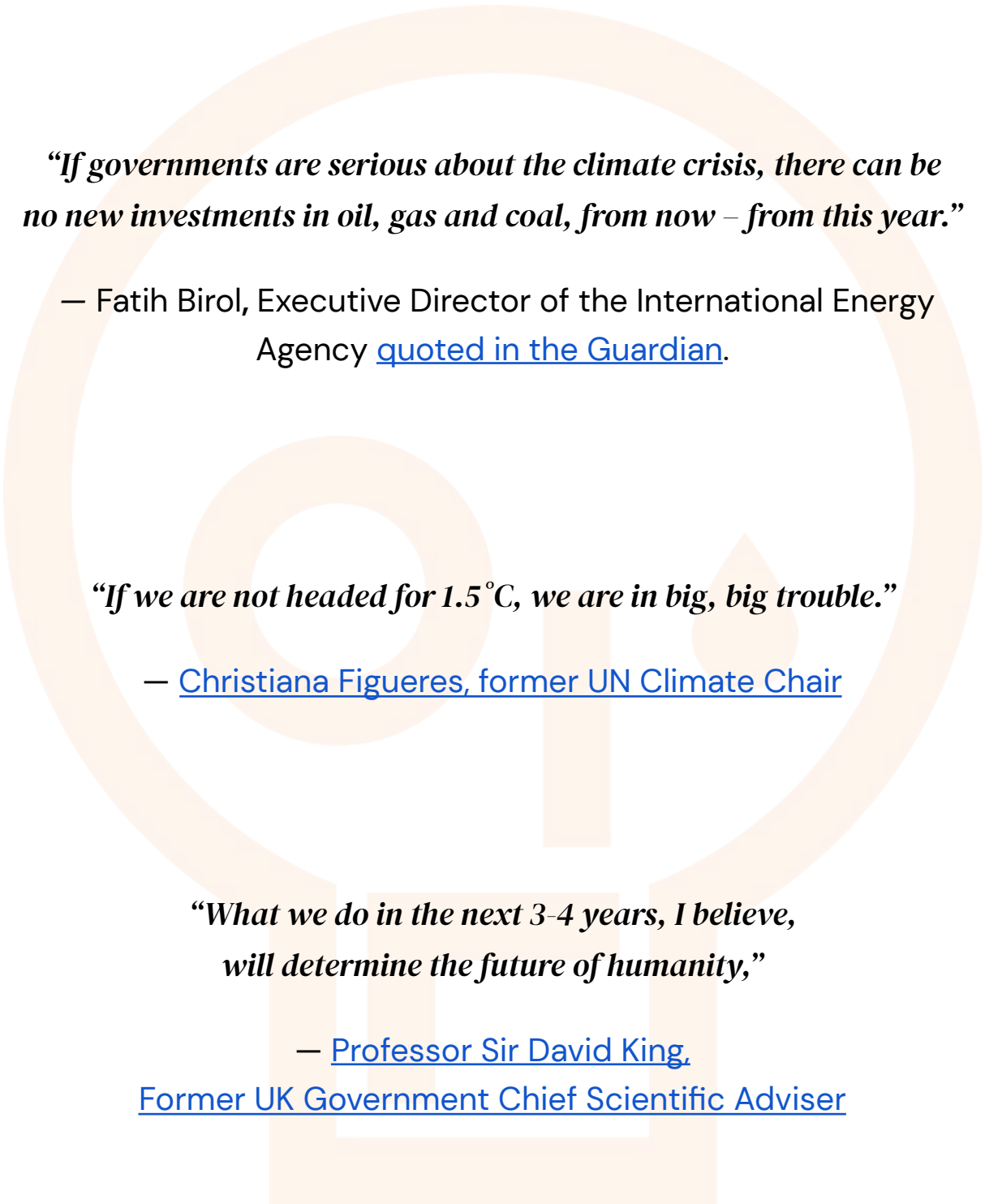


Just Stop Oil: The Why and the How





“If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year.”

— Fatih Birol, Executive Director of the International Energy Agency [quoted in the Guardian](#).

“If we are not headed for 1.5°C, we are in big, big trouble.”

— [Christiana Figueres, former UN Climate Chair](#)

“What we do in the next 3-4 years, I believe, will determine the future of humanity,”

— [Professor Sir David King](#),
[Former UK Government Chief Scientific Adviser](#)

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This document is subject to ongoing revision in consultation with stakeholders.
To comment on the report please contact us via juststopoil.org

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Introduction

Humanity is on the verge of an abyss, accelerated human induced climate change will destroy human civilisation unless emergency action is taken to rapidly reduce our Greenhouse Gas Emissions (GHG) to zero in a very short timescale. The reality is indisputable. We have to act now.

Burning fossil fuels produces [89% of all our carbon emissions](#) and [roughly 36% of all our methane emissions](#) and together with deforestation is the primary cause of human-induced climate change. [Climate change](#) is widespread, rapid, and accelerating. At only [1.2°C of warming](#) we are already seeing the dangerous impacts of the climate crisis unfolding around the world in the form of floods, [wildfires, extreme heat events, drought and famine](#).

The [IPCC's latest findings](#) indicate that 1.5°C warming from pre-industrial times will be reached or exceeded in the early 2030s regardless of the emissions path taken, while current climate model simulations suggest that temperature could be reached as early as 2026–2029. ([Tebaldi et al., 2021](#)). Scientists are warning that we have already passed several key climate tipping points and are dangerously close to reaching others. ([Lenton et al, Nature 2019](#)).

According to peer-reviewed science, the implications of going beyond 1.5°C include :

- Rising [threats to global food security](#), arising from multiple, simultaneous bread basket failure
- [Vast regions of the world will be too hot to live in](#), including the tropics, home to 40% of the world's population
- [Critical tipping points in the climate system will be crossed](#), potentially leading to a "hothouse earth".

The Government knows the implications going beyond 1.5°C. It knows that to have an even chance of meeting the Paris Agreement long term goal of keeping global temperature below 1.5°C there can be no new investment in fossil fuel supply projects. It knows this because the [International Energy Agency](#) ("IEA"), the expert energy adviser to industrialised governments, [has said so](#). But, only a few days after COP26, and while still President of the UN climate process, the government was found to be [actively encouraging investment](#) in new fossil fuel supply and has since given the green light to plans for a [new oil and gas](#) field, with reportedly [more still to come](#). These are actions that will commit us to the path to catastrophe.

To adopt such a course, in full knowledge of the consequences, is treason against this country and the ultimate crime against humanity and life on earth. We cannot be bystanders. It is our duty to intervene. Now.



Summary

Why does the UK need to end new licences and consents for fossil fuel exploration and production?

Further expansion of oil and gas production globally is putting us on course for human extinction

Fossil fuel combustion has driven CO₂ concentrations to their highest level for [4 million years](#). We need immediate, rapid and large-scale reductions in greenhouse gas emissions taking us to zero in a very short timescale. However, global policy inaction means we're heading for around [2.7°C of warming by 2100](#), before taking all the system feedbacks into account.

