Construction and Demolition Waste Management in Australia: Review of Differences in Jurisdictional Regulatory Frameworks

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Introduction

- Rapid growth in construction activities in Australia in recent years has led to increased generation of construction and demolition (C&D) waste
- According to the latest statistics[1] about 20.4 Mt of C&D waste was generated across Australia during 2017- 2018
- Failure in effective management of C&D waste generated will have unintended economic, social, political and environmental repercussions[2]
- The efficient management of C&D, however, is very much dependent on the associated legislation that governs C&D waste management[3]

1. Australian National Waste Report 2018. Department of the Environment and Energy
2. PARK, J. & TUCKER, R. 2017. Overcoming barriers to the reuse of construction waste material in Australia: a review of the literature. International Journal of Construction Management, 17, 228-237.
3. LOCKREY, S., NGUYEN, H., CROSSIN, E. & VERGHESE, K. 2016. Recycling the construction and demolition waste in Vietnam: opportunities and challenges in practice. Journal of Cleaner Production, 133, 757-766

Introduction: Regulations

- In Australia C&D waste is regulated through three tiers of government: federal, state or territory, and local
- **The federal government** is not directly involved in regulating C&D waste
- The majority of legislation occurs at state and territorial government level. C&D waste management in each state/territory builds on the specific regulatory framework that prevails in that state
- This regulatory approach is the emergence of inconsistencies between jurisdictional regulations; it gives rise to barriers that impede effective C&D waste management activities[1]

1. Environment and Communications References Committee 2018. Never waste a crisis: the waste and recycling

Introduction: Aim and Objectives

- **Aim:** review Australia's legal framework and to identify the inconsistencies in C&D waste regulations and strategies that are currently implemented in different Australian jurisdictions
- **Research project:** 'A National Economic Approach to Improved Management of C&D Waste', supported by the Australia Built Environment National Research Centre
- **Main objectives:** development of a consistent approach to define and measure C&D waste, identification of influential economic factors that govern the disposal/ reduction/ reuse/ recycling of C&D waste

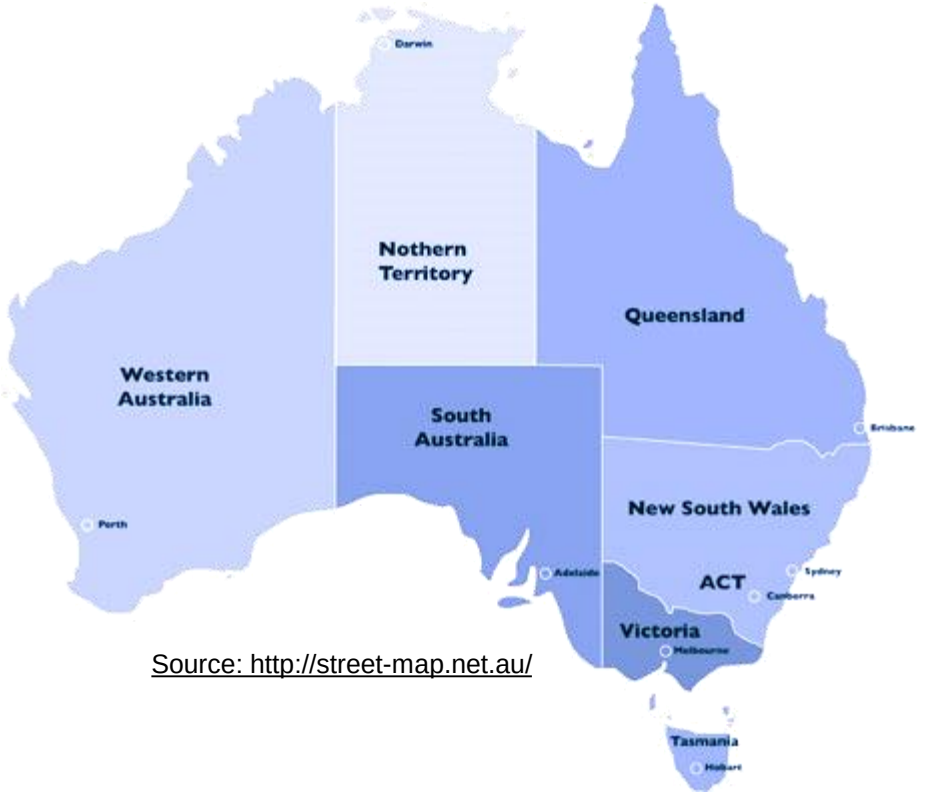
Sustainable Built Environment National Research Centre

