

Net Zero Review: Call for Evidence

Response from Regen

October 2022

About Regen

Regen is an independent centre of energy expertise with a mission to accelerate the transition to a net zero energy system. We have 20 years' experience in transforming the energy system for net zero and delivering expert advice and market insight to government and industry on the systemic challenges of decarbonising power, heat, and transport.

Regen is also a membership organisation and manages the Electricity Storage Network (ESN) – the voice of the UK storage industry. We have over 150 members who share our mission, including clean energy developers, businesses, local authorities, community energy groups, academic institutions, and research organisations across the energy sector.

The target to achieve net zero carbon emissions is instrumental to securing the prosperity of UK people, businesses, and the economy. Leading climate economist, Lord Nicholas Stern, states that net zero investment “will be the economic growth story of the 21st century”¹. If we get this right, the economy will be larger, healthier, and more resilient as a result of the transition to net zero.

- **Clean energy will attract massive investment, supply chain and export opportunities.**
Clean energy is a UK growth story. The UK is attracting billions of pounds of investment in clean technologies such as electricity storage and developing skills and expertise that can be exported to other countries. This investment is driving long-term sustainable jobs for communities that need them most. For example, Regen has [highlighted](#) the social and economic opportunities to be reaped from the development of floating offshore wind in the Celtic Sea, as well as from being a first mover in the [clean maritime propulsion market](#). We have also [demonstrated](#) that by investing in the new green economy the UK could become a net exporter of energy by 2040.
- **Leading the way on net zero will give the UK a competitive advantage.**
International investors and businesses are now looking to invest in countries where they can achieve their own net zero goals. The UK will have a significant competitive advantage if we are able to offer low carbon energy and services. High tech and service industries are unlikely to locate in a country that still relies on imports of expensive and vulnerable fossil fuels.
- **Net zero energy will be lower cost.**
Renewable energy costs are now far lower than gas generation and will continue to fall even further. Whilst total electricity system costs in a net zero energy system may rise due to

¹ World Economic Forum, 2022 <https://www.weforum.org/agenda/2022/07/sustainable-resilient-inclusive-economic-growth/>

managing the variability of renewable output, the electricity system will also be delivering far more energy for heat and transport, so the system costs per unit of energy are likely to fall. Electricity is a far more efficient fuel than high carbon alternatives. An electric vehicle, for example, will achieve 3-4 miles per kWh compared to just over 1 mile per kWh for a petrol or diesel vehicle. This means that overall energy costs for power, heat and transport have the potential to be much lower in a net zero system.

By driving forward net zero, the UK has the opportunity to secure a competitive advantage, spur investment, and grow the economy – ensuring the UK’s long-term prosperity whilst also bringing down costs for billpayers and improving living standards. The cost-of-living crisis, driven primarily by the UK’s reliance on volatile and expensive fossil fuels, further makes the case for net zero as the only path out of the economic crisis that is driving mounting financial hardship for people across the country. In other words, there is no-trade off between delivering net zero and the UK’s economic goals; they are two sides of the same coin.

We welcome this Net Zero Review as an opportunity to ensure the economic benefits of the net zero transition are fully captured and understood by UK policymakers. These opportunities will only be unlocked with the right policy framework. Below, we highlight key areas where the government could deliver quickly to simultaneously accelerate net zero and economic growth.

13 recommendations to quickly drive growth and net zero

Accelerating renewable energy deployment

- 1. Build on the success of the Contracts for Difference (CfD) scheme by at least doubling the capacity of renewable generation supported in each auction and extending its use to ensure the low cost of renewables is felt as reductions on bills for businesses and consumers.**

New renewable energy projects are now the cheapest form of power generation. Because of this, generators under the government’s CfD scheme are regularly paying money back as a contribution to the UK government, reducing costs for billpayers. Regen’s analysis of the most recent auction round showed that if the winning wind and solar projects had been built at the start of the energy crisis, they would have saved consumers more than £3.2 billion in 2021/22².

