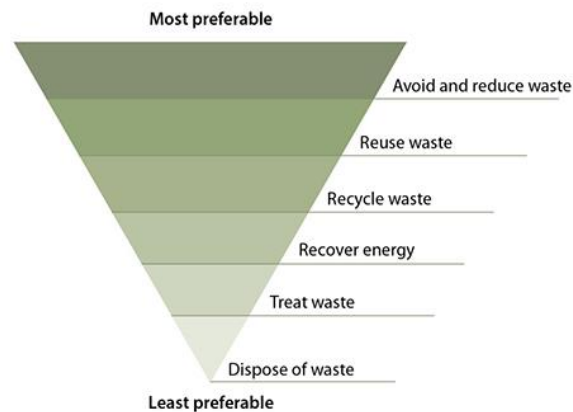


## 1. Waste Management Plan

TIC Mattress Recycling conducts its business in accordance with the NSW waste hierarchy, which underpins the objectives of the Waste Avoidance and Resource Recovery Act 2001, and follows the principles of waste management through the process of:

- (i) Avoidance – reducing the generation of waste materials.
- (ii) Resource recovery – including re-use, recycling, reprocessing and energy recovery.
- (iii) Environmentally sound disposal – the least preferred option, but necessary when materials have reached the end of useful life and no other option is available.



TIC Mattress Recycling embeds the principles of waste management throughout its core operations, including the handling and processing of waste mattresses to ensure valuable recyclable materials are recovered, and that ensuing waste is diverted to a higher order use involving energy recovery. These outcomes are consistent with the objectives and guidelines as outlined in the *NSW Waste Avoidance and Resource Recovery Strategy 2014-2021*, and furthermore the facility ensures the diversion of mattresses away from landfill. This is a key benefit for saving space in landfills, which is also a desired outcome for the state of NSW.

The key features of TIC Mattress Recycling approach to waste management at the proposed facility involves:

### I. Collection of waste mattresses and transport to site.

Waste mattresses are a form of general non-putrescible waste, and the site will receive an estimated 4,200 tonnes of waste mattresses annually. This is equivalent to approximately 140,000 mattresses processed through the plant each year.

Mattresses will be collected from local sources located within Metropolitan Sydney and surrounding areas.

Transporting the mattresses will be by road, using a fleet of 10 pallet trucks. The trucks will arrive at the site to deliver the mattresses between the hours of 1-4pm each working day.

## **II. Temporary storage of the waste mattresses.**

Waste mattresses will be stored temporarily inside a designated warehouse on site. Mattress storage will be maintained at a minimum enable maximum processing throughput.

The location of mattress storage and processing area is shown on **Figure 4** (refer page 11).

## **III. Processing - materials recovery.**

Approximately 3,000 tonnes of steel and foam will be recovered through the proposed facility. These materials will be suitable for recycling into other products by local manufacturing businesses

The recovered steel and foam will be stored inside the warehouse facilities, and bins will be covered with tarpaulins prior to being removed from the warehouse for collection. Importantly, these materials will not be left to stockpile, and will be removed from site on a daily basis.

Steel recovered from the process will be collected immediately into a hook bins (30m<sup>3</sup>) located within the warehouse facility, and will be collected on a daily basis using a contracted waste service provider. All recovered steel will be sent to a metals recycling facility.

Foam recovered from the process will be baled and immediately loaded into a truck for delivery to a local recycling facility where it will be processed further and used in new products.

## **IV. Process Engineered Fuel**

Approximately 1,200 tonnes of textile material will be recovered on an annual basis. While this material is not suitable for re-use or recycling it is suitable as feedstock for resource derived fuel and energy recovery. It is proposed this material will be separated and provided to a local fuel engineering company.

To collect this stream the proposed processing facility is designed to automatically separate textile material from the mattresses. Once separated the material will be diverted onto a conveyer and transported directly to a baling machine, where it will be baled on site.

The baled textile will be temporarily stored within the warehouse, following which the bales will be loaded onto trucks for daily transport and delivery to a local fuel producer and waste to energy company.

This approach ensures a higher order use of this waste stream, maintaining consistency with the NSW Waste Hierarchy.

## **V. Dust management**

The facility includes a sophisticated extraction system to capture dust being generated in the dismantling process and to reduce the risk of worker exposure to dust and particulate matter.

Extraction hoods are located in the key operational areas including g the dissection unit and shredding area with curtains, skirting and aprons employed where needed to ensure no spillage or escape of materials.

