

MITIGATING AND ADAPTING TO CLIMATE CHANGE

A JUST TRANSITION TO NET ZERO IN THE WATER SECTOR REQUIRES THE WATER SECTOR TO BE TREATED EQUALLY WITH THE WIDER ECONOMY WHILE FUNDING THE SECTOR'S ADAPTATION TO CLIMATE CHANGE.

WHERE WE ARE

As a sector, we are not on a trajectory to deliver our contribution to the government's 2050 Net Zero target. This needs to change.

But the water sector is also being treated differently to the wider economy in relation to greenhouse gas emissions. This raises the question whether our customers are being asked to deliver their fair share of a just transition. This raises the question whether our customers are being asked to deliver more than their fair share of a just transition.

The sector has made significant public commitments relating to Net Zeroⁱ, and Ofwat has implemented financial incentives that aim to support companies with these commitments. Additionally, Ofwat has committed over £35 million to Net Zero projects through its innovation fundⁱⁱ and around £500 million for enhancement totexⁱⁱⁱ for specific projects in a few companies.

Some companies have made changes to reduce emissions; for example, Northumbrian Water is the first and only water company to use all of its sewage sludge to produce biogas.^{iv} However, our analysis shows that under Ofwat's preferred methodology, since 2018 the sector's emissions have not reduced significantly – most improvements have been driven by the UK-wide decarbonisation of grid electricity.^v

Despite Ofwat's financial incentive, the AMP8 performance commitments do not require the sector to make improvements. With only 4 Water and Sewerage

Companies (WASCs) - including Northumbrian Water - committed to delivering greenhouse gas reductions.

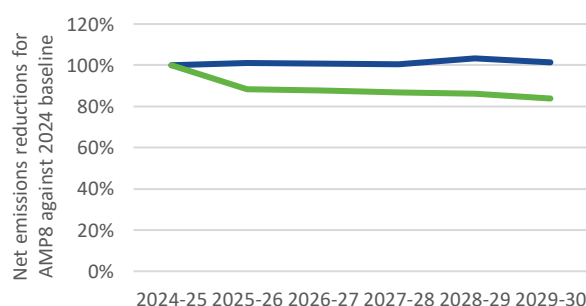


Figure 1: Planned Net emissions reductions for AMP8 against 2024 baseline. Blue = sector, Green = Northumbrian Water. Source: NWG analysis.

This position aligns with the national picture – progress to date has been driven by phasing out coal-generated electricity. The Committee on Climate Change (CCC) estimate that only a third of the emissions reductions required to achieve the UK's 2030 target are covered by credible plans.^{vi}

To deliver a just transition, action is needed across all sectors of the economy.

We believe that it is the interest of customers, the environment and the UK for the regulation of Net Zero to be considered and implemented at an economy level rather than bespoke sector/company specific targets.

The current approach of Net Zero regulation being scattered across the economy, with Ofwat adding a layer of financial incentives and project-specific payments on top means the financial reward for any emission reduction varies significantly by activity. This does not

deliver the best value for money – in a just transition, we should abate the lowest cost emissions first, rather than create a multi-tier carbon economy.

For example, there is currently no financial incentive for companies to reduce process emissions from wastewater treatment, whereas companies are triple-incentivised to reduce electricity consumption, with the UKETS, renewable subsidies and Ofwat's operational emissions ODI all compounding to produce a strong incentive to reduce electricity demand.

Further, this technology-specific incentive regime gives rise to project centric thinking, with vast resource being dedicated to technologies that may deliver little material benefit or a high cost of abatement. Further still, this technology focus gives rise to regulation that focuses on the technology rather than the desired outcome.

Given the scale of the challenge, we must develop a strategic approach to Net Zero which covers the whole economy. We believe that the water sector is well placed to support this transition.

WHERE WE WANT TO BE

We need a long-term plan to get to Net Zero for the sector. This needs to be developed as one part of a wider planning exercise for the whole economy. As the CCC has said, we do not currently have an industry wide plan – the only sector that comes close is energy.

Northumbrian Water is fully committed to Net Zero and delivering a just transition for the communities we serve.

We believe that a rationalisation of Net Zero regulation, allied with economy-wide carbon pricing and activity-specific carbon accounting processes are the most efficient way of the Country meeting its Net Zero commitments.

The benefits of economy-wide carbon pricing are numerous.

- Universal pricing ensures that the least-cost options are adopted first – ensuring best value and supporting a just transition.
- It ensures a technology agnostic approach.
- It is the simplest form of polluter-pays legislation.
- It removes the need for complex and bespoke emissions modelling and optimisation as the emissions impact is included in project/activity costs.
- It allows the costs of Net Zero to be properly weighed against other factors.

This final point is crucial, as we believe that it will help better inform other regulatory regimes. For example, under the current regime our emissions to the aquatic environment are outcome-focused with robust economic incentives (fines for failure) which have been developed without any serious consideration of their impact on the atmospheric environment – we are incentivised to build new grey-assets with new chemical and energy demands which will delay our transition to Net Zero. Had these two environmental drivers been considered in a holistic and complimentary framework, then UK Government may have required us to take a different course of action.