The [UN](#) and the [International Energy Agency \(IEA\)](#) have called for an immediate end to new fossil fuel exploration and production and an end to fossil fuel subsidies. However, the world's governments are yet to heed the warnings and are planning to produce [more than twice the amount of fossil fuels](#) in 2030 than would be consistent with limiting warming to 1.5°C by the end of the century (allowing for a temporary overshoot).

On our current path, we are risking [very severe impacts](#) within decades: 10 million deaths globally each year from heat stress by the 2030s and by the 2040s drought affecting 32% of global cropland, causing famine, migration, political instability and conflict – impacts which stretch across borders and affect the most vulnerable in societies. By 2070, a [third of the world's population](#) could be exposed to temperatures currently only found in the Sahara: 3.5 billion people may be forced to migrate and agricultural production may need to move to cooler climates.

Further expansion of oil and gas production is incompatible with UK climate change targets.

UK government policy remains [focused on attracting North Sea oil and gas investment](#) and maximising the economic value of UK reserves. These are policies that are [incompatible with UK climate change targets](#). Recent decisions to grant licences to a [new North Sea oil field](#) and a [coal mine](#) and the expected approval of [six new North Sea oil and gas fields](#) will fatally undermine the UK's climate commitments.

Government must align fossil fuel production with its climate targets. With no new licences for exploration, production or development of new fields, proven and probable [oil and gas reserves will last another 8 years](#). This should be the government's timescale to transition away from fossil fuels.

Energy security is best achieved by investing in renewables and reducing energy demand

Relying on fossil fuels has left the UK vulnerable to [global energy price hikes](#) as we rely on imports for a significant proportion of our energy demand. Investing in renewables and reducing energy demand are essential to improve our energy security and meet carbon reduction targets cost-effectively. It makes economic sense to reduce energy demand first to avoid the costs of building a larger than necessary [clean energy system](#), while renewables are now the [cheapest form of energy generation](#) in the UK.

UK fossil fuel subsidies are slowing down the transition to zero carbon

Supporting the extraction of North Sea oil and gas costs the UK public billions, money which could be better spent helping vulnerable families reduce their fuel bills through insulation. [Fossil fuel subsidies](#) amounted to about £12bn per year pre-covid, a large part of which (£8.4bn in 2019) are consumption subsidies such as the reduced rate of VAT on domestic fuel. By contrast, the removal of UK subsidies for renewables and energy efficiency measures in 2013 has slowed the [low carbon transition](#) and ensured that consumers are now paying more for their energy.

Fossil fuels are polluting our environment and causing millions of early deaths

[8.7 million people die each year](#) from breathing airborne fine particulate matter from fossil fuels – 1 in 5 of all deaths globally. This includes [99,000 people in the UK](#), 17% of all UK deaths. Children are particularly at risk as exposure to fossil fuel-related air pollution [can harm lung development](#), cause lifelong breathing disorders, asthma attacks, chest infections and earlier death. The UK government's existing plans to address pollution have been described as inadequate by [UK health leaders](#).

Climate inaction is violating the inalienable rights of the young and vulnerable people everywhere to a life and livelihood

Failure to reduce carbon emissions is placing a [massive burden on young people](#) to undertake investments to remove carbon from the atmosphere in future years or to suffer the consequences of a worsening climate. Courts are increasingly ruling that states are [violating their citizen's rights](#) by failing to reduce carbon emissions. Climate change is also an [act of injustice towards the poor](#). Climate [change and poverty](#) are inextricably linked, with [poor people and people of colour](#) likely to suffer disproportionately from climate impacts.

How can we end our use of fossil fuels in 8 years?

No-one left behind: Government must more actively plan for and manage the zero carbon [transition](#) in a way that is fair for workers, suppliers, communities and consumers. This needs to include provision of free, comprehensive, accessible and integrated support and training for all workers in the UK Oil and Gas sector and in highly carbon intensive businesses to transition to zero carbon jobs.

Upgrade democracy through citizen's assemblies: Government should establish and be guided by the decisions of [citizens' assemblies](#) which will upgrade our democracy by affording everyone an opportunity to meaningfully participate in the decisions that affect their lives. This is crucially important for younger generations who may not yet have a voice in our elective democracy but whose futures will be determined by the decisions we make today.

Energy demand reduction: The government needs to focus on [energy demand reduction](#) as the most cost effective way of meeting climate targets and reducing UK reliance on fossil fuels.

Power: The government should [double the target for renewables](#), incentivise the most [cost effective technologies](#) and [reform the market](#) to better cater for the transition to zero carbon.

Housing: The government must take responsibility for [insulating Britain](#), training up an army of retrofitters and [setting a zero carbon standard](#) for all housing construction including embodied carbon.

Transport: The government should focus on reducing travel demand and investing in comprehensive free public transport services. New travel infrastructure should be focussed entirely on low carbon modes such as [active travel](#) – shifting away from building new roads and allowing [airport](#) expansion.

Agriculture: Our food system is [hooked on fossil fuels](#). Government needs to actively encourage a shift to organic and [regenerative agriculture](#) practices, [local production](#) and increased uptake of [plant based diets](#).

1. Why does the UK need to end new licences and consents for fossil fuel exploration and production?

"This report must sound a death knell for coal and fossil fuels, before they destroy our planet... Countries should also end all new fossil fuel exploration and production, and shift fossil fuel subsidies into renewable energy. By 2030, solar and wind capacity should quadruple and renewable energy investments should triple to maintain a net zero trajectory by mid-century." UN Secretary-General António Guterres, 9th August 2021

Further expansion of oil and gas production globally is putting us on course for human extinction

Fossil fuel combustion has driven CO₂ concentrations to their highest level for 4 million years. For 150 years, fossil fuels like coal, oil and natural gas have generated most of the energy required to power our cars, homes and businesses and provided the main feedstock for plastics and agrichemicals. Burning fossil fuels produces [89% of all our carbon emissions](#) and [roughly 36% of all our methane emissions](#). Together with deforestation this has driven atmospheric CO₂ concentrations to levels last seen [4 million years](#) ago in the Pliocene epoch when temperatures were 3°C hotter than today and sea levels were 23 metres higher. It is rapidly heading towards levels last seen some [50 million years ago](#) – in the Eocene – when temperatures were up to 14 °C higher than they were in pre-industrial times.

