Worn Again Technologies' Polymer Recycling Solution for Poly/Cotton Textiles

Industrialization 'lift off' with demo plant launch in Winterthur, Switzerland

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Chairman, Worn Again Technologies

LINEAR IS UNSUSTAINABLE

IN 2020 ALONE 109m TONNES OF MATERIALS WERE USED TO MAKE FIBERS FOR TEXTILES

52%
POLYESTER

23%
COTTON

7%
CELLULOSIC

45%

PROJECTED INCREASE IN DEMAND BY 2030

92m

TONNES OF TEXTILES (incl. manufacturing waste) END UP IN LANDFILL EVERY YEAR

BY 2030 IT IS EXPECTED THAT THERE WILL BE NEARLY 150m TONNES OF FASHION WASTE

<1%

TEXTILES RECYCLED BACK INTO TEXTILES

POST CONSUMER TEXTILES OVERVIEW

GLOBAL AVERAGE 25% COLLECTED TEXTILES

10%
LANDFILL

45%
SUITABLE FOR RE-USE
RE-SOLD AGAIN GARMENTS

45%
NON-REWEARBLES
(HOLES, STAINS, DAMAGE)
CURRENTLY GETS DOWNCYCLED
INTO INSULATION, RAGS, STUFFING

OTHER FIBRES

PURE COTTON

40%
PURE POLYESTER & POLYCOTTON, POLY CELLULOSE BLENDS

[1] Approximately 40% of collected non-wearables are pure poly & poly/cotton blends
Source:Fibersort experiment

CIRCULARITY HIERARCHY

PYROLYSIS

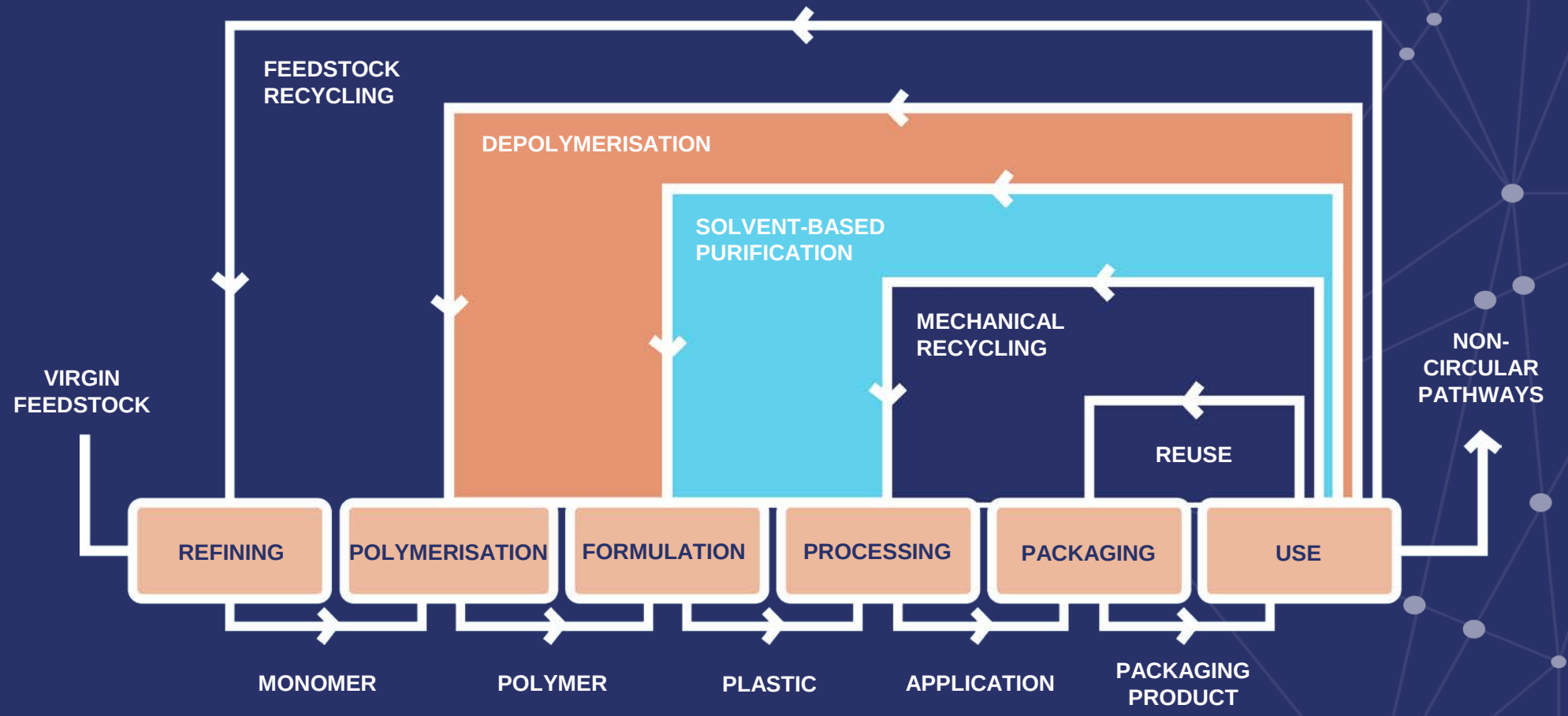
- Heating product under the absence of oxygen
- Production of hydrocarbon oils (feedstock for refining processes)