Methodology: Data collection, processing and analysis

- **Data collection:** Document analysis technique was conducted to identity differences in jurisdictional regulatory frameworks and practices in Australia
- **Sources:** Sources reviewed include acts, policies, regulations and strategies, reports and initiatives prepared for C & D waste management in Australia
- **Analysis:** Descriptive analysis is used to analyse and present the data collected

Methodology: Context of study

- **Context:** Australia is a large country with a population of 25 million that is mostly settled in capital cities.
- **States:** Victoria (Vic), New South Wales (NSW), Queensland (Qld), South Australia (SA), Western Australia (WA) and Tasmania (Tas); and 2 territories: Northern Territory (NT) and Australia Capital Territory (ACT)



Source: http://street-map.net.au/

Results: Policy Makers and Authorities- state level

- State and territory legislative frameworks are complex and involve multiple pieces of legislation and policy instruments
- They are produced and administrated by EPAs (with the exception of Qld, where the overarching act is produced under the Department of Environment and Science)
- Among the jurisdictions, VIC and WA have the largest number of acts in place, followed by the ACT, NSW and SA with 3, and TAS and NT with only 1 act
- In some jurisdictions, other authorities and departments have also produced acts that contribute to regulation of C & D waste or amend the primary EPAs acts

Results: Policy Makers and Authorities- state level

- In ACT, in addition to EPA produced acts, Transport Canberra and the City Services Directorate
- In SA, Green Industries SA has enacted the Green Industries SA Act 2004.
- In VIC, Sustainability Victoria developed an act (Sustainability Victoria Act 2005) to promote waste avoidance, waste reduction and recovery, reuse, recycling of resources and best practices in waste management.
- In WA, the Department of Water and Environment Regulation developed two acts (Waste Avoidance and Resource Recovery Act 2007/Waste Avoidance and Resource Recovery Levy Act) to regulate waste