- 2. Ensure the Review of Electricity Market Arrangements (REMA) remains laser-focused on bringing forward investment in renewables and is aligned with the development of an overarching Net Zero and Energy Security Delivery Plan.**

Recent analysis from the Climate Change Committee highlights that low carbon investment must reach £50 billion per year by 2030. There is a huge pipeline of renewable and low carbon energy projects ready to be built and attract billions in investment and growth for the UK economy. The challenge right now is to ensure we have the right market, infrastructure, and policies to bring forward this investment.

² Regen, 2022 <https://www.regen.co.uk/contracts-for-difference-allocation-round-4/>

3. Enable generators to provide lower cost power to consumers in exchange for long-term revenue certainty by speeding up the use of voluntary CfDs and exploring a route to allow demand customers to negotiate long-term Power Purchase Agreements (PPAs).

Our discussions with renewable energy developers suggest that many generators would be willing to pass significant value to the consumer to reduce investment risk. This could form the basis of a ‘new deal’ between the renewable industry and the consumer, based on generators providing lower cost power to demand customers in exchange for long-term revenue certainty. Options to be unlocked include extending the use of CfDs and using REMA to explore a route that allows demand customers to take out long-term PPAs. More detail can be found in our [response](#) to the REMA consultation (pg47).

4. Ensure the new ‘Future System Operator’ has a clear remit to develop markets that incentivise the flexibility needed for a robust net zero system, including energy storage.

To support the operation of a net zero system with high levels of renewables, the UK has the opportunity to grow its thriving energy storage industry, which is already attracting significant investor interest. Regen’s recent [analysis](#) showed that, despite recent economic turbulence, investment in storage, along with other low carbon technologies, has continued to grow. Developing a smarter electricity system that draws on zero carbon flexible technologies such as storage could reduce electricity system costs³.

Investment in network infrastructure to unlock growth

5. Rapidly increase investment in our electricity networks to ensure the UK fully unlocks their critical role in supporting economic growth, energy security and net zero.

Electricity networks are a critical component of our national infrastructure, central not just to the energy system but to the economy and society. As well as facilitating the delivery of net zero energy, they deliver jobs, investment and supply chain opportunities and they support regional goals in areas like fuel poverty, mobility, health and resilience. Network investment done well ripples through our economy, ‘levelling up’ the energy system and the whole of society. Regen’s analysis suggests that investment in our energy networks to achieve net zero could reach between £75-100 billion by 2037. The government’s Electricity Networks Strategic Framework recognises this investment opportunity: “reinforcing Great Britain’s onshore electricity network to meet net zero could directly support an additional 50,000 – 130,000 FTE jobs by 2050, contributing an estimated £4-11bn of GVA for the UK economy”⁴.

6. Develop a clear, centralised strategic network plan through the Holistic Network Design process initiated by the system operator.

The Holistic Network Design process has been introduced to rectify the missed opportunity for synergy and a better overall infrastructure design for the delivery of large-scale energy projects. This

³ UK Government, 2021 <https://www.gov.uk/government/publications/transitioning-to-a-net-zero-energy-system-smart-systems-and-flexibility-plan-2021>

⁴ UK Government, 2022 https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1096283/electricity-networks-strategic-framework.pdf

is an important first step towards the sort of coordinated forward planning that our energy infrastructure needs.

7. Speed up the process to bring forward legislation for the development of an independent Future System Operator (FSO).

The energy system currently lacks a high-level body overseeing and planning the energy system, taking leadership on decarbonisation and looking out of silos and across all energy vectors and ensuring network infrastructure is in place to enable a net zero system. Regen set out detailed views on what roles and responsibilities the FSO should have in our [consultation response](#).

8. Use the forthcoming 'Strategy and Policy Statement' for Ofgem to put ensuring our energy networks are net zero ready at the heart of the regulator's remit.

Our decarbonisation ambitions are running ahead of the ability of the networks and Ofgem to make and deliver investment. This is accentuated by underlying issues and systemic challenges, in particular the issue of strategic, anticipatory investment which is prevented by the regulatory framework, RIIO incentives and the allocation of risk and reward for future network investment. These issues must be addressed with a clear net zero remit for the energy regulator.

