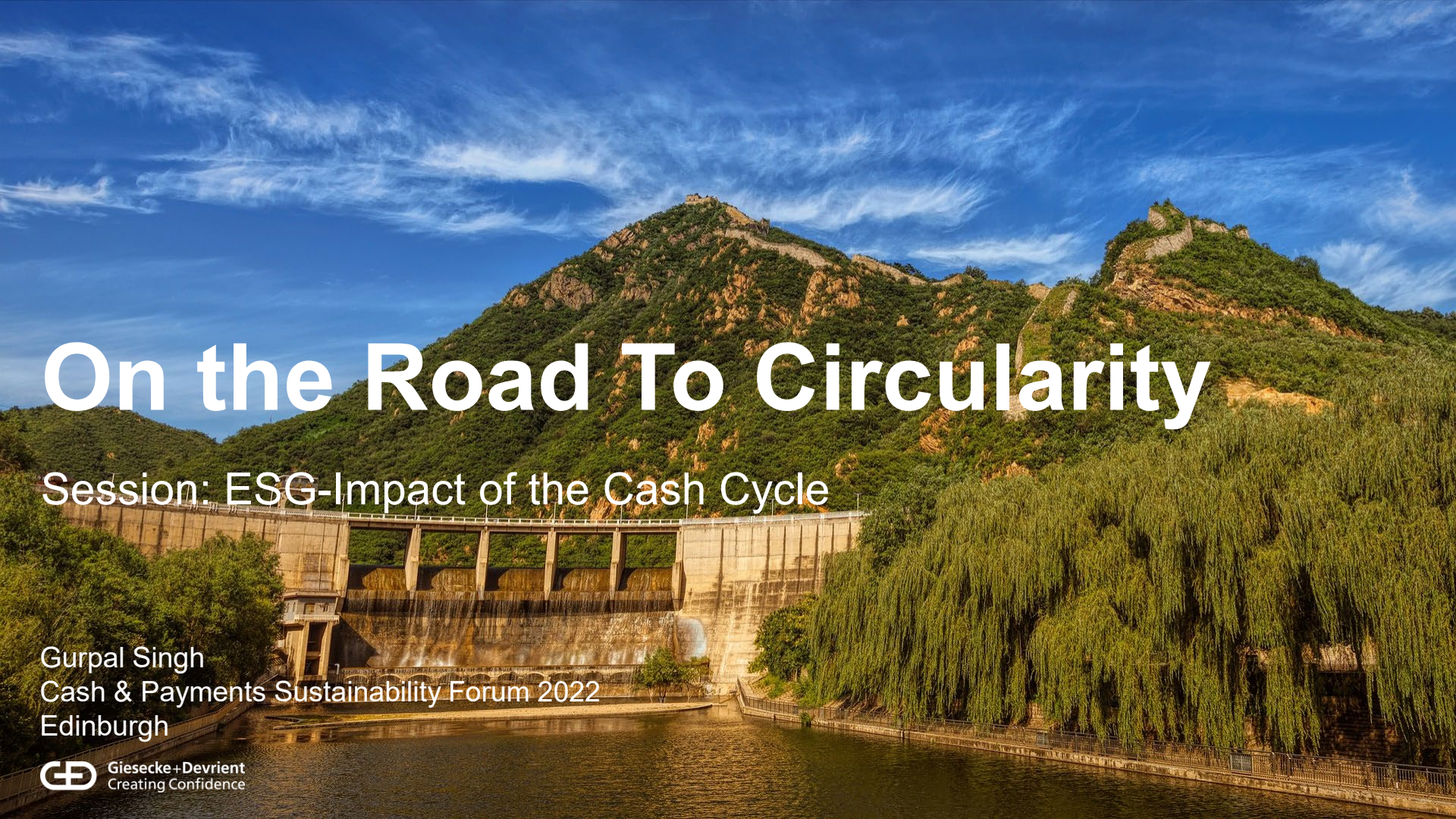




On the Road To Circularity

Session: ESG-Impact of the Cash Cycle

Gurpal Singh
Cash & Payments Sustainability Forum 2022
Edinburgh

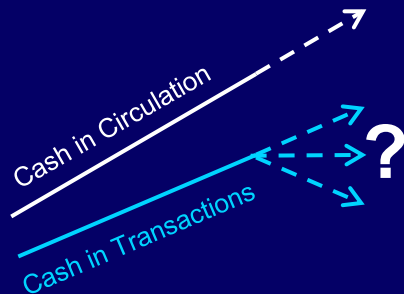


Giesecke+Devrient
Creating Confidence

Challenges of today's cash cycle

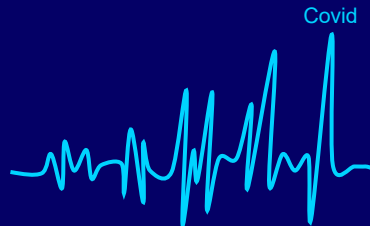
Cash Paradox

unpredictable
development of
cash in transactions



Multiple Crises

increasing volatility
in cash demand and
cash infrastructure
needs



Rising Costs

increasing costs for
cash processing vs.
low flexibility in cost
structure

2/3

fixed costs

Climate Change

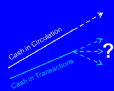
reducing carbon
footprint in the cash
cycle vs. cheapest
solution



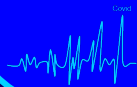
**How can we overcome these
challenges for the cash cycle?**

4

Cash Paradox



Multiple Crises



Rising Costs

2/3

fixed costs

Climate Change



Visibility

Intelligent Data Use

Cooperation of all Cash Cycle players

Accessibility

Resilient Cash Infrastructure

Intelligent Cash Distribution

Efficiency

Automation

Digitalization

Standardization

Sustainability

Greener Products

Greener Cash Centers