Results: Policy Makers and Authorities- state level

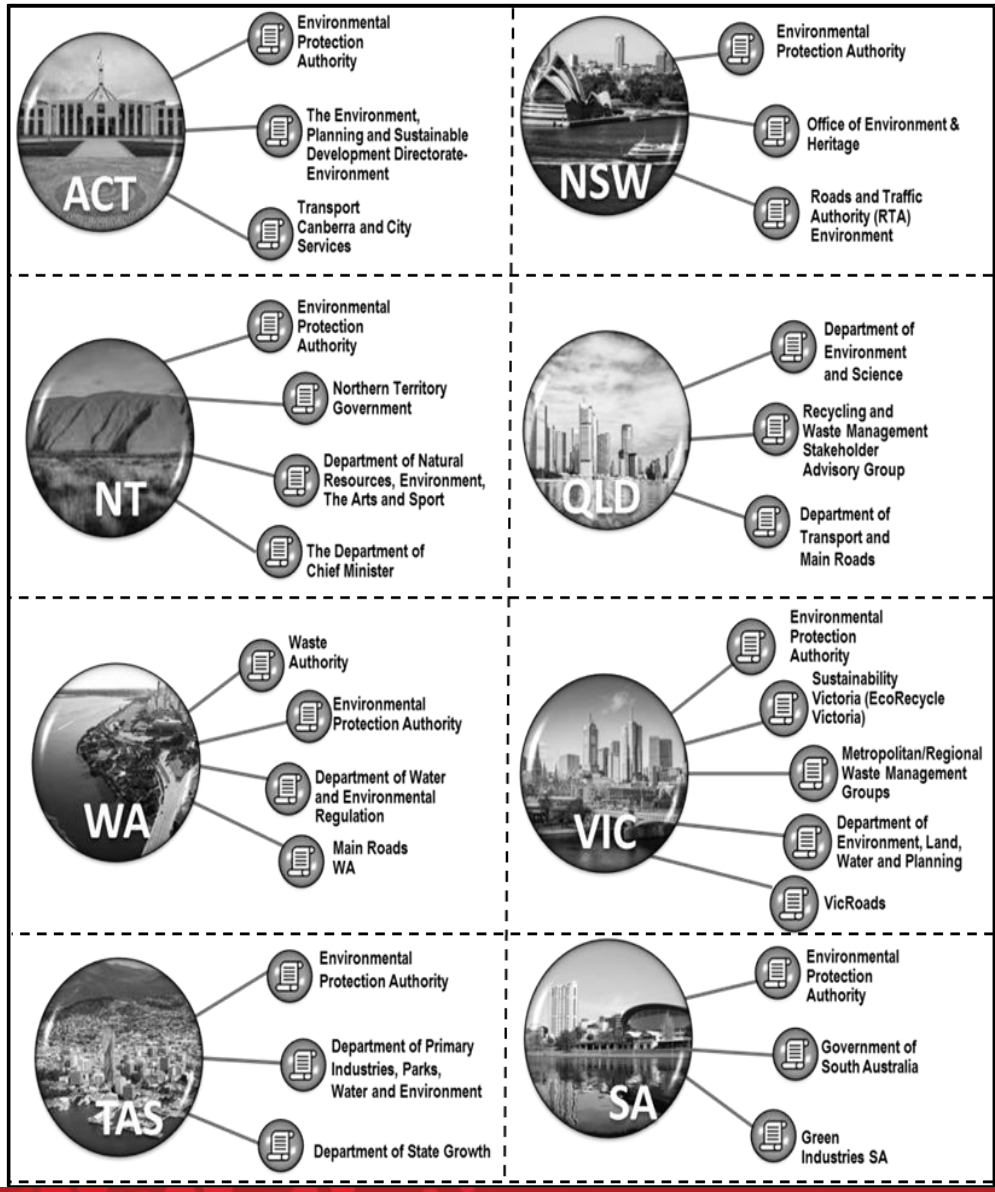


Figure 1: Agencies that contribute to C&D waste management legislation.

Results: Waste definition and classification

- Although the National Waste Policy 2010[1] set an objective to develop a national definition of waste, to date there is no consistent definition for general waste or C & D waste specifically
- The practice of waste definition is excessively associated with classicization of hazardous materials and determination on landfill levy liability
- The legal definitions of waste, as written into regulations, have generally developed independently within each jurisdiction
- Despite having general similarities between definitions of waste, each jurisdiction uses specific wording and practical applications

1. National Waste Policy. 2010. Department of the Environment and Energy

Results: Waste definition and classification

- The way that waste is classified has a significant impact on many aspects of waste management
- The main functions of classification in jurisdiction are to manage hazardous waste and granting permit and licencing
- The National Waste Policy advocates a classification that is based on three main streams: C & D, C & I and MSW.
- Yet this classification has not been used in waste related regulations in some of jurisdictions and other criteria (e.g. properties and the level of risk they may impose) are used to classify waste
- C&I: commercial and industrial, MSW: municipal solid waste

Results: Landfill levy

- **Landfill levy:** to set a price on waste disposal that is higher than the cost of recycling, such that recycling becomes a more attractive end-point.
- Except for NT, each of Australia's other jurisdictions have introduced a landfill levy; however, levies are imposed in different ways