Enclosed ducting moves any material through the facility to the baghouse from where the material is deposited into a wheelie bin that is curtained to ensure no material escapes. As per the following plan for waste to landfill, when the bin is 75% full it is emptied into the garbage compactor.

## **VI. Waste to landfill**

Non-recyclable material from the processing of mattresses is sent directly to a garbage compactor or will be captured through the extraction system and collected through the Baghouse.

The material collected through the extraction system is inert general waste such as dirt and dust that forms into clumps as the material moves through the system. It is estimated about three tonnes of this waste will be captured on an annual basis.

The material from the extraction system empties out directly into a wheelie-bin or similar and skirting is provided around the outlet and the bin to ensure no materials escape.

The bin is regularly inspected and when approximately 75% full it is emptied into the garbage compactor. An estimated 800 tonnes of this material will be generated annually. A safe work procedure for emptying the bin from the extraction unit is provided as an attachment.









It is important to note that this non-recyclable material will not be landfilled, and will however be used as a fuel at a waste to energy facility. This approach ensures a higher order use of this waste stream, and maintains consistency with the NSW Waste Hierarchy.

## **VII. Environmental Benefits**

Processing mattresses through the proposed facility will also benefit the environment through reduced landfill, energy savings, and lower carbon emissions. Each year the plant will deliver the following environment benefits:

- Avoided landfill space – 105,000 cubic meters.
- Energy saved in steel recycling – 196,000 kWh.
- Avoided greenhouse emissions – 268.5 TCO<sub>2</sub>.

## Attachment – Dust Extraction System Bin Change Over

<b>Description of Work:</b>	<b>Dust Extraction System Bin Change Over</b>					
<b>Location:</b>	<b>TiC Mattress Recycling 29 Chifley St, Smithfield NSW</b>					
		<b>Potential Hazards:</b> <ul style="list-style-type: none"> <li>• Rotating moving parts</li> <li>• Dust - Inhalation</li> <li>• Electricity / Electrocution</li> <li>• Strains and sprains</li> </ul>				
<b>Personal Protective Equipment (PPE) Required</b> <i>(Check the box for required PPE):</i>						
 Gloves	 Face Masks	 Eye Protection	 Welding Mask	 Appropriate Footwear	 Hearing Protection	 Hi Vis Clothing
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
<b>Other Equipment Required:</b>						
<b>Safe Work Procedure Checklist:</b>						
<b>1. PRE-Operation:</b> <ul style="list-style-type: none"> <li>• Operations Manager to ensure all TiC Group Employees and Contractors have read and understood this Safe Work Procedure prior to performing this task.</li> <li>• Operations Manager to ensure that no personnel or contractors undertake any task for which they are not suitably qualified.</li> <li>• Operations Manager to ensure that all PPE required for the task is available and used correctly.</li> <li>• All personnel and contractors are to adhere to the SWP at all times while undertaking this task.</li> <li>• Prior to commencing work ensure that all equipment necessary for the task is available and ready for use.</li> </ul>						

2. **Operation:**

- This task is a 2 man operation, this is to ensure that all safety measures are in place, the power to the Dust Extraction Unit has been turned off and the bin can be changed safely.
- **Step 1**, ensure there is a replacement bin at the ready.
- **Step 2**, turn off the power to the Dust Extraction Unit. The second operator must verify that the Dust Extraction Unit has been switched off.
- **IMPORTANT:** Wait until the motor has stopped completely before proceeding. Both operators must agree that it is safe to proceed.
- **Step 3**, remove the skirt from around the top of the bin.
- **Step 4**, pull the bin out from under the Dust Extraction Unit.
- **Step 5**, move the clean bin into position underneath the Dust Extraction Unit.
- **Step 6**, Replace the skirt back over the bin and secure it in place.
- **IMPORTANT:** ensure everything is secure and everyone is clear of the machine
- **Step 7**, Restart the Dust Extraction Unit.

- ### 3. **POST-Operation:**
- Move the bin to its compactor area so it can be emptied.
  - Ensure the work area is clean and tidy
  - Report any faults, issues or incidents to your Supervisor Immediately.

- Move the bin to its compactor area so it can be emptied.
- Ensure the work area is clean and tidy
- Report any faults, issues or incidents to your Supervisor Immediately.

**Please list all employees trained in this Safe Work Procedure**

[illegible]