

How biosourced binders can leverage your decarbonation strategy?



 **eco coat**

RESPECT THE FUTURE

SUSTAINABLE & PERFORMING

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19/09/2023

MOVING TOWARDS SUSTAINABILITY THROUGH GHG EMISSION TARGETS



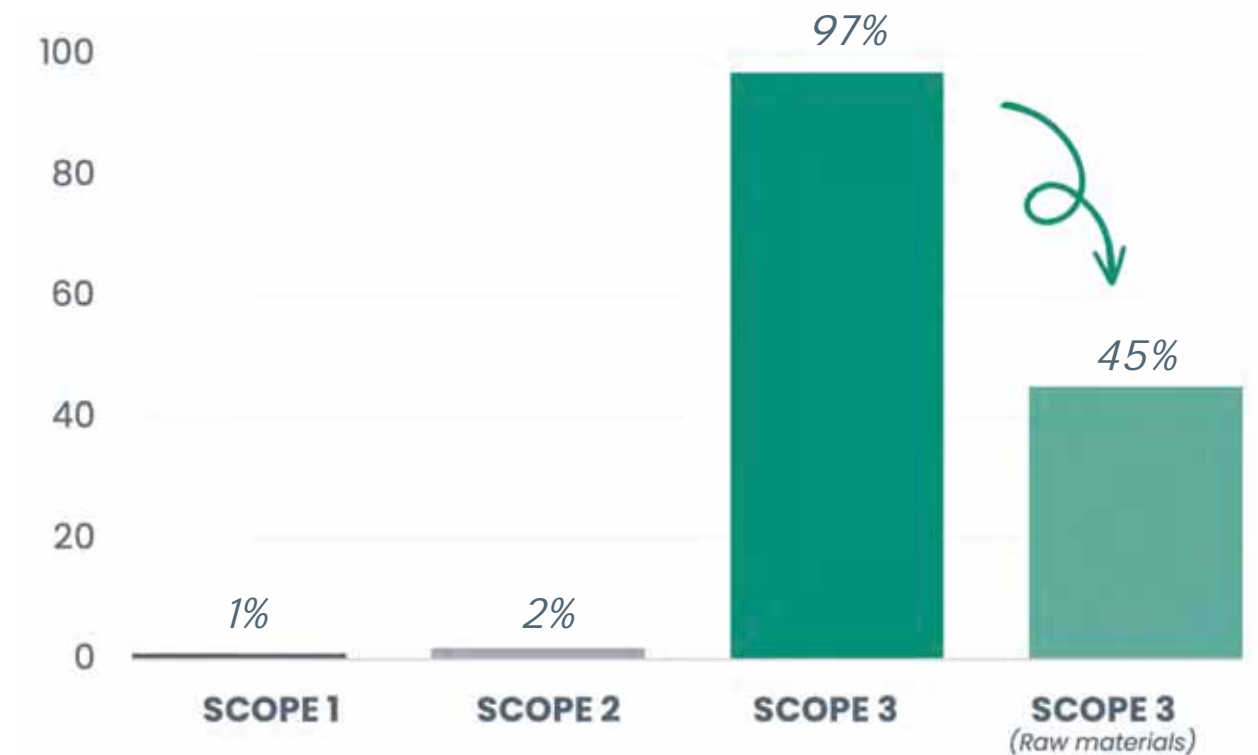
	2021 COATINGS SALES (\$ million)	GHG EMISSION TARGET	SCOPE 3 ASSESSMENT
	16,800	-15% by 2025 (2017 baseline)	YES
	15,960	-30% by 2030 (2019 baseline)	YES
	11,370	-50% by 2030 (2018 baseline)	YES (-50%)
	9,000	Net zero carbon by 2050	YES
	6,100	-20% per ton by 2025 (2021 baseline)	NO
	4,400	-50% per ton by 2030 Carbon neutral by 2040	NO
	2,590	-50% per ton by 2030 (2017 baseline)	NO
	478	-50% per ton by 2030 (2019 baseline)	NO



