

Sustainability starts with the Destruction Process
Insights from the Sustainability and Destruction
Technology Report by Hunkeler Systeme AG and BIN

Agenda

1. Status Quo of CB's Sustainability
2. Global Substrate Overview
3. Key Drivers for Sustainability in the Destruction Process –
Wheel of destruction
4. Best Practice in Recycling

Status Quo of CB's Sustainability



Status Quo of CB's Sustainability

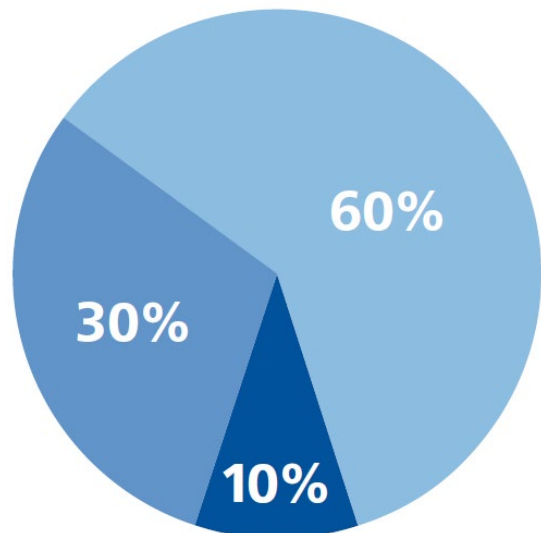


Status Quo of CB's Sustainability

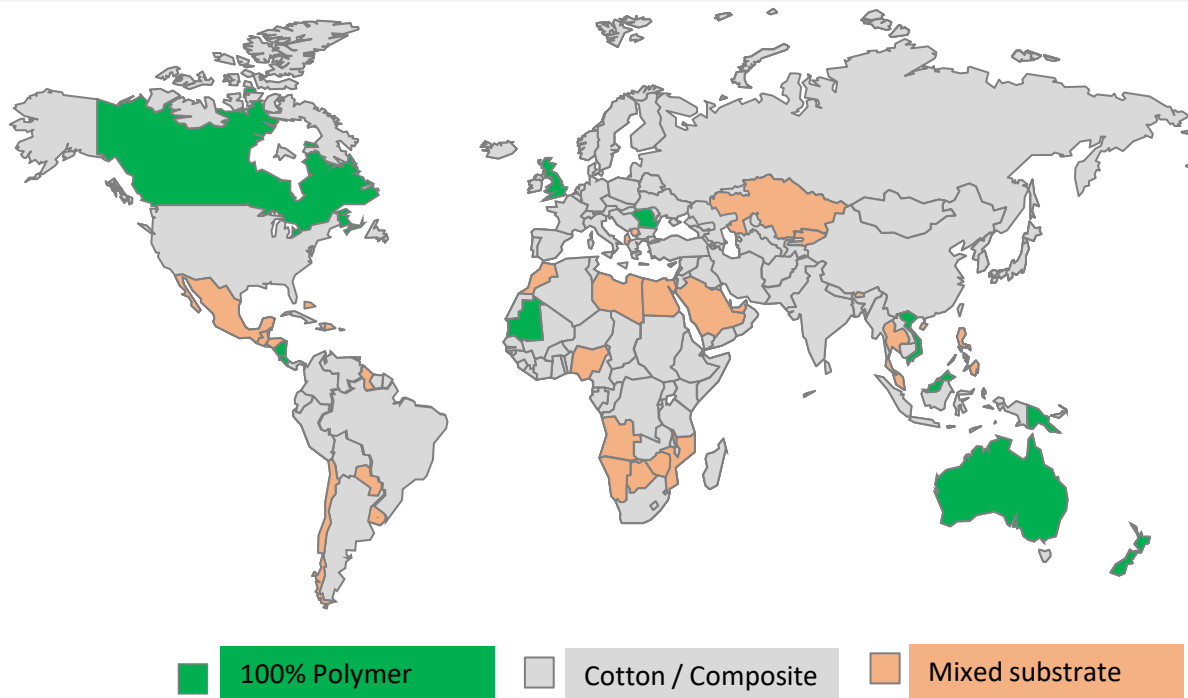
Key Findings:

