Glass Performance Days 2025

10 – 12 JUNE 2025 | NOKIA ARENA - TAMPERE, FINLAND

GLASS PERFORMANCE DAYS 2025

LEVERS AND CHALLENGES FOR REDUCED CARBON FOOTPRINT PVB INTERLAYERS

- Reducing carbon emissions in factories
- Using Recycled Materials
- Utilizing Bio-Based Raw Materials

CHRISTOPH TROSKA KURARAY

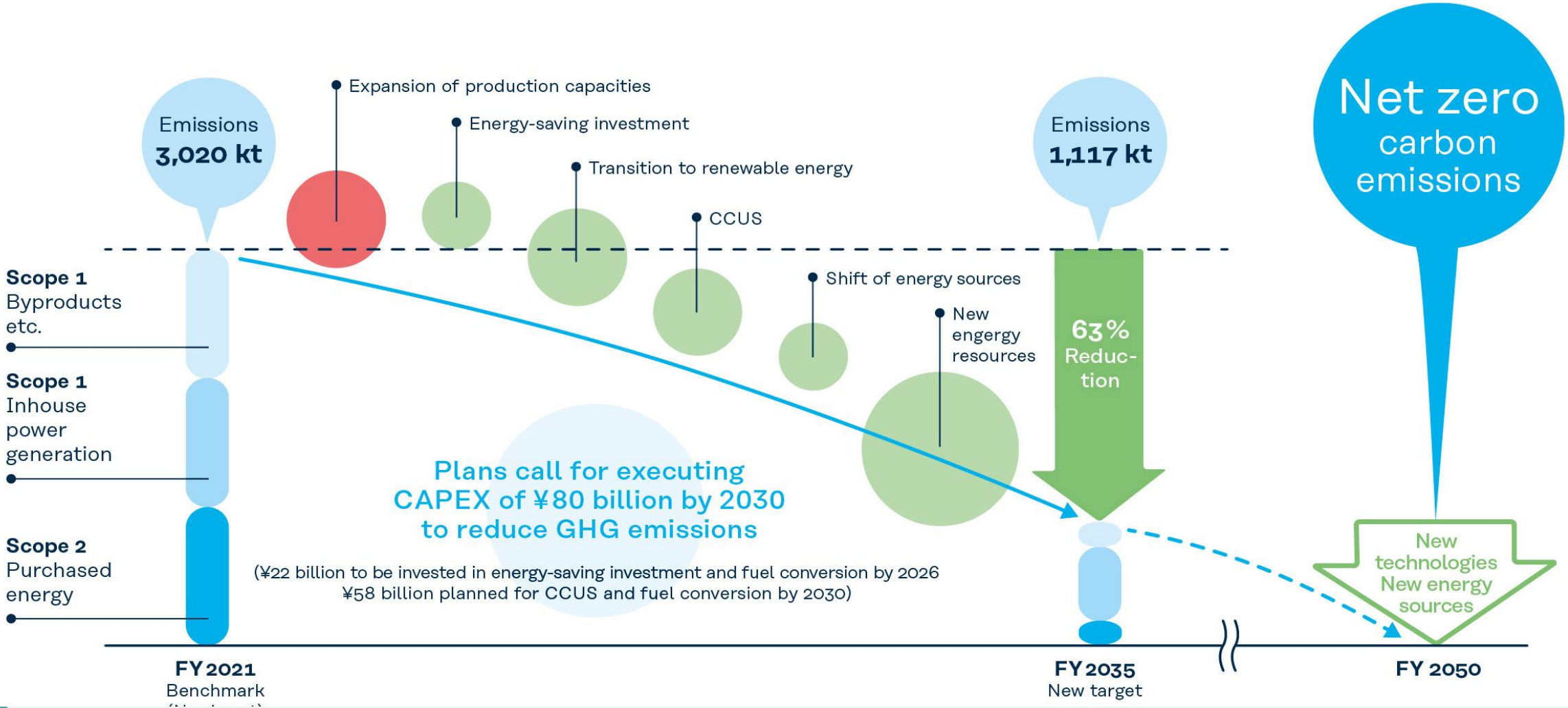
Kuraray vision in facts

Sustainability long-term vision (scope 1+2)