DEPOLYMERISATION

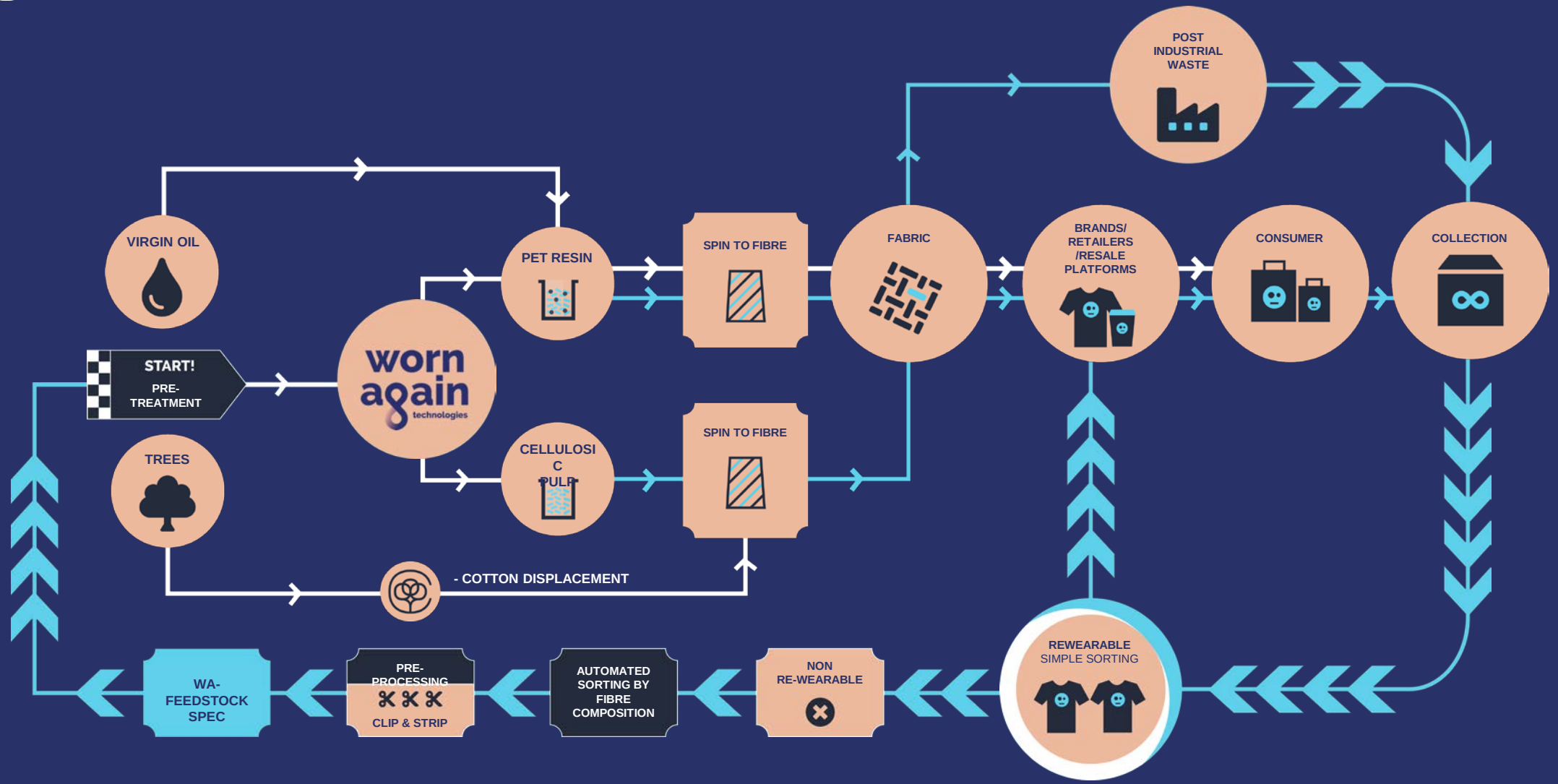
- Converting a fibre feedstock into monomers
- Limited to the recycling of one input