Signs of accelerated global warming are evident on all continents. At only [1.2°C of warming](#) we are already seeing the disastrous impacts of the climate crisis unfolding around the world. In 2021, more extreme storms and rainfall led to [catastrophic flooding](#) and loss of life in Bangladesh, China, Germany and South Sudan amongst others. Previous temperature records were [routinely broken by several degrees](#). Catastrophic wildfire events destroyed communities in Canada, Siberia, Turkey & Greece and unprecedented droughts afflicted South America and East Africa. In 2020, weather related disasters forced 30 million people to flee their homes -- three times more than those displaced by war and violence. ([IDMC, 2021](#))

It's code red for humanity. [Climate change](#) is widespread, rapid, and accelerating. Oceans have warmed, glaciers are retreating, heatwaves, storms, floods and droughts are getting more frequent and more intense and global sea level is rising. Human activity is behind this – unequivocally. These changes are exceptional and unprecedented in human history and many, such as ice loss and sea level rise, are irreversible on human timescales. ([IPCC, 2021](#))

We have already passed key climate tipping points. Evidence is mounting that major climate tipping points – thresholds where a tiny change could push a system into a completely new state – could be more likely, and occur at lower levels of warming, than was previously thought. ([Lenton et al, Nature 2019](#)). The retreat of sea ice in the [Arctic](#) and parts of [West Antarctica](#) and the melting of the [Greenland](#) ice sheet are all thought to be past the point of no return, committing future generations to sea level rise for thousands of years to come. Other tipping points may be triggered as global temperatures rise including: CO₂ and methane release from deep permafrost in the northern hemisphere ([Turetsky et al, 2019](#)); deforestation and wildfires transforming the [Amazon rainforest](#) into arid savanna and losing the reflective power of arctic sea-ice which could mean passing the 2°C threshold 25 years earlier than IPCC predictions ([Pistone, 2019](#)).

We are now risking a global cascade of tipping points. Exceeding tipping points in one system can increase the risk of crossing them in others and scientists are warning that the world faces a "cascade" of abrupt shifts in the planet's climate system, as temperatures rise. This could ultimately lead the earth to a

new less habitable 'hothouse' climate system ([Steffen et al. 2018](#)). The interaction between tipping points is illustrated by the finding that the [Atlantic Ocean circulation system](#), which plays a key role in redistributing heat around the oceans, has seen a 15% slowdown. It is thought that arctic sea-ice loss is amplifying regional warming leading to increased Greenland melting, which is in turn driving an influx of fresh water into the North Atlantic. If this ocean system were to stall it would lead to more extreme weather in the UK and Europe and disrupt monsoon seasons and rains in India, South America and West Africa, affecting crop production and creating food shortages for billions of people.

Temperatures will rise beyond 1.5C whatever emissions path we take. The [IPCC's latest findings](#) indicate that 1.5°C warming from pre-industrial times will be reached or exceeded in the early 2030s regardless of the emissions path taken, while current climate model simulations suggest that temperature could be reached as early as 2026–2029. ([Tebaldi et al., 2021](#)).

Immediate, rapid and large-scale reductions in greenhouse gas emissions are needed. Scientists agree that we need immediate, rapid and large-scale reductions in greenhouse gas emissions taking us to zero as quickly as possible. However, the failure of countries to implement policies to reduce emissions means we're heading for around [2.7°C of warming by 2100](#), with a range of estimates between 2.0°C – 3.6°C, before taking all the climate feedback mechanisms and tipping points into account. The upper end of this range is widely thought to be [beyond the capability](#) of organised human society to adapt to.

We are risking everything. Recent research from [Chatham House](#) looked at the climate risks associated with the current (pre-COP26) emissions trajectory which put the world on course for a 2.7°C temperature increase by the end of the century. Their key findings were that we are on course to have 3.9 billion people globally exposed to major heat waves by the 2040s and 10 million deaths each year from heat stress in the 2030s. By 2040 as much as 32% of cropland globally could be exposed to drought and yields could decline by as much as 30%. These direct risks will set off a long chain of knock-on effects that are almost impossible to quantify but will stretch across borders and impact on the most vulnerable in societies. They can create the conditions for food insecurity and force people from their homes, drive higher death rates, disrupt international trade and financial markets, drive political instability and fuel regional and international conflict.

Without action, 3.5 billion people may be forced to migrate. [A recent study](#) demonstrates that for thousands of years, humans have survived in a narrow subset of Earth's available climates, characterised by mean annual temperatures around 13 °C. Without major action to mitigate climate change, a third of the world's population could be exposed to a mean average temperature greater than 29 °C. This climate is currently found in only 0.8% of the Earth's land surface, mostly concentrated in the Sahara, but in 2070 is projected to cover 19% of the global land area. 3.5 billion people may be forced to migrate and agricultural production redistributed to cooler climates.

All countries need to end new fossil fuel exploration and production immediately.

"If governments are serious about the climate crisis, there can be no new investments in oil, gas and coal, from now – from this year." Fatih Birol, Executive Director, International Energy Agency, [quoted in the Guardian](#).

The UN and the IEA have called for an end to new fossil fuel exploration and production. The [International Energy Agency \(IEA\)](#), states "from 2021 there should be no new investment in fossil fuel supply and no exploration for new resources is required. That means no new oil fields, no new natural gas, no new coal and no new LNG plants". [UN Secretary-General Antonio Guterres](#) has called on countries to "end all new fossil fuel exploration and production, and shift fossil fuel subsidies into renewable energy."

Global fossil fuel production plans are putting us on course for annihilation. At present, the world's governments are yet to heed the scientists' warnings and are planning to produce [more than twice the amount of fossil fuels](#) in 2030 than would be consistent with limiting warming to 1.5°C by the end of the century (allowing for a temporary overshoot).

Governments have substantial control over fossil fuel production. [More than half of the world's fossil fuel production](#) is directly owned by governments, including by state-owned companies. Even when governments do not directly own fossil fuels, their policies and permits still control, to a large degree, how much fossil fuel gets extracted.

Actions to limit or phase out production of fossil fuels are, so far, largely symbolic. [France, Ireland, Denmark, New Zealand, Belize, Costa Rica, Spain and Greenland](#) have all banned exploration for new fossil fuels and have either ended existing production or set an end date to do so. However, none of these countries are major fossil fuel producers. Spearheaded by Costa Rica and Denmark, the Beyond Oil and Gas Alliance (BOGA) was launched at COP26. Core members are committing to end new concessions, licensing or leasing rounds and to set a Paris-aligned date for ending oil and gas production. [Members of the group](#) questioned the fact that some governments (including the UK) were touting their commitment to net zero by 2050 while also quietly planning to extract oil and gas to sell to others.

Further expansion of UK oil and gas production is incompatible with climate change targets.

“World leading” targets need world leading policy action. The UK government has set legally binding climate change targets to reduce emissions by 78% by 2035 compared to 1990 levels. It must now align UK fossil fuel production with these targets. Despite a superficial commitment to reducing emissions from producing oil and gas, UK government policy remains [focused on attracting North Sea oil and gas investment](#) and maximising the economic value of UK reserves. These are policies that are [incompatible with UK climate change targets](#).

Maximum economic recovery of oil and gas is inconsistent with climate targets. UK law requires all oil and gas that can be extracted profitably to be recovered from the UK continental shelf, thanks to the principle of ‘maximising economic recovery’ (MER). The [Energy White Paper](#) – together with the [Oil and Gas Authority \(OGA\) Strategy](#) imposed a new obligation on the OGA and on industry to step up efforts to reduce emissions from existing and new production. However, this carbon reduction obligation only covers emissions from oil and gas production (which account for around 4% of UK greenhouse gas emissions) and not emissions from their eventual use. Companies cannot be encouraged to extract all of the remaining 10 to 20 billion barrels of oil equivalent (boe) that [OGA estimates](#) are still to be discovered and exploited on the UK Continental Shelf – this would produce [7.6 billion tonnes of carbon](#), 14 times the UK’s annual emissions.