We aim to obtain Science Based Targets (SBT) certification for our Scope 1 and 2 as well as Scope 3 GHG emission reduction targets in 2025

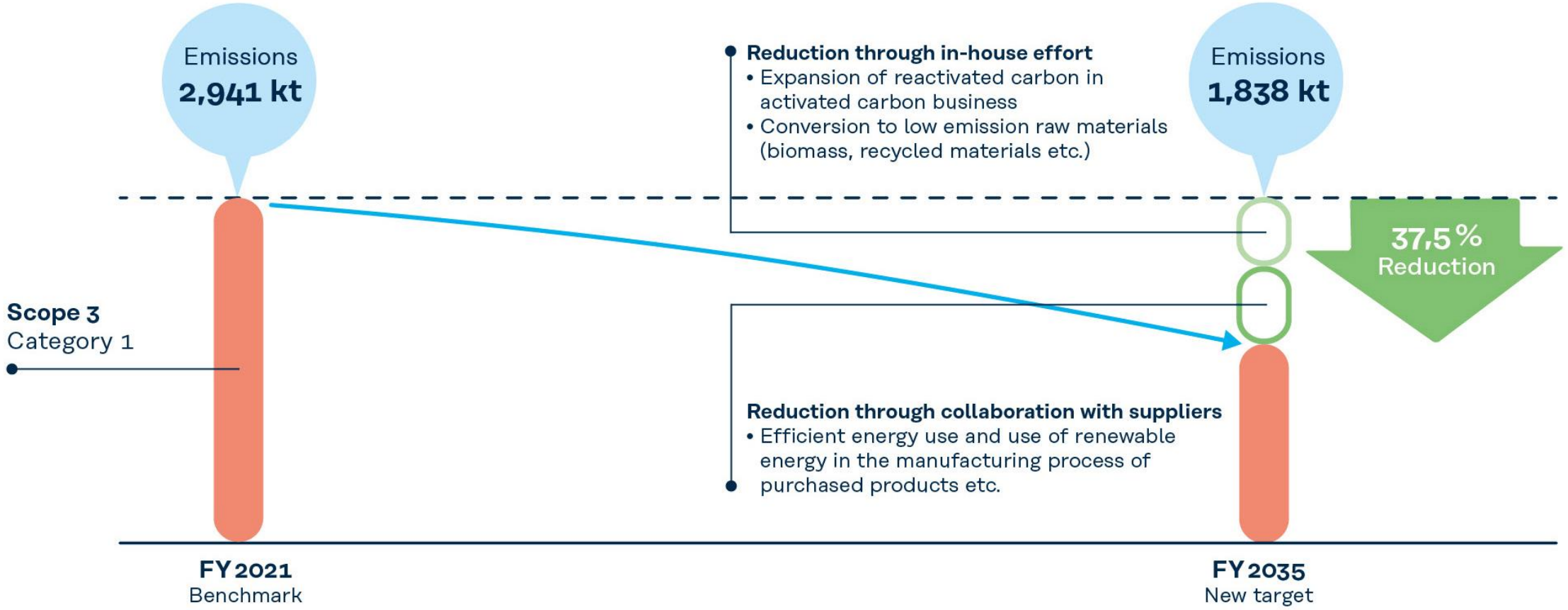
Kuraray sustainability long-term vision in facts

GHG emission reduction (scope 1&2)