- 24% of all Central Banks do have a recycling process in place
- 60% of Central Banks working on a sustainability policy and 30% of them working on a recycling process of unfit BN's in the near future

Global Substrate Overview



- Full series on cotton
- Mixed substrate
- Full series on polymer/composite



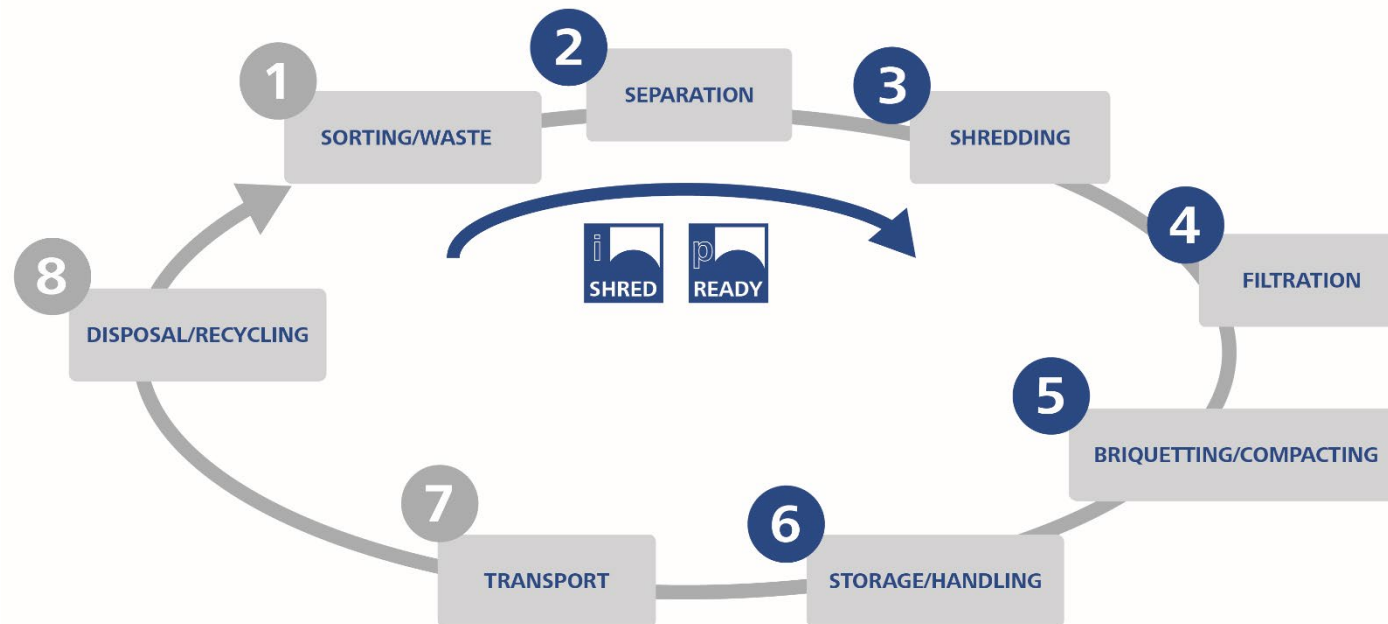
Key Findings



Key Findings:

- Global Banknote Volume is increasing → This leads to increased shredding demand for unfit banknotes
- Due to the increased mixed substrates in circulation a modern destruction system needs to handle both substrates polymer and cotton
- Separation of substrates for the shredding process needs to gain importance

Key Drivers for Sustainability in the Destruction Process



Separation

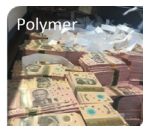
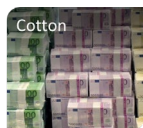