Government still focused on attracting UK oil and gas investment. The government’s [North Sea Transition Deal](#) aims to “maximise the advantages for the UK’s oil and gas sector from the global shift to clean growth”. This strategy, which is further detailed in the [Net Zero Strategy](#) and the [UK hydrogen strategy](#), revolves around decarbonising fossil fuel production while supporting the development of carbon capture, utilisation and storage and fossil hydrogen production. It therefore outlines a continuing role for UK fossil fuel production up until 2050 and beyond. UK government policy thus remains [focused on attracting fossil fuel investment](#) and as a result the UK now has one of the [most generous tax regimes](#) for oil and gas producers in the world.

Climate compatibility checkpoint compromised from the start. In March 2021, the government announced the outcome of a review looking at the compatibility of continued oil and gas licensing with the UK’s climate objectives. The main outcome of the review was a plan to introduce a new [Climate Compatibility Checkpoint](#) before each licensing round to examine the compatibility of projects with the UK’s climate goals. However, it was recently reported that the [oil and gas companies](#) are being invited to help

design the rules for the checkpoint. The Climate Change Committee recently [announced](#) that it “would support a tighter limit on production, with stringent tests and a presumption against exploration.” However, it failed to come to a conclusion on whether new oil and gas production could ever be compatible with the UK’s climate objectives.

The pipeline of fossil fuel projects awaiting approval will blow our carbon target. In October, [Friends of the Earth](#) revealed that fossil fuel companies plan to launch at least 40 new coal, oil and gas extraction projects in the UK in the next few years. These projects would generate 1.3 billion tonnes of CO₂ equivalent over their lifetimes, which is nearly three times the annual greenhouse gas emissions for the entire UK. The government recently approved a new [oil and gas field, Abigail](#), after concluding it “would not significantly alter the environment”. In February, [it was reported](#) that the government wants to fast-track six new oil and gas fields for approval in 2022 – Rosebank, West of Shetland, and Jackdaw, Marigold, Brodick, Catcher and Tolmount East in the North Sea.

With no new licences, oil and gas reserves will last another 8 years – this should be the timescale for transition. According to [OGA estimates](#) the level of proven and probable reserves of North Sea oil and gas was 4.4 billion barrels of oil equivalent at end 2020. This includes the estimated reserves in existing fields together with those consented for development. The OGA estimates that based on its projections this level of reserves would keep UK oil and gas production going for another 8 years, if no new wells are licenced. This is the maximum timescale in which the Government should reduce our reliance on fossil fuels to zero. This means rapidly decarbonising the power sector, phasing out fossil fuels from surface transport, home heating and much of industry. The government should transition rapidly to insulate us from volatile global energy prices, not lock us into new fossil fuel infrastructure for decades to come. It all starts with the government calling an end to all future licences and consents for exploration and production.

Energy security is best achieved by investing in renewables and reducing energy demand

“The youth of today and future generations will look back in horror that our generation gambled with catastrophic changes in climate and biodiversity for the sake of cheap fossil fuel energy when cost effective and socially acceptable alternatives were available.” [Sir Robert Watson](#), Emeritus Professor of Environmental Sciences, University of East Anglia

Relying on fossil fuels has left the UK vulnerable to volatile global energy markets. In response to rising energy bills and the collapse of a range of smaller UK energy suppliers this winter, there are calls for the UK to expand [production of oil and gas](#). This ignores the evidence that higher UK gas price rises have been driven by the rise in [global wholesale prices](#) for gas and that in response, gas producers have exported [40% more gas than normal](#) in order to sell at higher prices internationally. The prices of globally traded commodities like oil and gas are set in the global marketplace and given the UK’s position as a small oil and gas producer, increasing UK production will have little impact on prices.

We are more dependent on imported oil and gas than many assume. Of the [crude oil that the UK produces 78% is exported](#) and plays no direct role in our national energy security. Instead, we import 73% of the specific crude blends used in our refineries as well as 60% of our gas supply and 50% of refined petroleum products (petrol, diesel etc). Sourcing oil and gas from a diverse range of international sources is viewed as a key component of maintaining [UK security of supply](#). However, this is not a viable route to achieving energy security during what must be a very rapid global transition to a future without fossil fuels. Our security must be based on reducing our energy demand as much as possible while investing in a range of zero carbon energy sources. We are not economically dependent on maintaining an oil and gas industry which contributes less than 1% to our annual GDP.

Lowering energy demand will reduce our reliance on oil and gas imports. The [Oil and Gas Authority \(OGA\)](#) is projecting a 49% decline in UK oil production and a 55% decline in gas production by 2030. This compares

with the government's projections underpinning the UK Net Zero strategy for oil and gas demand to fall by a more modest 28% and 42% respectively by 2030. This demonstrates that the government has no clear plan for reducing the demand for oil and gas in line with the declining North Sea production profile. It is therefore implicitly assuming an increase in our dependency on imported oil and gas in the coming years which will leave us more reliant on petro-states like Russia and Saudi Arabia. Lowering energy demand through, for example, home insulation, free public transport and industrial energy efficiency, will directly reduce the need for fossil fuels and the UK's reliance on fossil fuel imports.

UK fossil fuel subsidies are slowing down the transition to zero carbon

The UK is the worst among G20 nations for its level of support for fossil fuels. [The value of UK support to fossil fuels](#) amounted to about £12bn per year pre-covid, with £8.4bn being consumption subsidies, such as the reduced rate of VAT on domestic fuel and power, although the [IISD](#) rates it as among the worst of the OECD-member nations for level of consumer support and lack of transparency. Globally the fossil fuel industry benefits from subsidies of \$11m every minute. Setting fossil fuel prices that reflect their true cost would cut global CO₂ emissions by over a third, according to the [\(IMF, 2021\)](#)

The UK's incoherent policy has slowed the low carbon transition and added to energy bills. The removal of subsidies for onshore wind power in 2015 led to a collapse in the pipeline for new wind installations and prevented an [extra 5.4GW being built between 2017 and 2021](#). Other changes in 2015 included [gutting](#) energy efficiency subsidies which led to an [immediate collapse](#) in the number of homes getting their lofts or cavity walls insulated each year (from which they have not recovered) and [scrapping](#) the zero-carbon homes standard which means that around a million new homes have been built since then with lower energy-efficiency standards – and higher energy bills.

Other countries are reforming subsidies. While the UK government does not even admit to subsidising fossil fuels, [at least 53 countries](#) implemented some kind of fossil fuel consumer subsidy reform or increased taxes on fossil fuels between 2015 and 2020. The G7 and G20 countries have vowed to eliminate "inefficient fossil fuel subsidies", although they have not clearly defined what this phrase means.

