Recycling Market
DEVELOPMENT CENTER

FOUR-PART
WEBINAR SERIES

Recycling Market Development Center

State agency partnership for collaboration to advance market development to prevent and reduce waste (RCW 70A.240.030)

- Statewide recycling studies
- NextCycle WA accelerator
- Diverse Advisory Board
- Focused pilot projects
- Waste stream market research
- Business & technical resources

Recycling Market
DEVELOPMENT CENTER

DEPARTMENT OF ECOLOGY
State of Washington

Washington State Department of Commerce

Housekeeping Notes

Recording:

This webinar is being recorded and will be posted to Ecology's YouTube and shared via the Recycling Market Development Center.

Q&A + Chat:

- **Use the Q&A box for speaker questions (use the 👍 upvote feature!)**
- **Use the chat to connect, share reflections, or drop helpful resources**

Privacy Reminder:

Please do not use AI notetakers (e.g., Otter.ai) — we're recording with limited, respectful access.

Take Care:

We'll have a 5-minute bio break, but feel free to step away as needed.

Feedback:

We'll drop a short survey link in the chat — your input helps shape future sessions!

Hosts

Timothy Parent (He/She/They)

Carly Mick (She/Her)

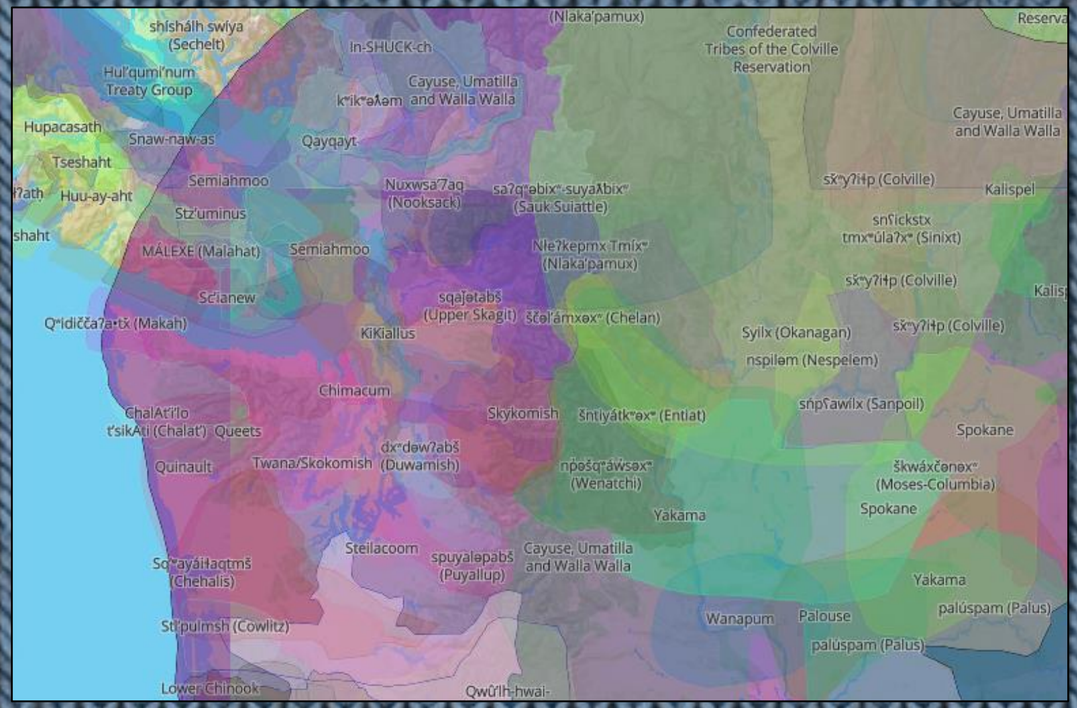
Reforme U

UNIVERSITY OF OREGON

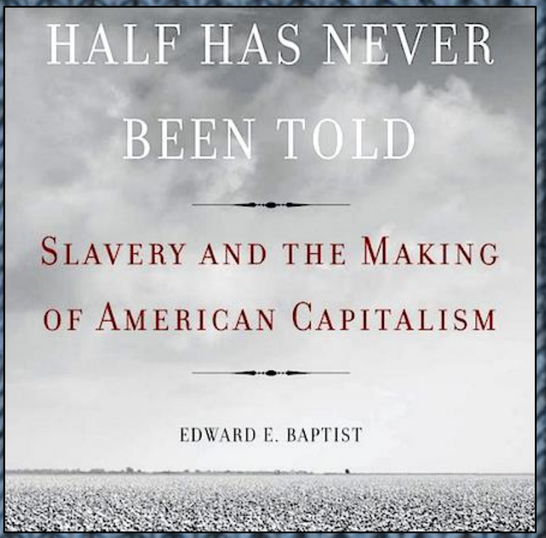
Land & Labor Acknowledgement

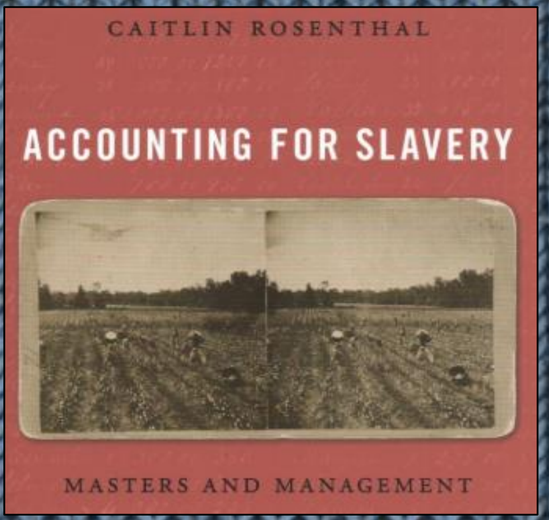
Newcombe, C. F. (1915). *Woman spinning yarn at the Coast Salish village of Musqueam* [Photograph]. University of Victoria Legacy Art Galleries. https://legacy.uvic.ca/gallery/salishcurriculum/coast-salish-design-elements/spindle-whorls/

Women Spinning yarn at the Coast Salish Village of Musqueam. Newcombe, C.F. (1915) https://legacy.uvic.ca/gallery/salishcurriculum/coast-salish-design-elements/spindle-whorls/



Map data provided by Native Land Digital (https://native-land.ca/) Used with permission for educational and non-commercial purposes.





Agenda

🎙️ Speaker Presentations
Circularity & Textiles Overview w/Carly Mick
Shared definitions & Key Terms

☕ 5-Minute Bio Break

💬 Panel Conversation
End-of-life pathways: donation, export, landfill

🧠 Group Q&A & Reflections
Speakers respond to your questions

📌 Closing Remarks
Survey + info for the next webinar

About

Recycling Market DEVELOPMENT CENTER

Created in 2019:

- Research and Development
- Marketing
- Policy Analysis
- Advance Recyclable Commodity Markets

Advisory Board

https://app.leg.wa.gov/RCW/default.aspx?cite=70A.240

Our Team


MYA KEYZERS
WA ECOLOGY


TINA SCHAEFER
WA ECOLOGY


LESLIE PERKINS
WA COMMERCE

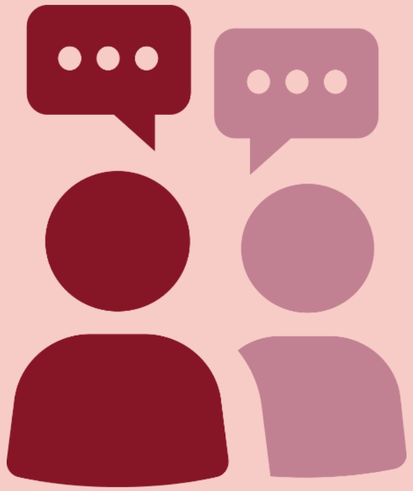

MEGAN DAVIS
WA ECOLOGY


KARA STEWARD
WA ECOLOGY

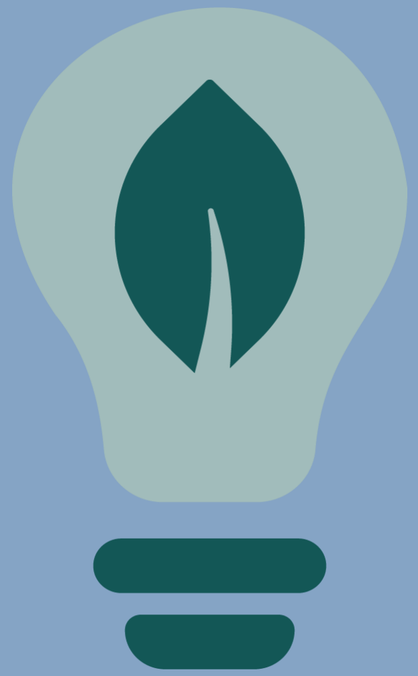

KIRK ESMOND
WA COMMERCE

RMDC Core Pillars

DEPARTMENT OF ECOLOGY
State of Washington



Convening



Innovation

Assistance

Research

Department of Commerce

"Strengthening communities and growing our economy"

Office of Economic Development and Competitiveness:

- Small Business Resiliency Network
- Tariff Resource Guide
- Property Site Selector Tools
- Small Business Flex Fund
- Small Business Export Assistance
- StartUp Washington
- Recycling Market Development Center
- Industrial Symbiosis Grant Program

Industrial Symbiosis Grant Program

Washington State Department of Commerce

- Supports innovative opportunities to recycle industrial waste for beneficial use and new resources (RCW 43.31.635)
- Since 2021, over $5 million invested into 27 projects located in 14 counties - to grow the circular economy across the state!

FUNDED BY WASHINGTON'S CLIMATE COMMITMENT ACT

What is NextCycle?