Unlocking investment in heat decarbonisation

9. Increase funding for energy efficiency, starting by delivering the remaining money committed in the Conservative manifesto and the additional £1.4 billion pledged to the Home Upgrade Grant by 2025.

The UK's reliance on natural gas for heating paired with our leaky and inefficient housing stock makes for a huge wasted economic opportunity – the UK spends more money on wasted energy than any other country in Western Europe. Investing in energy efficiency and clean heat is the route to cut bills for consumers and businesses and free public spending on energy bill support to be spent elsewhere in the economy. Better insulating our homes will also boost productivity and reduce pressures on the National Health Service by improving the health of our communities, and it is the most cost-effective way to quickly strengthen energy security by reducing reliance on expensive gas imports. A recent study found that the adoption of low carbon heating and energy efficiency could also increase GDP by £6.8 billion and create over 130,000 jobs by 2030⁵.

10. Give local authorities a remit to plan decarbonisation of heat in their area, de-risking investment and kickstarting local supply chains.

Bristol City Council has recently secured £424 million of private investment in low carbon energy infrastructure such as heat networks and heat pumps. The government's plans for Heat Network Zoning demonstrate how this could be built on efficiently with a national and local partnership approach that derisks and brings forward private investment. Regen's '[The Local Delivery of Clean Heat](#)' paper sets out six practical recommendations for how national government can work with local authorities to take the most cost-efficient, place-based approach to heat decarbonisation that develops local supply chains.

⁵ Cambridge Econometrics, 2022 <https://www.camecon.com/what/our-work/greenpeace-the-economic-impact-of-decarbonising-household-heating-in-the-uk-in-an-era-of-high-fossil-fuel-prices/>

11. Deliver the measures in the Heat and Buildings Strategy, including the market-based mechanism for low carbon heat and the ban on fossil fuel boilers in off-gas grid properties.

A key barrier that our heating industry members consistently identify to scaling up and investing in the clean heat supply chain is uncertainty on the government's commitment and direction on heat decarbonisation. The proposals in the Heat and Building Strategy, if implemented, will provide the vital mechanisms to give industry confidence and unlock private sector investment.

Opportunities in innovative technologies

12. Target investment to support the deployment of floating offshore wind (FLOW) to manufacturing and port development opportunities in the Celtic Sea and Scotland.

The UK is the current leader in the deployment of FLOW and, as articulated by The Crown Estate, this burgeoning industry represents “the next frontier in the UK’s green growth story”⁶. As well as creating and safeguarding thousands of jobs⁷, expanding the FLOW industry could provide tangible regional benefits that support ‘levelling up’ and provide export opportunities for the UK⁸ via current and future interconnectors. Regen has outlined key areas where investment into FLOW should be targeted, namely manufacturing and port development opportunities within the Celtic Sea to de-risk development and allow the supply chain to scale up to develop the GW-scale projects expected.

13. Use the Net Zero Hydrogen Fund to target innovations in energy storage solutions and the decarbonisation of heavy industries.

Hydrogen has the potential to play a key role in the UK’s future energy mix, as an important balancing and storage fuel and to decarbonise heavy industries such as aviation, transport, and utilities. With the UK Hydrogen Strategy doubling its ambition to up to 10 GW by 2030⁹, there is an opportunity for the UK to attract investment and reap the economic benefits of developing its low carbon hydrogen sector. The £240 million Net Zero Hydrogen Fund is one vital scheme to bring forward projects and should be built on, but it must be focused on encouraging the production of truly low carbon hydrogen.

⁶ The Crown Estate <https://www.thecrownestate.co.uk/en-gb/what-we-do/on-the-seabed/floating-offshore-wind/>

⁷ Regen, 2022 <https://www.regen.co.uk/wp-content/uploads/HotSW-FLOW-study-published.pdf>

⁸ Regen, 2022 <https://regensw.wpenginepowered.com/wp-content/uploads/Regen-Go-West-Oct-2022.pdf>

⁹ UK Government, 2022

https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1067408/hydrogen-investor-roadmap.pdf

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