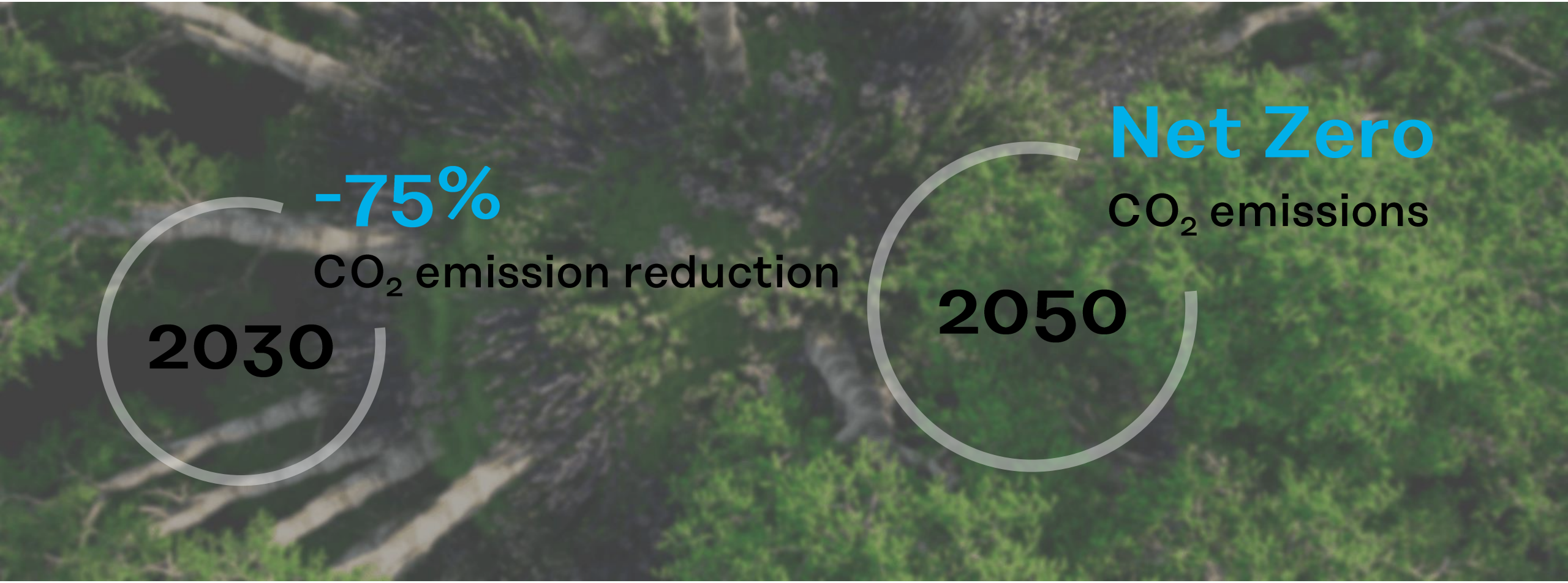
Kuraray sustainability long-term vision in facts

GHG emission reduction from the supply chain (scope 3)



Advanced Interlayer Solutions vision in facts

Sustainability long-term vision (scope 1+2)