- Est. in 2023 – funded by Dept of Ecology
- Offers a 6-month training (accelerator) for innovators focused on waste prevention, repair, reuse, recycling
- Currently in the third round of accelerator team training
- Pitch Showcase May 19th

Convening

Quarterly Advisory Board meetings:

- Ecology and Commerce updates
- Board member roundtable
- Varied presentations: mattresses, textiles, reuse/repair

Partner Engagement:

- Solid Waste City/County Meetings
- Facility Tours
- Material topic discussions: glass and textiles

Stay in Touch!

Commodity Research

Circular Procurement Pilot Program

Leading a new approach for state agency purchasing by implementing circular economy principals into goods procurement, infrastructure, and recycling

NextCycle & Industrial Symbiosis

Waste Characterization Data

Material	Est. Percent	Percent +/-	Est. Tons	Tons+/-
Textiles-Organic	2.4%	0.7%	125,347	35,286
Textiles-Synthetic/Mixed/Unknown	1.2%	0.3%	62,785	15,552
Shoes/Purses/Belts	0.3%	0.1%	14,240	4,522
Total	3.9%	1.1%	202,372	55,360

Ecology's Statewide Waste Characterization Study 2020-2021, Table 14: Overall Statewide Disposed Waste Stream, Detailed Composition.

Definitions

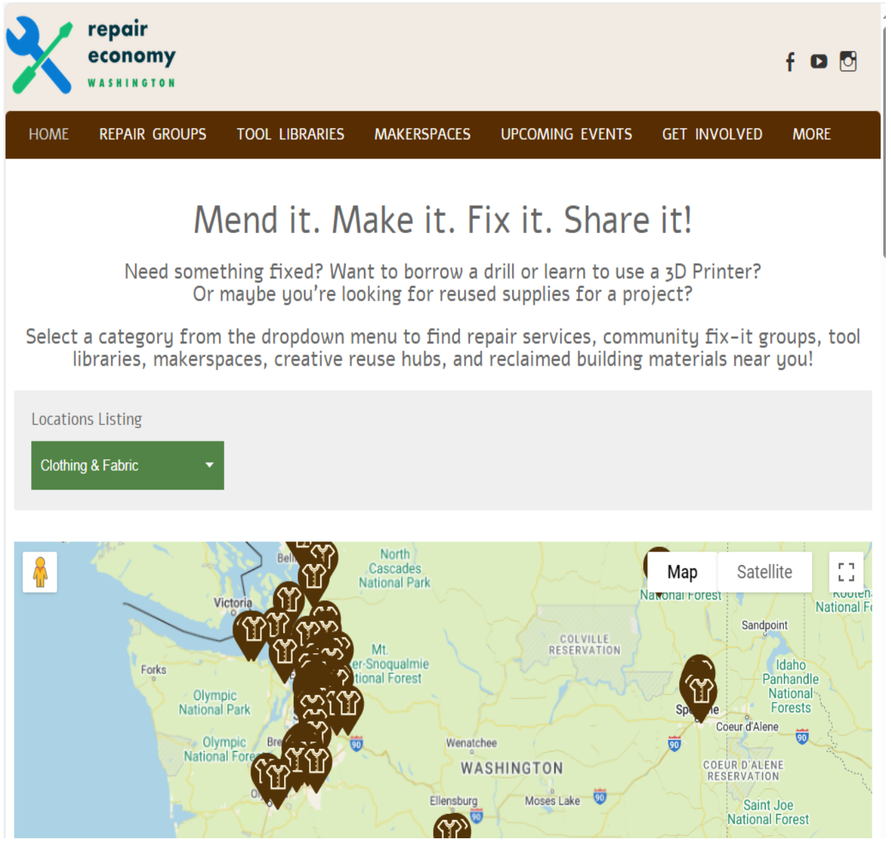
103. Textiles-Organic: cloth, clothing, and rope made of 100 percent cotton, leather, wool, or other naturally occurring fibers. Composites of several different naturally occurring fibers (such as a wool jacket with a cotton liner) can be included in this material, as can organic textiles with buttons and zippers.

104. Textiles-Synthetic, Mixed or Unknown: cloth, clothing, and rope made of unknown fibers, synthetic fibers, or made from a mixture of synthetic and natural materials. This includes dryer sheets and cleaning wipes.

105. Shoes, Purses, and Belts: all shoes and boots, purses, and belts whether made of leather, rubber, other materials, or a combination thereof.

Missing Data

Reuse/Repair



Export

Thrift Market

Incineration

Radical Collaboration

The textile industry is one of the fastest-growing materials in the U.S. waste stream and presents a multifaceted challenge with paralyzing complexity.

Approach: cutting a wide swath; initiating conversations, asking hard questions, and building trust with an invaluable network of partners including the convening of a textile co-design team.

The Result: A four-part webinar series that incites the courage for radical collaboration.

♻️ Unraveling the Textile Industry for a Regenerative Washington ♻️

✂️ Cut from the Same Cloth: Level Setting – May 6th

💡 Ripping the Stitch: Business Transformation – May 8th

🪡 Hemmed in to Cutting Loose: Adopting New Innovations – May 13th

👥 Fastening the Textile Community: Advocacy + Coalition - May 15th

Lisa Hilbert Founder, Redesign Collective

Leslie Perkins, Commerce

Megan Davis, RMDC

Carly Mick, Director of Sports Product Design, U of O

Kathryn Horvath, Fashion Advocate

Behnosh Najafi, Co-Founder, Circular Spring

Amrit Bhuie, Sustainability Advocate, Ph.D in Toxicology

Zakiya Cita, The Chayah Movement

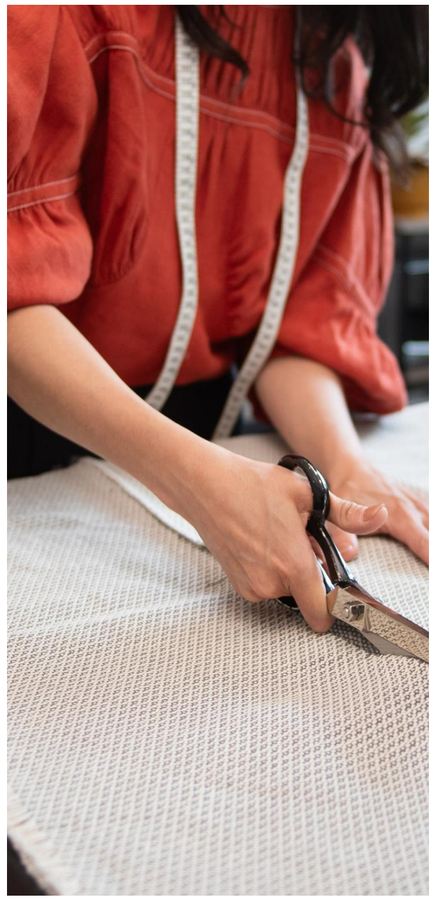
JeLisa Marshall, Community Organizer, PhD Candidate

Lizzy Paul, Circular Economy Leader, RRS

Mya Keyzers, RMDC

Nina Olivier, Circular Economy, King County

Cut from the Same Cloth: Level Setting



MAY 6TH 10AM – 12:30PM PST

Establish a shared understanding of the current state of textile waste, circularity, and market development.

Textile circularity framework	Existing systems, data, and terminology	Industry challenges and opportunities

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ACCELERATING® CIRCULARITY

King County

BANK& Vogue LTD/LTÉE

goodwill®

Ripping the Stitch: Business Transformation

MAY 8TH 10AM – 12:30PM PST

Equip textile businesses with practical insights to transition into or maintain circular business models through real-world examples and peer learning.

Elements of circular business models	Circular economy business types (upcycling, repair, rental)	Peer sharing: motivations, logistics, costs, & market demand

REDESIGN COLLECTIVE

Ravel™

King County

Washington State Department of Commerce

Hemmed in to Cutting Loose: Adopting New Innovations

MAY 13TH 10AM – 12:30PM PST

Explore cutting-edge technologies enabling circular textile practices while addressing infrastructure, logistical, and economic barriers to scaling innovation.

Infrastructure and investment needs	Concrete, scalable examples relevant to Washington	Tech innovations in textile circularity (fiber ID, platforms)

fibarcode

LOOPTWORKS

SORTILE

alqia.

Fastening the Textile Community; Advocacy, & Coalition Building

MAY 15TH 10AM – 12:30PM PST

Unify and empower stakeholders across levels to advance textile policy and collaboration, driving actionable steps for advocacy and ongoing community engagement in WA and beyond.

