



RAPIDLY PHASING OUT ALL FOSSIL FUELS



Burning fossil fuels produces significant greenhouse gases (GHGs), driving climate change and causing increasingly devastating effects. Moreover, the fossil fuel industry retains a highly insidious grip over national and international climate policy, throwing its economic might behind deregulatory and [destructive policy agendas](#) and [obstructing progressive action on climate change](#) while making false claims of commitment to a green energy transition.

Fossil fuel use is the single greatest contributor to the UK’s domestic greenhouse gas emissions, predominantly in power supply, heating of buildings, industry and transport. Despite recent progress in renewables, fossil fuels still constitute [79%](#) of the UK’s primary energy use. The use of fossil fuels in the UK currently contributes around [360 million tonnes](#) of GHG annually out of the UK’s total domestic emissions of [450-500 million tonnes](#), with agriculture, deforestation, industrial processes, and emissions from waste making up much of the remainder. In recognition of the scale of the contribution made by fossil fuels to the UK’s domestic emissions, the Green New Deal **must urgently phase out all fossil fuels** in order to achieve full economy-wide decarbonisation.

The UK’s domestic fossil fuel emissions [derive predominantly](#) from natural gas (e.g. in generating power or heating buildings) and oil (e.g. via petrol in cars). Vast quantities of fossil fuels are burned across several different sectors of the economy, producing staggering quantities of emissions. The figure below highlights the emissions from each sector of the UK economy, both from burning fossil fuels other means of producing GHG, such as destruction of natural carbon sinks like forests or cement production.

[Figure 2 - UK domestic CO2 emissions in 2018, by sector](#). Source: CCC, 2019

Source	Millions of tonnes of GHG emissions	Share
Power Supply	73	15%
Heating Buildings	85	17%
Industry	105	21%
Transport	117	23%
Aviation and Shipping	52	10%
Agriculture, Land Use, Forestry	36	7%

Waste	20	4%
F-gas emissions	15	3%

OUR TRUE CARBON FOOTPRINT

In addition to producing emissions domestically, the UK contributes significantly to international emissions by importing goods and services from abroad whose production and transport emits GHGs through the use of fossil fuels. The term '**consumption emissions**' describes a country's total emissions contribution from imported as well as domestically produced goods and services, excluding exports.

Because the UK economy is now principally service rather than manufacturing and industry-based, and because certain strides have been made in reducing our domestic emissions (see below), the UK's total consumption emissions are now [over 50% greater than our domestic emissions](#), totaling roughly **780 million tonnes** in 2018. This disparity is significantly greater than in [most other large countries](#). Fossil fuel use overseas is a key contributor to our consumption emissions through its contribution to the production of the goods we import and consume. To have a meaningful impact, a **Green New Deal must address the UK's consumption emissions** - not just our domestic emissions. This must include a 'fair share' of our contribution to fossil fuel use in international production, shipping and aviation.

Although the UK has less direct influence over GHG emissions associated with imports, there are a multitude of **mechanisms a Green New Deal could employ** to reduce our consumption emissions, including: inclusion of consumption emissions within national targets, as [recently proposed by Jeremy Corbyn](#); public sector procurement change; border tax adjustments; [collaborative transformation of supply chains](#); reducing vehicle ownership, and the development of low-carbon industry and manufacturing within the UK.

The UK's current consumption emissions per person are over double the world average. When historic emissions are considered, this rises to over six times the world average - making the **UK one of the largest per-person contributors to climate change**. This historical contribution, in combination with the UK's wealth and capacity for transforming its energy systems, means the UK has both the responsibility and the ability to do more than other countries in tackling climate change.

LIMITED PROGRESS AND FAILED POLICY

Since 1990, the UK has [reduced domestic emissions by 38%](#). This largely derives from [reductions in energy use](#), as well as [decarbonisation](#) in the power generation and waste sectors. It is also a byproduct of continued deindustrialisation of the UK economy, which has [devastated communities](#) reliant upon manufacturing.

A closer inspection of the UK's emissions reductions reveals some **major gaps**:

- Transport, buildings and agriculture have made no material improvements in their emissions in the last three decades.
- Heating for buildings and water now has an emissions contribution comparable to that of the country's total electricity production.
- Emissions from the UK's share of international aviation have **more than doubled** since 1990.

Furthermore, in contrast to domestic emissions, **the UK's total consumption emissions have [barely decreased](#) over the past two decades** as we import more and more goods contributing massive GHG emissions both through their production and their international transport. Drastic action is required to change this.

The EU Emissions Trading Scheme is severely limited in its scope and has failed to set an adequate carbon price that reflects the real impacts of GHG emissions from fossil fuels. The UK carbon floor price shares many of the same flaws. If well designed, such systems can in theory efficiently price carbon, albeit [at increasingly high costs](#) (also see [Section 2.5.2.1](#)); however, they fail to address the vulnerability of communities developed around carbon-based industries and services. Thus, while a Green New Deal must end the short sighted and ineffective strategy employed by the Conservative government in continuing support for fossil fuels, particularly fracking, it must also ensure that the dismantling of our fossil fuel energy system is paired with **massive investment in jobs, public services and new renewable energy systems** to ensure a just transition.

