

Net zero: economy and jobs

The economy in 2050 is going to look very different irrespective of a net zero emissions target, with Artificial Intelligence, big data, digitisation and ever greater automation transforming the ways in which we create wealth and jobs. For example, if self-driving cars become the norm, the need for taxi drivers may disappear entirely. But a shift to net zero emissions will be a factor in some sectors of the economy growing faster, some shrinking and some transforming.

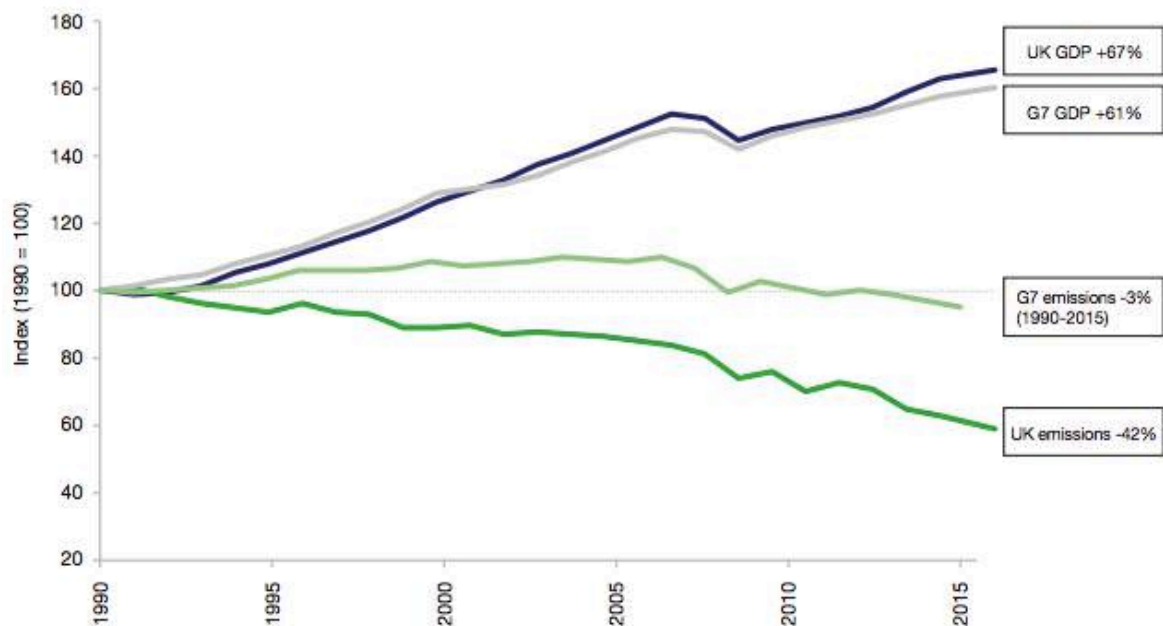
Economic growth and tackling climate change

Most of the world's leading economies, and the UK in particular, have grown strongly in the past 25 years while reducing their greenhouse gas emissions. Since 1990, the UK economy has grown by 67%, while emissions have fallen by 42%, [according to a government paper](#). Earlier [ECIU research](#) found similar results.

The UK has topped (with China in second place) PWC's [Low Carbon Economy Index](#) of countries, having reduced the carbon intensity of its economy by 7.7% in 2016. There are now [more than 390,000 jobs](#) in low-carbon businesses and their supply chains, employing people across the UK. The UK's low-carbon and renewable-energy economy [was worth £43bn in 2016](#).

The Government sees decarbonisation as an opportunity to boost overall economic growth and has launched its [Clean Growth Strategy](#) to support this. It sees the low-carbon economy [growing 11% a year](#) between 2015 and 2030, four

times faster than the rest of the economy, while boosting exports by between £60bn and £170bn.



UK and G7 economic growth and emissions reductions. Source: Clean Growth Strategy, Oct 2017

A net zero economy

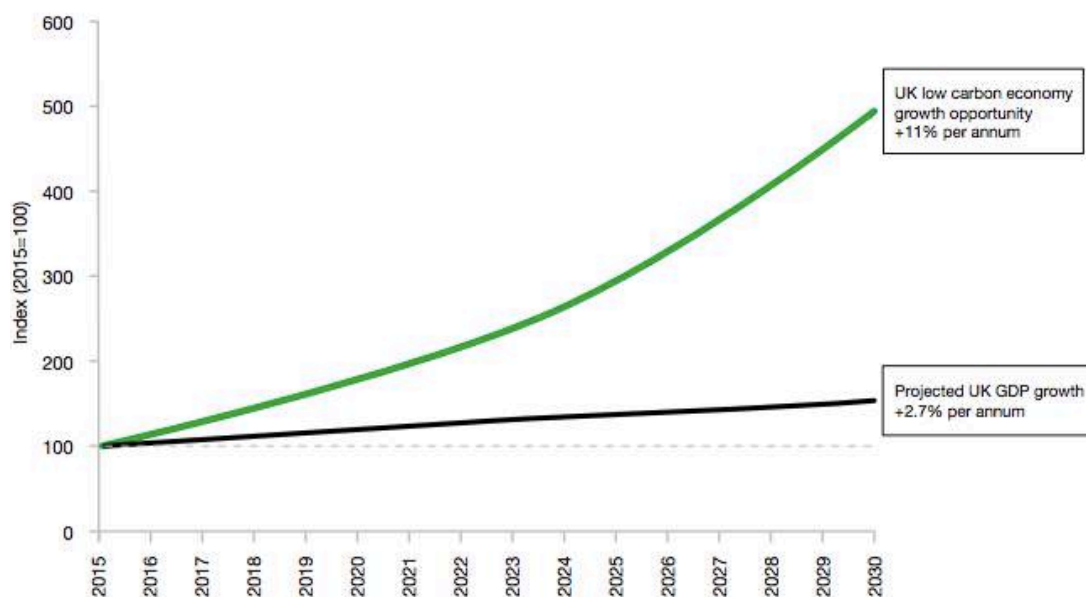
To reach net zero emissions will require significant investment in current and new clean technologies, and away from fossil fuels. Economies do not stand still and some sectors will benefit while others, like oil and gas extraction, will decline. These changes will have implications for jobs and training. By reaching net zero emissions the risks of climate change and associated negative impacts on the economy will be reduced. The UK is predicted to be the **fastest growing** G7 economy out to 2050. Analysis suggests the overall impact of policies to restrict global warming to 1.5 degrees, and ultimately move towards net zero emissions, will be positive for the UK economy and jobs.