Coalition-building frameworks	Global to local policy & stakeholder landscape	Route to sustained collaboration

CARLY MICK

UNIVERSITY OF OREGON-
Portland Campus

Director of Sports Product

Intro to Textile Circularity

email:cmick@uoregon.edu

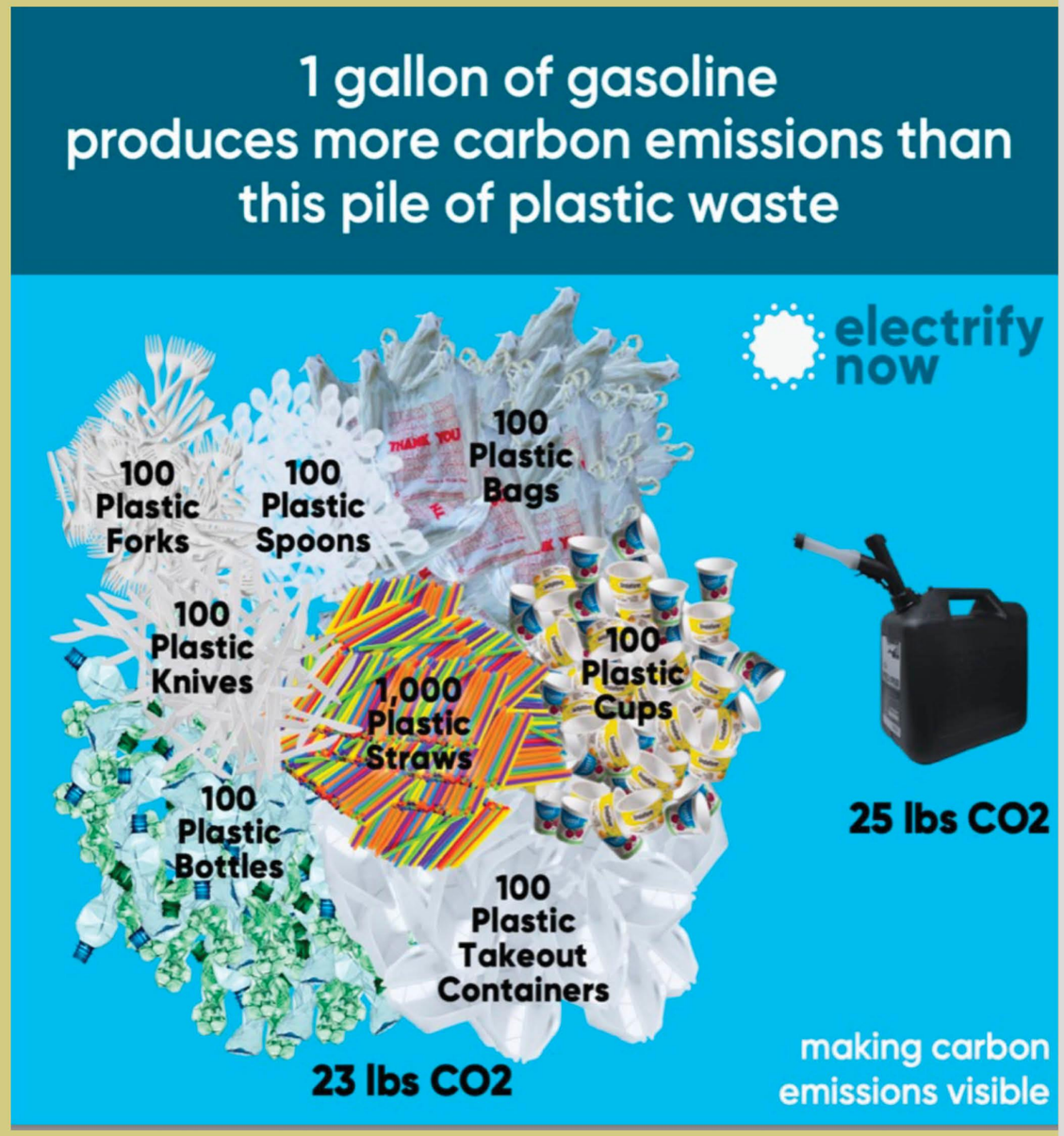
MAKING SENSE OF TEXTILE CIRCULARITY

INTRO TO TEXTILES AND RECYCLING

WHAT HAPPENS TO MY TEXTILES

ACCRA

ATACAMA



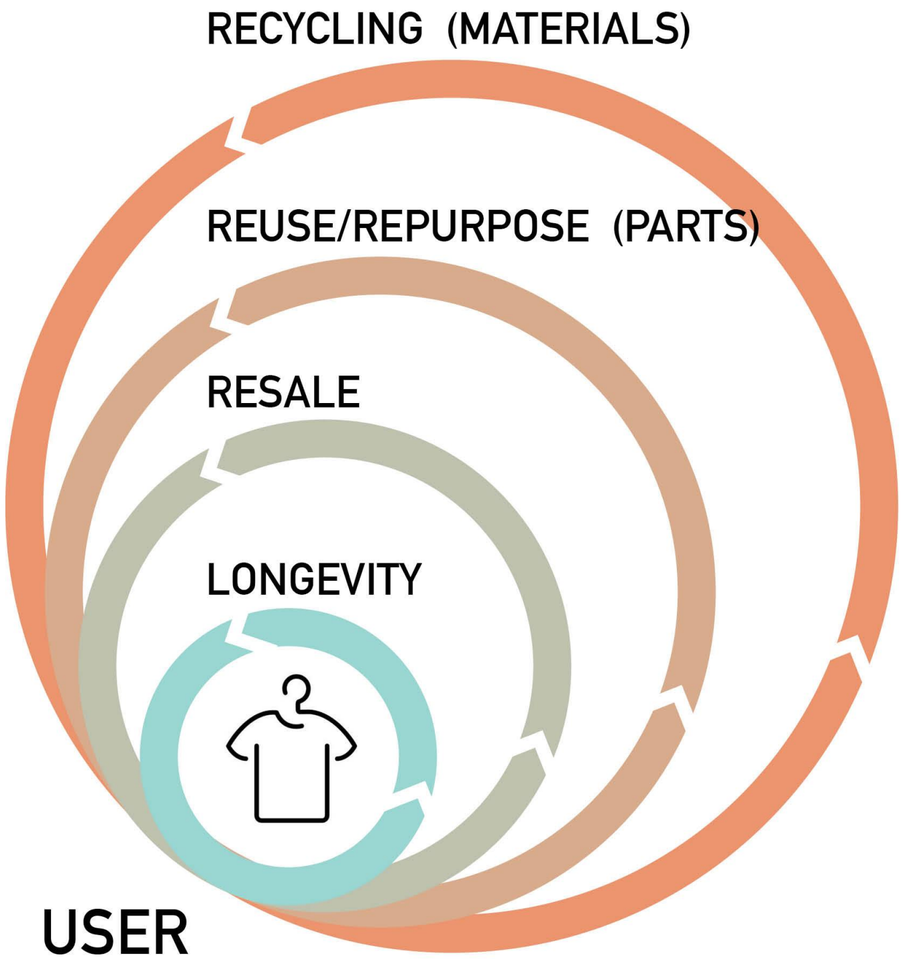
DISPOSAL IS A SMALL PART OF THE IMPACT

1. Fiber production through assembly = 98% of apparel's global impact
2. Raw material through assembly =>95% of footwear's global impact
3. 68% Of the water impacts for a pair of jeans are in fiber creation (cotton farming)

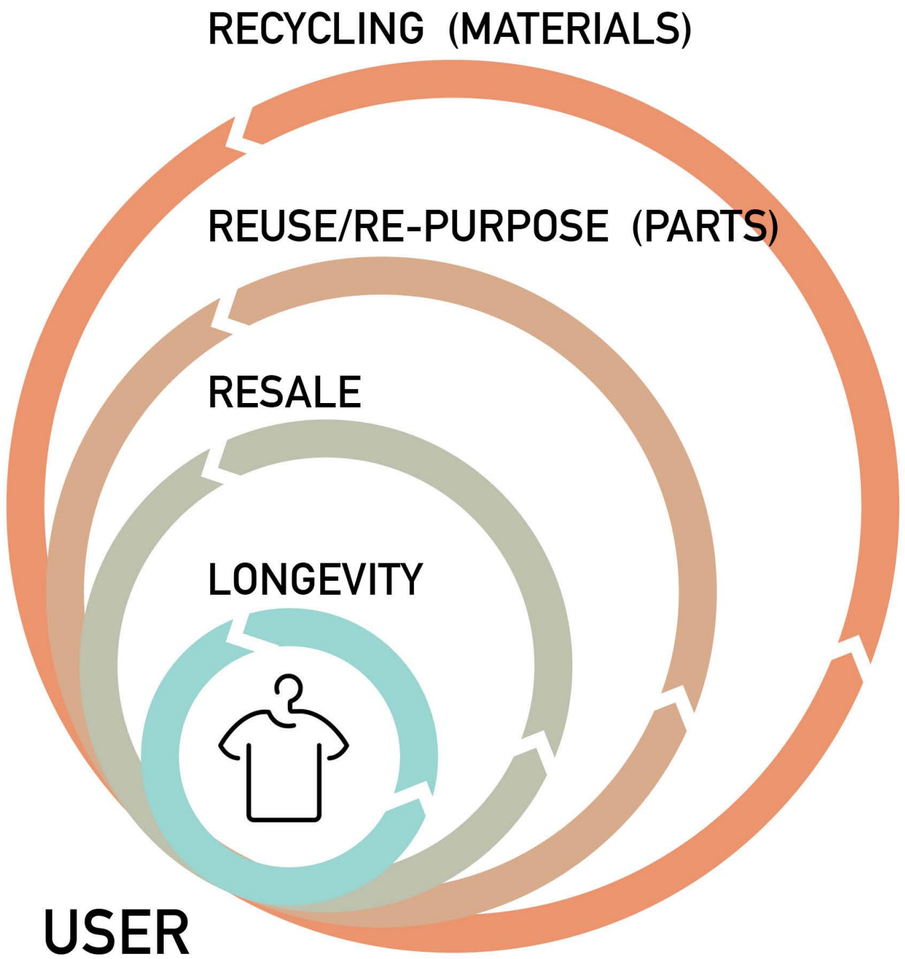
Eric Brody-Shift Advantage

REDUCE
REUSE
RECYCLE

TRANSITION TO A CIRCULAR ECONOMY



TRANSITION TO A CIRCULAR ECONOMY



SOCIETY

- Policy and legislation
- Collection, processing technology, disposal
- Resource sharing
- Education

