**Waste 2024 Conference Abstract Submission**

**(for face-to-face Conference which includes live broadcast)**

AI, shaking up the sector and enabling the Circular Economy

*My presentation is relevant to the following topic area(s).*

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|  | **Aboriginal community waste management**  (projects, results, planning, what else to be done) |  | **National waste policies & programs** (new schemes, opportunities & recent results) |
|  | **CDS** (new schemes, new containers, innovations) |  | **Organics** (food only vs FOGO, implementation strategies, new services) |
|  | **Circular economy** (case studies, right to repair, trials, new materials targeted) |  | **Plastics** (plastics recycling, plastics recovery schemes, small and large scale plastics projects) |
|  | **Climate change** (new innovations, strategies & policies) |  | **Problem & hazardous waste** (asbestos, clinical & medical, illegally dumped hazardous waste, systems for managing hazardous materials) |
|  | **Collections** (innovations, new systems, vehicles, challenges) |  | **Procurement** (recent process developments, case studies, planning) |
|  | **Disaster waste management** (bushfires, floods, pandemic) |  | **Project Planning** (projects currently planned, challenges and barriers, planning controls and conditions, project management) |
|  | **Economics** (business cases, data gathering, planning for financial impacts, reviews & analyses) |  | **Product stewardship & extended producer responsibility** (current & planned schemes, new materials to be captured by schemes, local schemes for recovery) |
|  | **Education** (behaviour change, community engagement, social media, planning FOGO education) |  | **Recycling & resource recovery** (post China Sword, and export bans, market insights & updates) |
|  | **Energy from Waste** (projects, case studies) |  | **Regional issues** (regional responses to waste settings, collaboration, joint projects) |
|  | **Grants** (major waste grants, outcomes & processes) |  | **Social enterprise** (new entrants, recent endeavours, case studies) |
|  | **Infrastructure & planning** (FOGO capacity, new material recovery planning) |  | **State based issues** (policies, strategies, responses & challenges, border transitions) |
|  | **Innovative projects** (sustainability innovations, artificial intelligence, case studies) |  | **Strategic waste planning & policy** (stakeholder engagement, strategy development, waste policy impacts and opportunities) |
|  | **Landfill & facility management** (facility operations management, strategic planning, facility budgeting) |  | **Technology** (innovations, must haves, how technology will improve or assist with waste responsibilities, AI) |
|  | **Legislation, regulations & levies** (major updates, monitoring & enforcement, response to changes in regulations) |  | **Tenders & contracts** (planning, implementation, contract management, innovations, systems & approaches) |
|  | **Litter & illegal dumping** (prevention, new management systems & innovative & smart initiatives, surveillance) |  | **Waste projects** (planned waste infrastructure, how to plan & scope, budgeting, understanding what is required, governance & process planning, case studies) |
|  |  |  | **Other** |

**Proposed Panel Discussion** -Proposed topic & participants suitable for key issues that may be addressed by a Panel of presenters. For this category suggest your topic & who you will arrange to attend and present (maximum of 5 panel members).

**Presenter information**

**Presenter name:** David Cocks

**Presenter position:** Director of Growth

**Presenter organisation:** MRA Consulting Group

**Presenter email address:** david.c@mraconsulting.com.au

**Presenter phone number:** 0408338489

**Presenter mobile number:** 0408338489

**Biography**

*David has over 14 years’ experience in the waste and resource recovery sector. He has led projects including feasibility studies for introduction of FOGO services and other kerbside reforms, state waste infrastructure plans, local government strategies and the lifetime costing of facilities. He has delivered procurement of waste and recycling services as well as the design, construction and operation of organics facilities, transfer stations and landfills. He has undertaken market analysis and commercial due diligence for WTE facilities, MRFs, anaerobic digestion facilities and landfills as well as advised procurements of national waste services for major retail brands.*

*David started his career as an electrical engineer having completed an engineering and computer science degree at Monash University. More recently he has pursued a passion for sustainability through his work as Executive Officer for the North East Regional Waste Management Group prior to joining Sustainability Victoria as Manager of Waste Infrastructure.*

**Abstract Summary**

*This presentation explores how Artificial Intelligence (AI) is revolutionising waste and recycling and enabling the Circular Economy. It considers current and potential applications. of AI in detecting contaminants, analysing waste composition, predicting waste generation, facilitating positive household behaviours , reducing landfill use, and improving recycling processes. The presentation will address AI's challenges, like data integrity and privacy, and its impact on the workforce and application in municipal and commercial contracts. AI's role in supporting the sector achieve national waste policy targets and the opportunity is explored .*

**Abstract**

*In the context of striving towards achieving our national waste policy target, the role of Artificial Intelligence (AI) is transforming the dynamics of waste and recycling operations is becoming increasingly crucial.*

*This presentation will delve into both current and prospective uses of AI within the waste and recycling domain. Key focal points include AI's role in detecting contaminants in residential recycling bins, determining the makeup of waste and recyclables, assessing domestic waste and recycling habits, and forecasting waste production from households and commercial entities. The strategic implementation of AI not only promises to reshape waste generation behaviours but also to reduce the cost to recycle and just like a landfill levy reduce economic incentives to landfill. AI continues to boost recycling quantity and quality, mitigate environmental footprint, and pave the way for a more circular economy.*

*The presentation will also examine the existing landscape of AI in this sector, addressing the challenges and prospects for its integration. This includes considerations of data integrity, privacy issues*, *its impact on the workforce. Additionally, we will discuss the implications of AI-driven innovations on municipal and commercial contract requirements.*

*Leveraging AI, the waste and recycling industry is positioned to advance towards an sector ecosystem that is both sustainable and circular, diminishing the environmental and economic toll of waste. This presentation aims to provide insights into how AI can be a pivotal tool in achieving state and national waste policies and deserving of much greater focus and government investment.*

***Key Takeaways:***

* *AI offers a sophisticated, non-invasive approach to materials stream analysis.*
* *Uses of AI range from assessing waste composition to detecting contamination and predicting waste generation, and better identifying materials that continue to slip through the Circular Economy.*
* *AI's impact extends to changing the way we operate, improving waste-related behaviours, reducing landfill use, enhancing recycling programs and operational efficiencies.*
* *AI is reshaping the framework of future municipal and business contracts.*
* *Integrating AI in waste management comes with challenges like data accuracy, privacy, and the need for collaborative efforts and transformation of roles in the workplace.*