



CLEAN WATER CLEAN RIVER CLEAN OCEAN

NATIONAL WATER REFORM 2026

SUBMISSION TO PRODUCTIVITY COMMISSION

April 2026

CEO Clean Ocean Foundation



Clean Ocean Foundation thanks the committee for the opportunity to submit this information and would be happy to discuss it in more detail if required.

The views and comments expressed in this submission are Clean Ocean Foundation's alone, and in no way should be interpreted as those of any other body.

Sewage treatment – a threat to Australia's economy

Australia faces a profound water challenge as the driest inhabited continent. Unfortunately, its water sector bureaucracy has evolved to resist change driven by community expectations in relation to economic, environmental, and social needs. Instead, it is dominated by state and territorial bureaucracies hamstrung by the need to place short term political and public relation perceptions above reality.

The accelerating impacts of climate change, a rapidly evolving understanding of both traditional and emerging pollutants, and the growing thirst for data centres compounds these challenges. Together, they significantly increase the complexity of how Australia must manage both its water supply and the waste generated by the water sector. Concerns also extend to the risk of wastewater discharges poses to aquaculture, agriculture, and tourism sectors along with the health recreational users.

Australia needs to rapidly change its view of our coastline and rivers as a cheap way of disposing of waste. The risk and cost to our future is too great.

The Foundation calls on the Productivity Commission to recommend a thorough investigation into the measures adopted by the European Union to minimise the risks associated with wastewater discharges. This should include consideration of mandating advanced (quaternary) treatment for all major urban centres. Such an approach would not only strengthen environmental protection but also accelerate innovation and investment in water recycling technologies.

The water sector – on the outside looking in

Clean Ocean Foundation (COF) has, through a quarter of a century of supporting communities around Australia has argued for better outcomes in relation to the water cycle, particularly in relation to dumping of waste into our oceans and rivers.

It has unique informed perspective of the reality on the ground for many communities. Currently the Foundation is closely involved with coastal community groups including Warrnambool, Boags Rock, Merimbula, Sydney's Dirty Three Outfalls (Malabar, Bondi and North Head), Queensland (Noosa) and Beenyup (WA).

Although each of these communities face a unique problem, COF has found that ultimately each can be reduced to an outdated interplay between a regulatory system that fails to properly cost the risk related outdated polluting practices. Put simply there is "no cost" associated with polluting our aquatic and ocean environment and no effective driver of positive change so our oceans suffer from our negligence.

A clear example of this is the issue of Poo Balls from the Malabar outfalls in Sydney. For decades the Foundation and many other groups have criticised the archaic NSW practice of allowing deep ocean

outfalls with minimal treatment of waste. Despite local groups such as SO Shire having raised ongoing concerns related to debris washing up on beaches near the Malabar plant, Sydney Water have consistently and aggressively denied any connection to their Malabar outfall. This has now been proved wrong. But it is not just a failure of technology, it is a failure of a system that permits the onus of proof to be on community groups with limited resources to prove damage or risk, rather than the relevant water authorities to protect the environment.

Can sewage damage economies?

NUTRIENTS

The commission should consider that the Federal Senate inquiry into the SA Algal Bloom state noted that land and water management practices had been identified by a variety of participants as likely contributory factors, including from the Environment Institute at the University of Adelaide that stated:

“Historically, Adelaide’s coastal waters have been impacted by high-nutrient discharges from a combination of sources, including wastewater treatment plants (WWTPs), industrial outfalls, and diffuse-source stormwater runoff from both urbanised areas and agricultural land. The state’s gulfs are naturally susceptible to the accumulation of pollutants due to their shallow nature and relatively poor water exchange with the open ocean, which limits their flushing capacity.”¹

However, the culture predominantly in the sector limits the collection and transparent public release of critical information or downplays its significance. Rather than using this knowledge to drive reform and support informed decision-making with an engaged community, the opposite frequently occurs. Problems are minimised or dismissed due to “lack of evidence,” major infrastructure decisions are deferred, and when action finally becomes unavoidable, community engagement is often stage-managed to validate pre-determined outcomes. This approach is no longer tenable.

MICROPOLLUTANTS

Current public concerns related to micropollutants underline our rapidly changing understanding of the risk these to both water supply and the environment they are discharged. Micropollutants of concern released to the environment include:

- Pharmaceuticals (e.g. antibiotics, antidepressants)
- Personal care products (e.g. fragrances, sunscreen agents)
- Endocrine-disrupting compounds (e.g. hormones like estrogen)
- Microplastics
- Pesticides and herbicides
- Industrial chemicals (e.g. PFAS, solvents)
- Heavy metals (e.g. mercury, lead, cadmium)
- Surfactants and detergents

1

https://www.aph.gov.au/Parliamentary_Business/Committees/Senate/Environment_and_Communications/AlgalBloom48P/Report pp.24

Flame retardants (e.g. PBDEs)
Illicit drugs and their metabolites

The water sector often argues that managing micropollutants at the source is preferable to removing them during treatment. While this approach has merit in principle, it is also convenient in that it minimizes both cost and responsibility for the sector itself. In practice, however, a singular focus on source control has not proven effective in managing micropollutants, particularly when it comes to preventing their discharge into the environment.