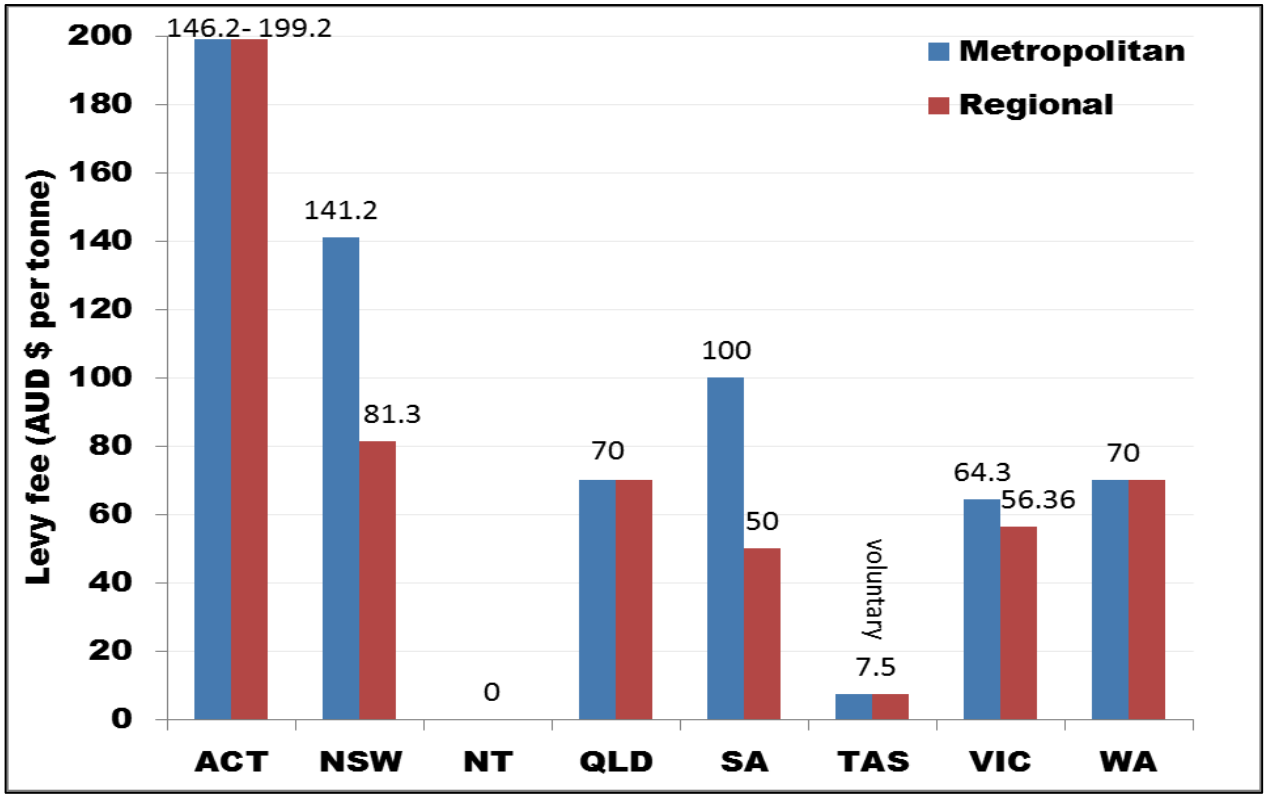


Figure 2: Levy fees for C & D waste disposal in different Australia's jurisdictions. Source: EPA in each jurisdiction.

Results: Illegal waste dumping penalty fees

- Legislators have set different penalty fees for illegal waste dumping.
- The most severe penalty is being applied in NSW, where offenders face up to 5 M and/or 7 year imprisonment.
- This is followed by the penalties in NT, Tas and ACT, which are 5 M (+/5 year imprisonment), 1.59 M (+/5 year imprisonment) and 1 M (+/7 year imprisonment), respectively.

- The next lowest penalty fees are charged in SA (up to 30 K), WA (up to 125 K), Qld (up to 217 K) and Vic (775 K).