Greener Cash Transport



Giesecke+Devrient
Creating Confidence

Sustainability: The World has set itself Goals



What do we focus on?

G+D ESG Dashboard



E nvironment



Climate, CO2 Emissions &
Energy Consumption

Waste & Circular
Economy

Water

Sustainable
Products & Technologies

S ocial



Diversity & Equal
Chances

Health & Safety

Lifelong Learning &
Development

G overnance



Compliance & Integrity
(incl. Human Rights)

Data Privacy

Sustainable Investments/
Business Models

ESG compatible
Financing

What does **sustainability**
mean for the entire cash cycle?



Environ- ment

Greener banknotes
Greener processing
Greener distribution

Social

Cash serves society
Most inclusive & accessible
Resilient and cost-efficient

Gover- nance

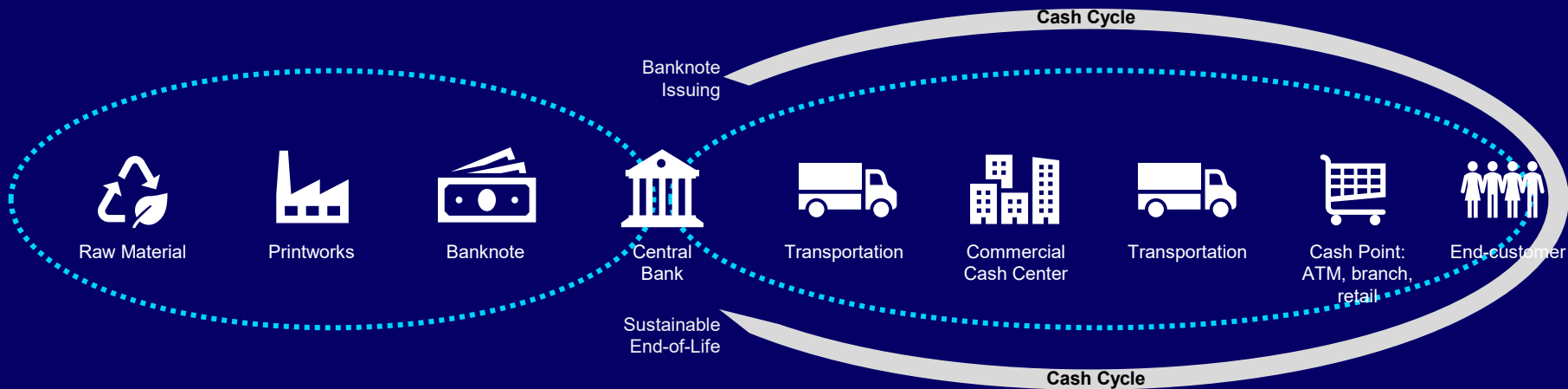
Legally compliant
Trustfully collaborating

Advanced Banknote Management

GREEN CASH CYCLE INITIATIVE

Value chain of creation

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



G+D Sustainability

Creating a greener banknote lifecycle



GREEN
BANKNOTE
INITIATIVE



GREEN
CASH CYCLE
INITIATIVE

What are the largest levers for a **greener** cash cycle?