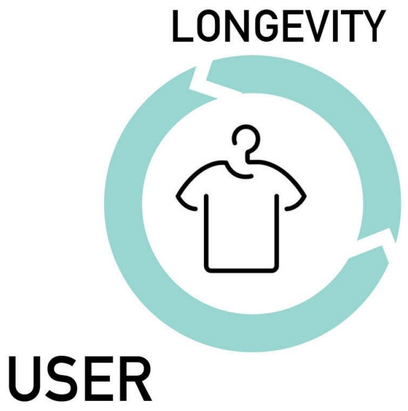
BRAND

- Sourcing
- Manufacturing
- Design

CONSUMER

- Purchasing behavior
- Care and maintenance
- Disposal

TRANSITION TO A CIRCULAR ECONOMY



LONGEVITY OF USE/REDUCE

SOCIETY

- Affordable repair
- Right to repair
- Repair/maintenance education
- Incentivizing longevity (EPR)

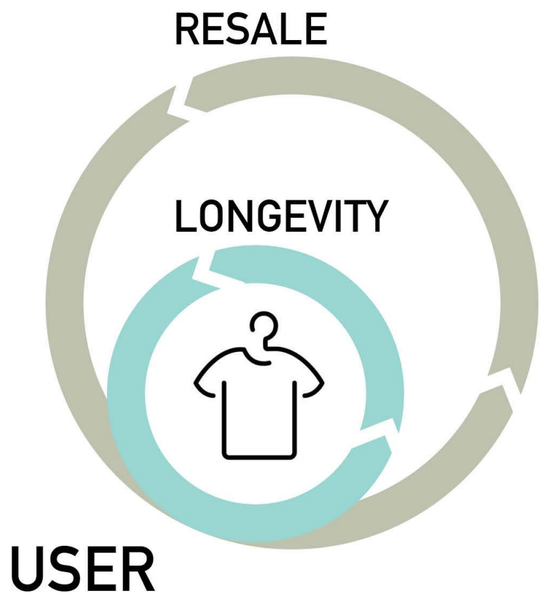
BRAND

- Design for durability, and repair-ability
- “Timeless” designs
- Owned repair
- Data collection for durability

CONSUMER

- Purchasing philosophy shift - “fewer, nicer, things”
- Maintenance and repair

TRANSITION TO A CIRCULAR ECONOMY



RESALE MARKET/REUSE

SOCIETY

- Easy collection/donation
- Sorting and distribution networks
- Financially incentivizing resale over first-use products

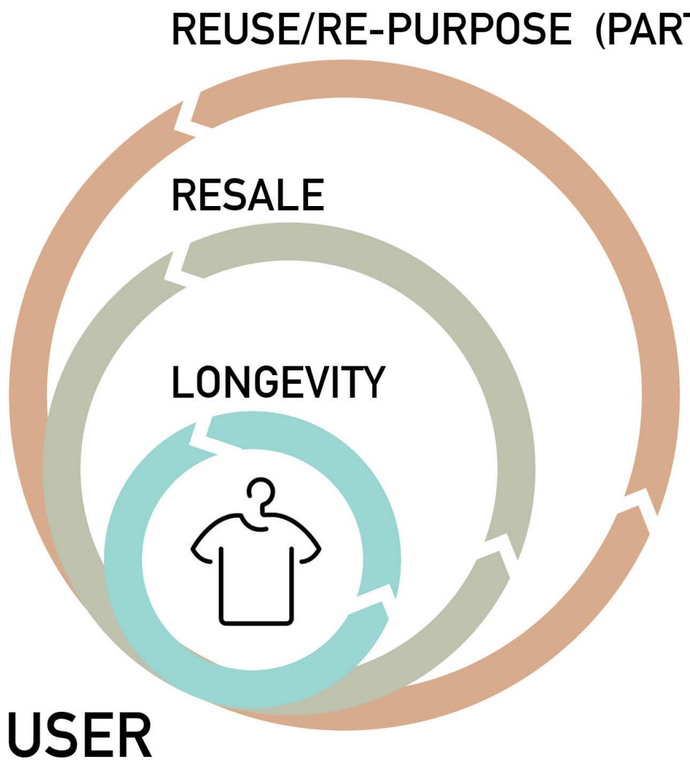
BRAND

- Creating business models that grows via service instead of production
- Brand owned resale
- Partnerships with external resale
- Clothing rental

CONSUMER

- Reducing the stigma of 'used'
- Appropriate disposal

TRANSITION TO A CIRCULAR ECONOMY



REUSE MARKET/REUSE (PARTS)

SOCIETY

- Facilitating collection
- Developing distribution networks
- Sorting technology
- Disassembling technology

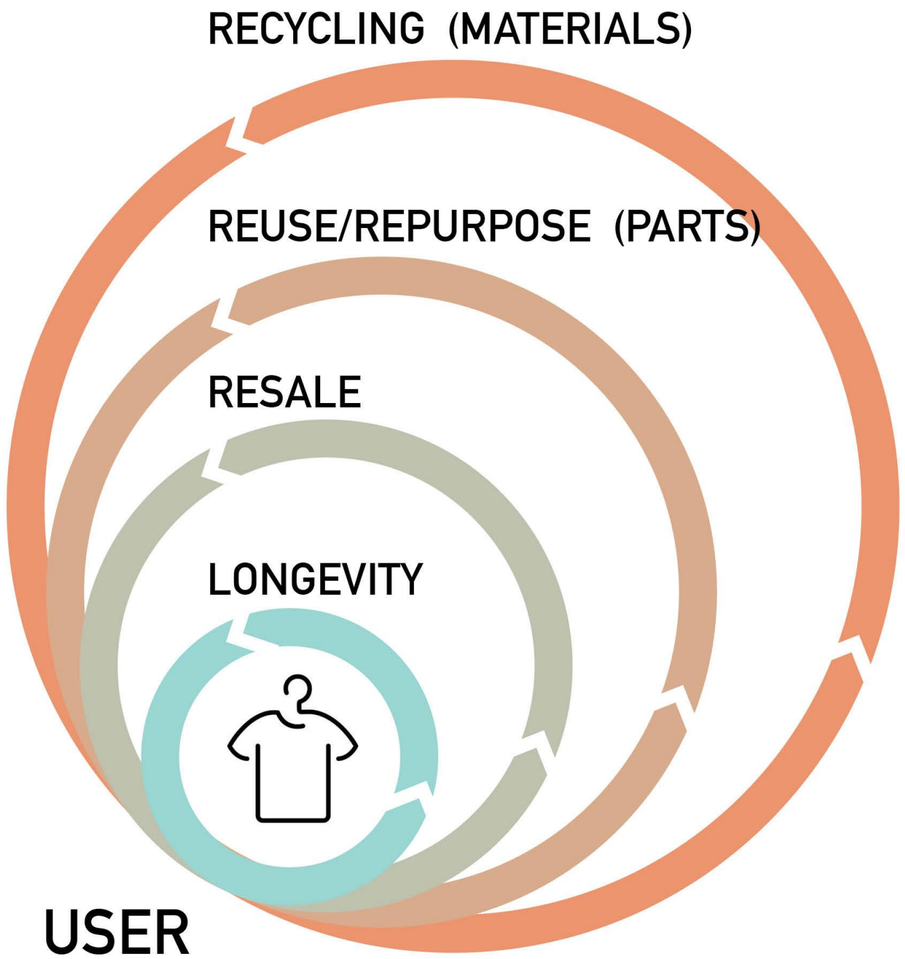
BRAND

- Owned repair
- Collaboration with collection
- Using re-purposed parts in new designs
- Easing decommissioning
- Design for disassembly

CONSUMER

- Appropriate disposal

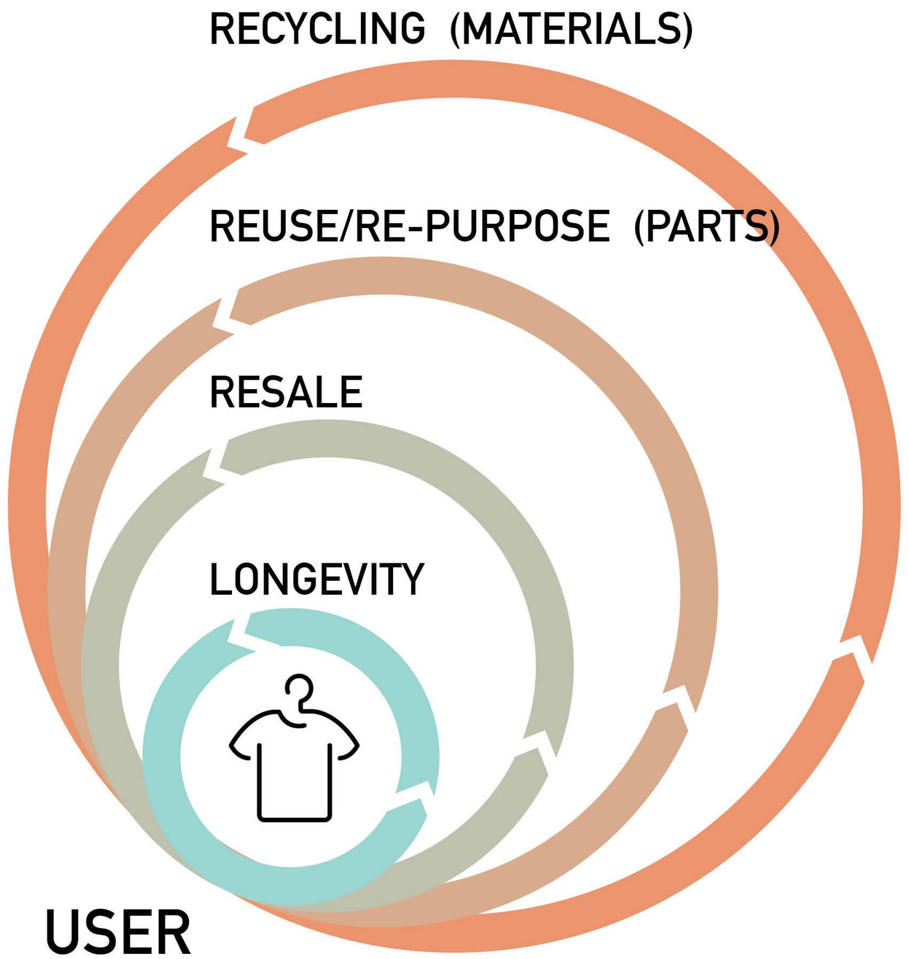
TRANSITION TO A CIRCULAR ECONOMY



"THE LONGER PRODUCTS, MATERIALS AND RESOURCES ARE EXPECTED TO RECIRCULATE AND REMAIN IN THE VALUE CHAIN, THE MORE IMPORTANT IT BECOMES TO AVOID CONTAMINATION WITH HAZARDOUS MATERIALS IN THE FIRST PLACE."