Fossil fuel subsidies mainly benefit the rich. Governments are reluctant to reform subsidies to avoid raising energy prices for the poor, but holding down fossil fuel prices mainly benefits the rich who use most energy, encourages excess consumption and disadvantages renewables and lower carbon alternatives. According to the IMF, the richest 20% of households receive, on average, about six times as much in universal energy subsidies as the poorest 20% [\(IMF, 2015\)](#).

Swapping subsidies to clean energy could tip the balance towards renewables almost everywhere. Shifting just 10–30% of [global fossil fuel subsidies](#) towards renewables would pay for a global transition to clean energy. Almost everywhere, renewables are so close to being competitive that a 10–30% subsidy swap tips the balance, and turns them from a technology that is slowly growing to one that is instantly the most viable and can replace large amounts of fossil fired generation. Solar and wind are already the cheapest source of new bulk electricity generation in countries representing about two thirds of global electricity generation [\(Chase, 2022\)](#).

Fossil fuels are already polluting the environment and causing millions of early deaths

The production and use of fossil fuels has multiple impacts on the health of humans and ecosystems. The use of fossil fuels results in significant [climate, environmental, and health impacts](#) at every stage of their life cycle, from extraction and refining to combustion. In addition to being the primary cause of climate change, the use of fossil fuels causes air and water pollution harming human health and wildlife. In addition, most plastics are made from fossil fuels and globally [300 million tons](#) of plastic waste are produced each year, [14 million tons](#) of which end up in the ocean, killing wildlife and entering the food chain.

A globalised system of production adds significantly to the overall climate burden of fossil fuels.

Producing, transporting, and refining crude oil into fuels such as gasoline and diesel accounts for between 15 and 40% of the “well-to-wheels” [life-cycle greenhouse gas \(GHG\) emissions](#) of transport fuels.

Approximately [40% of all shipping cargo](#) globally consists of fossil fuels.

Combustion of fossil fuels contributes to millions of deaths and harms the development of children. [8.7 million people die each year](#)

from breathing airborne fine particulate matter from fossil fuels – 1 in 5 of all deaths globally. This includes [99,000 people in the UK](#), 17% of all UK deaths. Globally, [fossil fuel air pollution](#) kills more people each year than HIV, tuberculosis, and malaria combined. Air pollution is linked to increased risk of dementia and other significant health problems. Children are particularly at risk from air pollution with evidence that exposure [can harm lung development](#), cause lifelong breathing disorders, asthma attacks, chest infections and earlier death. The UK government’s existing plans to address pollution have been described as inadequate by UK health leaders ([UKHACC, 2021](#)).

Climate inaction is violating the inalienable rights of the young and vulnerable people everywhere to a life and livelihood

Failure to reduce carbon emissions is placing a massive burden on young people. High fossil fuel emissions today are placing a burden on young people to undertake massive investments to remove carbon from the atmosphere in future years or to suffer the consequences of a worsening climate (Hansen, et al, [2017](#)). Climate change is already preventing the realisation of a broad range of human rights, both directly and indirectly, for large numbers of people, [particularly children and youth](#).

Courts find that government failure to reduce carbon emissions is violating the most basic human rights: A number of recent [court decisions](#) have ordered the governments of wealthy nations to dramatically reduce their greenhouse gas emissions on human rights grounds. In December 2019, the Supreme Court of the Netherlands upheld a 2015 court decision ordering the Dutch government to dramatically reduce greenhouse gas emissions (25% below 1990 levels by 2020) citing Articles 2 and 8 of the European Convention on Human Rights, the right to life and the right to family life (Urgenda v the Netherlands). Other jurisdictions in which the courts have reinforced and in some cases extended the Dutch decision include [Germany](#), [France](#) and [Columbia](#).

Climate change is an act of injustice towards the poor. [The Global North is responsible](#) for 92% of all excess global carbon dioxide emissions, while those least responsible for the problem – especially in least developed countries – are the most affected by climate change and have the fewest resources to cope with its impacts. [Climate change and poverty](#) are inextricably linked.

The duty to respect human rights can extend to citizens of other countries. There continue to be significant hurdles for climate-vulnerable communities in developing countries to compel action by wealthy nations with a historical responsibility. However, in October 2021, the [UN Child Rights Committee](#) ruled that a state’s human rights duties can extend to children in other countries when the state’s emissions cause “significant harm” due to climate change.

Lack of decisive UK policy action is multiplying the risks of economic and social collapse

The risks of a “disorderly transition” are rising. The [fear is that late and rapid policy shifts](#) will leave businesses and societies with little time to adapt and could cause deep disruption. A disorderly collapse would mean job losses, stranded assets and potential for financial melt down.

Oil will destroy the economy. [Half the world’s fossil fuel assets](#) could be worthless by 2036 in net zero transition according to a recent study. This research suggests that in a worst case scenario fossil fuel assets currently valued at \$11tn could become worthless, causing a financial crisis around the world.

UK's current policies are unlikely to deliver the deep emissions cuts that are necessary. A recent risk assessment from [Maplecroft](#) suggests that the UK's current policies are unlikely to deliver the changes necessary to meet the more ambitious 78% emissions reduction target for 2035, much less deliver carbon neutrality by 2050. It concludes that unless the UK starts to move legislation quickly it will need to rush through regulations later on. This could see measures – such as restrictive emissions limits for highly carbon intensive businesses, mandates for buying clean energy, and high levies on carbon – imposed with little warning.

A fair transition for oil and gas sector workers and communities. The government announced the [North Sea Transition Deal](#) in March 2021. It focuses on supporting up to “40,000 jobs across the supply chain”. This seems to overlook many of the [178,500 jobs](#) that are estimated to be directly and indirectly dependent on the oil and gas sector and the millions of workers and communities across the UK that are heavily dependent on employment with carbon intensive businesses. A [survey of oil and gas workers](#) in 2020 found a high level of concern about employment and job security within the oil and gas sector. 81.7% said they would consider moving to a job outside of the oil and gas industry, but they have little confidence in government support for retraining, even though it would be relatively simple to reorient their specialist skills toward work on offshore wind farms.

A fair transition needs to look beyond the oil and gas sector. The [Centre for Progressive Policy \(CPP\)](#) finds that up to 9 million people in the UK are at risk of economic harm without a just transition and 37 areas of the country are extremely vulnerable high-risk places as a result of their dependence on carbon intensive employment.

We need to move rapidly and no-one should be left behind. We need a well planned and managed transition for [workers, suppliers, communities and consumers](#) to ensure that everyone is treated fairly and no one is left behind – but this should not be an excuse for slowing action. As the transition picks up speed, the location of job losses and employment gains will be critical and the need to avoid ‘stranded workers’ and ‘stranded communities’ as well as to make sure that new green jobs are also quality jobs.

