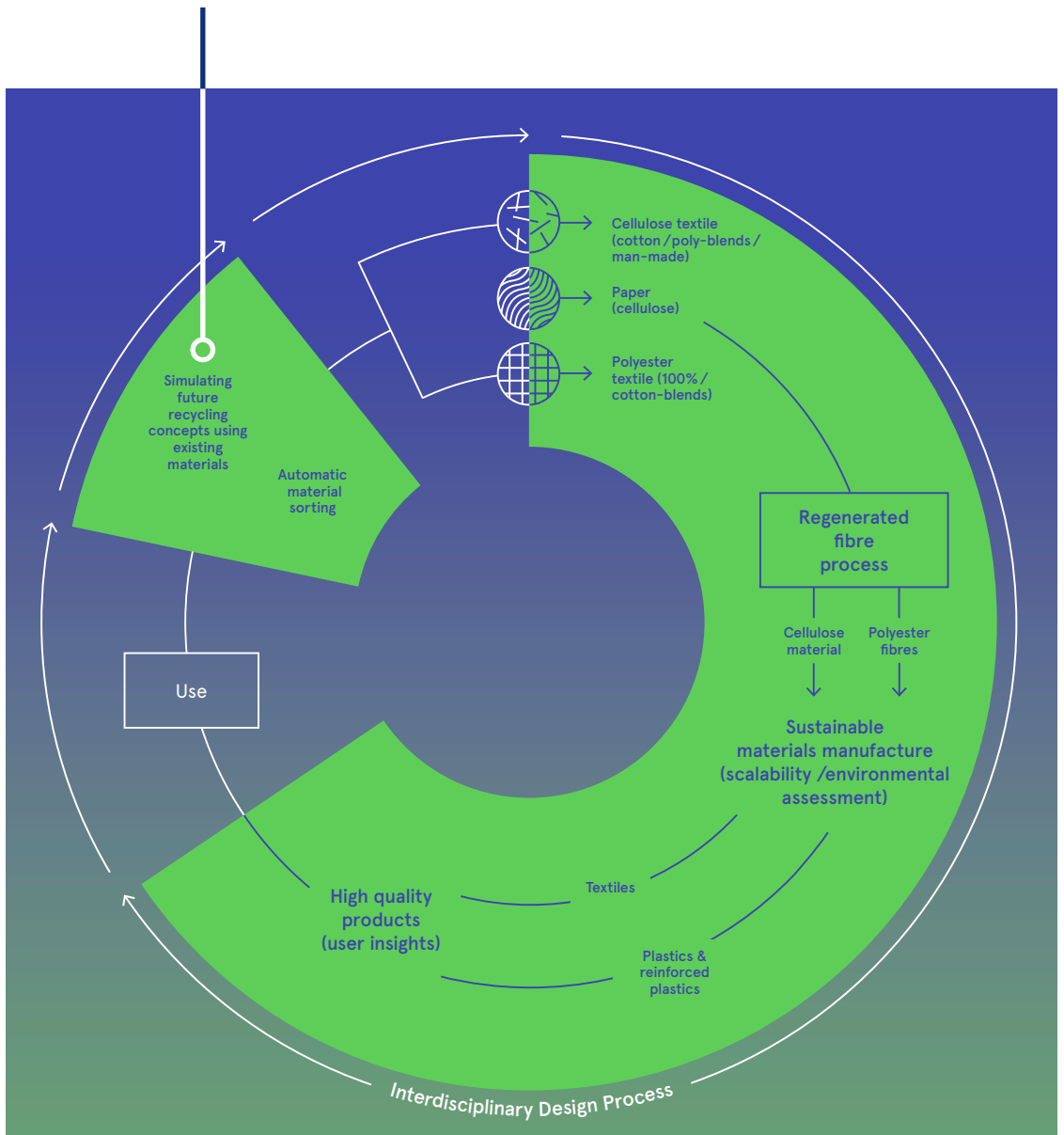


Trash-2-Cash aims to utilise zero-value waste textiles and fibres with design-driven technologies to create high quality products.

The research involves the whole material cycle, importantly including the textile waste supply chain.