Juanga-Labayen, Labayen, and Yuan, "A Review on Textile Recycling Practices and Challenges."

TRANSITION TO A CIRCULAR ECONOMY



RECYCLING/MATERIALS

SOCIETY

- Legislating traceability
- End market development
- Sorting technology
- Support a variety of fiber to fiber recycling

BRAND

- Traceability
- Chemical management
- Collaborate with waste management to align designs to recycling technology
- Source recycled materials

CONSUMER

- Appropriate disposal

FEWER, NICER, THINGS

CROSS INDUSTRY COLLABORATION

FIND WHERE YOU CAN BE EFFECTIVE

TYPES OF TEXTILES

SYNTHETICS

64%

PET- POLYESTER

PA - POLYAMIDE - NYLON

SEMI- SYNTHETICS

7%

REGENERATED CELLULOSE

RAYON/VISCOSE
LYOCELL
TENCELL
MODAL
ACETATE

NATURAL FIBERS

27%

CELLULOSE
COTTON
LINEN
JUTE

PROTEIN 2%
WOOL
SILK
CASHMERE

TYPES OF RECYCLING

MECHANICAL

PHYSICALLY SHREDDING OR CUTTING APART TEXTILES TO CONVERT THEM INTO A FIBROUS FORM THAT CAN BE USED FOR NEW YARNS OR FABRICS

CHEMICAL

DISSOLVING OR BREAKING DOWN TEXTILES INTO THEIR POLYMERS OR MONOMERS AND RECOMBINING TO MAKE NEW POLYMERS

THERMAL

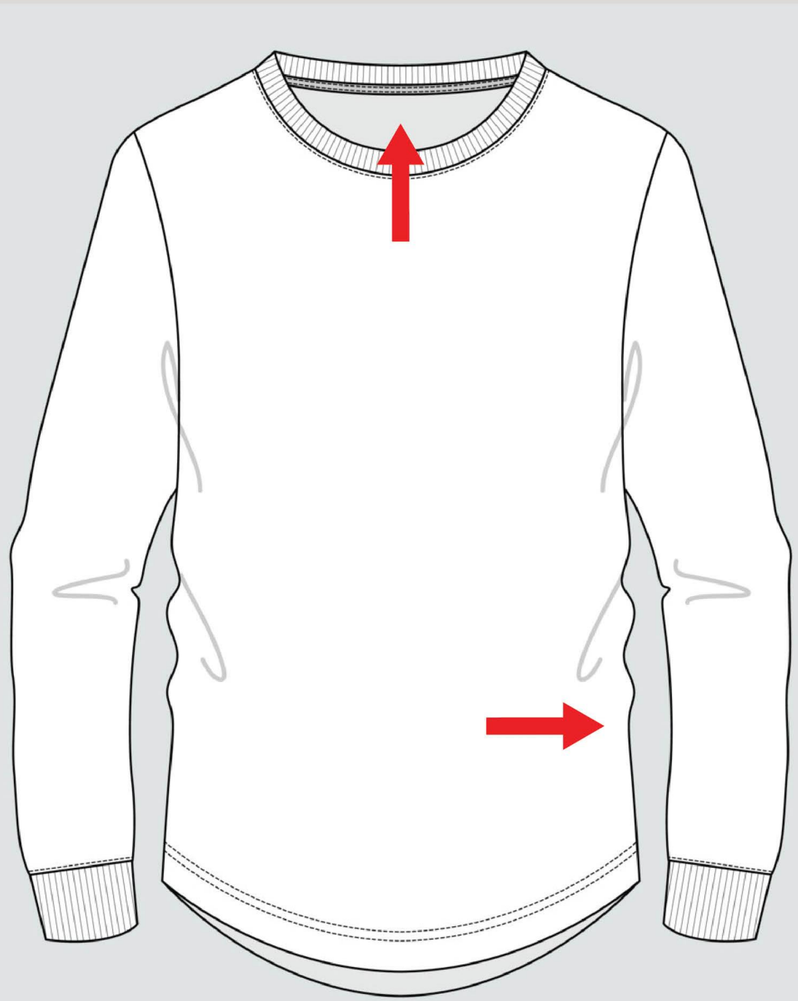
TEXTILES UNDERGO HIGH HEAT RESULTING IN THE MELTING OR COMBUSTION OF THE POLYMERS FOR USE IN NEW FIBERS OR AS ENERGY

COMPOST

BIOLOGIC DECOMPOSITION OF FIBERS THROUGH AEROBIC PROCESS AND MICROORGANISMS

WHAT IS IT MADE

THE FTC REGULATION GOVERNING CLOTHING LABELS



WHAT IS IT MADE OF?

THE FTC REGULATION GOVERNING CLOTHING LABELS 16 CFR PART 303 JUNE 2, 1959

1. FIBERS FOUND IN LESS THAN 5% DON'T NEED TO BE CALLED OUT SPECIFICALLY.

2. TRIMS AND DECORATIONS ARE EXEMPT PROVIDED IT DOESN'T EXCEED 15% OF THE SURFACE AREA.

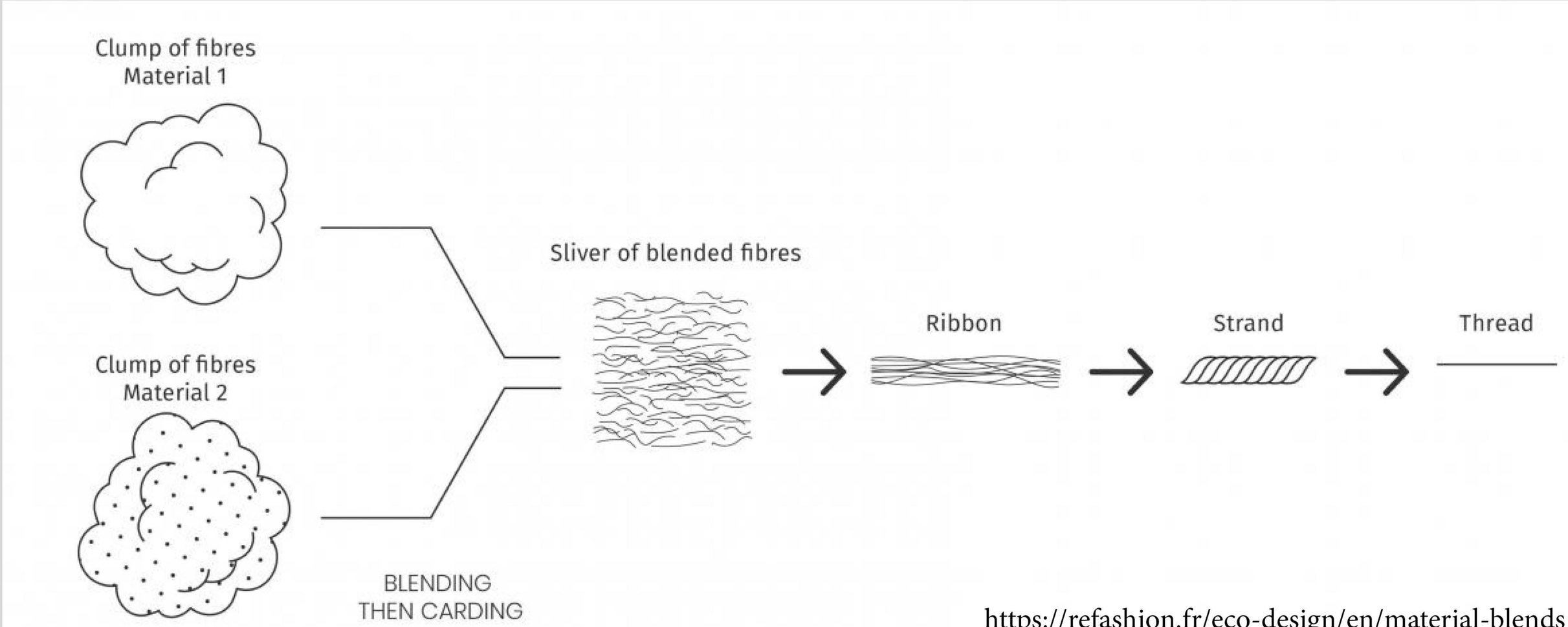
3. ITS LEGAL TO SAY "MADE OF REMNANTS OF UNDETERMINED FIBER CONTENT."

4. 100% MEANS COMPRISED WHOLLY OF ONE FIBER, OTHER THAN ANY FIBER ORNAMENTATION, DECORATION, ELASTIC, OR TRIMS.

5. THE FOLLOWING ARE SOME EXEMPTIONS FROM LABELING REQUIREMENTS:
   BELTS, PERMANENTLY KNOTTED NECKTIES, DIAPER LINERS, LABELS (EITHER REQUIRED OR NON REQUIRED), SHOE LACES, COATED FABRICS AND THOSE PORTIONS OF TEXTILE FIBER PRODUCTS MADE OF COATED FABRICS, AND ALL HAND WOVEN RUGS MADE BY NAVAJO INDIANS.