SCIENCE
BASED
TARGETS

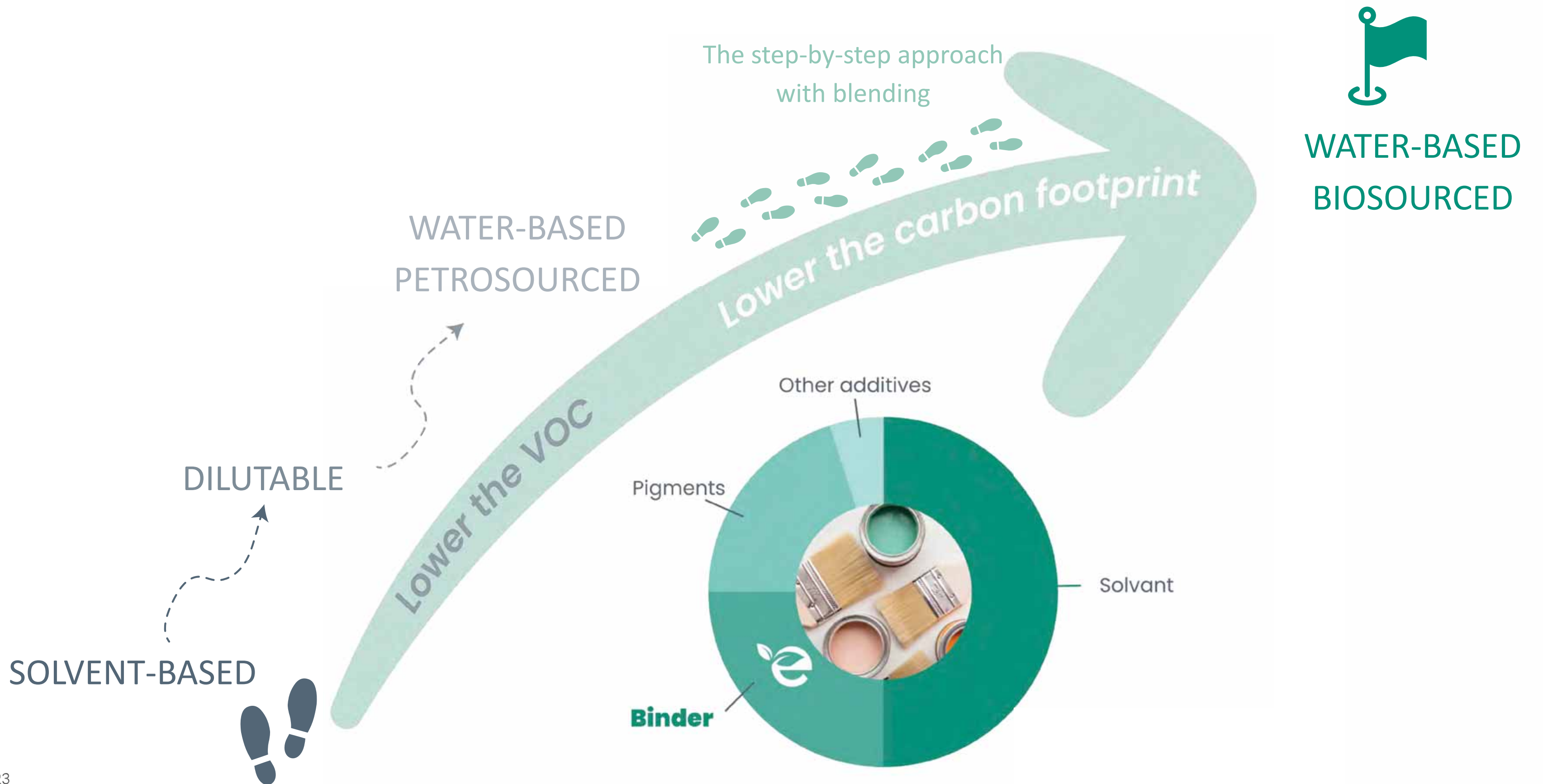
DRIVING AMBITIOUS CORPORATE CLIMATE ACTION

to meet the Paris Agreement:
-90% of GHG emissions by 2050 or -4%/year

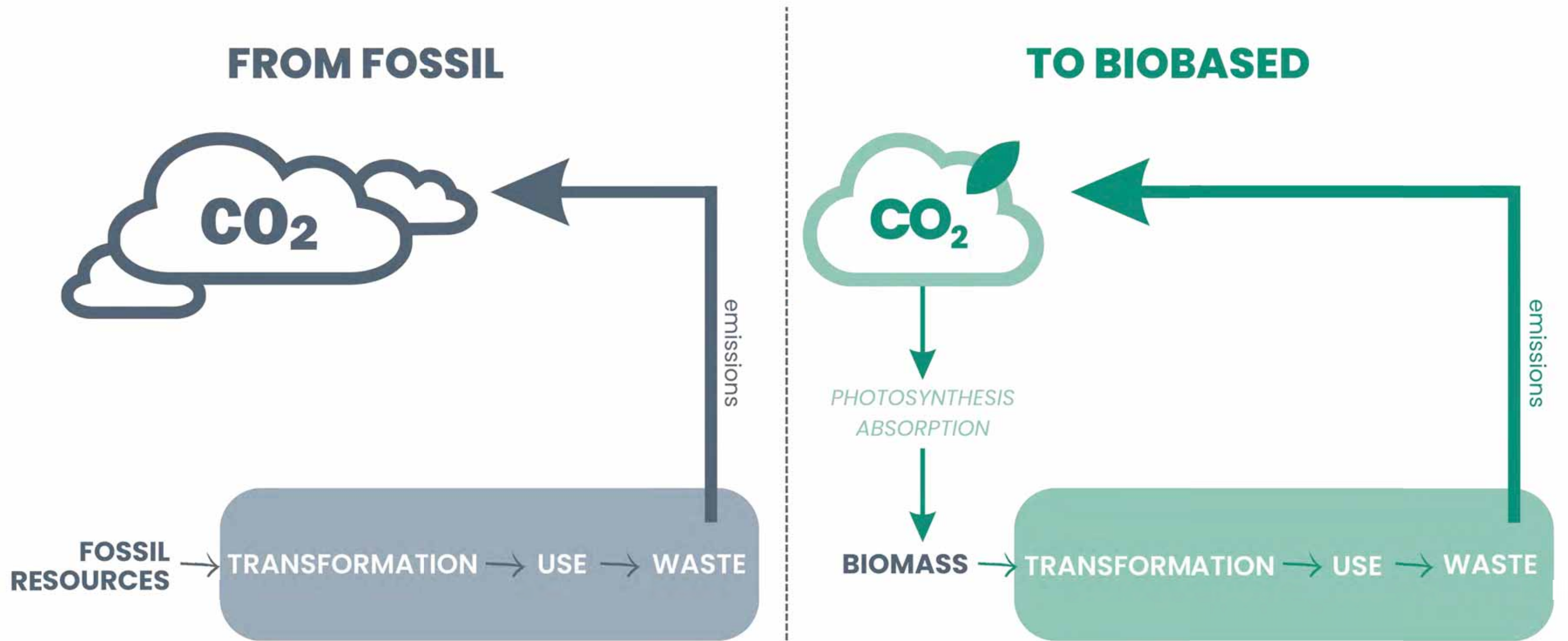


GHG emissions for each scope (CDP, 2022)

THE JOURNEY TO LOWER RAW MATERIALS IMPACT



WHY SWITCHING FROM PETROSOURCED TO BIOBASED?



“Linear” emissions: increase of CO₂ amount in the atmosphere

“Cyclic” emissions: CO₂ previously fixed is released at the end of life



BIOBASED BINDERS FOR COATING APPLICATIONS

Architectural



- ✓ Up to 98% biobased binders
- ✓ Class 1 wet scrub resistance

Anticorrosion



- ✓ At least 36% biobased binders