Overarching Goal

Reduce Waste and Single-Use Plastic



3

Cash Design

Less Emissions in Production
Less Plastic
Green Product

Cash Processing

Less Power Consumption
Less Waste
Less Service Travel

Cash Distribution

Less Transport Emissions
Standardized Package & Transport

The Green Banknote.



2

Cash Design

Less Emissions in Production
Less Plastic
Green Product

Cash Processing

Less Power Consumption
Less Waste
Less Service Travel

Cash Distribution

Less Transport Emissions
Standardized Package & Transport

Cash Processing

Less power consumption





More Efficiency in Cash Processing

Intelligent Automation fosters sustainability

- Automation in cash management offers a new way to reduce costs, **increase efficiency**, and support greater sustainability and adaptability
- The increased throughput of BPS® M machines has led to a substantial **reduction of power consumption** per banknote/bundle
- With introducing **NotaTracc®** machines are utilized higher for more efficiency and productivity

Cash Processing

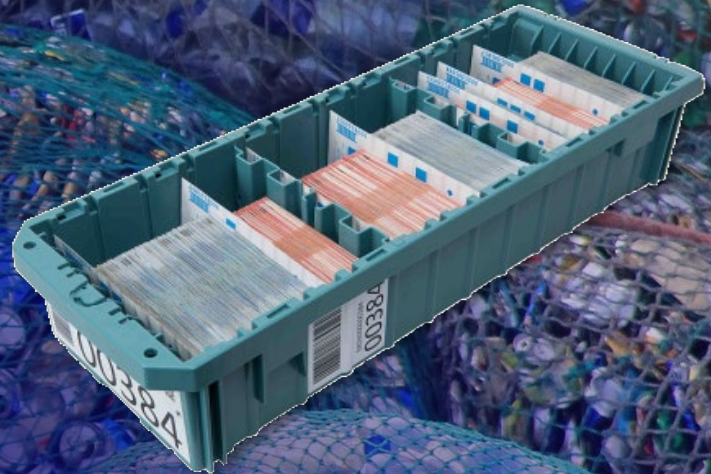
Less waste



Less Waste in Cash Processing

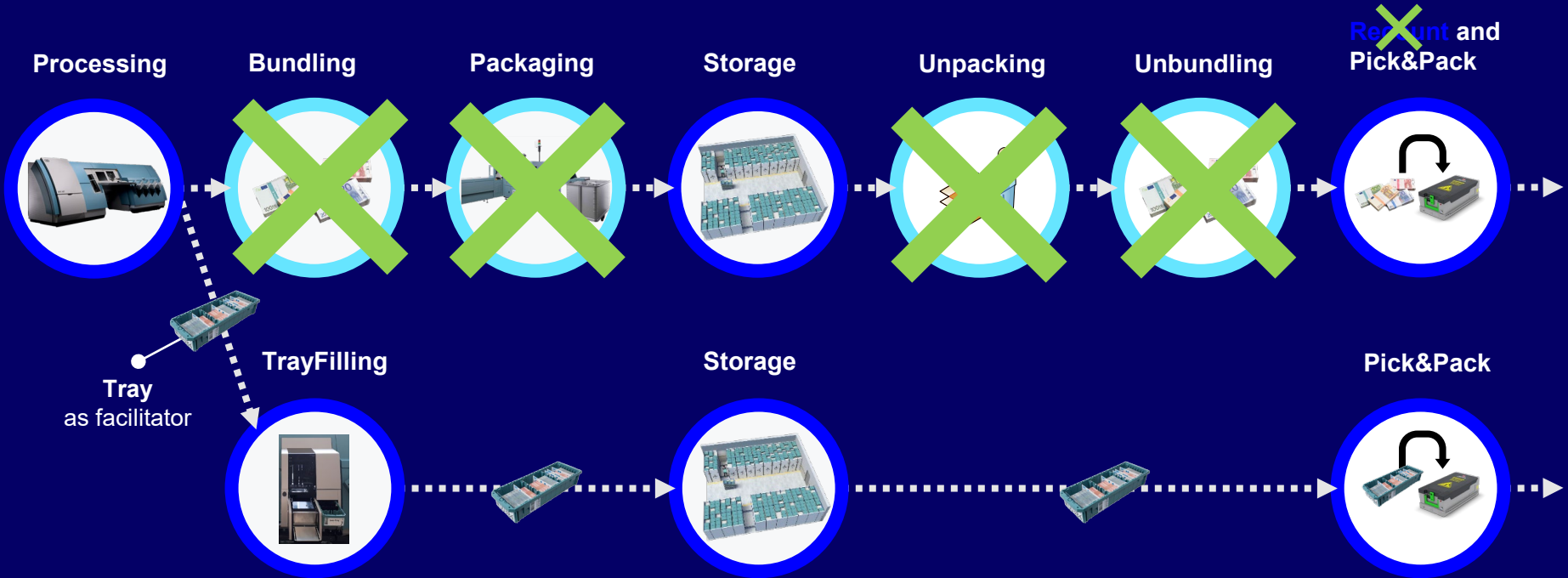
Sustainability in cash logistics

- Substantial **reduction of bundling and packaging waste** with introducing **NotaTray** as the cash logistics container in cash centers, and between partners



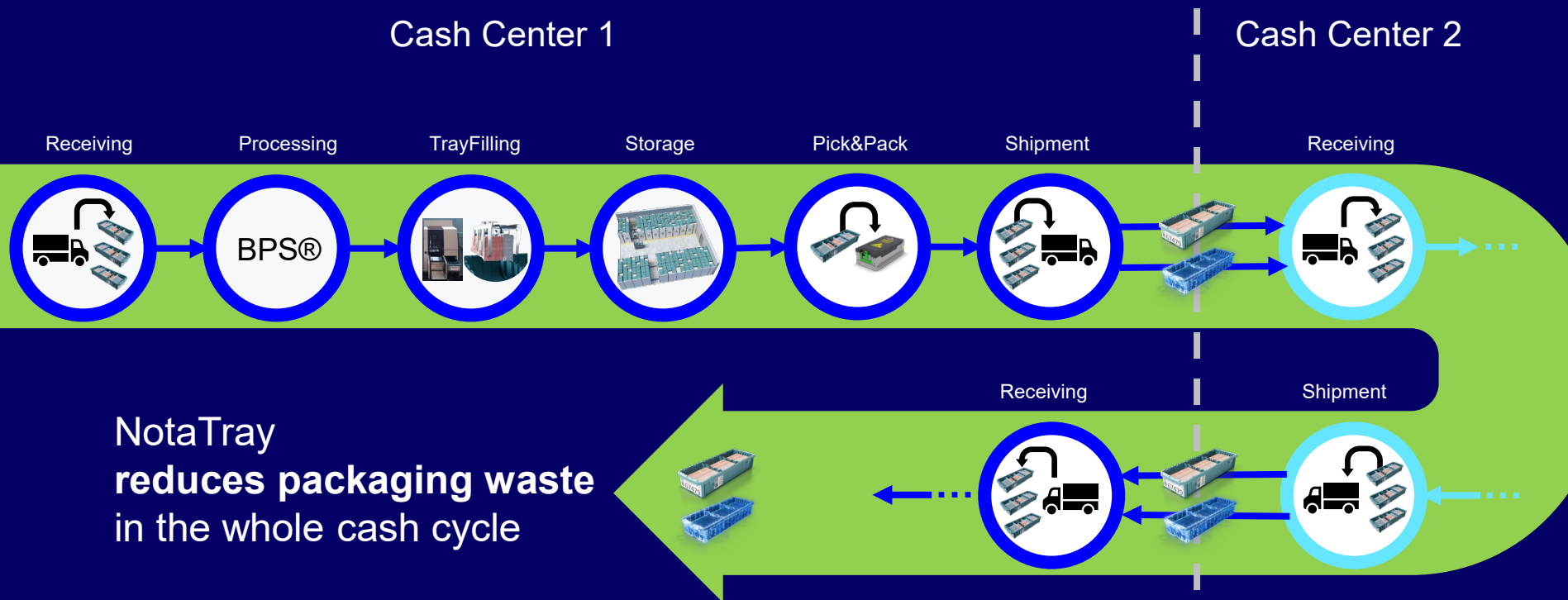
How it works:

Waste reduction in **greener** cash centers



How it works:

