

Green Alliance response Review of net zero: call for evidence

October 2022

Summary

Tackling climate change and achieving economic growth go hand-in-hand. The UK has managed to [nearly halve](#) its territorial emissions compared to 1990 levels whilst at the same time increasing GDP by 75 per cent.

With careful design and cost-effective policies, net zero can deliver long-term, sustained economic growth. Transitioning to renewable energy, energy efficient housing, clean and public forms of transportation, a circular economy and nature-positive land use also offers other economic benefits. These include:

- creating high-quality green job across the country
- making the UK more competitive internationally, attracting private investment and new export opportunities
- strengthening the UK's energy and national security
- improving air quality and the natural environment, boosting worker productivity and wellbeing.

Whilst economic growth can be achieved through net zero, it is not possible to grow the economy without it. The [Office for Budget Responsibility](#) concluded in its 2021 Fiscal risks report that unmitigated climate change would have 'catastrophic economic and fiscal consequences for the UK'. Debt, for example, would soar to 290 per cent of GDP due to the cost of adaptation and economic shocks.

As an early mover on climate change, backed by broad and deep [public support](#) for action, the UK has a golden opportunity to capitalise on the 'first mover advantage' in the transition to the future, green economy.

Renewable energy generation

New renewable power is now [nine times](#) cheaper than gas. Onshore wind ([£42/MWh](#)), solar ([£45/MWh](#)), and offshore wind ([£37/MWh](#)) is not only cheap but can be deployed quickly.

Accelerating renewable deployment across the UK can quickly reduce the UK's dependence on gas for power, strengthening energy security, and bringing down bills

for businesses and households. This causes a shift in spending, away from imported fossil fuels and towards domestic goods and services.

Recommendation: Reform the planning framework for onshore wind to accelerate deployment. There is [5GW](#) of onshore wind currently awaiting planning approval, which could lower electricity bills. Footnote 54 of the National Planning Policy Framework, which puts a block on onshore wind, should be removed and replaced with a proportionate and sensible system which allows appropriately sited projects to be developed in England. To complement this, Ofgem should be given a net zero statutory duty to speed up the deployment of renewable energy, including solar and offshore wind.

Opportunity for growth: The Treasury's [Net Zero Review](#) found that the GDP multipliers of green investments in renewables can be between 2.2 to 2.5 times larger than fossil fuel energy investment. This is because renewables are productivity enhancing, delivering the same outcome at lower costs.

Job creation potential: Green Alliance [research](#) has found that low carbon power sources support at least three times more secure work per megawatt of capacity than gas, with solar and offshore wind supporting five times more. Fully decarbonising the power by 2035, with ambitious targets for offshore and onshore wind, will create skilled work across the UK.

Energy capacity market

The capacity market ensures security of electricity supply by providing a payment for flexible future sources of power generation capacity. Today's power system uses gas to provide flexibility with the result that, despite providing only 40 per cent of electricity, gas determines the price of electricity [84 per cent of the time](#).

As a result, businesses and industry are unable to tap into the benefits of cheaper electricity.

Recommendation: Create a market for clean flexible and firm power which incentivises innovation and cost reduction in clean flexible/firm power. This would allow many technologies – such as batteries, demand response, pumped storage hydropower, nuclear, BECCS, geothermal, and hydrogen turbines – to replace gas and provide cheap, zero carbon flexible and firm power.

Opportunity for growth: The volatility of international oil and gas markets makes it difficult for business and industry to make long-term plans, requiring them to scale-down operations or stop production altogether when energy prices make business uneconomical (as we saw with the UK's only fertiliser plant in August 2022). According to the Federation for Small Businesses, [53 per cent](#) of firms expect to

stagnate, shrink, or fold over the next year. Cheap and flexible renewable power will help businesses and industries to plan ahead.

Job creation potential: Cheap and flexible power has a key role to play in enabling the net zero transition, creating jobs across all economic sectors.

Energy efficiency

The UK is exposed to high energy prices due to its dependence on gas for heating and power, driving up gas and electricity bills to record highs, and leading to expensive government intervention such as the [Energy Price Guarantee](#).

The UK has some of the oldest and leakiest housing stock in Europe, with heat escaping through uninsulated windows, walls, and roofs. [Nineteen million households have EPC ratings of D or lower](#). Insulating homes can dramatically reduce gas demand in the short term, help to bring down energy bills permanently, boost productivity and wellbeing, and improve the UK's [resource resilience and efficiency](#).

Recommendation: Government should implement a minimum energy efficiency standard of EPC C by 2028 for private rented properties and a 2030 target for all tenures of housing, at the point of sale, would incentivise homeowners to upgrade their homes and give confidence to green mortgage lenders that there is demand.

Opportunity for growth: The CCC estimates that the bulk of the cost of retrofitting homes (£250 billion to 2050) will be delivered by the private sector. Home decarbonisation offers the UK's [£265 billion](#) mortgage market a huge opportunity for growth into green mortgages and other green financial products.

