. (2020). [Starbucks and Nespresso: The Truth About Your Coffee](#). *Dispatches*.
147. Kara, S. (2018). [Is your phone tainted by the misery of the 35,000 children in Congo's mines?](#) *The Guardian*.
148. Williams, R. (2020). [Are These Fashions Linked to Forced Labour? Brands Can't Confidently Say No](#). *The Business of Fashion*.
149. ICAEW (2023). [Supply chain human rights issues a huge challenge for CEOs](#). *Institute of Chartered Accountants in England and Wales*.
150. Blaine, T. *et al.* (2022). [Moving Toward a Just Transition in Green Minerals](#). *United States Institute of Peace*.
151. Crawford, A. *et al.* (2018). [Green Conflict Minerals](#). *International Institute for Sustainable Development*.
152. Amling, A. (2021). [The Simple Guide to ESG in the Supply Chain](#). *Global Supply Chain Institute*.
153. Business & Human Rights Resource Centre (2022). [Parliamentary Briefing: A UK 'Business, Human Rights and Environment Act'](#). *Business & Human Rights Resource Centre*.
154. Corporate Justice Coalition [A Business, Human Rights and Environment Act](#).
155. Curran, B. *et al.* (2022). [Making transition plans just: how to embed the just transition into financial sector net zero plans](#). Grantham Research Institute on

- Climate Change and the Environment.
156. McGivern, A. *et al.* (2022). *Defining Net Zero for organisations: How do climate criteria align across standards and voluntary initiatives?* Smith School of Enterprise and the Environment.
157. Joint Committee on Human Rights (2017). *Human Rights and Business 2017: Promoting responsibility and ensuring accountability.* House of Commons.
158. Global Resource Initiative (2020). *Final Recommendations Report.*
159. Oeschger, A. (2022). *EU Paves Way for Landmark Deforestation-free Products Regulation.* *IISD SDG Knowledge Hub.*
160. European Commission *Corporate sustainability due diligence.*
161. European Parliament (2022). *New social and environmental reporting rules for large companies.* *European Parliament Press Room.*
162. IBM Envizi (2023). *The EU's Corporate Sustainability Reporting Directive explained.* *IBM Blog.*
163. Cotula, L. (2022). *Law, economies and justice: a new programme.* *International Institute for Environment and Development.*
164. International Work Group for Indigenous Affairs (2017). *New green powers in the global land grab violate indigenous peoples' rights.*
165. Amazon Watch (2021). *Environmental Justice and Human Rights Organizations: Carbon Offsets Don't Stop Climate Change.*
166. Blomley, T. *et al.* (2013). *'Land grabbing': is conservation part of the problem or the solution?*
- International Institute for Environment and Development.
167. Re:Common (2019). *Turning forests into hotels - The true cost of biodiversity offsetting in Uganda.* *ReCommon.*
168. Kill, J. *et al.* (2016). *Rio Tinto's biodiversity offset in Madagascar: Double landgrab in the name of biodiversity?* World Rainforest Movement & Re:Common.
169. Dooley, K. *et al.* (2022). *The Land Gap Report 2022.*
170. Forest Peoples Programme (2023). *Landmark Ruling For Kichwa Community Puerto Franco Defends Indigenous Rights Against Exclusionary Conservation of The Cordillera Azul National Park.* *Forest Peoples Programme (FPP).*
171. Rugh, N. *et al.* (2023). *Discrediting carbon credits.* *The Ecologist.*
172. Environmental Justice Atlas *Parque Nacional Cordillera Azul (PNCAZ) REDD+ Project, Peru.* *Environmental Justice Atlas.*
173. Lee, S. *et al.* (2022). *How Just Transition Can Help Deliver the Paris Agreement.* United Nations Development Programme.
174. Robins, N. *et al.* (2021). *Just zero: 2021 report of the UK Financing a Just Transition Alliance.* Grantham Research Institute on Climate Change and the Environment.
175. Sarr, S. *et al.* (2023). *Guest post: Behind the scenes at Senegal's 'just energy transition partnership'.* *Carbon Brief.*
176. Kennedy, S. (2023). *Guest post: What would it take to phase out coal in Indonesia?* *Carbon Brief.*
177. Klinsky, S. (2018). *An initial scoping of transitional justice for global climate governance.* *Clim. Policy*, Vol 18, 752–765. Taylor & Francis.