It is worth noting that removal of PFAS alone from drinking water supplies alone in Australia is likely to run into the billions of dollars, with Sydney Water expected to spend \$100 million dollars on removal of PFAS from the Blue Mountains water supply alone.² Stopping discharges of all micropollutants from wastewater into environments will reduce the risk of clean up required in years to come.

Can we make our economy cleaner?

COF maintains that removing micropollutants from wastewater strengthens Australia's productivity by protecting the natural systems that underpin key industries. Contaminants such as PFAS, endocrine-disrupting compounds, and microplastics can accumulate in waterways, affecting fisheries, aquaculture, and agriculture through reduced water quality and ecosystem health. Cleaner effluent supports more reliable water recycling for irrigation and industry, lowers treatment costs for downstream users, and reduces risks of regulatory breaches and costly environmental damage. It also safeguards public health, helping maintain a productive workforce, and protects Australia's reputation in export markets that increasingly demand high environmental standards. In this way, investing in micropollutant removal is not just an environmental measure, but an economic one that enhances resilience, efficiency, and long-term growth.

The Commission should take note of the rapid progress in waste water treatment being undertaken in the EU. Based on a substantial and well-established body of evidence, the European Union has moved to address PFAS and other micropollutants in wastewater discharges. It also includes a polluter pays approach to funding upgrades. It has done so because the risks of inaction—to the environment, public health, and the economy—are considered unacceptable.

By committing to the removal of PFAS and other micropollutants, the European Union is making water reuse schemes safer, more cost-effective over the long term, and more acceptable to the public. In doing so, it is driving innovation through the deployment of proven treatment technologies and positioning itself to develop export markets based on this expertise.

² <https://www.abc.net.au/news/2024-12-03/multi-million-pfas-mobile-system-nsw-cascade-water-plant/104674212>

This approach will lead to cleaner rivers and oceans by reducing the toxic load discharged from wastewater treatment plants, while providing citizens with a clear and credible pathway toward a “Zero Pollution” objective.

This includes:

- By 2035 remove biodegradable organic matter (secondary treatment).
- By 2039 remove phosphorus and nitrogen (tertiary treatment).
- By 2045 remove of micropollutants (quaternary treatment).

Notably, these advances have been achieved despite the complexity of coordinating policy across 27 member states, each with its own political and economic priorities. It applies to all major cities inland and over 30 coastal cities.³

Community Driven Reform

To provide government in Australia with an alternative conceptual framework, COF proposed, implemented and currently maintains the National Outfall Database (NOD). Established in 2015, the NOD is a project for the NESP Marine and Coastal Hub that tracks discharge data for all of 192 Australia’s coastal outfalls. The intention is to provide decision makers and stakeholders with a national perspective of waste water discharges into the Australian coastline.

In 2019 using discharge data collected from the NOD, the Foundation published a study that found: “The net benefit of coastal outfall upgrades in Australia is significant amounting to between \$12 billion and \$28 billion³ in 2019 dollars depending on the discount rate used and the project period, with costs of between \$7.3 billion to just over \$10 billion.”⁴

In 2023 the Foundation established the Australian Water Network, a loose coalition of community groups concerned with the poor process of reform in the water sector, especially in relation to potable water recycling and sent an open letter to the then Federal Environment Minister Tanya Plibersek. The open letter, signed by over fifty community leaders was based on the premise that community would be more likely to “buy in to water recycling”, if benefits in terms of reduction of pollutants discharged to the environment were also achieved.

Several recommendations were made in the letter to achieve this aim that have been ignored by state and territory bureaucracies. An example of this studied ignorance is the extreme case in Victoria that has outlawed the use of purified recycled water for potable use against the view of most scientists and engineers with expertise in this area.