Burn now, pay later approach will lead to catastrophe

“The more I work within the climate-energy-policy area, the more depressed I become. It's full of the wildest fantasies about promises of future technology. Constant appeasement to growth-based policies. Any new thinking throttled out of existence.” James Dyke, Senior Lecturer in Global Systems, University of Exeter

No carbon budget left for 1.5°C. There is most likely [no carbon budget](#) left for 1.5°C degrees and there is a [significant chance](#) the remaining carbon budget has already been exceeded. There is likely no carbon budget for 2.0°C degrees. Such “budgets” are: associated with low odds of success (only a 50 or 66% chance of staying below the target); rely on temperatures dangerously exceeding the 1.5°C target for several decades before dipping again (overshoot); or are based on the use of speculative unproven technologies such as carbon capture and storage. There have also been concerns raised about [the physical and technical limits](#) to delivering the solutions that governments envisage will deliver the projected emissions reductions.

Concerns that IPCC may have underestimated future climate impacts: IPCC reports have historically been criticised for being [too conservative](#) as they marginalise the more extreme outlier predictions and tend towards consensus. There have also been accusations of [political interference](#) from major fossil fuel producers. Within the scientific community, there are also concerns that the IPCC is too reliant on models that do not fully capture exponential risks to earth's climate system including tipping points and feedback loops which means that there is potential for a serious underestimation of future climate impacts. ([Spratt & Dunlop, 2021](#)), ([Knorr & Steffen, 2020](#)).

Future emissions scenarios depend too heavily on negative emissions technologies. The expectation is that the IPCC, in its forthcoming synthesis report, will toughen up its language on the use of negative emissions technologies (NETs) in future emissions scenarios. There have been concerns that the [scenarios used by climate modellers](#) rely excessively on deployment of unproven technologies such as Bioenergy with Carbon Capture and Storage (BECCS). There are concerns that [the basic premise of BECCS is flawed](#). Expanding biomass production could lead to a [net loss of carbon from the land](#) and there are physical constraints to growing sufficient biomass to meet the scenarios envisaged by policymakers.

Carbon Capture and Storage is not yet economically and technically viable at scale. There are additional concerns around the role of carbon capture and storage in the future energy system. Global operational CCS capacity is currently 39MtCO₂ per year, this is about 0.1% of annual global emissions from fossil fuels. There are just 26 operational CCS plants in the world, with 81% of carbon captured to date used to extract more oil via the process of Enhanced Oil Recovery (EOR), and at this stage CCS planned deployment remains dominated by EOR. Even if the technology is to become economically and technically viable at scale, optimistic forecasts do not anticipate significant CCS capacity until at least the 2030s. ([Freites & Jones, 2021](#))

The cost of inaction will far outweigh the cost of the transition

If damaging tipping cascades can occur and a global tipping point cannot be ruled out, then this is an existential threat to civilization. No amount of economic cost–benefit analysis is going to help us. We need to change our approach to the climate problem. ([Lenton et al, 2020](#))

‘If we go into a runaway climate effect, the damage may be between €100 trillion and the loss of civilisation’
Professor Hans Joachim Schellnhuber ([Roberts 2019](#))

Don’t disrupt the economy. The basic premise of much international and UK policy making is that action to address the climate crisis should not disrupt the economy, cost jobs or impact on future economic growth. As a result, much research has focused on emissions reduction scenarios where economic growth is unaffected and where solutions are considered politically feasible. ([Spratt & Armistead, 2020](#))

The cost of inaction may be beyond quantification. Economic analysis of climate change has systematically underestimated the impacts of future damage, and in particular failed to account for non-linear changes in the climate system. On our current trajectory towards 4°C of warming we face catastrophic risks: countries disappearing to sea level rise, global famine, conflict and billions dead. This level of damage is beyond quantification and any level of expenditure must be considered acceptable to avoid such an outcome. ([Spratt & Armistead, 2020](#)). There is growing agreement between economists and climate scientists that the unquantified risks of climate change are material and that the “risk of catastrophic and irreversible disaster is rising, implying potentially infinite costs of unmitigated climate change, including, in the extreme, human extinction” ([Krogstrup & Oman 2019](#)).

UK Net Zero Strategy is taking us to 3°C of warming.

‘Remove the reliance on other nations offsetting our emissions and today’s children deploying ‘negative emission technologies’ to suck our CO₂ out of the atmosphere, and the UK’s total carbon budget is more in line with 2.5–3°C of warming than 1.5–2°C.’ Prof Kevin Anderson, Professor of Energy and Climate Change, University of Manchester

The UK’s climate policy falls far short of both its Paris temperature and equity commitments. The [UK Net Zero Strategy](#) (NZS) sets out plans to reduce carbon emissions by 78% by 2035 and decarbonise the economy by 2050. The strategy describes big ambitions but makes small commitments. The total spending

commitments in the strategy add up to around 0.05% of GDP and the specific delivery commitments add up to only a small fraction of the government's pledge to COP26 ([UK Fires, 2021](#)). Criticisms of the strategy include that it: fails to recognise the need for urgent short term action to reduce carbon emissions before 2025; relies on unproven technologies that do not currently exist at scale, particularly in carbon capture, use and storage (CCUS) and neglects issues relating to agriculture, food, land use and energy storage. ([Somerville, 2021](#)).

Equitable burden sharing indicates the UK should aim for negative emissions by 2030. A review of fairness justifications provided in emissions pledges made under the Paris agreement framework against the principles of international law found that developed countries (such as Germany, France, UK, USA and Japan) with high historic responsibility for emissions and high GDP per capita should achieve net-negative emissions by 2030. They have already used their fair share of the global carbon budget. Among G20 nations the UK's emissions in 2010 were furthest from its fair share of emissions consistent with achieving a global temperature below 1.5°C by 2100 and peaking below 1.7°C. The fair share approach would require a more than 100% decline in UK emissions by 2030. ([Climate Policy, 2021](#))

Technology will not save us. The UK government's over-reliance on and obsession with technological solutions in its Net Zero Strategy is dangerous. While some of these technologies will be useful in the overall effort to decarbonise, they cannot be relied on, particularly given they are not all tested at scale. Moreover, it reinforces a belief in technological salvation and diminishes a sense of urgency in the need to act now ([Dyke et al. 2021](#)).

Negative Emissions Technologies The Government is increasingly relying on untested negative emissions technologies to arrive at net zero, with a specific focus around two proposed technologies that will both store captured CO₂ underground: Bio-Energy with Carbon Capture and Storage (BECCS), which combines biomass with carbon capture and storage; and Direct Air Carbon Capture and Sequestration (DACCS), which can use chemicals (known as sorbents) to capture CO₂ from the air. [The Net Zero Strategy more than doubles](#) the previous CCS target of 10m tonnes of CO₂ (MtCO₂) captured across the economy by 2030, rising to 50MtCO₂ by the mid-2030s.

Unrealistic assumptions. The evidence base for the technical and commercial viability of DACCS is limited and significant uncertainties exist in estimates of its technical and economic performance. BECCS potential in the UK has been assessed as between 3 and 60 MtCO₂/yr when only considering indigenous biomass, and between 100 and 160 MtCO₂/yr when considering imports ([Habiba Ahut Daggash, 2019](#)). However, there are grave concerns about the devastating impacts of [bioenergy crops on biodiversity](#), while assumptions about the scale of carbon dioxide removal possible through BECCS in IPCC scenarios have been found to be unrealistic due to the amount of land that would be required (25% to 80% of all the land currently under cultivation.) ([Fajardy et al, 2019](#)). All of these solutions remain untested at scale.