178. Lenferna, G. A. (2018). [Can we equitably manage the end of the fossil fuel era?](#) *Energy Res. Soc. Sci.*, Vol 35, 217–223.
179. Fanning, A. L. *et al.* (2023). [Compensation for atmospheric appropriation.](#) *Nat. Sustain.*, 1–10. Nature Publishing Group.
180. Roberts, J. T. (2023). [Calculating what we owe.](#) *Nat. Sustain.*, 1–2. Nature Publishing Group.
181. UNFCCC (2022). [COP27 Reaches Breakthrough Agreement on New “Loss and Damage” Fund for Vulnerable Countries.](#)
182. Steadman, S. *et al.* (2022). *What do we have to lose? Understanding and responding to climate-induced loss and damage to cultural heritage.* ODI.
183. Wang, X. *et al.* (2021). [Just transition: A conceptual review.](#) *Energy Res. Soc. Sci.*, Vol 82, 102291.
184. Khosla, R. *et al.* (2023). [Can ‘Net Zero’ still be an instrument of climate justice?](#) *Environ. Res. Lett.*, Vol 18, 061001. IOP Publishing.
185. Cha, J. M. *et al.* (2022). [Just transition: Framing, organizing, and power-building for decarbonization.](#) *Energy Res. Soc. Sci.*, Vol 90, 102588.
186. Office of the United Nations High Commissioner for Human Rights (2013). [Free, Prior and Informed Consent of Indigenous Peoples.](#) Office of the United Nations High Commissioner for Human Rights.
187. UN Department of Economic and Social Affairs (2016). [Free Prior and Informed Consent – An Indigenous Peoples’ right and a good practice for local communities.](#) *UN Department of Economic and Social Affairs.*
188. Newell, P. *et al.* (2011). [Pursuing Clean Energy Equitably.](#) United Nations Development Programme.
189. Lehtonen, M. *et al.* (2009). [Deliberative Socio-Technical Transitions.](#) in *Energy for the Future: A New Agenda.* (eds. Scrase, I. *et al.*) 103–122. Palgrave Macmillan UK.
190. Nakhooda, S. (2010). [Getting to Work: A Review of the Operations of the Clean Technology Fund.](#) World Resources Institute.
191. Airey, S. *et al.* (2017). [“Georgetown ain’t got a tree. We got the trees”—Amerindian Power & Participation in Guyana’s Low Carbon Development Strategy.](#) *Forests*, Vol 8, 51. Multidisciplinary Digital Publishing Institute.
192. Sovacool, B. K. *et al.* (2015). [Energy justice: Conceptual insights and practical applications.](#) *Appl. Energy*, Vol 142, 435–444.
193. Jenkins, K. (2018). [Setting energy justice apart from the crowd: Lessons from environmental and climate justice.](#) *Energy Res. Soc. Sci.*, Vol 39, 117–121.
194. Armstrong, J. H. (2021). [People and power: Expanding the role and scale of public engagement in energy transitions.](#) *Energy Res. Soc. Sci.*, Vol 78, 102136.
195. Adger, W.N. *et al.* (2006). *Fairness in Adaptation to Climate Change.* MIT Press.
196. The Scottish Government (2020). *Net Zero Nation: Draft Public Engagement Strategy for Climate Change.* The Scottish Government.
197. Pelliconi, A. M. *et al.* [Human rights defenders & business in 2021: Protecting the rights of people driving a just transition.](#) *Business & Human Rights Resource Centre.*
198. MacArthur, J. L. *et al.* (2020). [Canada’s Green New Deal: Forging the socio-political](#)

