Textiles are Made of Fibres

- Natural Fibres
- Fibre Blends
- Man-Made/Synthetic Fibres
Cradle-to-Cradle

- Biological cycle: Products return harmlessly to nature through decomposition
- Industrial cycle: Non-degradable products are recycled continuously
Biological Cycle
Industrial Cycle

IN SELECTED STORES AND ONLINE FROM APRIL 10TH

H&M CONSCIOUS
EXCLUSIVE
More sustainable fashion

Supermodel Amber Valletta and sustainability think tank Ever Manifesto present exquisite fashion full of bohemian flair and flamenco-inspired glamour.
<table>
<thead>
<tr>
<th>Language</th>
<th>Number of items</th>
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<tr>
<td>English</td>
<td>9.227 EUR</td>
<td>461.331 KG</td>
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<tr>
<td>English (CAD / LB)</td>
<td></td>
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<tr>
<td>French</td>
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(Updated 2017-05-05)

http://hm.charitystar.com/en/home/
Take Back Programs

WE’D LIKE OUR CLOTHES BACK NOW THANKS VERY MUCH.

GREEN EILEEN EILEEN FISHER

A COLLECTION OF GENTLY WORN EILEEN FISHER CLOTHING

CARE TAG FOR OUR PLANET
- WASH COLD
- LINE DRY
- DONATE TO GOODWILL

Levi’s®
How Close or Far are we away from a Circular Economy?

Textile Recycling

Mechanical recycling

Ragging

Shredding

Chemical recycling
Ragging
Shredding
Jasztex (Montreal)

"JASZTEX was founded twenty-five years ago and has distinguished itself in the nonwoven fabrics industry for its constant innovation, dynamism and excellent customer service."
IRIS INDUSTRIES

BONDED LOGIC DENIM FIBER MATERIAL
Jessica Schreiber, Fab Scrap

Pre-consumer textile waste from 1,483+ manufacturing facilities
Chemical Recycling

Textile Recycling

Mechanical recycling
  - Ragging
  - Shredding

Chemical recycling
  - Cellulosic
  - Synthetic
  - Fibre blends
Cellulosic Recycling: Greys Paper Recycling Industries Ltd.


EDMONTON JOURNAL EDITORIAL BOARD February 23, 2016:
There are a handful of ways Edmontonians could react to news their municipal government sunk $9.4-million over the last six years into a recycling business that just filed for bankruptcy.
Synthetic Recycling: Victor Innovatex’s (Quebec)

Eco Intelligent Polyester (EIP),
• is produced with 80% less greenhouse gas emissions, by lowering humidity pressure, improving heating efficiencies, and implementing clean technologies -
• they claim to be the first antimony-free polyester that maintains its quality when recycled
“Repreve is one of the most certified, earth-friendly fibers available in the world. High-quality, recycled polyester yarns are made of 100% recycled polyester materials, including post-consumer plastic bottles, pre-consumer industrial waste, or a hybrid blend of both.”
Fibre blends:
Investment in Research and Technology

• The H&M Foundation partnered with The Hong Kong Research Institute of Textiles and Apparel (HKRITA),

• H&M committed $5.8 million to develop the technology to recycle blended textiles into fabrics fit for new clothing.

• Fibers like cotton-poly are currently un-recyclable into wearable new material

How H&M is Trying to Balance Fast Fashion with Revolutionary Recycling
POSTED ON DECEMBER 31, 2016 UPDATED ON DECEMBER 29, 2016
Fibre Blends: Recycling Cotton Polyester Clothes

- Biorefineries research group at Aalto University, has already success recovering polyester and spun it back into usable fibers.
- The biggest hurdle is not the chemical know-how. "We can handle the science, but we might not know what dye was used, for example, because it's not labeled."

- (1) DISSOLVE THE BLENDED MATERIALS,
- (2) SEPARATE THE CELLULOSE AND
- (3) SPIN NEW LYOCELL-LIKE

https://www.eurekalert.org/pub_releases/2017-04/acs-uf030717.php
Do we Need to Recycle Textiles?
Global Trends

• population growth,
  • increased global fibre consumption,
    • a finite cotton supply,
      • greater focus on sustainability issues

These trends contribute to a global fibre gap. Companies need to explore renewable options. Reclaimed fibres will be increasingly important for the supply of industrial raw materials for the textile industry.
How Much Textiles Require Recycling?
Where can We Find Textiles?

• Retail Council Canada is working with Scout Environmental on an inventory of textile products marketed in Canada by their retail members.
Textiles

Textile Industry
- Fabrics
- Home Textiles

Apparel Industry

Furniture Industry

Post consumer textiles,

IC & I Sector

Distribution Channels
The Residential and The IC & I Waste Stream

The Issue
Postconsumer – Textile Waste

IC & I Sector – Textile Waste

85% of textiles end up in landfills
15% is collected
De Brand (Delta, BC)

Secure and Responsible recycling

Business to business solutions for end-of-life product management

Proudly Trusted by:

[Logos of various companies]
A Circular Economy Challenge?

7.5% of textiles recycled

82 pounds of textile waste per person per year
12.3 pounds are donated
6.15 pounds are recycled
Material Flow of Garment Production

Organic fibre production: Fibres are spun into yarn, yarn is knitted or woven into fabric.

Fabric dying and finishing process:

Fabric is cut and made into clothes.

Consumer use/reuse:
- 85% Landfill
  - Landfill 0.75%
  - Recycled/converted 4.5%
- 15% Collected
  - Mainly reused as second hand clothes 6.75%
  - Recycled into fibre 3%
Textiles Have Different Values

- Used clothes good enough for reuse - garment value
- Used clothes not good enough for reuse – fiber value
- Dirty Textiles, or Textiles combined with other materials
Used Clothes
Good Enough for Reuse - *Garment Value*
Used Clothes Not Possible For Reuse
Fabric Scraps - *Fiber Value*
Dirty Textiles, or Textiles Combined with Other Materials – *The High Hanging Fruit*
Where To Start?
TEXTILES THE HOTTTEST ITEMS IN THE WASTE STREAM

Textile Diversion and Recycling Symposium
May 2018

sustainable
STRATEGIES & SOLUTIONS

Poster concept by Smriti Mahmud
smriti009@gmail.com
Thank you