Further, understanding the Government's long-term valuation of carbon also helps identify and invest in synergetic opportunities. For example, dynamic monitoring of asset health allied with data driven maintenance will likely deliver carbon benefits by reducing energy use and premature asset replacement. Similarly, surety of carbon pricing would help us drive/invest in removing carbon and increasing the resilience of our chemical supply chain.

Finally, the sector includes some emissions sources that have a high-abatement cost and so should not be the first target for emissions reductions, as recognised by the CCC.^{vii} Understanding and accounting for the Governments Carbon Price would allow us to focus our Net Zero research and development on areas that are likely to be funded and on a timeline that ensures delivery.

HOW DO WE GET THERE

Issue	Recommendation for
Currently we face diverse and multi-layered Net Zero regulation across the economy.	<p>Government: To create a sector specific long-term carbon plan that sits as part of a national Net Zero strategy. The sector specific plan could be done through the Long-Term Delivery Strategies.</p> <p>Government: Set an economy wide carbon price. This would effectively put a statutory obligation on all sectors to deliver net zero.</p> <p>Government: Complete a policy review to define the implied cost of abatement across activity and by sector. We believe this will expose significant inequality across the economy.</p>
Policy focusing on Net Zero technology rather than marginal cost of abatement .	<p>Government: Subsequent to policy review above, update Government's own valuation of CO2 avoidance and create a framework to migrate existing policy into new process.</p> <p>EA: Include an environmental driver in the WINEP to fund investigations into water sector interventions with lowest marginal cost of abatement for emissions including process emission mitigation.</p>
Lack of strategic approach to Net Zero and limited ability to test policies.	<p>Government & Sector: For future strategy and policy development we believe the development of a truly collaborative sandbox involving government, key sector members and independent bodies should be developed to better enable policy design and testing.</p> <p>Regulators: Additionally, regulators should ensure that all strategic planning frameworks include a mandatory and common approach for Net Zero with the climate scenarios and carbon prices agrees across regulators.</p>

IMPACT ON CUSTOMERS, THE ENVIRONMENT AND WIDER SOCIETY

There are two high level risks with the current approach to Net Zero within the water sector.

Firstly, given the complexity and mixed application of incentives/penalties it is unlikely that emissions reductions will be delivered on a least-cost basis. This is a poor outcome for the customers that pay the bill and for the environment that does not receive the protection that could have been achieved.

More importantly, failure to decarbonise the economy is an existential threat to the water sector. Effort and investment in cost-effective emissions abatement is

likely to have a material benefit it terms of climate resilience – reducing the need to modify assets for a changing climate.

WAY FORWARD

We recognise the scale of the challenge and that economy-wide carbon prices bring a range of additional risks from affordability, to growth to global security. However, the UK should now be in a phase of rapid Net Zero development and delivery – a long term, stable and transparent approach to carbon pricing is the best route to investor confidence and therefore a rapid roll out of the technologies the country needs.

WHAT THE SECTOR HAS TO OFFER

We believe that the UK water sector, and particularly those sector members with operations in the hydrogen and Carbon Capture Utilisation and Storage (CCUS) focused industrial clusters are extremely well placed to support the design and testing of Net Zero policy.

Northumbrian Water's interest in enabling a 'Net Zero' sandbox is because the challenges we face are more diverse than most. As major users and producers of energy, with significant vehicle fleets, a heavy reliance on industry for chemical provision and our links to the agriculture and waste sectors, compounded by our

£6 billion+ investment plan for 2025-30, we are already aiming to manage emissions across most activities which drive UK wide emissions. Further, we have strategic energy sites located adjacent to some of the UK's most promising hydrogen and CCUS infrastructure. We are a good bellwether for the efficacy of carbon abatement policy – if Northumbrian Water can't decarbonise within a policy framework, then it's unlikely that framework will deliver Net Zero for the wider economy.

We would welcome the opportunity to work more closely with Government to design and implement a Net Zero sandbox to deliver the policies needed for a just transition.

ⁱ See '[Net Zero 2030 routemap](#)', Water UK, 2020.

ⁱⁱ NWG analysis of '[Winners - Ofwat Innovation Fund](#)', Ofwat.

ⁱⁱⁱ NWG analysis of '[Wastewater – Net-zero; enhancement expenditure model](#)', Ofwat, December 2024, and '[Water – Net-zero; enhancement expenditure model](#)', Ofwat, December 2024

^{iv} [Northumbrian Water | Biogas](#)

^v 'Emissions by the water sector and its Net Zero Journey', Christy, A., Browne, A., Elnahass, M., Amezcaga, J. and Heidrich, O., Journal of Environmental Management (under review), 2025.

^{vi} See '[2024 Progress Report to Parliament](#)', Committee on Climate Change, July 2024.

^{vii} See 'The Seventh Carbon Budget – Advice for the UK Government', CCC, February 2025, p. 244.