- foundations of climate resilient infrastructure? *Energy Res. Soc. Sci.*, Vol 65, 101442.
199. Bright, C. *et al.* (2021). Risk-Based Due Diligence, Climate Change, Human Rights and the Just Transition. *Sustainability*, Vol 13, 10454. Multidisciplinary Digital Publishing Institute.
200. Baker, S. H. (2020). Fighting for a Just Transition. *NACLA Rep. Am.*, Vol 52, 144–151. Routledge.
201. UN Human Rights Council (2011). Guiding Principles on Business and Human Rights: Implementing the United Nations 'Protect, Respect and Remedy' Framework. United Nations.
202. Elliott, J. *et al.* (2023). Green expectations: Involving communities in landscape change. Green Alliance.
203. Street, J. *et al.* (2014). The use of citizens' juries in health policy decision-making: A systematic review. *Soc. Sci. Med.*, Vol 109, 1–9.
204. Gastil, J. *et al.* (2013). Making Direct Democracy Deliberative through Random Assemblies. *Polit. Soc.*, Vol 41, 253–281. SAGE Publications Inc.
205. Abram, S. *et al.* (2022). Just Transition: Pathways to Socially Inclusive Decarbonisation.
206. Jakob, M. *et al.* (2020). The future of coal in a carbon-constrained climate. *Nat. Clim. Change*, Vol 10, 704–707. Nature Publishing Group.
207. Defard, C. *et al.* (2022). An inclusive Social Climate Fund for the just transition. Jacques Delors Institute.
208. Newell, P. J. *et al.* (2022). Navigating tensions between rapid and just low-carbon transitions. *Environ. Res. Lett.*, Vol 17, 041006. IOP Publishing.
209. Stirling, A. (2014). *Emancipating Transformations: From controlling 'the transition' to culturing plural radical progress.* STEPS Centre.
210. Cooke, B. *et al.* (2001). *Participation: The New Tyranny?* Zed Books.
211. Newell, P. (2021). *Power Shift: The Global Political Economy of Energy Transitions.* Cambridge University Press.
212. Newell, P. (2018). Squaring urgency and equity in the just transition debate. *Commentary Rapid Transition Alliance.*
213. Barry, J. *et al.* (2010). Beyond Consensus? Agonism, Republicanism and a Low Carbon Future. in *Renewable Energy and the Public.* Routledge.
214. Pinker, A. (2020). Just Transitions: a comparative perspective. The Scottish Government.
215. Furceri, D. *et al.* (2023). Are climate change policies politically costly? *Energy Policy*, Vol 178, 113575.
216. Bogelein (Climate Change Committee), S. (2023). Personal Communication.
217. Velicu, I. *et al.* (2020). The Just Transition and its work of inequality. *Sustain. Sci. Pract. Policy*, Vol 16, 263–273. Taylor & Francis.
218. Bouzarovski, S. (2022). Just Transitions: A Political Ecology Critique. *Antipode*, Vol 54, 1003–1020.
219. Azzi, D. A. (2021). Trade Union Politics for a Just Transition: Towards Consensus or Dissensus? in *The Palgrave Handbook of Environmental Labour Studies.* (eds. Räthzel, N. et al.) 225–248. Springer International Publishing.
220. Harris, M. (2023). Are climate policies a liability or a political asset? *Fixing Carbon Anthropocene Magazine.*