SOLVENT-BASED RECYCLING

- Selectively recovering on polymer using very specific solvents
- Extraction of impurities
- Simple post-processing
- Re-creating fibers

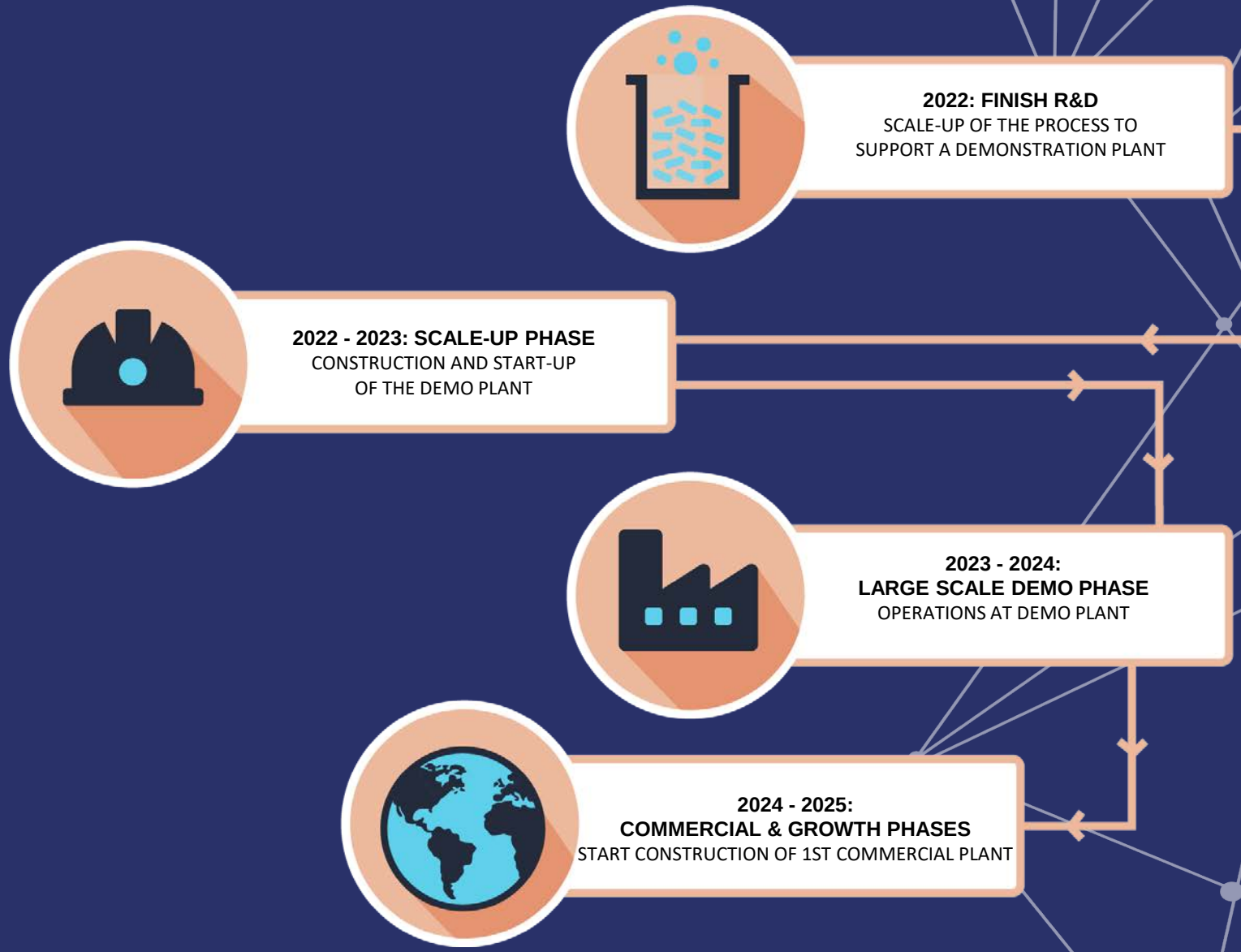


CIRCULAR TEXTILES SYSTEM

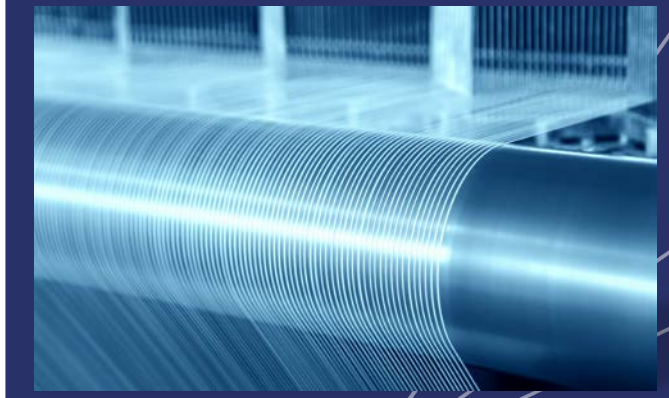


WHERE WE'RE AT:

THE ROAD AHEAD



WORN AGAIN'S BUSINESS MODEL



Our goal is to build 40 plants by 2040 and we can't do it alone

- Changing the current paradigm requires collaborative efforts from everyone in the textile value network
- If you are a potential plant operator, equipment provider, development partner or brand/retailer interested in playing a part, get in touch with us

FEEDSTOCK SPECIFICATIONS

MONO-MATERIAAL: 100% POLYESTER
MIXED MATERIAL: POLY-COTTON & POLY-CELLULOSE BLENDS WITH 10% TOLERANCE FOR OTHER FIBRES (EG. NYLON, WOOL, ELASTANE
COLOURS, DYES, CONTAMINANTS: NO RESTRICTIONS. BUT WOULD ENCOURAGE ZDHC GUIDELINES TO BE FOLLOWED

DRY AND CLEAN MATERIAL: DRY, NO MOULD OR CONTAMINATION

ACCESSORIES: ZIPS, BUTTONS, SNAPS, RIVETS, HOOK AND LOOP, BUCKLES. THERE NEED TO BE STRIPPED DURING THE PRE-PROCESSING STEP.

