

Challenge Topic: Textile Recycling

Challenge Description

The recyclability of textiles varies widely by fabric. Cottons, wools, linens, and other natural materials are more easily recycled, while synthetics with useful characteristics like stretchy, durable polyester and synthetic blends are problematic to recycle and shed plastic microfibers. Man-made fabrics like rayon can come from biodegradable raw crop material, but the fabric manufacturing process requires use of chemicals, counteracting the environmentally-friendliness of their raw inputs. How might we redesign textiles to reduce their lifecycle environmental impact?

Success Criteria

1. Considers a full product lifecycle analysis – is it better environmentally to design a textile for maximum recycled content, maximum recyclability or maximum durability? Can all be done, embracing principles of the circular economy?
2. Perform as well as and be as durable as the original item
3. Maintain the aesthetics of the original item

Relevant Efforts

1. [A New Textiles Economy \(Ellen MacArthur Foundation\)](#)
2. [Sustainable Apparel Coalition](#)
3. [Blue Jeans Go Green](#)
4. [Circular Fibers Initiative](#)
5. [Fashion for Good](#)
6. [FABSCRAP](#)
7. [Martex Fiber](#)
8. [Evrnu](#)
9. [Closed-Loop Apparel Recycling Eco-System Program](#)
10. [Alternative fabrics](#)

Relevant Perspectives

The solution needs to satisfy the needs and stand up to the scrutiny of these stakeholders – consider interviewing some of them.

1. Customers
2. Textile manufacturers
3. Product designers
4. Textile recyclers