Hydrogen. Hydrogen can be made by splitting water with electricity from renewable sources (green hydrogen) or by splitting fossil fuels (LNGs) or biomass with heat or steam (blue hydrogen). The greenhouse gas footprint of blue hydrogen is more than 20% greater than burning natural gas or coal for heat and some 60% greater than burning diesel oil for heat ([Howarth and Jacobson, 2021](#)). While hydrogen may help to tackle 'hard-to-abate' sectors, such as steel and long-distance transport, it is expensive, needs updated infrastructure to make it work and has low efficiency, with more energy being lost at each step than many alternatives. ([Smit et al 2021](#)).

2. How can we end our use of fossil fuels in 8 years?

A transition based upon the most basic necessity of Justice

We need to move rapidly, but no-one should be left behind. We need a well planned and managed [fair transition](#) for workers, suppliers, communities and consumers so no one is left behind – but this should not be an excuse for slowing action. We need the government to develop, with the involvement of workers, a plan for the provision of free, comprehensive, accessible and integrated support and training for all workers in the UK Oil and Gas sector to transition to jobs in the clean energy and transport sectors. The transition plan needs to also consider the needs of workers and communities that are heavily dependent on carbon intensive businesses. As the transition picks up speed, the location of job losses and employment gains will be critical and the need to avoid ‘stranded workers’ and ‘stranded communities’ as well as to make sure that new green jobs are also quality jobs.

Upgrade democracy through citizen’s assemblies. The UK’s political system is failing to do what is needed to stop catastrophic climate change. Politicians focussed on today’s newspaper headlines or the electoral cycle are not prepared to make the radical changes necessary to avert the impending chaos. We need to upgrade our democracy by affording everyone an opportunity to directly participate, or otherwise be involved in the decisions that affect their lives. This is crucially important for younger generations who may not yet have a voice in our elective democracy but whose futures will be determined by the decisions we make or fail to make today. Citizen’s Assemblies have already been successfully convened in the UK and abroad ([Involve 2021](#)). Past assemblies tasked with mapping out possible solutions to the climate emergency have demonstrated that citizens are better placed than politicians to provide the ambitious leadership necessary on climate ([Carnegie Europe 2020](#)).



Energy demand reduction

Reducing energy demand is essential to meet existing targets cost-effectively. The limited government focus on energy demand to date has mostly been on improving technology efficiency with little attention to the other mechanisms that involve reducing the need for energy. Without a stronger role for [energy demand reduction](#), the UK electricity system will need to be four times the size that it is today by 2050 to accommodate electrification of transport and domestic heating. Energy demand reduction is a cost effective and proven approach that could help lessen the risks of failure to deploy sufficient clean technology. The UK could more than halve its energy demand by 2050, making a substantial contribution to global and UK climate goals. Energy demand reductions are possible across all sectors and particularly useful in “hard to mitigate” sectors such as steel production, aviation and agriculture. Reducing energy demand will help lower the overall cost of the transition and help to keep energy bills affordable for industry and consumers. ([Barrett et al, 2021](#)).

Power sector

Current plans are unlikely to deliver a fully decarbonised electricity grid by 2035. Government has committed in the sixth Carbon Budget to decarbonising the electricity system by 2035 (subject to being able to maintain security of supply). It has stated that the core of the system will be renewables and nuclear, but that these will need to be complemented by unproven technologies such as Carbon Capture Use and Storage (CCUS), hydrogen-fired generation and BECCS. It is clear that the assumptions underpinning the government’s power sector decarbonisation targets are fatally flawed. The government is failing to effectively plan for sufficient renewables and battery storage, relying on uncertain technologies such as CCUS that are not yet commercial at scale and on highly capital-intensive projects and risky technologies like nuclear that are unlikely to deliver in the timescale needed.

Renewables targets are inadequate. The Government is targeting an extra 40GW of offshore wind capacity by 2030. However, it will need to at least double this target and roll out new grid-connected batteries at an unprecedented speed and scale if it is to deliver net-zero emissions electricity by the middle of the next decade. At least 108GW of new offshore wind is needed, together with over 140GW of grid-connected batteries, more than 100 times greater than current installed battery capacity ([IC, 2021](#)). The UK currently has 16GW of battery storage capacity planned across 700 projects. ([Edie, 2021](#))

Even without support, renewables are now the cheapest form of energy generation. Despite an uneven playing field, renewable technologies are the cheapest form of energy generation and set to become even more cost-competitive. [BEIS analysis](#) shows that for projects commissioning in 2025, large-scale solar is 48% cheaper than gas generation and offshore wind is 32% cheaper.

Government failing to incentivise the most cost-effective technologies. Onshore wind and solar are among the cheapest renewable technologies but were excluded from the Contracts for Difference (CfD) process between 2015 and 2020 and are still constrained by frequency of auctions and the capacity limits in the process ([Regen, 2021](#)). Government has recently announced that it will hold [annual CfD auctions](#) starting in March 2023, but it remains the case that offshore wind is the only renewables subsector with its own sector deal. There are no current government targets for deployment of onshore wind generation or for solar capacity. However, the renewable sector industry body has suggested that onshore wind capacity could reach 30GW by the end of the decade and solar could reach 40GW if supported by more ambitious policy, for example if linked to new-build and deep retrofit programmes ([UK Fires, 2021](#)).

Reform the market. The design of electricity systems has failed to catch up with the revolution in renewable energy. Competitive electricity markets, established in many countries to try and minimise costs, are actually suffering the greatest price rises in the current energy crisis. This is because in wholesale electricity

markets, the most expensive generator sets the price and so consumers do not see the benefit of low cost renewables ([Grubb, 2022](#)). The wholesale market needs to be redesigned to better cater for the predominantly low carbon, low short run marginal cost system as we transition to zero carbon ([Cornwall Insight, 2022](#)).

Housing: we need to Insulate Britain

The UK has some of the least energy efficient housing stock in Europe. The UK has some 29 million homes and they are the oldest and have been labelled among the least energy efficient housing stock in Europe ([ACE, 2015](#)). Every year vast amounts of precious energy are wasted in heating and cooling our buildings. Nearly 15% of the UK's total emissions come from providing heating and hot water to homes. Moreover, it is estimated that due to the low rate of building new homes and a low rate of demolition, 80–85% of homes that will be occupied in 2050 already exist ([Fylan et al., 2016](#)).

We need a nationally funded whole house low energy retrofit programme. An overhaul of the energy performance of the UK's housing stock is needed to reduce the energy demand. This includes increasing the thermal insulation of properties, changing the heating systems to heat pumps, and switching to smart heating controls. In line with [Insulate Britain's demands](#), what is needed is a nationally funded whole house low energy retrofit programme that aims to insulate all social housing by 2025 and all remaining homes by 2030.