Advanced Interlayer Solutions

Status update scope 1+2

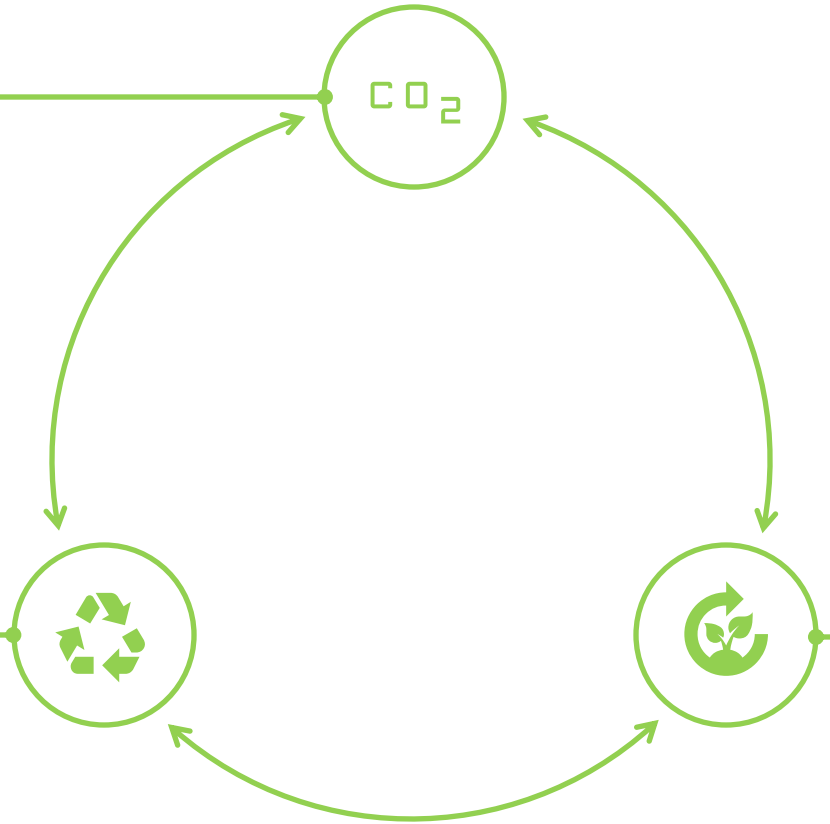
2023:
Scope 1+2
reduction of
-38%

Advanced Interlayer Solutions Division

Roadmap to further reduce carbon footprints

Reducing CO_2 at our factories

- Renewable electricity
- Increasing yields
- Energy recycling



Increase recycling rates

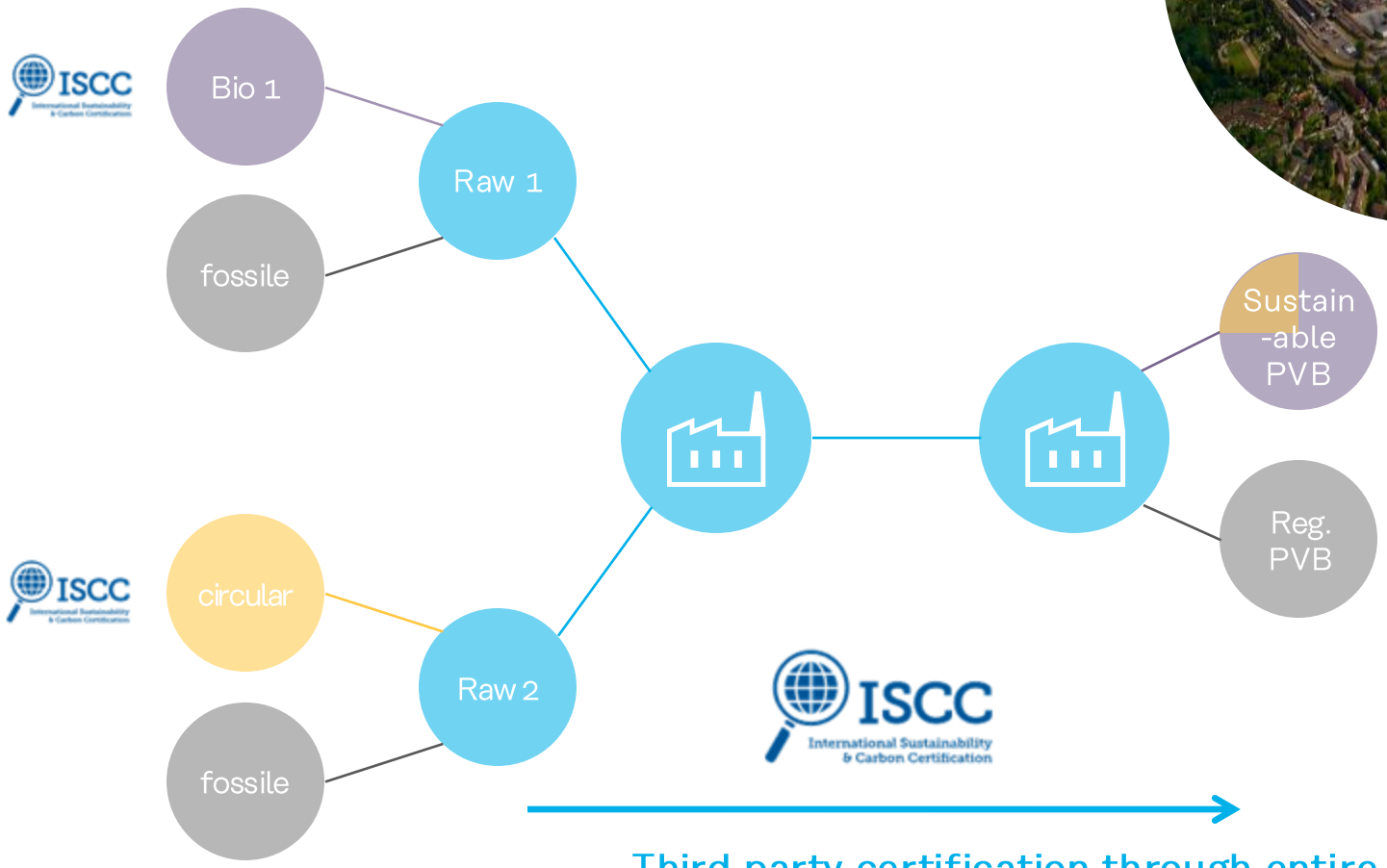
- of post-industrial materials

Bio based raw materials

- Supplier development
- Mass-balancing