Job creation: To retrofit housing, 12,000 upskilled workers will be needed every year over the first four years, increasing to 30,000 per year up to ten years, culminating in an increase in the trained workforce of [230,000 by 2030](#).

Heat pumps

In the UK, [85 per cent](#) of homes use gas for heating. Electric heat pumps, meanwhile, are three to four times more efficient than gas boilers meaning they can achieve similar heating results with significantly less energy. This is crucial as the UK government is now effectively subsidising energy through the Energy Price Guarantee. Any savings on wholesale gas costs could directly benefit the exchequer and taxpayers.

Rolling out heat pumps will help reduce the UK's dependence on gas imports, bolstering the UK's energy security. In fact, analysis by [ECIU](#) has shown that accelerating heat pump and insulation deployment could completely eliminate the demand for imports of Russian gas as early as 2027.

Recommendation: Set an ambitious sales mandate for heat pumps. The government should set an obligation on manufacturers or energy suppliers to sell and install low carbon heating appliances, such as heat pumps. This target could help to shift costs onto equipment suppliers and encourage innovation and upfront cost reduction, driving mass-market uptake – including amongst low-to-middle income households.

Opportunity for growth: An efficient heat pump will now have similar running costs to a conventional gas boiler because gas prices have increased faster than electricity prices. Research by [Nesta](#) has shown that further policy interventions, such as reducing the upfront cost, could make heat pumps cheaper to run over its lifetime than a conventional gas boiler. This would help to reduce household bills and free up income to flow back into the economy.

Job creation potential: The [Heat Pump Association](#) estimates that, in total, 12,400 installers will be needed by 2025 to install 300,000 heat pumps per year and 50,200 will be needed by 2030 to install one million heat pumps in total. Growing UK manufacturing and the supply of heat pumps to 300,000 units a year by 2028 could also create over [10,000 jobs](#) in manufacturing.

Electric vehicles

Transport is responsible for nearly a third of the UK's carbon emissions, with cars responsible for 40 per cent of this. Transitioning the UK's car fleet to electric vehicles (EVs) is essential to reduce this impact. A rapid transition will also ensure more people benefit sooner from clean, cheaper to run cars and it will help to futureproof UK car makers for a rapidly changing global automotive industry.

The government's ban on the sale of all new fossil fuel powered cars and vans by 2035, and its commitment to drive up the sale of EVs through the Zero Emission Vehicle (ZEV) mandate, have already put the UK at the forefront of the transition.

Recommendations: Set an ambitious ZEV mandate. A ZEV mandate will be crucial to a successful EV transition, creating a viable second and third hand market, and the associated investment opportunities in auto manufacturing. For cars, the ZEV mandate should target a third of sales in 2024 rising to two thirds by 2027 and almost 100 per cent in 2030.

Opportunity for growth: Analysis by [Cambridge Econometrics](#) has found that ramping up EV domestic production and increasing uptake to nearly all new sales in 2030 could increase GDP by 0.6 per cent.

Job creation potential: Investment in UK electric vehicle manufacturing will help to futureproof jobs in the automotive sector, while investment in charging infrastructure and battery cell manufacturing will create jobs in the short and

medium term. Cambridge Econometrics has also found that increasing ambition on EV production and uptake could create an additional 63,000 jobs.

Land use

The UK's farming sector has seen no reduction in emissions over the past decade, and low productivity growth, off the back of a Common Agricultural Policy regime that pays farmers simply to occupy land, not to use the land to deliver the public goods of carbon removal and nature restoration. The EU's scheme pays around two thirds of its budget to 20 per cent of farmers, without supporting them to reduce their carbon emissions or restore nature.

The government's principle of 'public money for public goods' moves away from the outdated EU system of payments based on land area farmed and should be the cornerstone of our post-Brexit farming system. Better environmental land management boosts nature, biodiversity, food security, carbon sequestration, [farm incomes](#) and provides better value for taxpayer money

Recommendation: Make a three compartment model for land use the basis of environmental land management (ELM) subsidy. The three strands of ELM are the Sustainable Farming Incentive (already partially launched), Local Nature Recovery and Landscape Recovery. The latter two schemes, especially, could be very high value for money. For example, using Landscape Recovery to restore some of the lowest yielding 10 per cent of farmland (which produces just one per cent of the food grown in England) for nature could provide [half](#) the carbon reductions needed from the whole agriculture and land sector by 2035 at a cost of less than a third of the existing ELM budget.

Opportunity for growth: A three compartment model would raise the economic productivity of farms in 'less favoured area' (LFA) land: the average LFA farm receives around [£40,500 a year](#) in government payments and saw a financial return of £23,400 (£6.92 per hour), mainly due to large economic losses from food production.

Job creation potential: Between 2015-2020, English LFA farms lost an average of [£37,060 a year](#) on food production when unpaid family labour was taken into account. In contrast, a farmer on a 50 hectare holding could enjoy an income of £28,000 a year with payments of £775 per hectare for habitat creation, if incentivised by a (voluntary) landscape recovery scheme. This payment rate is similar to that paid

for habitat measures under the government's current countryside stewardship scheme.