Government needs to set the framework for industry to invest in training and skills development. In line with what many in industry are calling for, the programme should include consideration of training and skills development. The retrofit industry consists mainly of SMEs and this sector will need to grow by at least a factor of 10 in the next 10 years to deliver the required levels of retrofits to reach the government's Net Zero targets ([Tooling up the Green Homes Industry, 2021](#)).

Insulating Britain is an essential first step. Retrofitting our homes is fundamental to achieve the Government's climate change, fuel poverty, and water reduction targets. The benefits include creating vast numbers of skilled jobs, long-term energy cost savings, optimising infrastructure investment, and social value through enhanced well-being ([Insulate Britain, 2021](#)).

Reuse and refurbish before building new. Government should also use planning reforms to prioritise reuse of existing buildings and assets, disincentivise demolition and new build and set a zero carbon standard for new build and major refurbishments, including a minimum standard for embodied carbon for all buildings by 2030 ([UKGBC, 2021](#)). Integrated housing and transport planning is needed to ensure new homes don't end up locking in car dependency ([Transport for new homes, 2022](#)). The government needs to ensure that newly built homes are [fit for future climate conditions](#).

Transport: we need free public transport and a ban on air travel

Government plans to decarbonise transport emissions lack credibility. 27% of the UK's greenhouse gas emissions come from surface transport, a sector which has increased its share in recent years ([House of Commons Library 2021](#)). According to the Department of Transport, under current government policies, the sector will still emit over 80 million tons of CO₂ equivalent in 2050 ([DoT 2020](#)). Independent experts have criticised the government's "fuzzy pathway" to net zero transport as not credible ([UKERC 2021](#)). In other words, there is a large gap between publicly touted 'net zero' targets and actual government action.

Even with rapid uptake of e-vehicles, significant reductions in vehicle miles are required to achieve targets. Cars are responsible for over half of total emissions from the UK transport sector ([House of](#)

[Commons Library 2021](#)). Two out of every three personal car trips cover a distance of five miles or less ([DoT 2018](#)). Even taking into account projected increases in e-vehicle numbers and fuel efficiency gains, official emissions targets are only achievable through a significant reduction in passenger miles, but no such reductions are envisaged in current government plans ([UKERC 2021](#)).

We need free public transport, safe active travel and restrictions on private car use. Achieving net zero will require a reduction of passenger vehicle use. The most obvious way to do this is to dramatically improve public transport services across the UK and make them free at the point of use ([IPPR 2021](#), [Massey-Chase 2021](#)). Provision of safe active travel infrastructure (protected bike lanes, low traffic neighbourhoods, school streets etc) is equally important ([House of Commons Library 2020](#)). In addition, some measures to reduce fossil fuel use by private cars will need to be considered including: speed limit reductions on motorways and in town centres, restrictions on private car use in cities (as has been implemented in [Milan](#)), car share lanes, parking restrictions and the imposition of a workplace parking levy.

Aviation is hard to decarbonise. UK domestic flights currently emit 1.7 million tonnes of CO₂ equivalent annually ([House of Commons Library 2021](#)). International flights emitted 37 million tonnes of CO₂ equivalent in 2018, or over 20 times as much as domestic flights. UK emissions from international aviation have more than doubled since 1990 ([DoT 2020](#)). Air transport's contribution to overall UK emissions is projected to "increase significantly" for the foreseeable future ([DoT 2020](#)) because there are no technologies in the pipeline that could significantly reduce emissions from flying ([House of Commons Library 2021](#)). Based on current policies and expected efficiency gains, the Department of Transport projects that there will be no reduction in absolute carbon emissions from UK aviation between now and the UK 'net zero' target year of 2050 ([DoT 2020](#)).

Halting airport expansions and banning avoidable air travel is needed. There is considerable UK public support for banning avoidable short-haul flights ([Bourke, 2021](#)) ([Garay 2022](#)). Other measures needed include cancelling all planned airport expansions ([AEF 2022](#)) and introducing a frequent flyer levy ([NEF 2021](#)), while substantially expanding the existing rail network ([CBT 2019](#)) and making travel by rail more affordable ([Chen 2021](#)). The absence of technical solutions to decarbonise air transport and the risks inherent in current IPCC scenarios suggests that banning all air travel may be required, at least in the short term ([Allwood, 2021](#)).

Agriculture

Our food system is hooked on fossil fuels. [Agriculture is responsible for 10%](#) (46.3Gt CO₂e) of UK GHG emissions of which 54% is the result of methane emissions (from livestock and manure) and 32% from nitrous oxide emissions (mainly from use of inorganic fertilisers). Large quantities of natural gas are currently used in [artificial fertiliser production](#). Globally, fertiliser application on crops has increased nine-fold worldwide since 1961 ([Carbon Brief, 2020](#)).

Government needs to actively encourage the shift to regenerative practices. If we move to [regenerative agriculture](#) practices which focus on soil health, such as using [nitrogen fixing cover crops](#), longer rotations, no-till methods, use of manure to improve soil and mob grazing, we can end UK farming's dependence on inorganic fertilisers while still feeding the population – and in fact feeding us better.

Actively encourage the uptake of plant based diets. Growing crops to feed animals, rather than growing vegetable and cereal foods directly to feed ourselves, is vastly inefficient. [Research](#) suggests that without meat and dairy consumption, global farmland use could be reduced by more than 75%. By moving to this [more efficient and healthier way](#) of farming and eating, we radically reduce the need for hydrocarbon-based fertiliser. Government should lead the way with plant based options as standard in school canteens, hospitals and public buildings and [apply behavioural science](#) to nudge the public to shift towards plant

based diets. A good start would be [implementing](#) the widely praised [National Food Strategy \(2020\)](#), commissioned by DEFRA, with its recommendation among many others that we eat 30% more vegetables and 30% less meat.

Encourage local to reduce emissions and improve food security. Research shows that imported food adds 20 MtCO₂e to the UK's food footprint: equivalent to around half the emissions from domestic production. Thus, action to reduce demand in UK food-related emissions would have an impact at a global scale (CREDS, [2022](#)). Importing food causes us to use oil in air and sea transportation. Government should proactively support local regenerative food production and [local food communities](#) to achieve radical reductions in the use of fossil fuels for fertilisers, transportation, chilling and storage. This approach actually improves our food security – we do not need to import more food in order to end fossil fuel usage, just to farm and eat smarter ([84% of farmers](#) want net zero measures to be part of new systems to reward farmers for environmentally friendly farming).

End food waste. [9.5 million tonnes of food](#) is wasted in the UK every year, food with a value of £19 billion and associated with 36 million tonnes of greenhouse gas emissions. If we avoid this waste, we save at a stroke all the oil and gas used to grow, transport, store and (where wasted after cooking) cook this food. Food waste on this scale is not inevitable and in the current context is a grave environmental harm – it should be [monitored](#), legislated against and sanctioned as such. There is strong [public support](#) for ending food waste. Government should prioritise ending waste through public messaging, [behavioural insights](#) measures and setting an example by ending food waste within the public sector (saving a potential [£150 million per year](#)).