Greener cash cycle



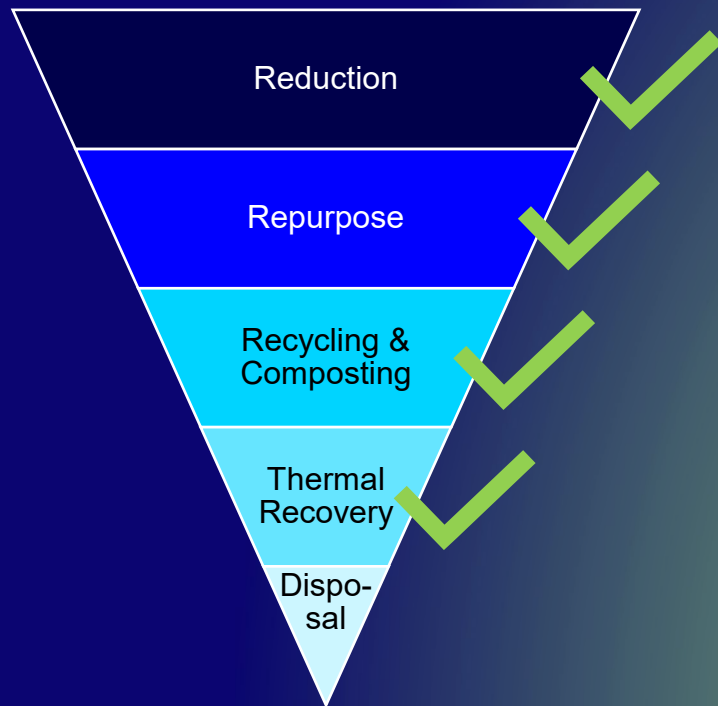
End-of-Life Solutions

Less waste



Less Waste with Banknotes

Sustainability with local End-of-life Solutions



Reduction of plastic and use of by-products of textile industry and **organic fibers** banknote production

Reuse of shredded banknotes as **raw material** in paper production

Reuse of fibered hybrid banknotes as **insulation material** for the construction industry

Composting of cotton, long-life and hybrid banknotes **converted to soil**

Thermal Recovery of shredded banknotes for **energy and heat production**

Cash Processing

Less travel emissions



Less travel-related emissions

Sustain reliable maintenance with remote services

Reduce service travel and sustain reliable maintenance by:

1. **Knowledge Transfer** remotely via trainings platform/ videos, etc. to enable on-site service
2. **Remote Service** utilizing Eco-Remote and Visual Support to help on-site service without travelling
3. **Smart Maintenance** via utilization of machine data to condition-based and predictive maintenance



Example **Visual Support**:

Both experts and the person on site can exactly picture live views to identify problems and find suitable solutions increasing resolution times



Cash Design

Less Emissions in Production
Less Plastic
Green Product

Cash Processing

Less Power Consumption
Less Waste
Less Service Travel

Cash Distribution

Less Transport Emissions
Standardized Package & Transport

Cash Distribution

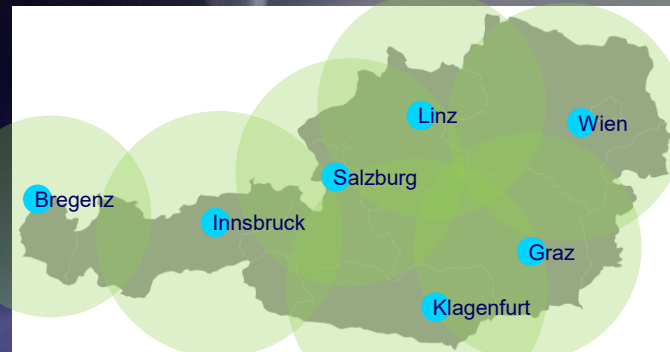
Less cash transport emissions



Less Distances

Sustainability in cash transport

- G+D supports with analyzing the right infrastructure for the cash network with **Compass Network Forecasting**
- G+D builds **Multi-Bank Cash Centers** with shared cash processing infrastructure leading to less environmental impacts



Example Austria:
the GSA regional cash center coverage reduces the **cash transport distances** between GSA and their partners

Next level of sustainable cash transport

Software leveraging cash cycle data



**Compass
Transport
Management**



Transport and
Route Optimization
for **less mileage**



**Compass
ATM+Branch
Forecasting**



Cash Point
Optimization
for **less stops**



**Compass
Vault
Network**



Bulk Transport to
Distributed Vaults
for **less distances**

G+D Sustainability

Creating a greener banknote lifecycle



GREEN
BANKNOTE
INITIATIVE



GREEN
CASH CYCLE
INITIATIVE

A photograph of Edinburgh Castle, a large stone fortress, perched on a rocky hill. The castle is surrounded by lush green trees and vegetation. The sky is blue with scattered white clouds. A flag is visible on a tall pole to the left of the castle.

Thank you

Gurpal Singh
Portfolio & Technology Management



Sustainability Forum 2022 in Edinburgh