112

Textile waste samples

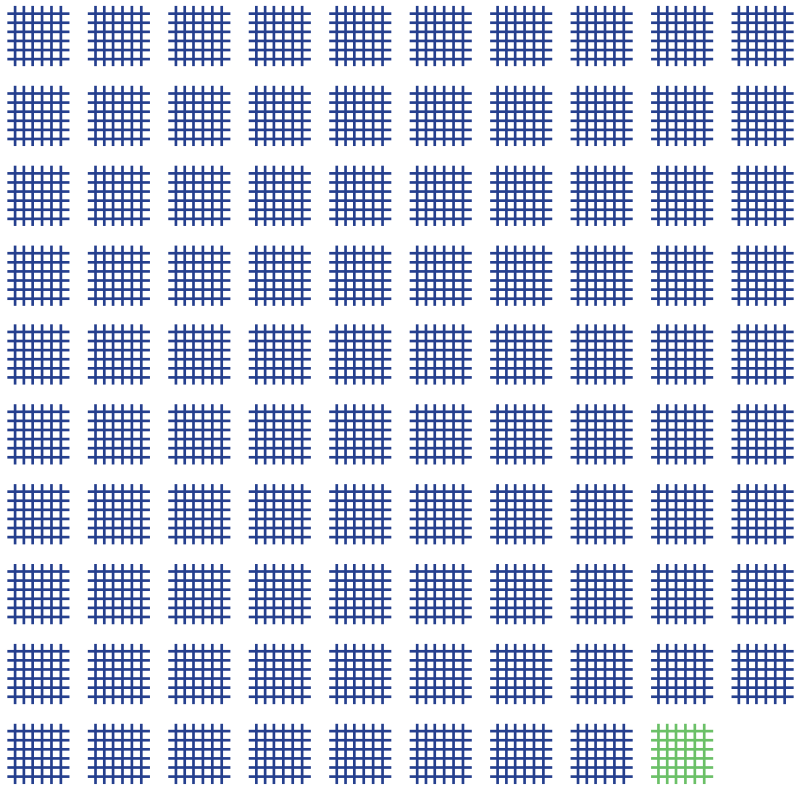




In 1 tonne of mixed post-consumer textile waste Trash-2-Cash partners selected 112 textile samples to represent the composition.

112
Textile waste samples

They found 90 different material types including 76 blends.



Textiles destined for 'low-value' applications (down-cycling)

Textiles that are currently regenerated into new high-value fibres*

*100% Polyester is currently the only post-consumer textile that is regenerated into new fibres for use in garments on a commercial scale



Manually sorting mixed post-consumer textile waste
Wolfen Germany SOEX GROUP

Image: SOEX GROUP



112

Textile waste samples

In Trash-2-Cash technical research institute SP, is assisting textile recycler SOEX to face this challenge by testing emerging textile sorting technologies.

These sensor-based technologies can recognise the fibre content of each piece of clothing.

One of these new sorting technologies could enable SOEX to reliably and efficiently sort unusable clothing waste into different fibre 'fractions'.

The sorted textile can then be prepared for regeneration into new fibres.



Pailak Mzikian, SOEX group, Chetan Gupta, I:CO, SOEX group and Helena Wedin, SP record textile samples for the Trash-2-Cash study



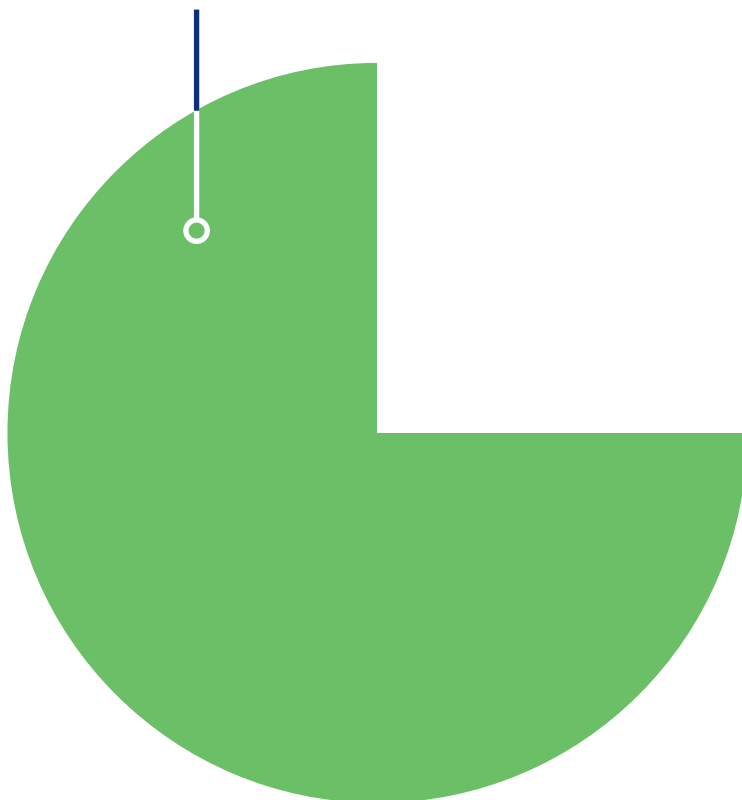
112

Textile waste samples

T2C fibre scientists are targeting 3 fibre blends for regeneration into new high-value cellulose and polyester materials:

cotton
polyester-cotton
lyocell (loncell)

Interestingly, in 1 tonne of textile waste around 3/4 were cotton, cotton-polyester and cotton-elastane blends.



