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## Textile Waste – Recovery & Regeneration

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### Why the theme?

Waste generation is increasing...  
 Between 2002-03 and 2006-07 waste generation increased to 43.8 million tonnes.

Waste generated	2002/03	2006/07
	32.4	43.8

Source: Dept. of Environment, Water, Heritage & the Arts, Oct 2009  
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### State and territory role

- All States and Territories have waste strategies and legislation to protect the environment and conserve natural resources
- A wide variety of measures have been adopted

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### Waste generation is increasing...

Comparative waste generation 2006-07 to 2020-21

Source: Dept. of Environment, Water, Heritage & the Arts, Oct 2009  
 www.ftna.com.au/education.htm

Australian Government  
 Department of the Environment,  
 Water, Heritage and the Arts

# Developing a National Waste Policy

Presentation from public consultation meetings held  
 21 April – 1 May 2009

### Discussion paper Sources of Textiles Waste in Australia

Author: Kerryn Caulfield



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## What is "textile waste?"

1. Pre-consumer
2. Post consumer
3. Industrial

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### 1. Pre-consumer Textile Waste

1. Manufacturing waste that is generated by processing fibres, (be they natural or synthetic fibres) and the production of finished yarns and textiles, technical textiles, nonwovens, garments and footwear, including off-cuts, selvages, shearings, rejected materials
2. B-grade garments

- Usually "clean".
- Usually landfilled in Australia!

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### 2. Post consumer Textile Waste

- Garments or household textiles (such as sheets or towels) that the consumer no longer needs and decides to discard, either because they are worn out, damaged, outgrown, or have gone out of fashion.
- This category has typically been of reasonable to good quality garments that can be recovered and subsequently recycled by another user as second-hand clothing, much of which is sold to third-world nations.

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### 3. Industrial Textile Waste

- Industrial textile waste is generated from commercial and industrial textile applications including commercial waste from properties such as carpets and curtains, hospital refuse in addition to industrial applications such as filtration, conveyor belting, etc.
- Industrial textile waste is usually "dirty waste". Collection and chemical contamination issues render this category as the least likely to be recovered in Australia. A substantial proportion of these end-of-life goods are consigned to landfill.
- However, there is research currently being undertaken by a number of industries, including the carpet industry, to utilise this resource.

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## Filtration media.....



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## Carpet waste




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## There is money in textile waste!

### Where there is money – there is trade

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Textile Waste - Textile Waste and more - Windows Internet Explorer

http://www.alibaba.com/catalog/110501/Textile\_Waste.html?searchWeb=Y

Alibaba.com

Products Selling Leads Suppliers Buyers AllExpress

Select Country/Region: **Textile Waste**

Related Searches: Nylon scrap, Cotton linters, Recycled cotton yarn, Blending yarn

Country/Region: Pakistan (1114), Bangladesh (300), United States (242), Indonesia (16), Turkey (120), Canada (46)

Business Type: Contract Manufacturing, Main Export Markets

Find Small Orders on AllExpress

One-time aviation head restraints waste  
One-time aviation head restraints  
Hansen Skin Woven Co., Ltd. [verified member]

recycle cotton polyester yarn, blended yarn, knitting yarn, recycle cotton yarn  
Always complying with the contract, we got...  
Min. Order: 2 Metric Tons

textile waste, textile waste Manufacturers & Suppliers - Windows Internet Explorer

http://www.alibaba.com/showroom/textile\_waste.html

Cotton knit textile waste - Self Shades  
Cotton knit self shades  
Sorted by color...  
TWS Trading LLC

Acrylic Tow textile waste  
We require acrylic fiber / low from 1.5 to 3 densier and 3 to 5 densier in any cut length and dyable as  
EROS INTERNATIONAL

7 Matching Results

Cotton Salvage Textile waste  
We are exporting Cotton Salvage...  
SHOHE International Trading

2 Matching Results

Textile Waste  
We have a huge quantity of textile waste...  
Aves



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**shod-dy** (sh d )  
*adj.* **shod-di-er, shod-di-est**

- Made of or containing inferior material.
- Dishonest or reprehensible: *shoddy business practices*.
- Conspicuously and cheaply imitative

*.n. pl.* **shod-dies**

- Woolen yarn made from scraps or used clothing, with some new wool added.
  - Cloth made from or containing such yarn.
- Something of inferior quality; a cheap imitation.