Circular economy

A circular economy sees products and resources kept in use for as long as possible through reuse, recovery, remanufacturing, and recycling.

The UK's current approach is unsustainable. Too many products and materials are cast aside without a structure in place to reclaim them or prolong their use. Poor resource efficiency undermines energy security, as low carbon technologies (wind turbines, digital devices, battery storage systems, and electric vehicles) are all dependent on critical raw materials such as lithium, cobalt, gold, and rare earth metals.

Policy recommendations: Strong standards, as part of the public procurement processes, should be put in place for end of life treatment and use of recycled materials for low carbon technologies, like wind turbines. The UK government should also establish comprehensive circular economy policy frameworks for electric vehicle batteries and other important technologies, such as rare earth magnets, to spur investment in reprocessing.

Opportunity for growth: A [meta-analysis](#) of circular economy scenarios found that the implementation of ambitious circular economy scenarios could generate a 'win-win-win' scenario where GDP increases, CO2 emissions decrease, and jobs are created. [Economic growth](#) would largely be achieved through increased revenues from emerging circular activities and lower cost of production through more productive utilisation of inputs.

Job creation potential: Green Alliance analysis and shown that the government could help to create over [450,000 jobs](#) in the circular economy by 2035 in reuse, repair, and remanufacturing across the UK.

Finance

The UK is the world's top net exporter of financial services. The sector employs 2.3 million people across the UK, two thirds of which are located outside of London, and generates [8.3 per cent](#) of the UK's total economic output.

Given that the cost of the net zero transition will be largely delivered by the private sector, it is not surprising that [low-carbon finance](#) is expected to grow faster than all other low-carbon sub-sectors of the economy. As a leader in green finance, with London ranked as the [top](#) financial sector ahead of Amsterdam, Stockholm, and New York, the UK is well placed to capitalise on this significant export opportunity.

Recommendation: The Financial Services and Markets Bill (currently going through Parliament) plans to overhaul Solvency II, reducing risk margins for insurers and releasing billions of capital held in reserve. It is critical that these reforms have green requirements attached, so that released capital is channelled towards long-term green infrastructure projects. The government should also provide the Bank of England with a strategic steer on implementing a [green credit guidance policy](#), which offers cheap long-term finance (with zero or negative real interest rates) for green activities.

Opportunity for growth: Research by the [Social Market Foundation](#) estimates that low-carbon financial services could generate an export opportunity of up to £7.5 billion per year in 2030, rising to £17 billion per year by 2050.

Job creation potential: The UK financial services sector as a key role to play in enabling the net zero transition, creating jobs across all economic sectors.

Alternative proteins

Alternative proteins have recently [become cheaper](#) than some categories of processed meat and are demonstrably [lower carbon](#). Further innovation would likely further reduce the price of sustainable protein, reducing household food bills.

Recommendation: Government should invest £125 million into a commercial innovation “cluster” to develop, test and scale up alternative proteins, particularly those derived from precision fermentation – a technology that relies on similar skills to the UK’s leading life sciences sector. This cluster should use existing innovation infrastructure, such as the Centre for Process Innovation’s [novel food unit](#) in Teesside. The funding would provide open-access facilities and early stage business grants to allow start-ups to test and scale up new products, building on the model developed in the UK’s successful offshore wind catapult.

Opportunity for growth: The alternative protein sector is estimated to be worth [\\$27 billion](#) globally by 2027. As world leaders in mycoprotein fermentation, research and innovation investment will help keep the UK competitive and at the front of this emerging sector.

Job creation potential: If the UK produced the alternative protein it consumes, the industry would create an additional [10,000](#) good manufacturing jobs and support 6,500 farming jobs to produce inputs for the industry.

Hydrogen

Hydrogen fuel offers significant opportunities for decarbonising hard to abate parts of the UK economy as an alternative to batteries and synthetic or biofuels.

Hydrogen requires considerable energy and infrastructure to produce, and its availability is not unlimited, therefore its use should be focused on applications where direct electrification is not a viable option in the foreseeable future, such as for aviation and the production of virgin steel.

Recommendation: The government should give greater attention to where in the economy limited hydrogen resources can be best used. Priorities should be the aviation and shipping industries over any others, and explicit selection criteria for projects qualifying for support should be introduced so that they target application with few, if any, viable alternatives for decarbonisation.

Opportunity for growth: According to [Cornwall Insight](#), the UK renewable hydrogen investment opportunity could be worth £23 billion by 2030.

Job creation potential: Scaling up hydrogen in the UK could support [75,000 direct and indirect jobs by 2035](#). A significant proportion of jobs will be located in Humberside, South Wales, Teesside, Merseyside, Southampton, and Grangemouth.

For further information, please see:

- Green Alliance, 2022, Briefing: Protecting households over winter
- Green Alliance, 2022, Climate for growth: Productivity, net zero, and the cost of living
- Green Alliance, 2022, Circular business: what companies need to make the switch

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