RECYCLING CHALLENGES

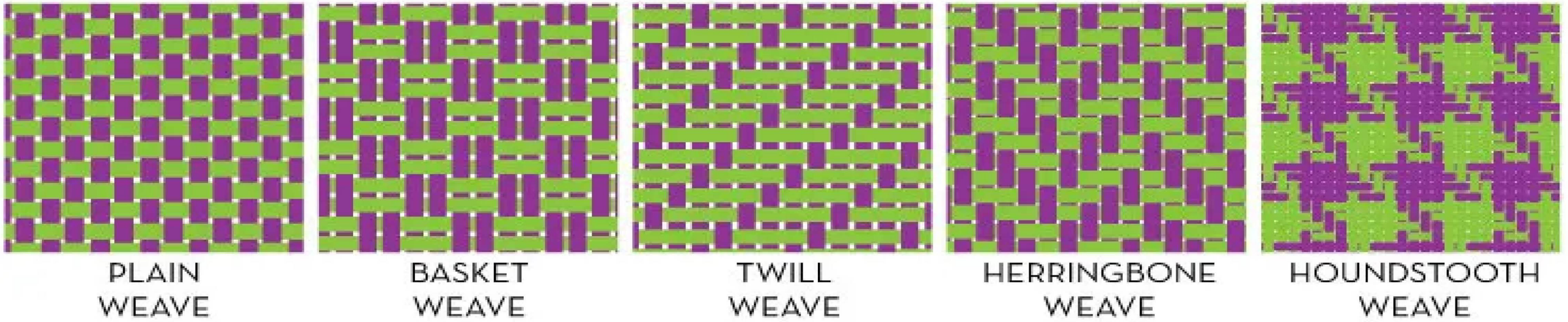
MULTI-FIBER YARNS- Using multiple types of fiber in a single

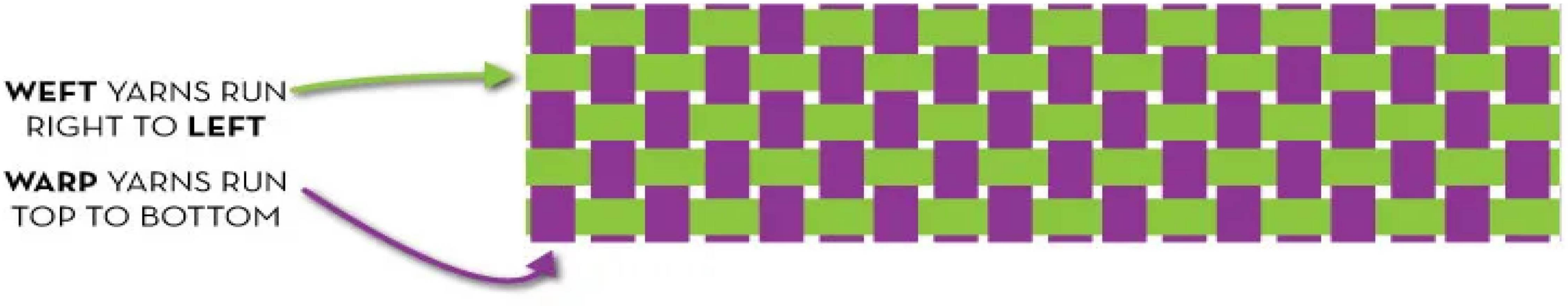


https://refashion.fr/eco-design/en/material-blends

RECYCLING CHALLENGES

MULTI-FIBER TEXTILES- Using multiple types of yarn in a fabric





RECYCLING CHALLENGES

DYES/FINISHES/COATINGS

RECYCLING CHALLENGES

MULTI-TEXTILES APPAREL-
Using multiple types of fabric/ materials in a garment

RECYCLING CHALLENGES

TRIMS

https://www.wawak.com/garment-construction/

RECYCLING CHALLENGES

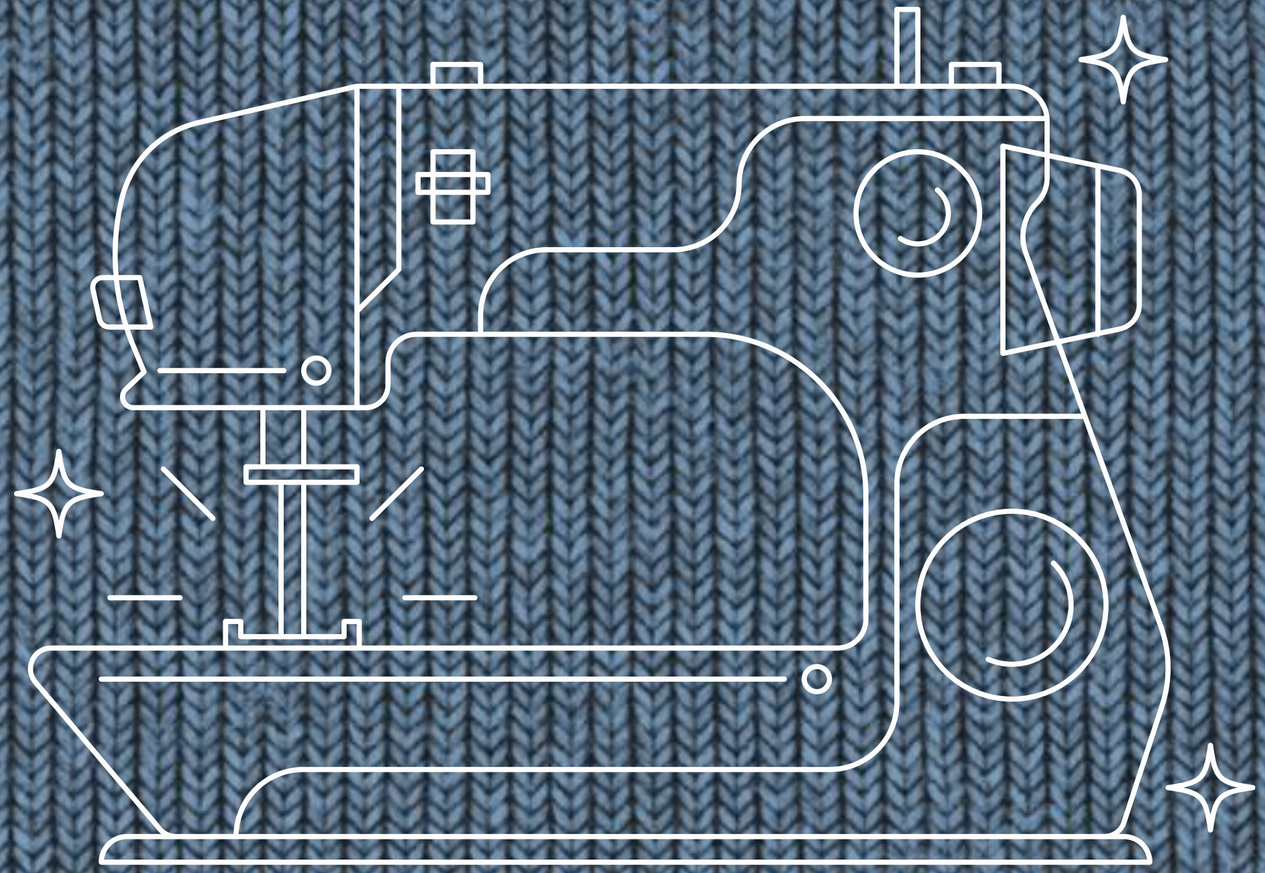
BONDING AND ADHESIVE


THANK YOU

Unraveling the Textile Industry

for a regenerative Washington

Questions



ACCELERATING®
CIRCULARITY

Entrepreneurial Executive | CEO
Sustainability Strategy | Consultant
Board Member | Product Innovator

Cut from the Same Cloth: Level Setting

May 6, 2025

Eileen Mockus
Chief Operating Officer

ACCELERATING®
CIRCULARITY

ACCELERATING® CIRCULARITY

WE ARE

An action-oriented nonprofit focused on textile-to-textile recycling systems at a commercial scale through a collaborative, stakeholder-led approach

WITH A MISSION

To build circular systems that turn used textiles into new raw materials

AND A VISION

Of a world in which textiles are no longer wasted

MATERIALS OUTLAST PRODUCTS

Photo Credit: A. Kraft PCW recycled textile polyester pellets.