Results: Future C & D Waste Management Targets

- Several waste and resource strategies use future targets to navigate efforts towards effective waste management
- **Resource recovery and recycling targets:** ACT: 85% (2020), NSW: 75%-80% (2022), Qld: 80% (2024), SA: 90% (2020) and WA: 75% (2020).
- **Landfill waste diversion targets:** NSW: 75%, Qld: 15%, SA: 90% and WA: 75% and reduction in waste per capita (Qld: 5%, SA: 5%).
- To date, NT, VIC and TAS have set no specific target at all

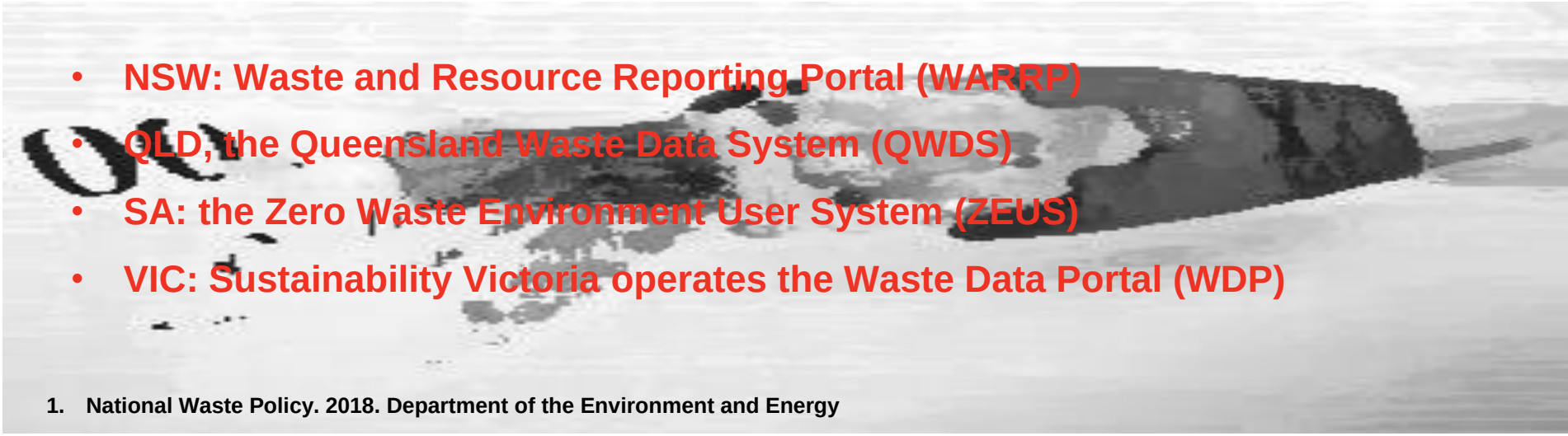
Results: Reusing C & D waste

- In the case of C&D waste, state road authorities particularly support road pavement applications by providing guidelines that determine the requirements and specifications for recycled C & D waste
- Various state authorities (in NSW, the Roads and Traffic Authority; in Qld, the Department of Transport and Main Roads; in SA, the Department of Planning, Transport and Infrastructure; in WA, WA Main Roads; and in Vic, VicRoads) have produced guidelines in which the requirements for recycled material usage in road pavement projects are outlined

Example: The City of Canning has been using recycled road base for the past 10 years and currently buys around 9,300 tonnes of the material each year and builds 100 per cent of its roads out of recycled product.
Source: Review of regulations related to C&D waste Management- authors

Results: Waste Data Management System

- Waste data is critical to well-targeted and planned evidence-based waste projects and programs
- In some jurisdictions, reporting waste data is obligatory and more than one authority could be responsible for waste data collection
- Among the jurisdictions, only four states (NSW, Qld, SA and Vic) have developed and operated a central data management system



- **NSW: Waste and Resource Reporting Portal (WARRP)**
- **QLD, the Queensland Waste Data System (QWDS)**
- **SA: the Zero Waste Environment User System (ZEUS)**
- **VIC: Sustainability Victoria operates the Waste Data Portal (WDP)**

1. National Waste Policy. 2018. Department of the Environment and Energy

Discussion and Conclusion

- The lack of consistent C & D waste legislation implies that waste minimisation strategies are not uniformly employed between jurisdictions
- **Consequential issues:** unreliable waste data collection, non-compliance with international reporting obligations and increases in illegal dumping and administration cost for waste management between jurisdictions
- These issues collectively hinder efforts by the Australian recycling industry to develop a domestic market that is attractive for investors
- **Solution:** A consistent approach has to be developed at the national level and harmoniously adopted by jurisdictions