221. Sovacool, B. K. *et al.* (2021). [The hidden costs of energy and mobility: A global meta-analysis and research synthesis of electricity and transport externalities.](#) *Energy Res. Soc. Sci.*, Vol 72, 101885.
222. Witajewski-Baltvilks, J. *et al.* (2021). [Workers or Consumers: Who Pays for Low-Carbon Transition – Theoretical Analysis of Welfare Change in General Equilibrium Setting.](#) *Cent. Eur. Econ. J.*, Vol 8, 231–245.
223. Oswald, Y. *et al.* (2023). [Luxury-focused carbon taxation improves fairness of climate policy.](#) *One Earth*, Vol 6, 884–898. Elsevier.
224. Hardt, L. *et al.* (2021). [What structural change is needed for a post-growth economy: A framework of analysis and empirical evidence.](#) *Ecol. Econ.*, Vol 179, 106845.
225. Owen, A. *et al.* (2020). [Reducing inequality resulting from UK low-carbon policy.](#) *Clim. Policy*, Vol 20, 1193–1208. Taylor & Francis.
226. Büchs, M. *et al.* (2023). [Emissions savings from equitable energy demand reduction.](#) *Nat. Energy*, Vol 8, 758–769. Nature Publishing Group.
227. Heffron, R. J. (2021). [What is the “Just Transition”?](#) in *Achieving a Just Transition to a Low-Carbon Economy.* (ed. Heffron, R. J.) 9–19. Springer International Publishing.
228. Grasso, M. *et al.* (2023). [Time to pay the piper: Fossil fuel companies’ reparations for climate damages.](#) *One Earth*, Vol 6, 459–463. Elsevier.
229. Cosme, I. *et al.* (2017). [Assessing the degrowth discourse: A review and analysis of academic degrowth policy proposals.](#) *J. Clean. Prod.*, Vol 149, 321–334.
230. Hardt, L. *et al.* (2017). [Ecological Macroeconomic Models: Assessing Current Developments.](#) *Ecol. Econ.*, Vol 134, 198–211.
231. Climate Change Committee (2023). [Investment for a well-adapted UK.](#) Climate Change Committee.
232. Timperley, J. (2021). [Why fossil fuel subsidies are so hard to kill.](#) *Nature*, Vol 598, 403–405.
233. Bridle, R. *et al.* (2019). [Fossil Fuel to Clean Energy Subsidy Swaps: How to pay for an energy revolution.](#) International Institute for Sustainable Development.
234. WWF UK (2022). [Unlocking finance for nature: learning from experience in driving climate action.](#) WWF UK.
235. Bateman I. (2023). Personal Communication. (University of Exeter).
236. Klasen, S. (2008). [The Efficiency of Equity.](#) *Rev. Polit. Econ.*, Vol 20, 257–274. Routledge.
237. Page, T. (1997). [On the Problem of Achieving Efficiency and Equity, Intergenerationally.](#) *Land Econ.*, Vol 73, 580–596. [Board of Regents of the University of Wisconsin System, University of Wisconsin Press].
238. Zhu, S. *et al.* (2022). [Decarbonization will lead to more equitable air quality in California.](#) *Nat. Commun.*, Vol 13, 5738. Nature Publishing Group.
239. Owen, A. *et al.* (2022). [Who pays for BECCS and DACCS in the UK: designing equitable climate policy.](#) *Clim. Policy*, Vol 22, 1050–1068. Taylor & Francis.
240. Perkins, J. O. N. (1990). [Three Instruments and Three Objectives: A Framework for Analysis.](#) in *A General Approach to Macroeconomic Policy.* 88–103. Palgrave Macmillan UK.
241. Heffron, R. J. *et al.* (2022). [The ‘just transition’ threat to our](#)

- Energy and Climate 2030 targets. *Energy Policy*, Vol 165, 112949.
242. Driscoll, D. (2023). Populism and Carbon Tax Justice: The Yellow Vest Movement in France. *Soc. Probl.*, Vol 70, 143–163.
243. Willsher, K. (2018). 'Gilets jaunes' protesters threaten to bring France to a standstill. *The Guardian*.
244. France 24 (2018). 'Yellow Vests' open a new front in the battle: Popular referendums. *France 24*.
245. Bernábe-Loranca, M. B. *et al.* (2022). Yellow jacket (gilet jaune CHA): an analysis throughout Python dictionaries and media theory. *Int. J. Comb. Optim. Probl. Inform.*, Vol 13, 18–32.
246. France 24 (2018). Macron abandons fuel-tax hike amid fears of new 'Yellow Vest' protests. *France 24*.
247. Stone, K. (2008). Coal. *Natural Resources Canada*.
248. Government of Canada (2017). Coal phase-out: the Powering Past Coal Alliance.
249. Task Force on Just Transition for Canadian Coal Power Workers and Communities (2018). A Just and Fair Transition for Canadian Coal Power Workers and Communities. Environment and Climate Change Canada.
250. Government of Canada, D. of F. (2019). Budget 2019: Chapter 2.
251. Kyriazi, A. *et al.* (2023). Towards a socially fair green transition in the EU? An analysis of the Just Transition Fund using the Multiple Streams Framework. *Comp. Eur. Polit.*, Vol 21, 112–132.
252. WWF Coal and Just Transition. *World Wide Fund for Nature EU*.
253. WWF EU (2023). Territorial Just Transition Plan Scorecard Assessment. World Wide Fund for Nature.
254. European Commission Secretariat Technical Assistance to Regions in Transition (START). *European Commission*.
255. Bulkeley, H. (2023). Personal Communication. (University of Durham).
256. Nemo, C. (2023). Personal Communication. (Climate Change Committee).
257. Baracat, L. (2023). Personal Communication. (Forest Peoples Programme).
258. Baroness Brown of Cambridge (2023). Personal Communication. (House of Lords).
259. Delgado, B. (2023). Personal Communication. (UN Global Compact Network UK).

