

Less is more – Reducing the product carbon footprint and material usage in banknotes

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Cash & Payments Sustainability Forum

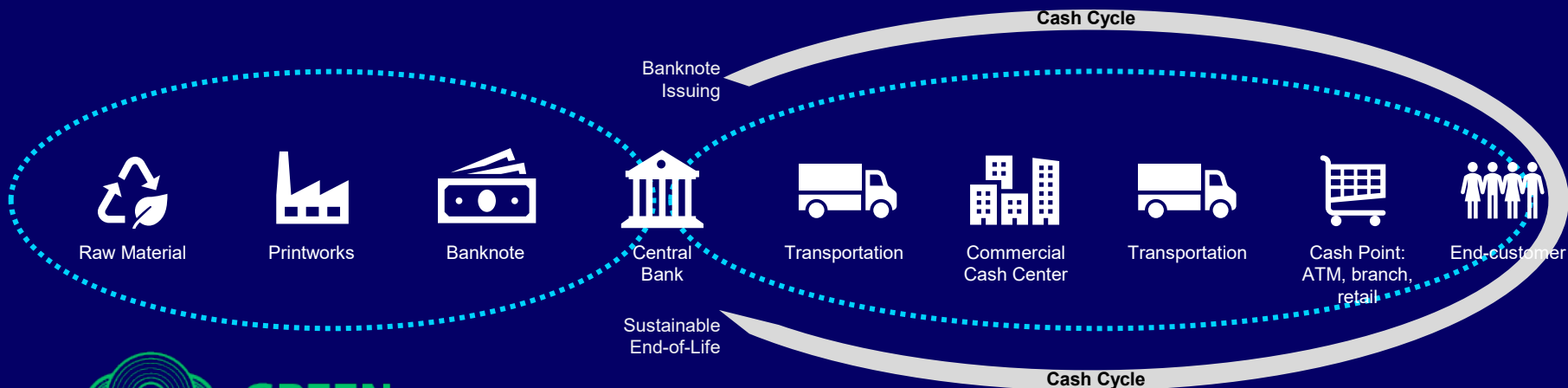
Edinburgh, 15 November 2022

How to make the lifecycle of banknotes **greener**

Advanced Currency Management

Value chain of creation

Value chain of distribution, circulation and end-of-life



Levers in the banknote industry

Where can we reduce the Environmental Impact of Cash

To offer a holistic solution in regards of sustainability, we have many action fields.

To see the influence of our footprint, but also to find out which levers we have, we have assigned an external institute to conduct a product carbon footprint.

Content was the analysis of:

- Standard cotton substrate,
- Longlife varnish substrate,
- Hybrid substrate.

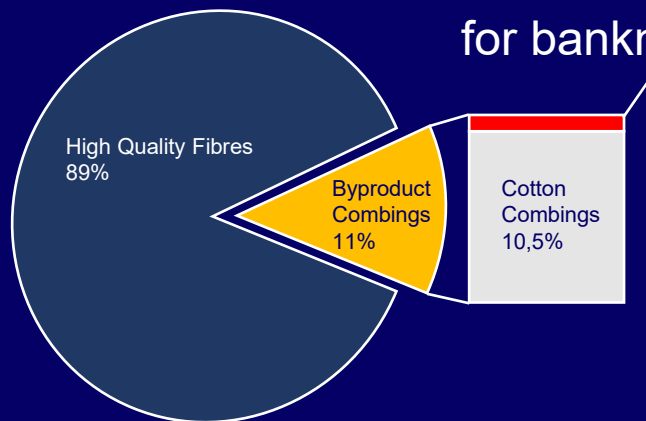


How can we **improve** further?