This is good news for T2C technologies which use waste cotton as an input for regenerating cellulose fibres into new high quality textiles.

Efficient sorting technologies are desperately needed so that suitable fibres can be identified and selected for regeneration into new high-value fibres...

...the alternative would be to read the label in every item of textile waste that gets thrown away: that's 8521 tonnes each day in Europe alone*.

45% POLYAMIDIA
27% AKRYLLIA
20% VISKOOSIA
8% ALPAKKA
FR L'AVER À LA MACHINE À
L'EAU TIÈDE
BLANCHIR SANS CHLORE
SI NÉCESSAIRE
SÉCHER À L'AIR
REPASSER À
TEMPÉRATURE MOYENNE

45% POLIAMIDE
27% ACRYLUQUE
20% VISCOSE
8% ALPAGA
HR PRATIŠA SLIČNIM BOJAMA
45% POLIAMIDNO VLAKNO
27% AKRILNO VLAKNO
20% VISKOZNO VLAKNO
8% ALPAKA VUNA
HU HASONLÓ SZÍNEKEL
EGYÜTT MOSNI
45% NEJLON
27% AKRIL
20% VISZKÓZ
8% ALPAKA
ID SUHU MAKSIMUM 40°C
JANGAN DIKELANTANG.
PENGERINGAN GANTUNG.
SUHU SETERIKA
MAKSIMUM 150°C
CUCI KERING PROFESIONAL

* EUROSTAT data for EU28 2012 baseline <http://ec.europa.eu/eurostat/data/database> (accessed 03/10/16)



112

Textile waste samples

C1

100% Cotton



112

Textile waste samples

C2

100% Cotton



112

Textile waste samples

C3

100% Cotton



112

Textile waste samples

C4

100% Cotton



112

Textile waste samples

C5

100% Cotton



112

Textile waste samples

C6

100% Cotton



112

Textile waste samples

C7

100% Cotton



112

Textile waste samples

D1

100% Denim Cotton



112

Textile waste samples

D2

100% Denim Cotton



112

Textile waste samples

D3

100% Denim Cotton



112

Textile waste samples

D4

100% Denim Cotton



112

Textile waste samples

L1

100% Linen



112

Textile waste samples

R1

100% Ramie



112

Textile waste samples

V1

100% Viscose



112

Textile waste samples

V2

100% Viscose



112

Textile waste samples

M1

100% Modal



112

Textile waste samples

Ly1
100% Lyocell



112

Textile waste samples

Ly2
100% Lyocell



112

Textile waste samples

Ly3

100% Lyocell



112

Textile waste samples

P1

100% Polyester



112

Textile waste samples

P2

100% Polyester



112

Textile waste samples

P3

100% Polyester



112

Textile waste samples

P4

100% Polyester



112

Textile waste samples

Pa1

100% Polyamide



112

Textile waste samples

Pa2

100% Polyamide



112

Textile waste samples

A1

100% Acrylic



112

Textile waste samples

A2

100% Acrylic



112

Textile waste samples

W1

100% Wool



112

Textile waste samples

W2

100% Wool



112

Textile waste samples

W3

100% Wool



112

Textile waste samples

W4

100% Wool



112

Textile waste samples

W5

100% Wool (Cashmere)



112

Textile waste samples

W6

100% Wool (Cashmere)