³ <https://data.consilium.europa.eu/doc/document/ST-7108-2024-INIT/en/pdf>

⁴ <https://www.cleanocean.org/s/4MARCH2019-Clean-Ocean-Foundation-Coastal-Outfall-System-Upgrades-in-Australia-Benefits-Costs-and-Im.pdf>

COF is also supportive of the push by local councils to advocate for a collaborative approach to wastewater issues as outlined in Australian Local Government Association motion passed in July 2024 which called for greater community involvement to help drive technological innovation and the adoption of water recycling targets throughout Australia.⁵

Recommendations

The Foundation makes the following recommendations:

1. A net benefit analysis in relation to the EU standards of treatment for Australia's wastewater discharges comprised of experts from both inside and outside the water sector, with appropriate community participation to provide oversight. This would include consideration of interim pollutant load caps and zero pollution targets.
2. The Federal EPA manages a centralized database of all of pollutant and micropollutant discharges into oceans and rivers under direction of appropriate community and institutional sources.
3. That all government agencies (federal and state) assess its own policies and activities in relation to how they contribute to the toxic load that ends up in our rivers and oceans.
4. A more exhaustive study of the net benefits of upgrading the nations WWTPs to Purified Recycled Water, that builds on previous work be undertaken.

⁵ Australian Local Government Association July 2024 - Motion 144.1 (Passed)

Appendix 1 The Europe Union is the leader in in wastewater

Australian cities versus EU a comparison on future action

PFAS European Union and Australia - 7 largest cities by population					
Australia			European Union		
		Will remove PFAS by 2040			Will remove PFAS by 2040
Sydney	5,450,496	No	Berlin	3,755,251	Yes
Melbourne	5,207,145	No	Madrid	3,332,035	Yes
Brisbane	2,706,966	No	Rome	2,754,719	Yes
Perth	2,309,338	No	Paris	2,087,577	Yes
Adelaide	1,446,380	No	Vienna	2,018,653	Yes
Canberra	466,566	No	Hamburg	1,892,122	Yes
Hobart	253,654	No	Warsaw	1,861,644	Yes
	17,840,545	0/7		17,702,001	7/7

Zero Pollution - a good plan, a federal plan

The European Union (EU), comprising 27 independent member countries, adopted a revised directive on urban wastewater treatment that will remove PFAS from wastewater discharges.¹ This initiative was developed in part to complement the EU's Zero Pollution action plan for water, air and soil in 2021². The plan "sets out that by 2050 pollution is reduced to levels no longer considered harmful to health and natural ecosystems". The directive states that wastewater treatment plants⁶ in Europe will:

- By 2035 remove biodegradable organic matter (secondary treatment).
- By 2039 remove phosphorus and nitrogen (tertiary treatment).
- By 2045 remove of micropollutants (quaternary treatment).

A national plan to remove all toxins including PFAS from wastewater

This commitment will remove micropollutants, including PFAS, that contribute to the toxic load³ emitted from wastewater treatment plants. This initiative is expected to reduce overall toxicity of emissions by 44% and 60% to areas "at risk".⁴

Polluter Pays Principle: a fair cost for a dirty product

This directive adopts the polluter pays principle in relation to pharmaceutical and personal care product sector, considered a key source of micropollutants (including PFAS) entering the domestic wastewater system.^{5 6} The Extended Producer

⁶ For discharges above a 150,000-population equivalent(p.e.). Between 10,000 – 150,000 p.e. a risk management approach is used. See Appendix 4 for definition p.e. Estimates based on Commission Staff Working Document Impact Assessment (2022). Some variances in figures as adopted criteria changed from 100,000p.e. to 150,000p.e.

Responsibility (EPR) policy will cover at least 80% of the costs of quaternary treatment required to remove micropollutants.⁷

The impact on this sector is expected to either cause prices to rise by 0.6% a maximum or reduce profit by 0.6 to 0.9%.⁸ The additional benefit of this approach is to assist with governance and provide incentive for producers to develop fewer toxic products.⁹

In the lead up to directive, there was broad stakeholder support for action (except from the polluters themselves), to make polluters at source financially responsible for costs associated with the removal of micropollutants along with clear emission standards for wastewater treatment. The need for particular attention to the possible presence of micro-plastics/pollutants and genes/bacteria promoting anti-microbial resistance in sludge reused in agriculture was also acknowledged.¹⁰

Benefits outweigh the costs of removing PFAS from wastewater 1.7 to 1

Monetised benefits to cost ratio of 1.7 per year by 2040 across 27 member countries.¹¹ This directive will have a modest effect on public budgets and water tariffs. Although these tariffs vary between states, they will remain below the ceiling set for water supply and sanitation of 5% of the budget of poorest households by the OECD.¹²

The EU expects that the public's willingness to pay will be enhanced by increased transparency and making key indicators publicly available digitally and on water bills.¹³

No threat to greenhouse gas emission targets

The reforms overall do not pose a threat to existing energy neutrality and greenhouse gas emission targets.¹⁴

Encourage water recycling

They will facilitate the economic reuse of treated urban wastewater to prevent water scarcity¹⁵ and allay concerns related to contamination with micropollutants.