Separation

Single Substrate destruction (small % of mix)

100% Cotton
or
100% Polymer

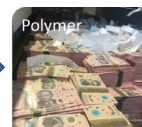
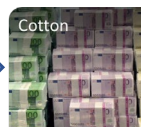
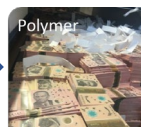
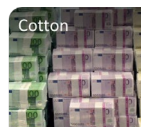
Dedicated shredding lines



Mixed Substrates Sequential destruction

100% Cotton
then
100% Polymer

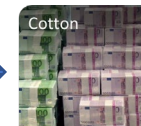
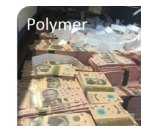
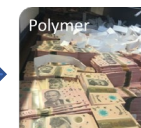
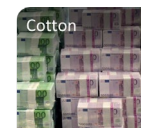
Standard Hunkeler destruction
lines with options



Mixed Substrates Parallel destruction

Sorter 1: Cotton
Sorter 2: Polymer

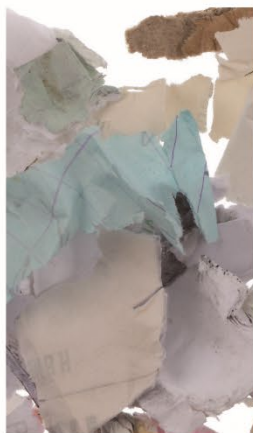
Automated change over systems



Shredding



P-1



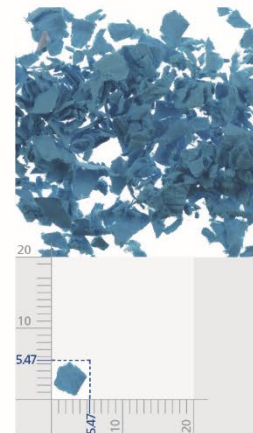
P-2



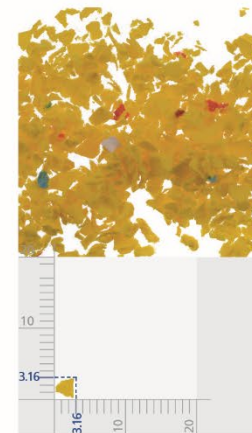
P-3



P-4

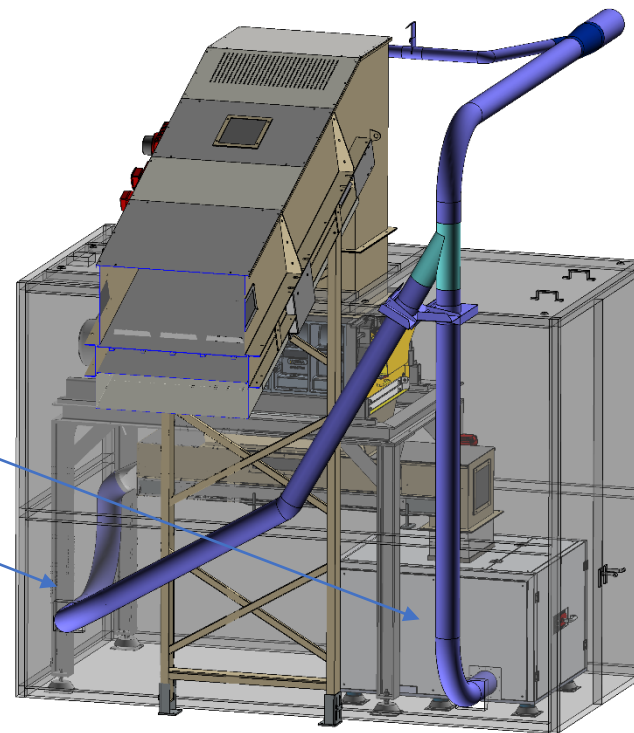
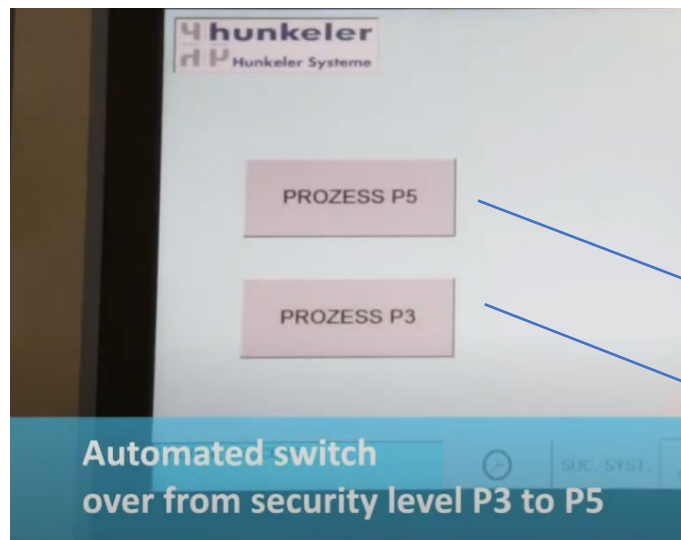