Fields of Activity

Sustainable cotton

annual demand
for banknotes 0.5%



Fields of Activity

Substrate and Fibres

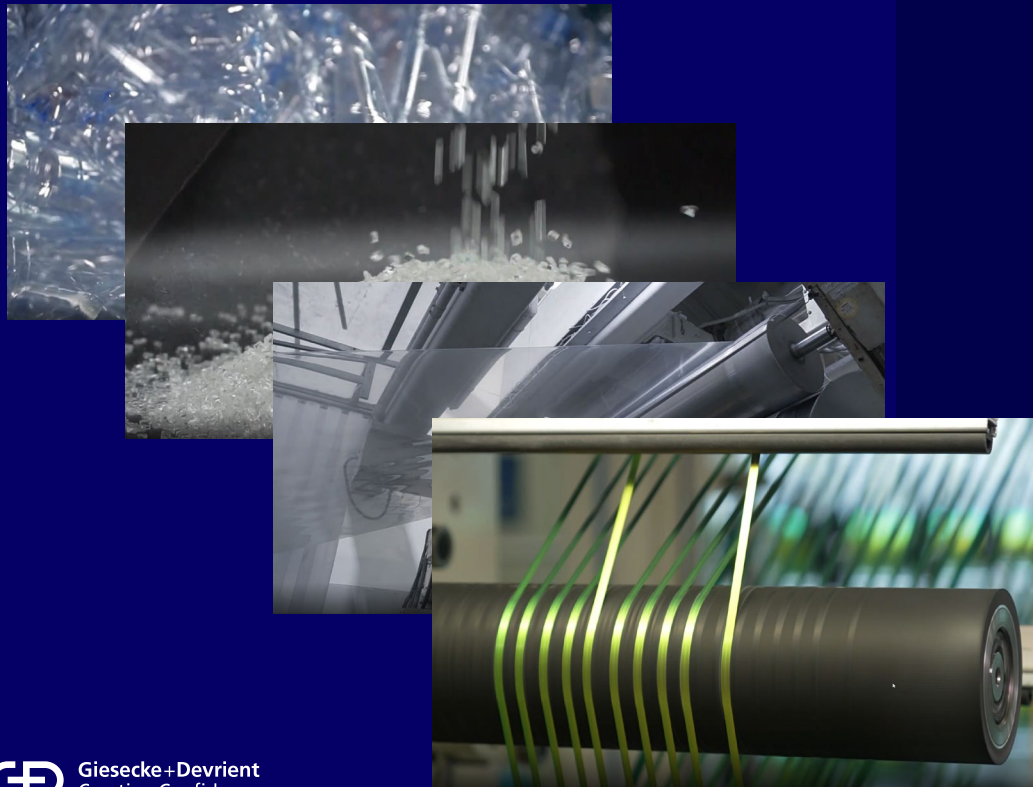
63%

LESS CO₂ EMISSIONS

COMPARED TO
CONVENTIONAL COTTON
FIBERS

- 50% cotton from certified organic cultivation
- 50% European grown fibers from FSC® (FSC-C138716) certified wood pulp
- Alternative natural renewable fibers also usable (hemp, abaca...)

Recycled materials



- Using **recycled polyester** (rPET) from post consumer recycling for the carrier foil of security threads and security foils



Benefits of recycled carrier foils

Reducing plastic waste and land fill

Post consumer waste is being collected and recycled (or even upcycled in the case of security features for banknotes)

Reducing the usage of fossil feedstocks

70%

per 100 Mio. banknotes e.g. :

- up to 500kg less virgin plastic for a RollingStar® security thread
- up to 2000kg for varifeye® Patches and LEAD® stripes

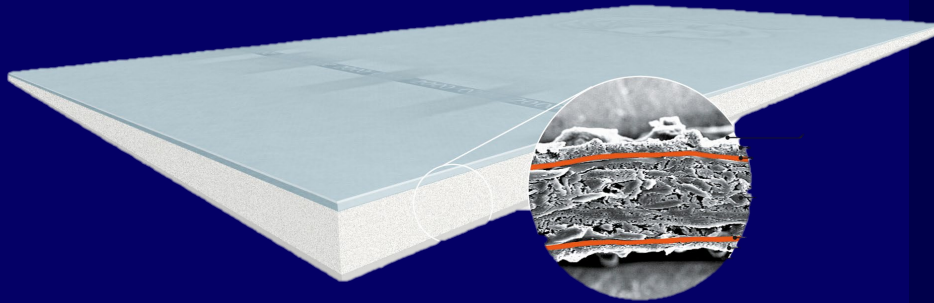
Reducing the carbon footprint

45%

less carbon dioxide emissions compared to standard foil made from virgin PET

Fields of Activity

Minimizing plastic



Reducing foil thickness as protective layer in Hybrid substrate

- 4µm instead of 6µm on each side
- 30% less plastic
- 5% less weight



**What's better than plastic?
Less plastic.**

38%

LESS VIRGIN PLASTIC USE

FOR THE FINISHED
BANKNOTE
COMPARED TO PREVIOUS
HYBRID SUBSTRATE

Fields of Activity

Mineral oil free inks



- Printing with **mineral oil free simultan printing inks** which uses vegetable oils as a substitute
- Increases biobased content of inks and finished banknote

The Green Banknote.



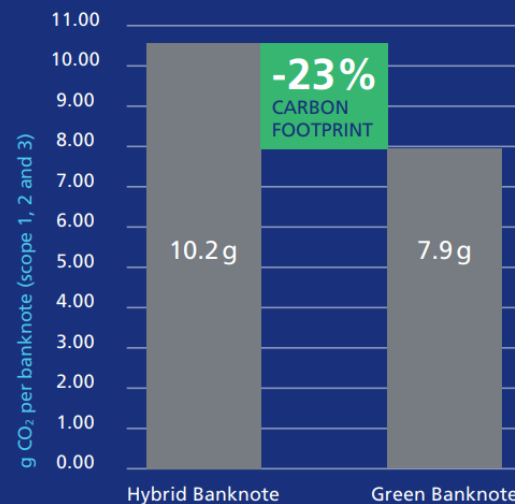
Sustainable at every level.



Advantages of the Green Banknote

- ✓ Less plastic use
- ✓ Less CO₂ emissions
- ✓ Highest durability
- ✓ Highest security standards

CO₂ EMISSIONS OF ONE
GREEN BANKNOTE COMPARED
TO HYBRID™ BANKNOTE



Source: Figures based on internal product carbon footprint report from DFGE, April 2022

**The sustainable banknote of the future
is based on natural renewable fibers
and recycled materials.**

Creating Confidence



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