The UK maintains the highest subsidies for fossil fuels of [any country in the EU](#). This primarily occurs through tax breaks to the sector, but also includes fiscal support and public financing for oil and gas exploration and production. A Green New Deal will **end subsidies for fossil fuel** exploration, production and power generation **both domestically and**

internationally, including the [billions provided by UK Export Finance](#) for fossil fuel projects in developing nations, locking their economies into a high carbon future. The tax breaks for fossil fuels designed to maintain their economic viability will become unnecessary as alternative means of significantly more affordable heating and transport are deployed at scale.

FULLY DECARBONISING POWER GENERATION

The UK's current electricity is predominantly generated from gas (methane), nuclear and renewable sources, a significant improvement on the coal-dominated energy mix in place [only five years ago](#). Nonetheless, power supply still contributes around 15% of domestic emissions; further, the UK's [electricity capacity must expand](#) to enable decarbonisation of heating, transport and industry through electrification. The Green New Deal must therefore both **expand and fully decarbonise the UK's energy system** through the elimination of fossil fuels.

Under the Conservative government, a number of regressive policies have led to a recent **drop in investment in renewables** and the expansion of long-life infrastructure for gas power generation. The policy changes include the following:

- [Renewable Obligations](#) (RO) for large-scale power generation were abolished. Despite some flaws, the RO scheme oversaw the growth of renewables' share of the energy mix from insignificance to nearly 25% of the national total.
- A 'Contracts for Difference Scheme' has been developed for large-scale power generation, [excluding the use of onshore wind](#) and other low carbon technologies. The Scheme lacks a viable strategy to encourage long term investment in renewables.
- The [abolition of Feed-in Tariffs](#) has led to a collapse in domestic and business solar PV investment. The proposed Smart Export Guarantee is insufficient to financially incentivise investment in solar PV and fails to provide equitable access to solar technology.
- The CCS commercialisation programme was abruptly [scrapped](#), with devastating [impact](#) on the development of scalable CCS for rapid decarbonisation of industry.

THE NEED TO ADDRESS ALL SECTORS

Despite countries like Sweden and France achieving low-carbon power sectors, principally by mass deployment of nuclear power, the countries' overall consumption emissions per person remain [similar to the UK](#). Indeed, there are currently **no examples of high-income countries with genuinely low carbon economies**. To correct this, the Green New Deal must extend its vision beyond the decarbonisation of the power sector into buildings, industry and transport.

As part of the Green New Deal, **UK industry must be made compatible with a carbon neutral and circular economy** principles. By precipitating a rapid transformation in collaboration with workers in the industries affected, the UK can benefit from first mover advantage in industries that will provide good, green jobs across the UK.

Significant challenges remain, however, particularly with respect to the transformation of the **cement, steel and chemicals** industries, all of which will be key to mass deployment of renewables, expansion of the electricity supply, and the development of a green transport system. Thus, alongside regulating for rapid improvements in energy efficiency, a Green New Deal will **invest in mass deployment of carbon-neutral heavy industry technology** to allow economies of scale, send signals to world industry and drive innovation.

AVOIDING NEW FOSSIL FUEL TECHNOLOGIES

Many existing government strategies, and indeed most [IPCC](#) emission scenarios, assume the continued use of fossil fuels with **Carbon Capture and Storage (CCS)** technology to reduce the associated carbon emissions. This in particular relates to using CCS with methane (natural gas) for centralised power generation and for producing hydrogen for industry, shipping and HGVs.

There are high levels of uncertainty over the rates of carbon capture that can be achieved ([CCC p51](#)), with life-cycle emissions perhaps only reduced by 60% ([CCC p59](#)) risking high residual emissions from the use of fossil fuels. Additionally, the technical and economic viability of

large-scale CCS is **not proven** and [lagging behind the large scale use of renewables](#). This increases risks of delays in decarbonisation, with drastic consequences. Furthermore, CCS technology does not fully mitigate the other **polluting impacts** of fossil fuels, including [air pollution](#) and release of toxic by-products into the aquatic and terrestrial environment.

Many strategies propose the use of **Negative Emission Technologies** (NETs) - sometimes called Carbon Dioxide Removal (CDR) - such as Direct Air Capture to remove carbon from the atmosphere, and thus attempt to justify the continued burning of fossil fuels. These technologies are [unproven, likely high cost](#) and would require [massive expansion](#) of the electricity network beyond that already required for green transport and heating.

Other NETs such as Bioenergy with CCS (BECCS) are similarly **unproven at scale and require huge areas of land** to produce feedstocks, with significant ecological impacts, [competition for land](#) with food production and natural habitats, and air pollution [when burned](#).

The continued use of fossil fuels reliant on new technology is high risk, high cost and carries with it high environmental impact. Furthermore, the use of carbon capture technologies fails to remedy the **grave political consequences** of allowing the fossil fuel industry to continue exerting political and economic might to obstruct progressive climate legislation. The Green New Deal must therefore prioritise rapidly phasing out of fossil fuels, countering its decline with a **massive program of investment in renewable energy**.