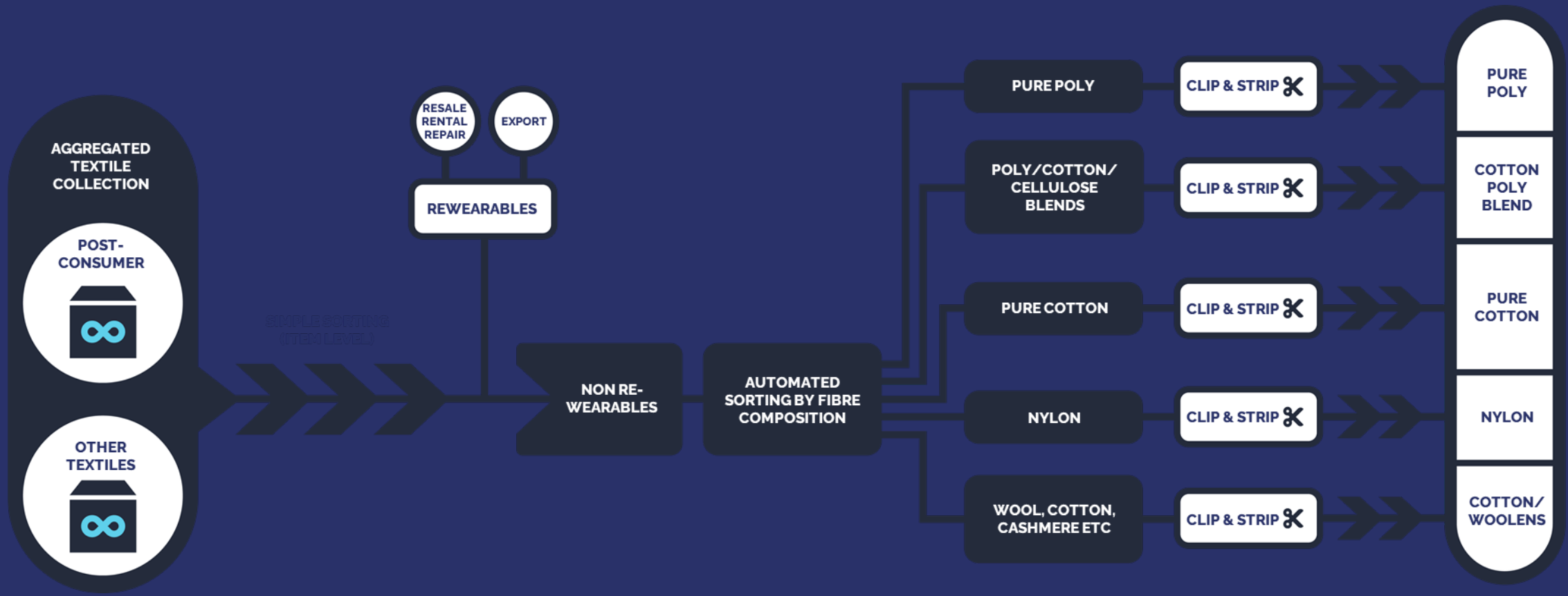
OTHER FIBRES (20%)

PURE COTTON

40% worn again technologies

PURE POLYESTER & POLY COTTON, POLY CELLULOSE BLENDS

FUTURE: ADVANCED TEXTILE SORTING FACILITY



FEEDSTOCK SUPPLY

Demonstration Plant

- 65/35 Polyester : Cotton Blend
- Single Sourced
- Clip and Strip
- Shredding
- Delivery in bales to Demonstration Plant via Box Truck

Commercial Plant

- Post-Consumer or Post-Industrial Textile Waste
- Automated Sorting by Material (Near-Infared)
- Sorting/Clip and Strip/Shredding/Baling at Sorting Facility
- EU subsidies, End of Use taxes
- Delivery to Commercial Plant via Box Truck

