

RENEWPOLYTEX

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Overview of the problem

- The EU generates around 13 million tons of textile waste annually. Currently, only 22% of post-consumer textiles are collected for reuse or recycling
- A lot of this waste ends up in landfills in Africa or Asia
- Polyester is the leading fiber of the clothing industry, but its recycling rate is very low. (14%)
- 16-40 thousand tons of microplastics from synthetic textiles end up in the ocean per year.
- The EU Commission is proposing rules to make producers responsible for the full lifecycle of textile products.
- Around 32 000 tons of used textiles were collected in Norway in 2018
 - The amount collected in 2024 is expected to be larger
- 97% of the collected textiles were exported for detailed sorting, reuse, and recycling.



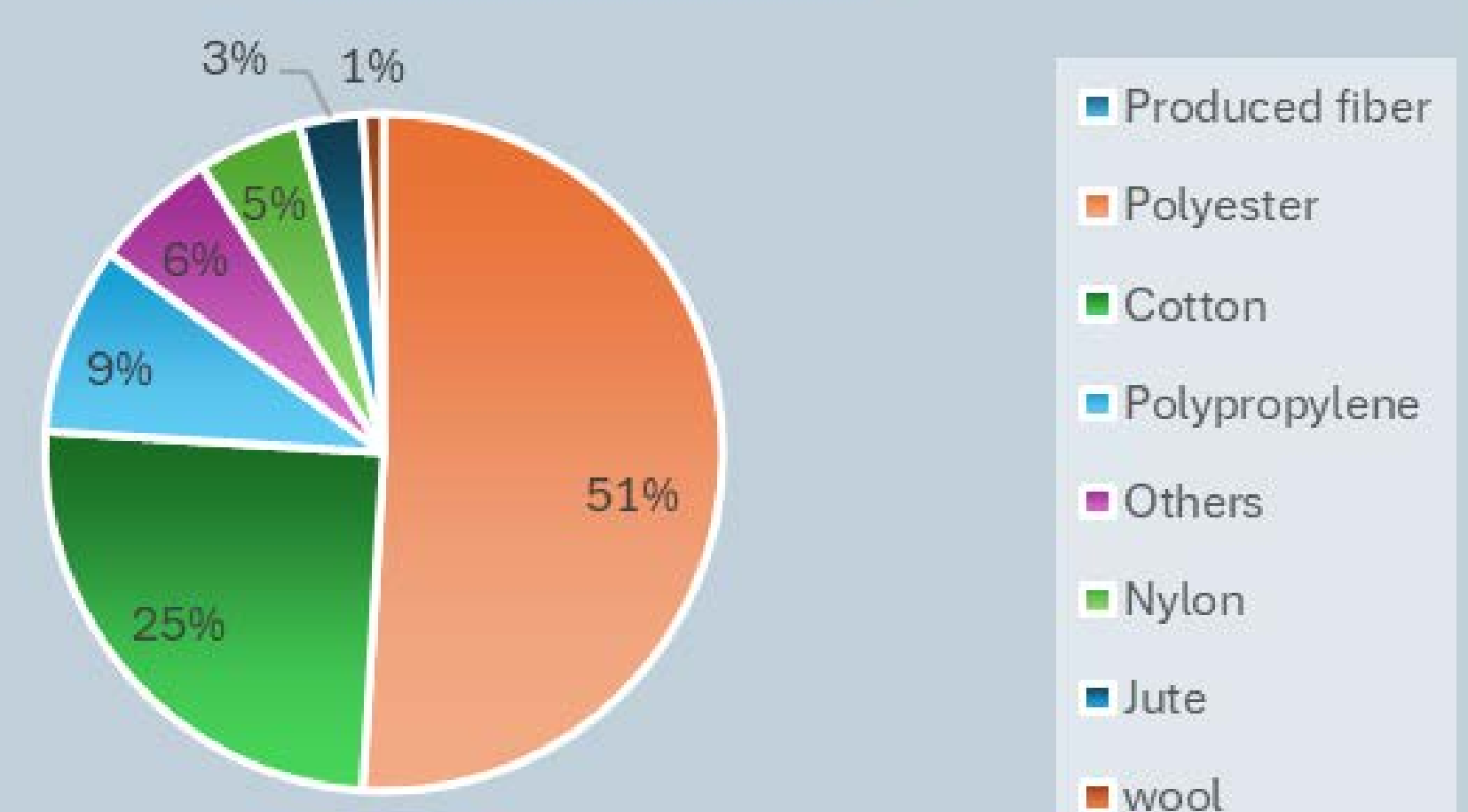
Our solution

Our materials

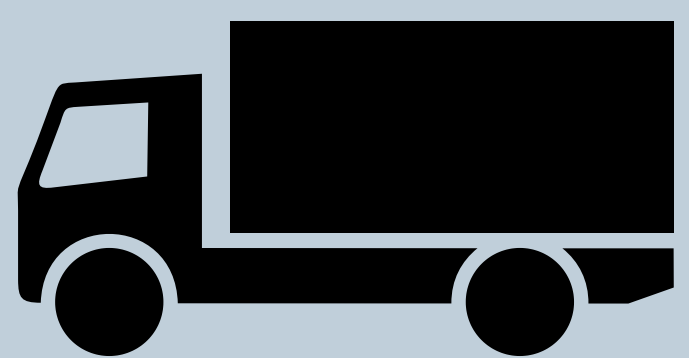
- Textile recycling: Chemical or mechanical
- Main issue: Fiber length
- Especially hard-to-recycle blends
- Our material consists of polyester-cotton blends:
 - Most produced fiber in the world -> easily accessible
 - Wanted structural and chemical properties



Produced fiber



The collection system



- Collecting and sorting from public or private management (donations from the citizens).
- Partnering with different industry sectors.
- The clothing industry in Norway discarded at least 825 tons of unsold clothes in 2021.
- Collaborate with industries that use uniforms that fit our fiber blend

What is our fabric? How do we make it?



1. Sorting by the type, composition, and colour: utilising near-infrared and visual spectrometry sensors
2. Washing: using environmentally friendly detergents
3. Shredding: shred the fabrics into fibers
4. Carding: disentangles and intermixes fabrics into the continuous web (RPX web)
5. Bonding: enhance the strength and stability of the material



Sound insulation

- Noise contributes to stress-related illnesses, high blood pressure, hearing loss etc.
- Our composition: 30% polyester and 70% cotton
- High commercial-quality noise reduction
- End of life



Thermal insulation



- EU decree to increase the efficiency of houses
- Our composition: 50% polyester and 50% cotton
- 7.5% better than glass wool insulation
- Good against hazards
- End of life

Further work

- Research and experiments to evaluate the feasibility
- Adapting the system to process more materials
 - Nylon
 - Polypropylene
 - Lycra
- These fibers are typically a small part of blends



SCAN ME