“Protecting our environment for the next generation also benefits our wider economic prosperity. The UK has helped new green industries to develop which have brought jobs and growth, even as we have taken decisive action to protect the world around us.”

- Theresa May, British Prime Minister

At the global level researchers [have calculated](#) the likely benefits of keeping future temperature rise to 1.5°C to be in the range of tens of trillions of dollars, more than 30 times more than estimates of what it will cost to limit the rise to 1.5°C.

Global trade in low-carbon goods and services could grow from £150bn in 2015 to between £2.8-£5.1 trillion in 2050, by which time UK low-carbon goods exports could be worth [more than the UK's entire exports](#) in 2015. Low carbon industries could grow from around 2% of UK Total Output in 2015 to [8% of UK GDP by 2030](#) and [13% by 2050](#).



Potential growth of UK low carbon economy. Source: Clean Growth Strategy, Oct 2017

Low-carbon goods	2030 Exports (£bn)		2050 Exports (£bn)	
	Low	High	Low	High
Low emission vehicles, infrastructure, fuels cells and energy storage	29.9	68.4	102.6	264.3
Energy-efficient products	17.2	13.3	52.4	37.4
Low-carbon electricity	7.0	26.5	15.7	64.2
Energy from waste and biomass	3.8	20.7	11.7	58.0
Waste processing and materials recovery	0.0	18.8	0	52.7
Low carbon heat	1.0	6.0	3.1	16.8
Total	58.9	153.7	185.5	493.4
% of total UK exports in 2015	15%	40%	48%	127%

UK Export potential for different low-carbon goods. Source: Grantham Research Institute on Climate Change and the Environment, 2017

Shifting to net zero emissions could have other economic impacts. Air pollution causes tens of thousands of premature deaths in the UK, more than six million sick days and costs [the economy £22.6bn a year](#). A [paper](#) published in The Lancet found that even the current UK target, for an 80% cut in greenhouse gas emissions by 2050, would have a significant impact on ill health and death.

Sectors in transition

A number of sectors, such as power (see [briefing](#)) and buildings will undergo significant change under a net zero emissions target, continuing transitions that are already well underway.

The UK car industry could receive a significant boost from the move to electric vehicles. In the UK this [could lead to](#) 7,000 to 19,000 additional jobs, however, much will depend on whether the cars are made domestically or imported.

More broadly, net zero implies the move to a more circular economy, where materials are reused rather than wasted. Greater focus on recycling, repairing and renting, [could create](#) more than 200,000 jobs in the UK. [A number of UK companies](#), including Jaguar Land Rover and Interserve, are redesigning their products to make them more durable and easier to repair or dismantle for recycling.

Sectors in decline

Fossil fuel industries will decline and are already contracting due to the Government's decision to phase out coal power stations (coal now employs [fewer than 700 people](#)) and dwindling oil and gas reserves in the North Sea. Employment in the oil and gas sector fell by a [third between 2014 and 2017](#).

Growth sectors

About 80% of UK GDP comes from services and [there are many opportunities](#) in high-value services such as financing low-carbon projects, climate-risk assessments, legal and consulting expertise. The Government has said it wants the UK to develop [world leading 'green finance' capabilities](#).

The Government has also said it wants to be a global leader in carbon capture utilisation and storage (CCUS), where carbon dioxide emitted is captured and either used or stored, and [has announced a £21.5m investment](#) in CCUS innovation. Bio-energy CCS (BECCS) could reduce the cost of meeting the UK's current 2050 emissions reduction target [by up to 1% of GDP](#) and an [£8.6m UK research programme](#) is investigating the opportunity around these 'greenhouse gas removal technologies' (see [briefing on negative emissions](#)).

The Government also sees great potential in hydrogen as a zero carbon fuel and has launched a £20 million '[Hydrogen Supply programme](#)' to explore the

production of large quantities of the gas for use in heating buildings, in industry, and in transport.

Taxation

With the decline of some industries (e.g. fossil fuels) government could see a reduction in tax take (e.g. fuel duty) and so may need to alter fiscal policy. The UK already has a carbon floor price which is a levy paid by electricity generating companies on the emission of carbon dioxide, aimed at encouraging cleaner forms of power generation, but also generating revenue for the Treasury. The idea of an economy-wide carbon tax has been [put forward](#) by think tanks, politicians and academics as a way of discouraging emissions and generating revenue. [One study](#) suggests this kind of tax could generate tens of billions of pounds in additional revenue ([forecast at £690bn for 2017-18](#)) for the Government.

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