

Pathways Call for Evidence Submission

18 July – 14 August 2026

Submission type	Email
Submitter	Hunter Water Corporation
Response ID	388662

Disclaimer

This document is a submission to the Net Zero Commission’s 2026 Pathways Call for Evidence. As part of the consultation process, the commission has committed to publishing the submissions it receives. Submissions do not represent the views of the commission.

Responses Net Zero Commission: Call for Evidence

June-July 2026

Reducing emissions via a pragmatic approach whilst ensuring affordable and reliable water services to customers

Public water utilities have a clear responsibility to support NSW decarbonisation goals. However, as a customer-centric organisation operating within a highly regulated environment we aim to achieve outcomes across public health, environmental protection, service reliability as well as affordability. Balancing these obligations with emissions reduction can be challenging, as decisions must consider multiple and sometimes competing objectives.

Emissions reduction frameworks should recognise these competing objectives and support a balanced approach that considers the long-term benefits of decarbonisation alongside customer affordability, regulatory compliance, and environmental and public health outcomes.

There are also important trade-offs between emissions reduction and water security. Some of the measures taken to strengthen the resilience and security of water supply systems, such as water recycling and desalination, are inherently energy-intensive and can increase emissions, depending on the source of energy and embedded emissions in infrastructure. While these assets are critical for adapting to climate change, they can create tension between water security and emissions reduction objectives.

Investment needed in Scope 1 emissions monitoring and methodology research and development

Some Scope 1 emissions sources from water and wastewater systems, particularly fugitive emissions such as methane and nitrous oxide emissions from wastewater networks and water reservoirs and dams, remain difficult to accurately quantify due to the lack of reliable and standardised accounting methodologies.

Current estimation methods, where they exist, rely on theoretical default emission factors that are derived from national and international averages. These calculations therefore do not reflect local conditions and rely on highly uncertain baselines. As a result, reported emissions can be subject to significant uncertainty which constrains the ability to assess the effectiveness of mitigation measures and accurately track reductions over time.

Regulatory expectations to reduce and/or offset these emissions should recognise these quantification limitations. Further investment in monitoring, research and methodology development is needed before utilities can accurately target and measure

the effectiveness of their mitigation. It is recommended this investment occurs prior to obligations being imposed on water utilities to reduce or offset these hard-to-quantify emissions.

For example, initiating and funding programs that increase research in this area and support water utilities to undertake methane monitoring across wastewater networks would help establish a stronger evidence base, improve emissions accounting frameworks, and enable utilities to target and measure emissions reduction initiatives more effectively.

Support for fleet electrification through infrastructure and market development

Fleet electrification presents an opportunity to reduce Scope 1 emissions from vehicle fleet fuel consumption, however, several financial, operational and safety barriers remain. The limited availability of public electric vehicle charging infrastructure, particularly in regional or remote areas, creates challenges for utilities whose staff travel long distances and respond to emergency events. These limitations require investment in charging infrastructure. Commercial and insurance considerations create challenges to installing chargers in leased buildings.

The availability of electric vehicles capable of meeting the operational requirements of water utilities is currently limited. Fleet vehicles are required to carry heavy payloads, travel long distances, and operate in regional and remote locations. Electric alternatives that meet these requirements are currently limited or not yet market-ready. Greater investment in research, development and commercialisation would help accelerate the availability of fit-for-purpose and cost-effective vehicles that would enable utilities to transition their fleets.

Policy certainty to support Scope 2 emissions abatement

Transporting and treating water and wastewater are energy-intensive activities, meaning Scope 2 emissions from electricity consumption represent a significant portion of water utilities' total emissions. Utilities are actively reducing Scope 2 emissions through a combination of renewable energy contracts, on-site renewable energy generation and the use of renewable energy certificates. These measures, together with the projected decarbonisation of the electricity grid, are expected to deliver a substantial portion of the emissions reduction to achieve our corporate 2030 and 2035 emissions reduction targets.

However, this approach relies heavily on the rate of grid decarbonisation. If the electricity grid does not decarbonise at the forecast rate, Scope 2 emissions will remain materially higher under a location-based approach and water utilities may be unable to achieve their emissions reduction targets despite making significant investments and operational changes.

Scope 2 emissions from water utilities under a market-based approach are also exposed to fluctuations in grid emission factors and uncertainty surrounding future emissions accounting, which can affect investment decisions and weaken the business case for behind-the-meter renewable assets. The uncertainty relates to the treatment of renewable energy certificates following the conclusion of the Renewable Energy Target (RET) in 2030 and the transition to a voluntary market. Clear guidance on the transition would provide greater investment certainty, support existing renewable energy procurement contracts, reduce risks associated with on-site generation projects, and ensure consistent and transparent accounting of Scope 2 emissions including preventing double counting through the methodology currently used in the National Greenhouse Accounts' Residual Mix Factor (RMF).

Supporting better supplier data and Scope 3 emission reduction

Scope 3 emissions are the largest source of emissions from water utilities, primarily driven by the embodied carbon in infrastructure projects. Quantifying these emissions remain challenging due to the consistency, robustness and availability of supply chain data.

Reducing Scope 3 emissions will require greater transparency across supply chains, supported by improved supplier reporting and stronger regulatory and procurement frameworks that encourage the disclosure and reduction of embodied carbon. Increased availability of high-quality supplier data will enable water utilities to better understand, manage, and reduce their largest Scope 3 emissions sources.

Biosolids and co-digestion opportunities and partnerships

Wastewater treatment plants produce an organic byproduct referred to as biosolids which presents an opportunity to deliver emissions reduction and broader environment and agricultural benefits. When applied to agricultural land, biosolids can improve soil health and support carbon sequestration. Greater government and industry support could improve understanding of these benefits and expand availability of biosolids to local primary producers. While the safe and sustainable reuse of biosolids requires effective management of contaminants these can be addressed through practical and fit-for-purpose regulatory frameworks.

Biosolids can also be processed into biochar, which can improve soil health while sequestering carbon in the soil. Further investigation is required to assess whether the emissions benefits outweigh the energy and resource inputs to produce this product.

Opportunities also exist to increase co-digestion and resource recovery partnerships that enable carbon dioxide and methane generated to be used beneficially for agricultural applications, such as greenhouses, or industrial uses as an alternative fuel source. Investment in these opportunities is currently limited by lack of regulatory

mechanisms and emission reduction incentives, including any recognised carbon credit method for the avoidance of methane flaring.

Barriers to decarbonisation from legacy infrastructure

A significant challenge for water utilities is the long lifespan of existing infrastructure. Water and wastewater assets are typically designed to operate for decades before upgrades are required and represent substantial sunk capital investments. Replacing or significantly modifying these assets to achieve lower emissions outcomes may incur considerable additional costs, particularly if required before the asset end of life or outside decadal scheduled upgrades.