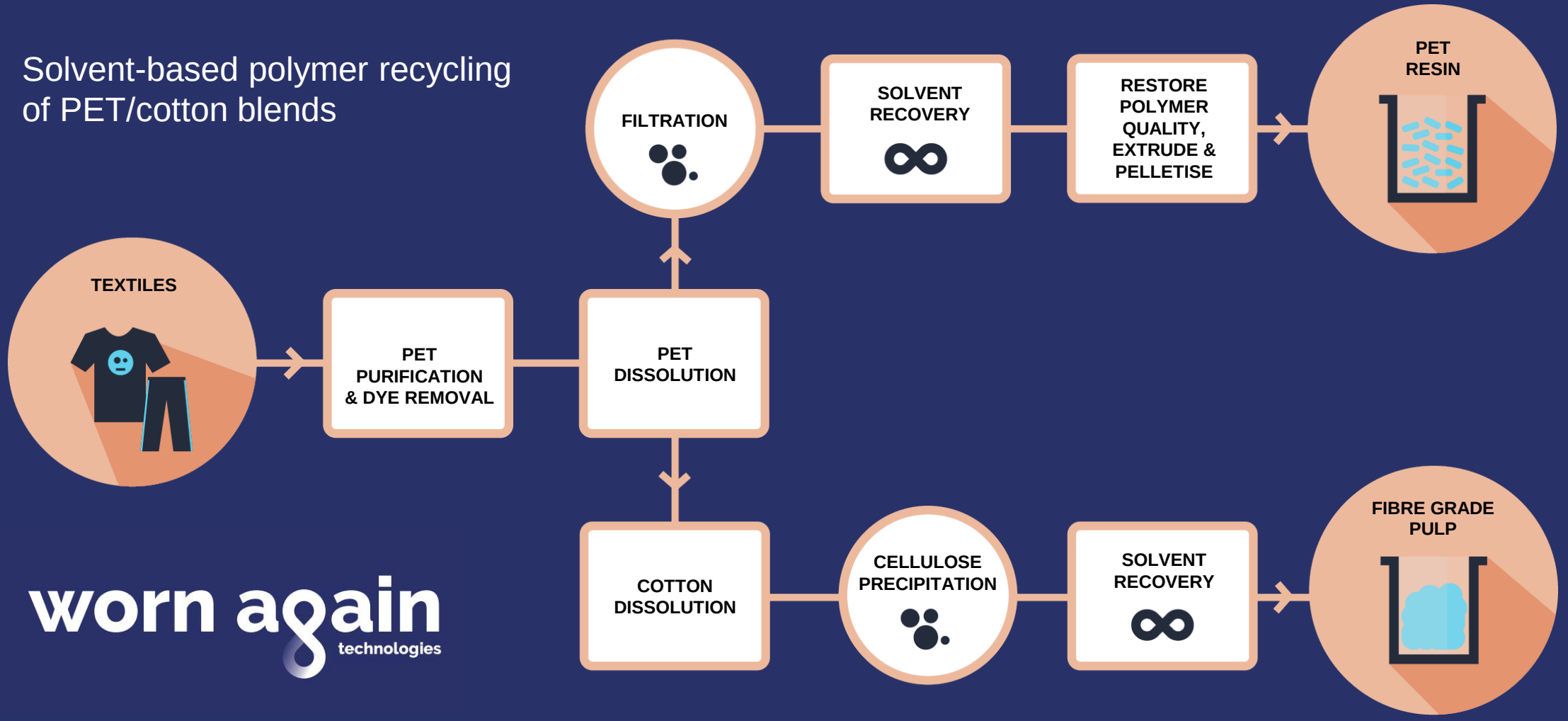
GOALS OF THE TECH

Our goals

- To produce virgin-equivalent, high-quality materials
- Cost-competitive processing
- Environmentally beneficial process
- Ultimately, to replace the use of virgin resources

WORN AGAIN'S RECYCLING PROCESS

Solvent-based polymer recycling of PET/cotton blends



SWISS TEXTILE RECYCLING ECOSYSTEM

The first WAT plant will be built in Switzerland where we have developed strategic partnerships throughout the supply chain.

TIMELINE

2020				2021				2022				2023				2024				2025				2026			
Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Scale				Lab Scale								Demo Scale								Commercial Scale							
Objective				Define WA - FS								Validate WA - FS								WA - FS							
Facility				SPL								Demonstration Plant								Commercial Plant							
Amount				< 1 Ton								1.000 Tons p.a.								50.000 Tons p.a.							
Type				Experimental Swatches								WA - FS Campaigns								WA - FS							
Terms				Collaborators on Project Level								Provision of Selective Test Batches & Industrial Trials								Long-Term Supplier Contracts							
Partners				Swiss Ecosystem Partners																Operator Defined							