Traceable Mass balancing

Traceability through ISCC+ certification



Check www.iscc-system.org for further information's

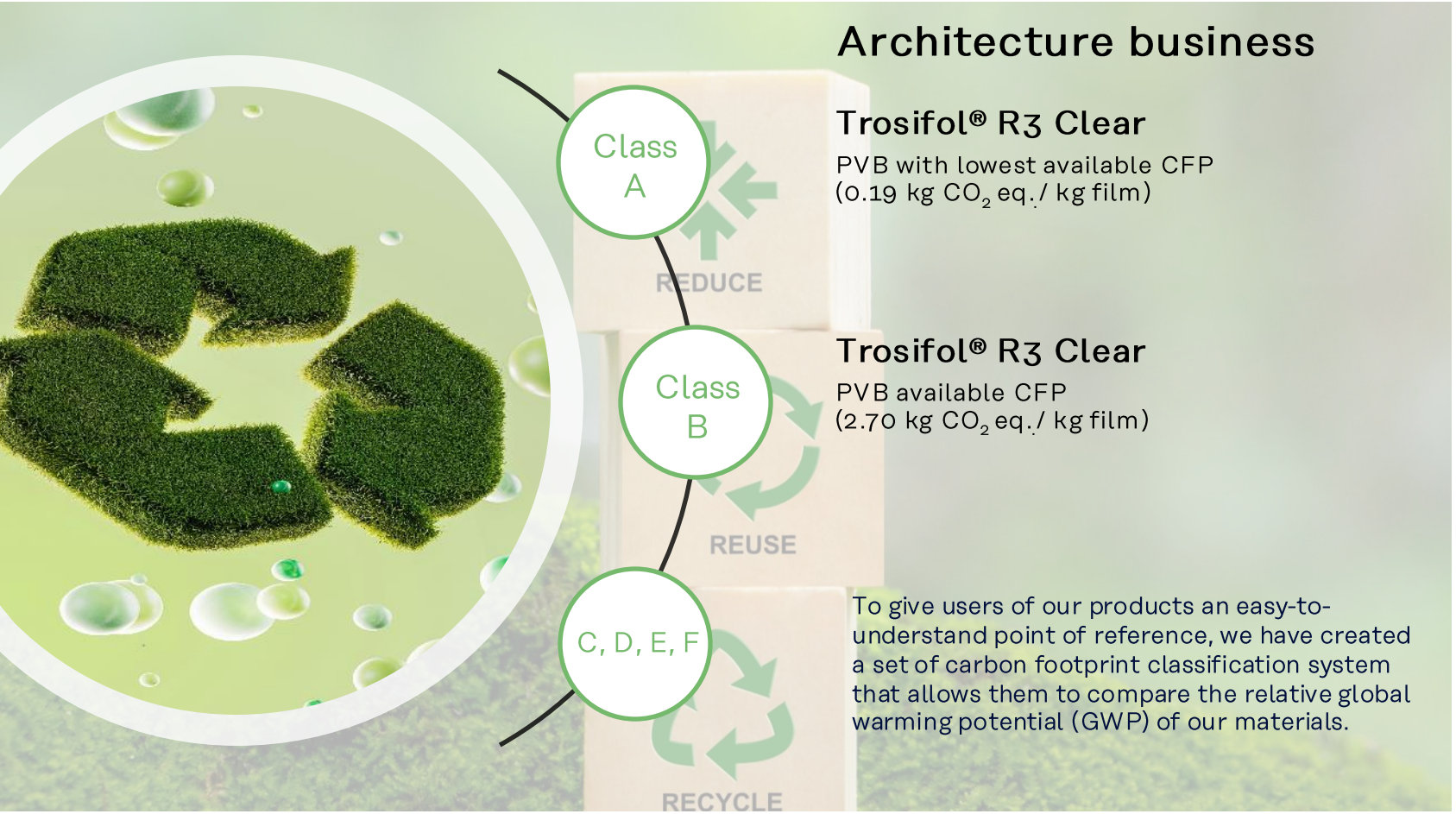
Mass balance is the general name for several methods for tracking the input of sustainable materials in production and to gradually shift away from virgin fossil to renewable/recycled raw materials. All methods relying on the same basic principle of separating renewable and fossil materials in bookkeeping while mixing them in production.