112

Textile waste samples

S1

100% Silk



112

Textile waste samples

S2

100% Silk



112

Textile waste samples

CE1

95% Cotton

5% Elastane



112

Textile waste samples

CE2

98% Cotton

2% Elastane



112

Textile waste samples

CE3

96% Cotton

4% Elastane



112

Textile waste samples

CP1

50% Cotton

50% Polyester



112

Textile waste samples

CP2

60% Cotton

40% Polyester



112

Textile waste samples

CP3

70% Cotton

30% Polyester



112

Textile waste samples

CP4

80% Cotton

20% Polyester



112

Textile waste samples

CP5

60% Cotton

40% Polyester



112

Textile waste samples

CP6

88% Cotton

12% Polyester



112

Textile waste samples

CP7

65% Cotton

35% Polyester



112

Textile waste samples

CP8

85% Cotton

15% Polyester



112

Textile waste samples

CP9

52% Cotton

48% Polyester



112

Textile waste samples

CP10

52% Cotton

48% Polyester



112

Textile waste samples

CPE1

60% Cotton

35% Polyester

5% Elastane



112

Textile waste samples

CPE2

74% Cotton

24% Polyester

2% Elastane



112

Textile waste samples

CM1

60% Cotton

40% Modal



112

Textile waste samples

CME1

50% Cotton

45% Modal

5% Elastane



112

Textile waste samples

CV1

60% Cotton

40% Viscose



112

Textile waste samples

CVE1

50% Cotton

45% Viscose

5% Elastane



112

Textile waste samples

CPa1

71% Cotton

29% Polyamide



112

Textile waste samples

CPa2

80% Cotton

20% Polyamide



112

Textile waste samples

CPa3

55% Cotton

45% Polyamide



112

Textile waste samples

CPaE1
80% Cotton
18% Polyamide
2% Elastane



112

Textile waste samples

CPaE2
78% Cotton
20% Polyamide
2% Elastane



112

Textile waste samples

CPaW1
60% Cotton
35% Poyamide
5% Wool



112

Textile waste samples

CA1

75% Cotton

25% Acrylic



112

Textile waste samples

CAE1

50% Cotton

45% Acrylic

5% Elastane



112

Textile waste samples

CK1

92% Cotton

8% Cashmere



112

Textile waste samples

CW1

70% Cotton

30% Wool



112

Textile waste samples

CL1

60% Cotton

40% Linen



112

Textile waste samples

HC1

55% Hemp

45% Cotton



112

Textile waste samples

LC1

60% Linen

40% Cotton



112

Textile waste samples

VE1

95% Viscose

5% Elastane



112

Textile waste samples

VC1

52% Viscose

48% Cotton



112

Textile waste samples

VCM1

50% Viscose

25% Cotton

25% Modal



112

Textile waste samples

VCPa1
60% Viscose
20% Cotton
20% Polyamide



112

Textile waste samples

VPa1

70% Viscose

30% Polyamide



112

Textile waste samples

VPa2

80% Viscose

20% Polyamide



112

Textile waste samples

VPaE1
80% Viscose
17% Polyamide
3% Elastane



112

Textile waste samples

VPaC1
35% Viscose
35% Polyamide
30% Cotton



112

Textile waste samples

VP1

60% Viscose

40% Polyester



112

Textile waste samples

VPE1

80% Viscose

15% Polyester

5% Elastane



112

Textile waste samples

VA1

85% Viscose

15% Acrylic



112

Textile waste samples

VW1

80% Viscose

20% Wool



112

Textile waste samples

VL1

80% Viscose

20% Linen



112

Textile waste samples

ME1

92% Modal

8% Elastane



112

Textile waste samples

MC1

53% Modal

47% Cotton



112

Textile waste samples

PC1

65% Polyester

35% Cotton



112

Textile waste samples

PC2

65% Polyester

35% Cotton



112

Textile waste samples

PC3

65% Polyester

35% Cotton



112

Textile waste samples

PC4

65% Polyester

35% Cotton



112

Textile waste samples

PC5

84% Polyester

16% Cotton



112

Textile waste samples

PCE

62% Polyester

33% Cotton

5% Elastane



112

Textile waste samples

PE1

90% Polyester

10% Elastane



112

Textile waste samples

PE2

95% Polyester

5% Elastane



112

Textile waste samples

PV1

65% Polyester

35% Viscose



112

Textile waste samples

PV2

70% Polyester

30% Viscose



112

Textile waste samples

PVE1

48% Polyester

47% Viscose

5% Elastane



112

Textile waste samples

PVC

40% Polyester

40% Viscose

20% Cotton



112

Textile waste samples

PW1

70% Polyester

30% Wool



112

Textile waste samples

PPaE1
60% Polyester
30% Polyamide
10% Elastane



112

Textile waste samples

PAE1

94% Polyamide

6% Elastane



112

Textile waste samples

AE1

95% Acrylic

5% Elastane



112

Textile waste samples

AC1

55% Acrylic

45% Cotton



112

Textile waste samples

ACW1

39% Acrylic

36% Cotton

25% Wool



112

Textile waste samples

AVPa1
48% Acrylic
48% Viscose
4% Polyamide



112

Textile waste samples

APa1

85% Acrylic

15% Polyamide



112

Textile waste samples

APaW1
61% Acrylic
25% Polyamide
14% Wool



112

Textile waste samples

APW1

54% Acrylic

34% Polyester

20% Wool



112

Textile waste samples

AP1

71% Acrylic

29% Polyester



112

Textile waste samples

AW1

85% Acrylic

15% Wool



112

Textile waste samples

AW2

70% Acrylic

30% Wool



112

Textile waste samples

AWE

50% Acrylic

45% Wool

5% Elastane



112

Textile waste samples

WC1

70% Silk

15% Cashmere

15% Cotton



112

Textile waste samples

WA1

60% Wool

40% Acrylic



112

Textile waste samples

WE1

97% Wool

3% Elastane



112

Textile waste samples

WPA1

87% Wool

13% Polyamide



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples



112

Textile waste samples