Contributors

POST is grateful to Henry Grub for researching this briefing, to NERC for funding his parliamentary fellowship, and to all contributors and reviewers. For further information on this subject, please contact the co-author, Dr Jonathan Wentworth.

Members of the POST Board*

Simon Anderson, International Institute for Environment and Development

Ed Atkins, University of Bristol

Lloyd Austin, Stop Climate Chaos Scotland

Ligia Baracat, Forest Peoples Programme*

Scott Barrett, Columbia University

John Barry, Queens University Belfast & Belfast Climate Commission

Ian Bateman, University of Exeter*

Lissa Batey, Wildlife Trusts

Sandra Bogelein, Climate Change Committee*

Hollie Booth, The Biodiversity Consultancy*

Harriet Bulkeley, University of Durham*

Mike Childs, Friends of the Earth UK

Benafsha Delgado, UN Global Compact Network UK

Joshua Deru, Climate Change Committee*

Karen Ellis, WWF UK

Mel Evans, Greenpeace

Steven Forrest, University of Hull

Phil Franks, International Institute for Environment and Development

Philip Gass, International Institute for Sustainable Development*

Linda Gessner, University of Surrey

Nigel Gilbert, University of Surrey

Arpana Giritharan, Green Alliance

James Gomme, World Business Council for Sustainable Development

Rosie Hails, National Trust*

Oliver Hauser, University of Exeter

Vicki Hird, Sustain

Keith Hyams, University of Warwick

Moustapha Kamal Gueye, International Labour Organization

Laura Kelly, International Institute for Environment and Development

Halliki Kreinin, University of Münster

Sangji Lee, UNDP

Samuel Leigh, Foreign, Commonwealth and Development Office

Lahra Liberti, OECD Development Centre

Sam Ludlow-Taylor, John Lewis Partnership

John Lynch, University of Oxford

Frances Maguire, Scottish Government

Adrian Martin, University of East Anglia

Alexis McGivern, Oxford Net Zero*

What is a just transition for environmental targets?

Chloe Nemo, Climate Change Committee*

Peter Newell, University of Sussex*

Sophie O'Connell, Green Alliance

Jacqueline O'Hagan, EastSide Partnership

David Obura, CORDIO East Africa & Earth Commission

Emily Polack, International Institute for Environment and Development

Zahra Rana, Department for Energy Security and Net Zero

Nick Robins, London School of Economics

Antonina Scheer, London School of Economics*

Patrick Schroder, Chatham House

Colin Seditas, Scottish Government

Jim Skea, Imperial College London*

Amanda Slevin, Queens University Belfast

Laiz Souto de Carvalho, University of Bristol

Benjamin Sovacool, University of Sussex*

Laura Spence, Royal Holloway*

Faustine Wheeler, Green Alliance

Simon Winch, John Lewis Partnership

Matthias Wong, University of Hull

Sophus zu Ermgassen, University of Oxford*

*denotes people who acted as external reviewers of the briefing

The Parliamentary Office of Science and Technology (POST) is an office of both Houses of Parliament. It produces impartial briefings designed to make research evidence accessible to the UK Parliament. Stakeholders contribute to and review POSTnotes. POST is grateful to these contributors.

Our work is published to support Parliament. Individuals should not rely upon it as legal or professional advice, or as a substitute for it. We do not accept any liability whatsoever for any errors, omissions or misstatements contained herein. You should consult a suitably qualified professional if you require specific advice or information. Every effort is made to ensure that the information contained in our briefings is correct at the time of publication. Readers should be aware that briefings are not necessarily updated to reflect subsequent changes. This information is provided subject to the conditions of the Open Parliament Licence.

If you have any comments on our briefings please email post@parliament.uk. Please note that we are not always able to engage in discussions with members of the public who express opinions about the content of our research, although we will carefully consider and correct any factual errors.

If you have general questions about the work of the House of Commons email hcenquiries@parliament.uk or the House of Lords email hlinfo@parliament.uk.

<https://doi.org/10.58248/PN706>

Image Credit: Photo by Ivan Bandura on Unsplash

POST's published material is available to everyone at post.parliament.uk. Get our latest research delivered straight to your inbox. Subscribe at post.parliament.uk/subscribe.



 post@parliament.uk

 parliament.uk/post

 [@POST_UK](https://twitter.com/POST_UK)