Non mass balancing requires specialized equipment, which is highly integrated in the chemical industry. Therefore, mass balance is the enabler for sustainable products.

Advanced Interlayer Solutions

Our new sustainable glazing solution Trosifol® R3

R3 use duce cycle



Architecture business

Trosifol® R3 Clear

PVB with lowest available CFP
(0.19 kg CO_2 eq./ kg film)

Trosifol® R3 Clear

PVB available CFP
(2.70 kg CO_2 eq./ kg film)

To give users of our products an easy-to-understand point of reference, we have created a set of carbon footprint classification system that allows them to compare the relative global warming potential (GWP) of our materials.

Interlayer CO_2 classification

Class	kg CO_2/ kg film
A	< 2.0
B	< 3.0
C	< 4.0
D	< 5.0
E	< 6.0
F	> 6.0

Check www.trosifol.com/about-us/sustainability/trosifol-r3-products for further information's

LCA's for interlayers Cradle to Gate

PVB film	Troisdorf	Troisdorf	Fayetteville	Ulsan	Holesov	Holesov
	B2xx / V2xx	B300	SentryGlas® sheet	V500 & V2xx	Trosifol® R3 Clear	SentryGlas® roll
Kg CO2 per kg film	4,45	5,5-5,7 (estimation)	5,95	5,63 (Butacite) 5,02 (Mowital)	0,187	3,92
Methodology	EF 3.0		EF 3.1	EF 3.1	EF 3.0	EF 3.0
Reference year	2018		2022	2022	2018	2018