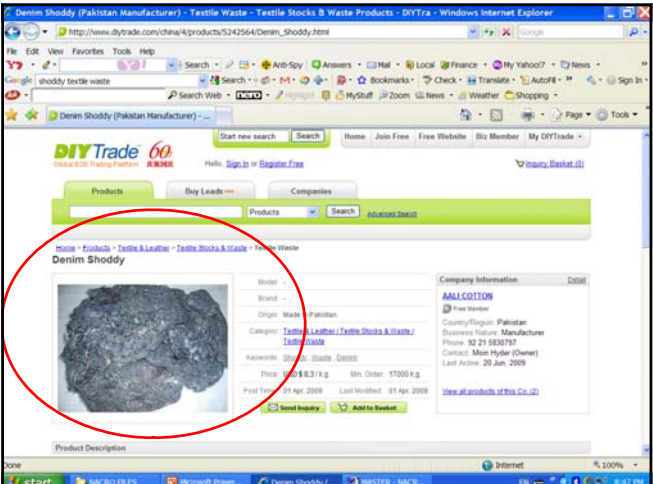
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- The shoddy industry, which was centred around West Yorkshire in the UK and Prato in Italy, concentrated on the recovery of wool from rags. The importance of the industry is gauged by the fact that even in 1860 the town of Batley was producing over 7000 tonnes of shoddy.
- At the time there were 80 firms employing a total of 550 people sorting the rags. These were sold to shoddy manufacturers of which there were about 130 in West Riding. Since these early days most countries have operated waste textiles industries, Prato in Italy being a prime example.

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Denim Shoddy (Pakistan Manufacturer) - Textile Waste - Textile Stocks & Waste Products - DIYTrade - Windows Internet Explorer

http://www.diytrade.com/chna/4/products/5242564/Denim\_Shoddy.html

DIYTrade 60 YEARS

Denim Shoddy

Model: -  
 Brand: -  
 Origin: Made: Pakistan  
 Category: Textile & Leather / Textile Stocks & Waste / Textile Waste  
 Keywords: Shoddy, Textile Waste  
 Price: \$24.83 / kg Min Order: 17000 kg  
 Post Time: 1 Apr 2009 Last Modified: 01 Apr 2009

Product Description

Company Information

ALL COTTON  
 Free Member  
 Country/Region: Pakistan  
 Business Nature: Manufacturer  
 Phone: 92 21 6830767  
 Contact: Moan Hyder (Owner)  
 Last Active: 29 Jun 2009  
[View all products of this Co. >](#)

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## Facts?

- Not many.....
- Various studies estimate that textile waste is currently 4% of landfill.

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## Textile recycling

Data on the US Environmental Protection Agency website estimates that:

- "more than 500 textile recycling companies handle the stream of used textiles in the United States.
- the industry employs approximately 10,000 semi-skilled workers at the primary processing level and an additional 7,000 jobs at the final processing stage.
- Primary and secondary processors account for annual gross sales of \$400 million and \$300 million, respectively."

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## Textile Waste Recovery Options

1. Recycle/Reuse
2. Regenerate
3. Energy from Waste

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## Option 1: Recycle/Reuse

It is estimated that between 80-100 million kilos of post-consumer textile waste is collected by Australian charitable recyclers through clothing recycling collection bins and donations.

Through the efforts of the charitable recycling organisations, approximately 75% of the collected post-consumer waste is diverted from our landfills and recycled and that the worlds poorest are clothed.

Of the post consumer waste recovered by charities;

- 60% consists of items of clothing that can be reworm or reused
- 15% can be torn into industrial wiper cloths, and
- 25% is unusable and sent to landfill.

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## Australian exports of textile waste

In Australia the two relevant tariff codes are as follows:

- 63090010 the description for which is "Worn clothing", and
- 63090090 the description for which is "Worn textile articles (excl. clothing)" which includes shoes, handbags etc.

- The Australian Bureau of statistics records that in the above two tariff categories, approximately 50,000 tonnes are exported annually to 44 countries, most of which are in the third world.
  - Around 2,500 x 40 foot shipping containers.

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## Australian exports of textile waste

- The major exporters of worn clothing and worn textile articles are the large charities such as the Smith Family Enterprise and Life Line.
- While ameliorating poverty in the receiving country, these shipments.
  - mitigate Australian land fill
  - earn export income for Australia
  - these earnings are reinvested into welfare programs.

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## Australian exports of textile waste

- The major destination is the United Arab Emirates, no doubt for transshipment to gulf countries.
- Malaysia is the second largest importer of textile waste from Australia, with Pakistan and New Guinea running third and fourth. African nations such as Togo, Tanzania, Mozambique, Nigeria, Tunisia, Dem Rep of Congo, Zaire, Zambia, Benin and Malawi and all large emerging recipients of Australian charitable clothing donations; so too South Pacific nations such as Papua New Guinea, Kiribati and Vanuatu, to name a few

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## Option 2: Regenerate

- Composites
- Paper
- Textile products

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## Option 3: Energy from Waste

- Fuel for cement kilns
- Ethanol from waste

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## Product Stewardship?

- Few effective product stewardship programs for the fibre, textile and apparel industry in Australia
- Government and other large uniform procurers don't appear to recycle – straight to landfill!
- France has a recycling Tax!

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## Conclusion....

- Knowledge: In order to manage an environmental issue, it must first be measured and quantified.
- Policy
- Financial
- Research and development
- Community awareness

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## Thank you

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