P-5



P-6

Shredding



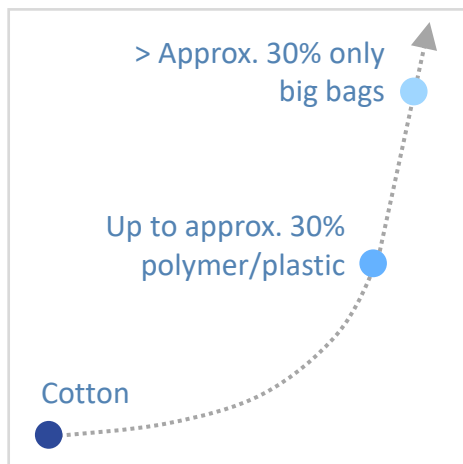
Filtration



Key Findings:

- Unclean air in the operational destruction may cause shutdowns and/or harm the health of the staff
- Summer/Winter switches for the return air support energy savings for air conditioning
- Modern systems allow additional dedusting of banknote sorters and other machines (for example banknote separation unit or conveyor belt)

Briquetting / Compacting



Briquetting / Compacting



Key Findings:

- Main target is the volume reduction
- Feasibility of briquetting depends on the substrate type
- The density of pure cotton-based banknotes is significantly higher than composite based banknote shreds
- For polymer banknotes, briquetting is not feasible → alternative solutions for shred transportation/storage must be considered

Storage / Transportation

Key Findings:

- Briquetting/Compacting is the driver for:
 - Better transport possibilities → reduced CO2 footprint
 - Easier handling for further processes
 - Lower disposal costs
 - Increased cleanliness at the workplace
- Uncompacted storage and transport leads to unnecessary environmental impact
- Transportation routes must be considered during the evaluation of the most sustainable solution for the banknote end of life process
- Controlled incineration may have fewer impact on the environment than shipping shreds for long distance for recycling

Recycling

Best Practices (excerpt)

- USA – The Federal Reserve Financial Services
 - 98% of shreds recycled
 - 42% composting
- Australia (NPA & Reserve Bank Australia)
 - 100% of polymer shreds were recycled
 - Recycling process in place for 20 years
- South Korea – Bank of Korea
 - Construction Materials
 - Automotive parts
 - Controlled incineration

Digital Report

Request full digital report via the news section of our webpage:
[Sustainability & Destruction Technology Report - Fit for Recycling
- Hunkeler Systeme AG](#)

Thank you for your attention

hunkelersysteme.com/en/home/

Gabriel Moser

Area Sales Manager

Central & Eastern Europe, Asia Pacific

Phone: +41 62 745 77 24

g.moser@hunkelersysteme.com