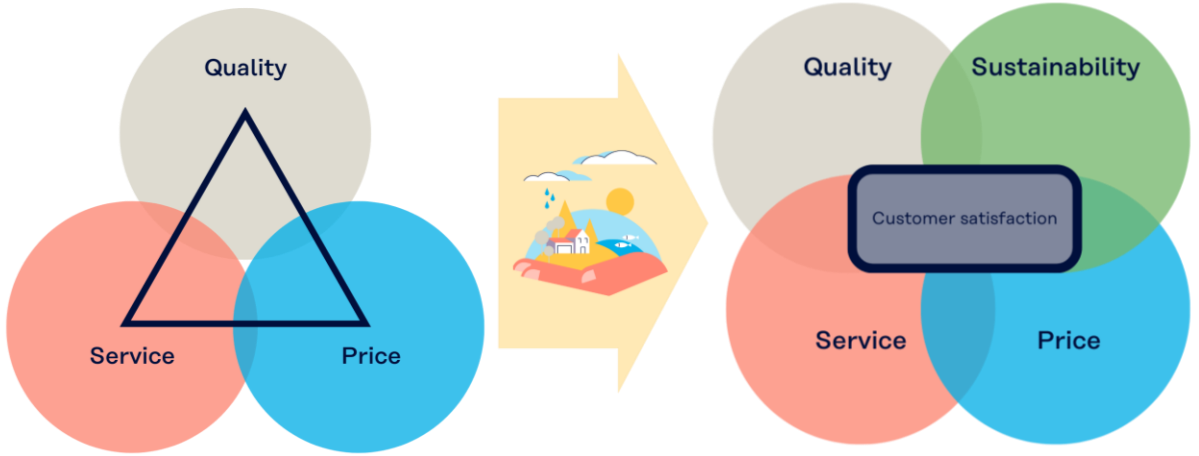
Environmental product declaration (EPD) for interlayers

Figures in "red" = Preliminary data
(not yet third party verified)

PVB film	Troisdorf	Holesov
	B2xx / V2xx	SentryGlas®
Kg CO_2 per 0,76mm sqm film	3,26	2,64
Reference year	2018	2018

Conclusion and “What can we do today?”

- Sustainability is a mega-trend and the right thing to do!
- Compare carbon footprint of your suppliers and consider it in your purchase decision.
- De-mystify mass balancing. It is an enabler for the chemical industry.
- Consider the entire construction and not only the components (see example on the next slide).



Structural interlayers stiffness & strength

Greater load bearing capabilities:

- Less deflection
- Thinner glass constructions and/or larger glass panes
- Minimal support structures
- Improved post-glass breakage performance

Typical carbon footprint data

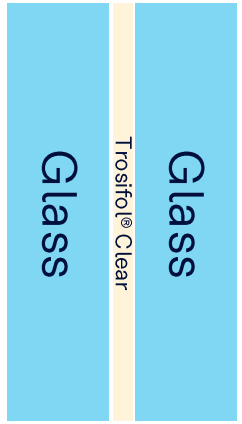
Product	Carbon Footprint [kg CO_2eq.]
1mm annealed glass	3,06*
4mm annealed glass	12,24
6mm annealed glass	18,36
8mm annealed glass	24,48
1,52mm Trosifol® UltraClear (according third party verifies EPD)	6,52
1,52mm SentryGlas® (according third party verifies EPD)	5,28

* Data taken from German flatglass association

www.Trosifol.com

Structural Interlayer are more sustainable !!!

16mm laminated safety glass (LSG)



Product	Carbon Footprint [kg CO_2eq.]
8mm annealed glass	24,48
1,52mm Trosifol®	6,52
8mm annealed glass	24,48
Total	55,48

12mm LSG with SentryGlas®

Product	Carbon Footprint [kg CO_2eq.]
6mm annealed glass	18,38
1,52mm SentryGlas®	5,28
6mm annealed glass	18,38
Total	42,04

	16mm LSG	12mm LSG with SentryGlas	savings
Thickness	17,52mm	13,52mm	22,8%
Weight	41kg/m²	31kg/m²	24,4%
Carbon footprint	55kg/m²	42kg/m²	24,2%

What does that mean for a 10.000m² facade

	16mm LSG	12mm LSG with SentryGlas	savings
Thickness	17,52mm	13,52mm	22,8%
Weight	41kg/m²	31kg/m²	24,4%
Carbon footprint	55kg/m²	42kg/m²	24,2%

- Weight reduction glass 100.000 kg
- Carbon footprint reduction 130.000 kg

- Not considering the reduced under-construction (steel or aluminum)