116 M

tons of virgin material produced globally*

93 M

tons of material go to landfill globally*

17 M

tons of material go to landfill in the United States

1.2 M

tons of material go to landfill in California;

There are enough Clothes on the planet right now to dress the next

6

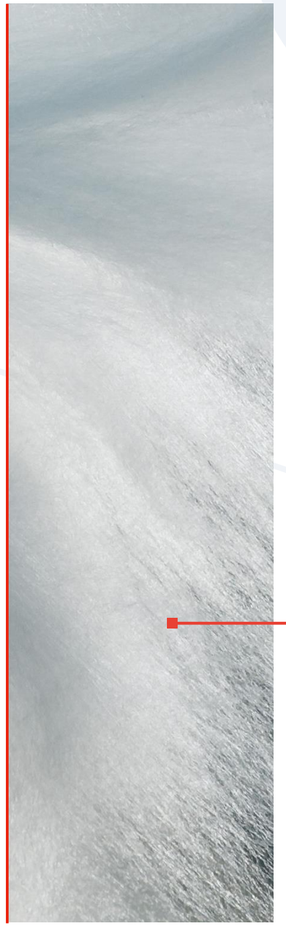
generations

25%

Cotton

63%

Polyester



7%

Manmade Cellulosic Fiber

*Textile Exchange Materials Market Report, December 2023
EPA data from 2018
California's Department of Resources Recycling and Recover

British Fashion Council | echolive.ie/corkviews/arid-41150395.html

Polyester Photo Credit: Unifi, Inc.
Lenzing AG Photographer: Markus Renner

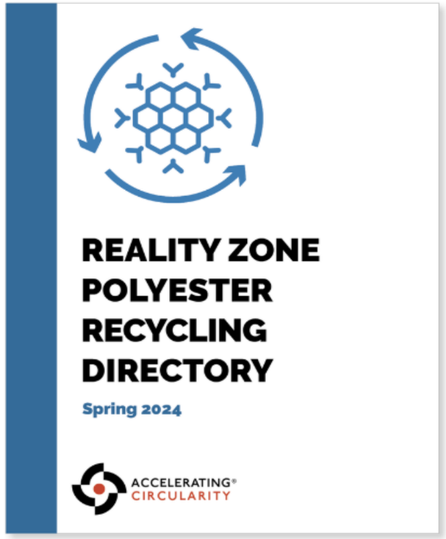
RESOURCES

Collectors: ~80 Collectors or Collector/Sorters in the United States and 40 are Goodwill Industries

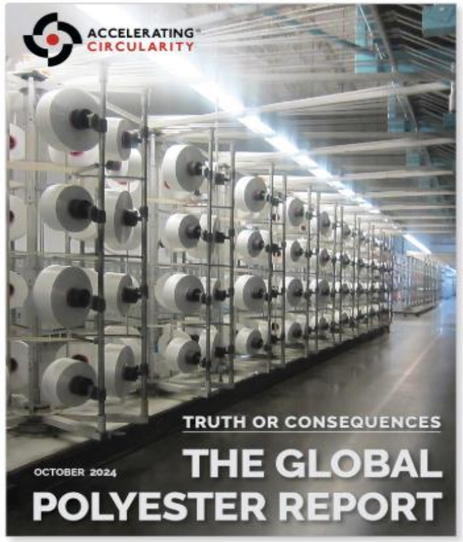
Sorters: ~35 Sorters and/or Pre-processors in the United States

Recyclers: ~ 25 Textile Recyclers in the United States with roughly a 50/50 split between mechanical and chemical recycling. Recyclers in the US are not large scale, not even 5 claim to be >1000 Tons

DIRECTORIES



REPORTS



TRIALS

Spent Textile Hierarchy

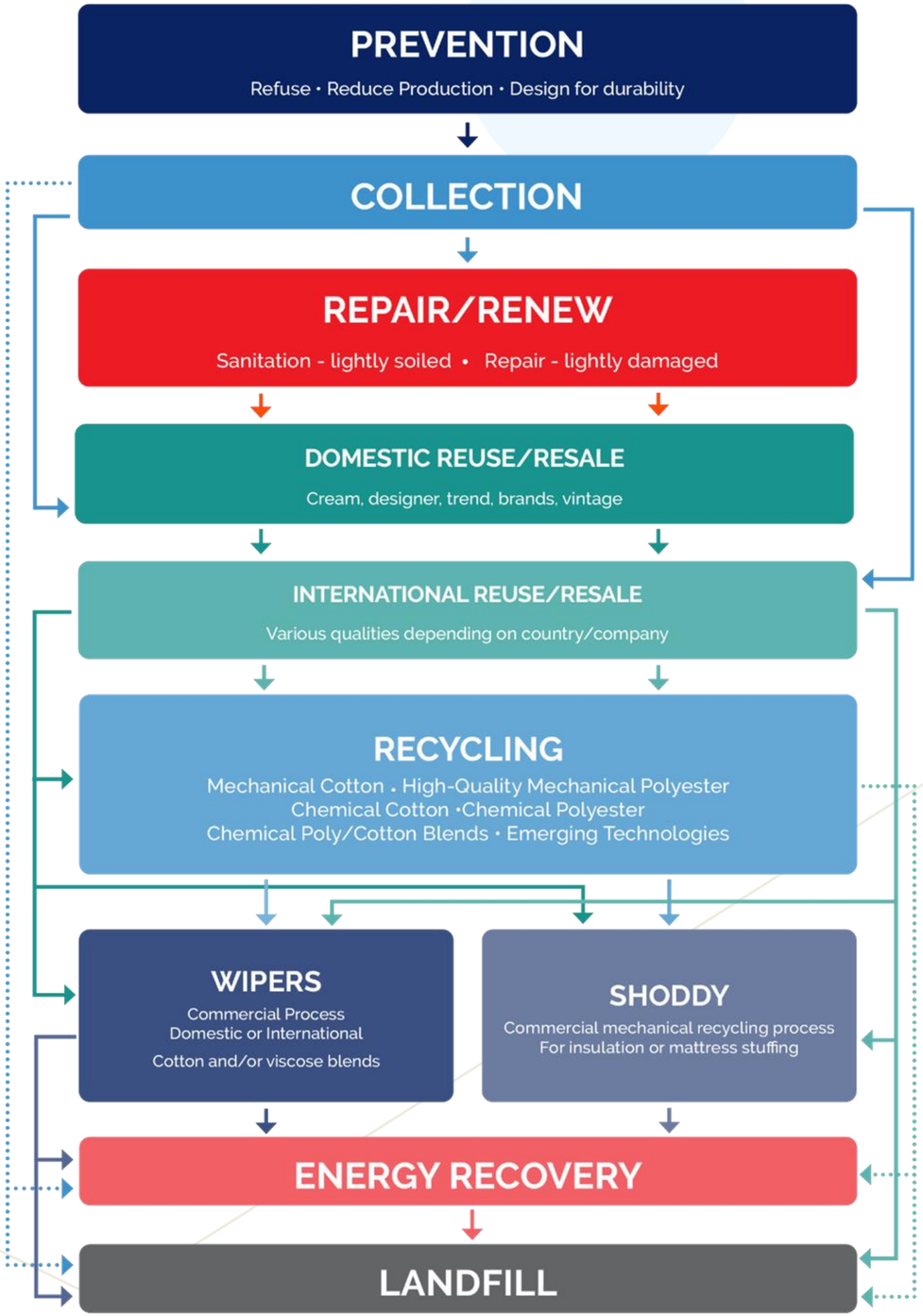
ACCELERATING CIRCULARITY

Priorities

The ACP framework aligns with guidance from the EPA, EU Waste Directive, and California SB707

- Prevention
- Collection
- Repair / Renew
- Re Use and Re Sale
- Recycling

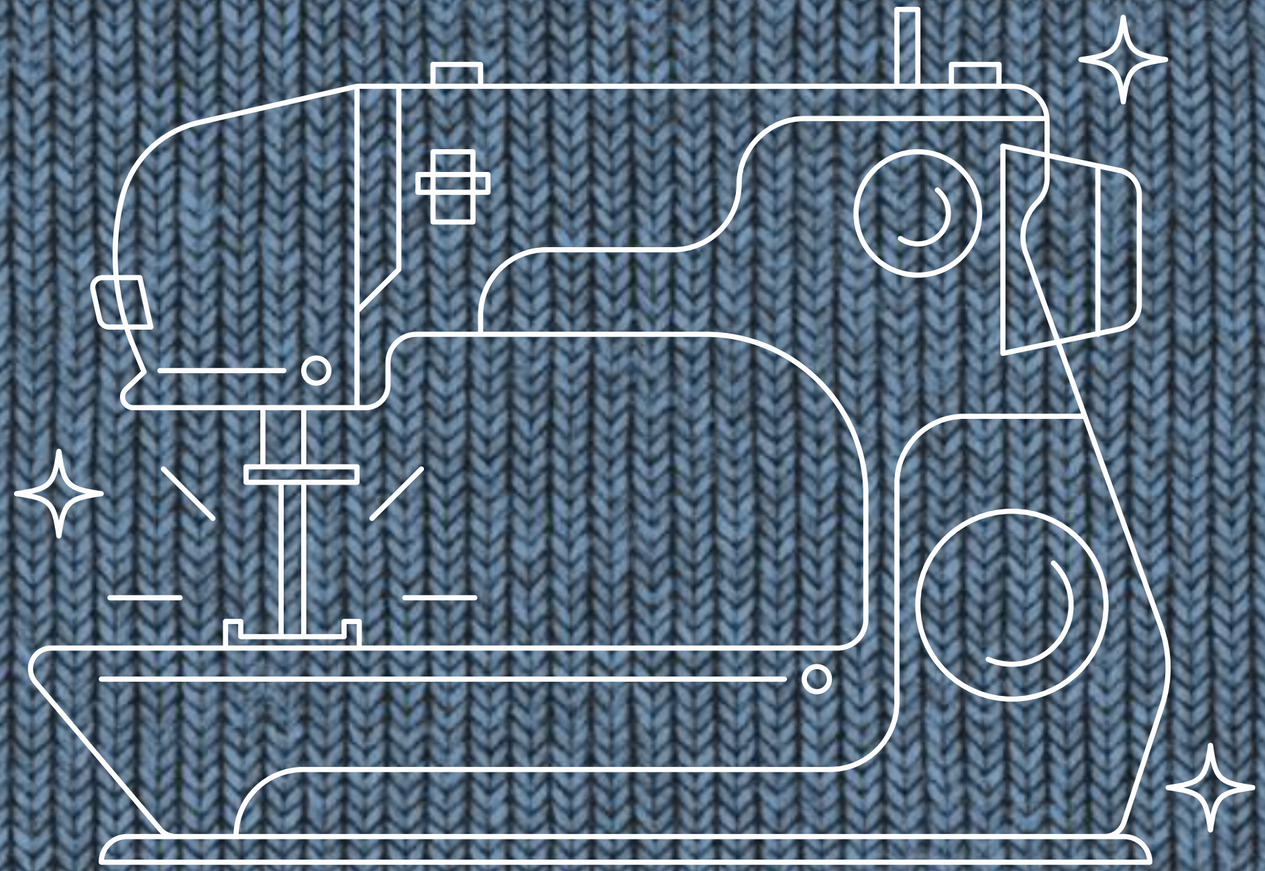
<15%
of all textiles are recycled, even though 95% of textiles are recyclable

