

28 June 2024

Isha Sharma

Team Leader
Waste Assessment
Waste and Enforcement Services
Department of Environment, Science and Innovation

Response to the Final Draft End of Waste Code for Biochar (EOWC010002177)

Dear Isha,

The Water Services Association of Australia (WSAA) appreciates the Department's extensive work on the development of the End of Waste (EOW) Code for Biochar and for providing the opportunity to comment on the final draft.

We commend the inclusion of additional potential feedstocks for biochar production, the expansion of approved applications beyond agricultural use, and the alignment of buffer zones with the EOW Code for Biosolids. These improvements reflect a positive response to some of the water sector's initial feedback.

However, WSAA does not support the Final Draft End of Waste Code for Biochar. Our review of the revised draft has identified several key areas of concern that require further attention to ensure the EOW Code effectively supports the circular economy and advanced thermal treatment technologies. Our primary concerns are:

1. A one size fits all prescriptive approach limits the uptake and application of biochar.
2. The EOW Code may undermine the biochar market, sustainable biosolids management and circular economy objectives.
3. The available scientific evidence does not support the concentration values for some contaminants.

A one size fits all prescriptive approach limits the uptake and application of biochar

Applying a single standard to all soil applications contradicts the principle of regulating proportionate to risk. Different applications pose different levels of risk and should be considered accordingly. WSAA advocates for an approach to biosolid-derived biochar that focuses on managing and accounting for risk-based outcomes rather than setting fixed values for diverse applications.

Sydney Office

Level 6, 75 Elizabeth Street
Sydney, NSW, 2000
P +61 (0) 2 9221 5966

Melbourne Office

Level 8, Suite 8.02, 401 Docklands Drive
Docklands, VIC, 3008
P +61 (0) 3 8605 7666

In our initial submission, we emphasised the importance of an outcome-focused approach that allows for fit-for-purpose reuse pathways. This approach enables producers to demonstrate the environmental impact and manage risks based on specific applications and local conditions.

The current draft of the EOW Code could benefit from incorporating this flexibility, emphasising site-specific end uses and criteria set for the processes involved, ensuring that the code adapts to the varying conditions and needs of different applications. This approach aligns with the principles outlined in the Code of Practice for the Sustainable Production and Use of Biochar¹, which highlights the importance of ensuring biochar is fit for its intended purpose and managing risks based on specific applications.

The EOW Code may undermine the biochar market, sustainable biosolids management and circular economy objectives

The revised guidance risks removing sustainable management options for biosolids, potentially impacting the biochar market and undermining broader circular economy objectives.

The criteria set within the guidance are either unobtainable or cost-prohibitive with existing and applicable technologies. This situation could lead to increased landfill use and hinder both current and future waste management strategies.

If the current approach and criteria are implemented, it is crucial that the Department publishes the supporting evidence to justify these revisions and demonstrates the specific risks they aim to manage. Consideration of the impacts on the biochar and biosolids markets, waste management facilities and the circular economy is essential.

The available evidence does not support the concentration values for some contaminants

The water sector does not support the Department's approach to setting the proposed concentration values, and supports a more flexible, risk-based and outcomes-focused approach. A risk-based framework that allows for flexibility in applying quality criteria based on site-specific conditions and intended use, would ensure that the regulation is both effective and efficient.

If the Department proceeds with the proposed concentration values, we are concerned that the existing evidence indicating lower bioavailability and environmental impact of these elements in biochar compared to biosolids has not been adequately considered. The rationale behind the further reduction of concentration values for contaminants such as copper and zinc is unclear. The available

¹ Code of Practice for the Sustainable Production and Use of Biochar in Australia and New Zealand (2021)

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scientific evidence^{2,3} does not support these stringent limits.

For example, the resource quality criteria for copper is reduced from 500 mg/kg to 150 mg/kg, and for zinc from 2500 mg/kg to 300 mg/kg. These reductions are not justified within the revision of the draft and therefore it is difficult to understand their relevance and intended outcome.

Failing to integrate the best available science undermines the credibility and effectiveness of the regulation. It may also stifle innovation in biochar production if producers are not incentivised to meet science-based methods.

We strongly encourage the Department to address the concerns of the water sector outlined above. Addressing these concerns is essential to ensuring the code supports sustainable biosolid-derived biochar production and use, while balancing environmental protection and economic viability.

We recommend the Department undertake further engagement with the urban water sector and biochar industry to develop an EOW Code for Biochar that aligns with the efforts of the water sector and waste sector towards a safe and sustainable circular economy. WSAA is committed to support and contribute to this collaborative process to ensure that the final code is both practical and scientifically sound.

We look forward to continuing our engagement with the Department and providing further input to improve the EOW Code for Biochar.

Thank you for considering our submission.

Yours sincerely,



Jason Mingo
Manager Liveable Communities

² Liu, Y., Liu, G., Zhang, J., Li, H., & Wu, J. (2023). Effects of biosolid biochar on crop production and metal accumulation through a rice-wheat rotation system in fields. *Environmental Pollutants and Bioavailability*, 35(1)

³ Sinha, P., Marchuk, S., Harris, P., Antille, D.L. and McCabe, B.K. (2023) 'Land Application of Biosolids-Derived Biochar in Australia: A Review', *Sustainability*, 15, p. 10909.