Other Benefits

They will enhance transparency¹⁶, digitisation and commercial opportunities for technology development within the wastewater sector.

¹Urban wastewater: Council adopts new rules for more efficient treatment
<https://www.consilium.europa.eu/en/press/press-releases/2024/11/05/urban-wastewater-council-adopts-new-rules-for-more-efficient-treatment/>

² zero pollution action plan
<https://www.europarl.europa.eu/legislative-train/theme-a-european-green-deal/file-zero-pollution-action-plan>

³ Analysis of toxic load of micropollutants etc. on network from point sources - CSWD pgs.110-118

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

⁴ The new policy would the toxicity of the released waters would be reduced by 44% against the current situation, of which more than 60% would happen in areas ‘at risk’. - CSWD pg.58

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

⁵ On November 5th, 2024, the European Union adopted a revised directive on urban wastewater treatment. <https://www.consilium.europa.eu/en/press/press-releases/2024/11/05/urban-wastewater-council-adopts-new-rules-for-more-efficient-treatment/>

⁶ Micro-pollutants arise from the use of many products in households. Pharmaceuticals and to a lesser extent Personal care products (PCP) represent a large share of the potentially harmful substances found in wastewater (see report 2, Annex 10).

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

⁷ New EU rules to improve urban wastewater treatment and reuse – Press Release

<https://www.europarl.europa.eu/news/en/press-room/20240408IPR20307/new-eu-rules-to-improve-urban-wastewater-treatment-and-reuse>.

⁸ A polluter pays approach would either increase products by a maximum of 0.6% or reduce profit by 0.6-0.9% - CSWD pg.58

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

WD pg.58

⁹ Relying solely on water tariffs and government funding would fail to yield gains in governance and remove incentives for industrial producers to develop less toxic products - CSWD pg.58

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹⁰ Non domestic pollution entering the treatment plants needs to be better understood and monitored. – CSWD pg.42

There was a broad consensus amongst stakeholders on the necessity to address the issue of micro-pollutants from wastewaters. Contrary to some business (PCP’s, Pharmaceuticals), citizens (4.0), NGOs (4.1), academics (3.8), public authorities (3.4) and water-related business support the requirement for larger UWWTPs to remove micro-pollutants based on EU-set performance standards. – CSWD pg.41

Stakeholders supported actions needed to reduce pollution at source and the need to better apply the polluters pays principle, making the producers financially responsible for the costs linked to the additional treatment required to treat micro-pollutants need to be applied except (predictably) the pharmaceutical and chemical industries – CSWD pg.41

Particular attention should be given to the possible presence of micro-plastics/pollutants and genes/bacteria promoting AMR in sludge, when used in agriculture. - CSWD pg.42

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹¹ “Overall, the total costs at EU level (€ 3,848 bn/year in 2040) are below the expected monetised benefits (€ 6,643 bn per year by 2040 – of which 6.157 bn are related to improvements to water quality and 0,486 bn to GHG emission reduction due to better N management and energy neutrality)”. - CSWD pg.68

Partial Monetisation of benefits related to micro-pollutants calculated only on avoided N,P and BOD pollution in absence of credible standard. However this did not account for short duration acute effects of runoff.

Willingness to pay estimated benefits were conservatively calculated at 10% value found in study. -- CSWD pg.52

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹² “The expected effects on public budgets and water tariffs (and therefore affordability of the water tariffs) are modest.” - CSWD pg.72

Therefore, the share of expenditures due to water supply and sanitation for households with poorest revenues, would remain below 5% - which is the ceiling considered as acceptable by OECD - CSWD pg.72

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹³ Enhanced transparency and making key indicators publicly available by digital means and on the water bills is expected to increase public willingness to pay but also collective awareness. A better empowerment of citizen might also lead to additional pressure on wastewater operators to improve their performances. - CSWD pg.58

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹⁴ No threat to GHG emissions targets. “Overall at EU level it would not change the analysis neither the conclusions on the added value of the energy neutrality target.”- CSWD pg.72

.....0,486 bn to GHG emission reduction due to better N management and energy neutrality)”. - CSWD pg.52

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>

¹⁵ <https://www.europarl.europa.eu/news/en/press-room/20240408IPR20307/new-eu-rules-to-improve-urban-wastewater-treatment-and-reuse>

¹⁶ They will also help to better implement the principles of the Aarhus Convention notably on access to information and public participation. While expressing concerns regarding the administrative burden for authorities, stakeholders consider that the current provisions on public information and transparency do not reflect current desirable levels of public engagement.-CSDW pg.46

Commission Staff Working Document Impact Assessment

<https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A52022SC0541>