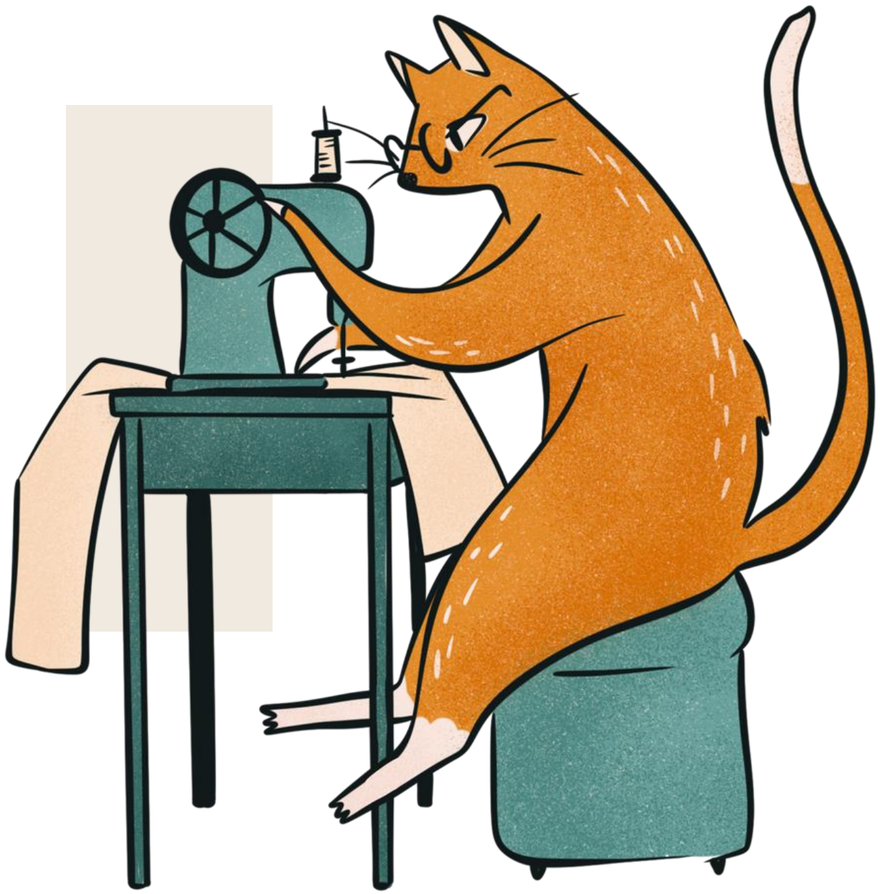


Unraveling the Textile Industry

for a regenerative Washington

Questions





Bio Break

Post Consumer Panel

Steven Bethell - Founder- Bank & Vogue Ltd/Ltée., BVH Services & Beyond Retro

Ottawa, ON

Co-founder of the Bank and Vogue family of companies, Steven has been a thought leader and pioneer in the post-consumer textile space for over 20 years. He has dedicated his work life to innovative and relevant solutions to the crisis of stuff.

Bank and Vogue works w/over 250 charities and private collectors across North America to maximize the value of post-consumer □waste□ stream. Steven and his team have traveled to over 30 countries working extensively amongst the robust second-hand markets of the world.

Kerwin Pyle - Environmental Programs Managing Supervisor at King County, WA

As a core member of the supervisor team, Kerwin leads the division□s efforts on prevention, reuse, recycling, product stewardship/Extended Producer Responsibility (EPR), policy, market development, environmental stewardship, and efforts within the circular economy.

Additional programs include Re+ (King County□s Zero Waste of Resources initiative), green building, household hazardous waste collection, resource recovery, waste stream integrity, and several compliance programs including on waste stream compliance & enforcement.

Sydney Muñoz (Pronunciation: moon-yoz)

Goodwill Industries International

Manager of Sustainability

Sydney Muñoz is the Manager of Sustainability at Goodwill Industries International (GII), which supports a network of over 150 local organizations that help people reach their full potential through the power of work.

Goodwill® is the largest nonprofit provider of workforce training and development in North America and the leader in the secondhand retail market.

Since joining Goodwill in November 2022, Sydney's work has focused on advancing textile circularity and sustainability initiatives across the Goodwill network.

With a career dedicated to sustainability, Sydney has led numerous initiatives in circularity, waste reduction, clean energy, and alternative transportation across nonprofit, government, and university sectors.

Unraveling the Textile Industry

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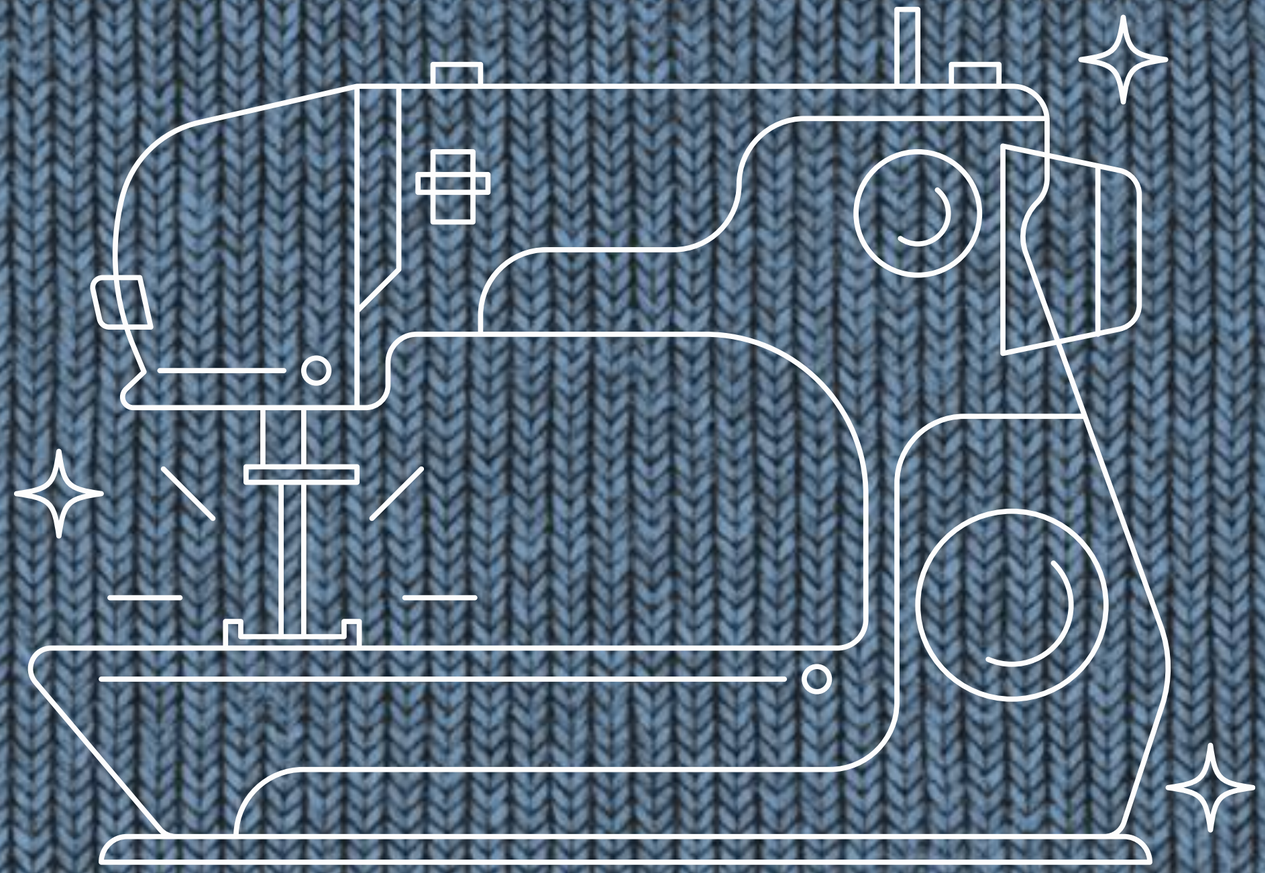
Questions



Closing Remarks

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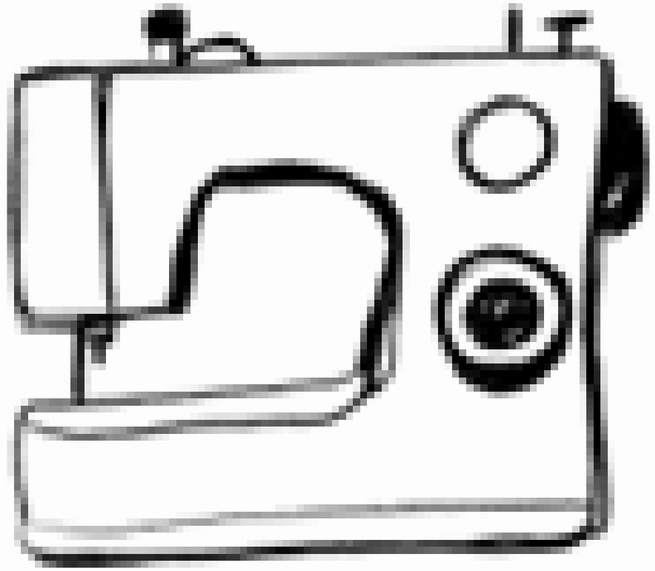
Survey

RMDC QR Code

Next Webinar



Thank you!