- ✓ Up to C4 anticorrosion paints

Wood



- ✓ Up to 98% biobased binders
- ✓ Impregnation / stain / topcoat

SUSTAINABLE & PERFORMING



OUR MISSION

DRIVE OUR INDUSTRY INTO
ECOLOGICAL AND ENERGY
TRANSITION

HOW?

COMPANY LEGAL STATUS ARE MODIFIED WITH OUR MISSION
GOVERNANCE MODIFICATION WITH A "MISSION" COMMITTEE
AUDIT BY THIRD PARTY EVERY 3 YEARS



OUR MISSION'S GOALS

#1

ALL INNOVATIONS ARE
RELATED TO SUSTAINABLE
DEVELOPMENT

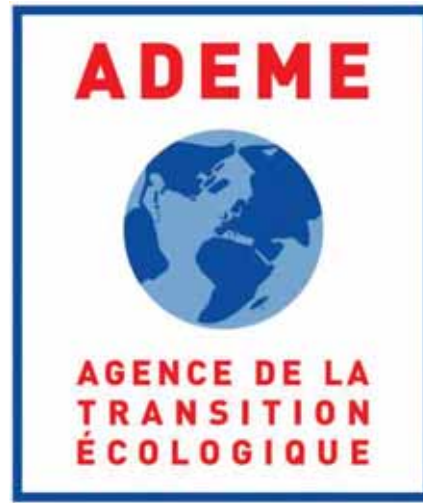
#2

CARBON IMPACT SHOULD BE
MEASURED IN 100% OF
OUR PROJECTS

#3

OUR TEAM IS COMMITTED IN AGILE AND
PERFORMING ORGANIZATION THROUGH
FREEDOM, LEARNING & EVOLUTION







- ✓ Created in 2007
- ✓ 65 members
- ✓ 2 main missions:



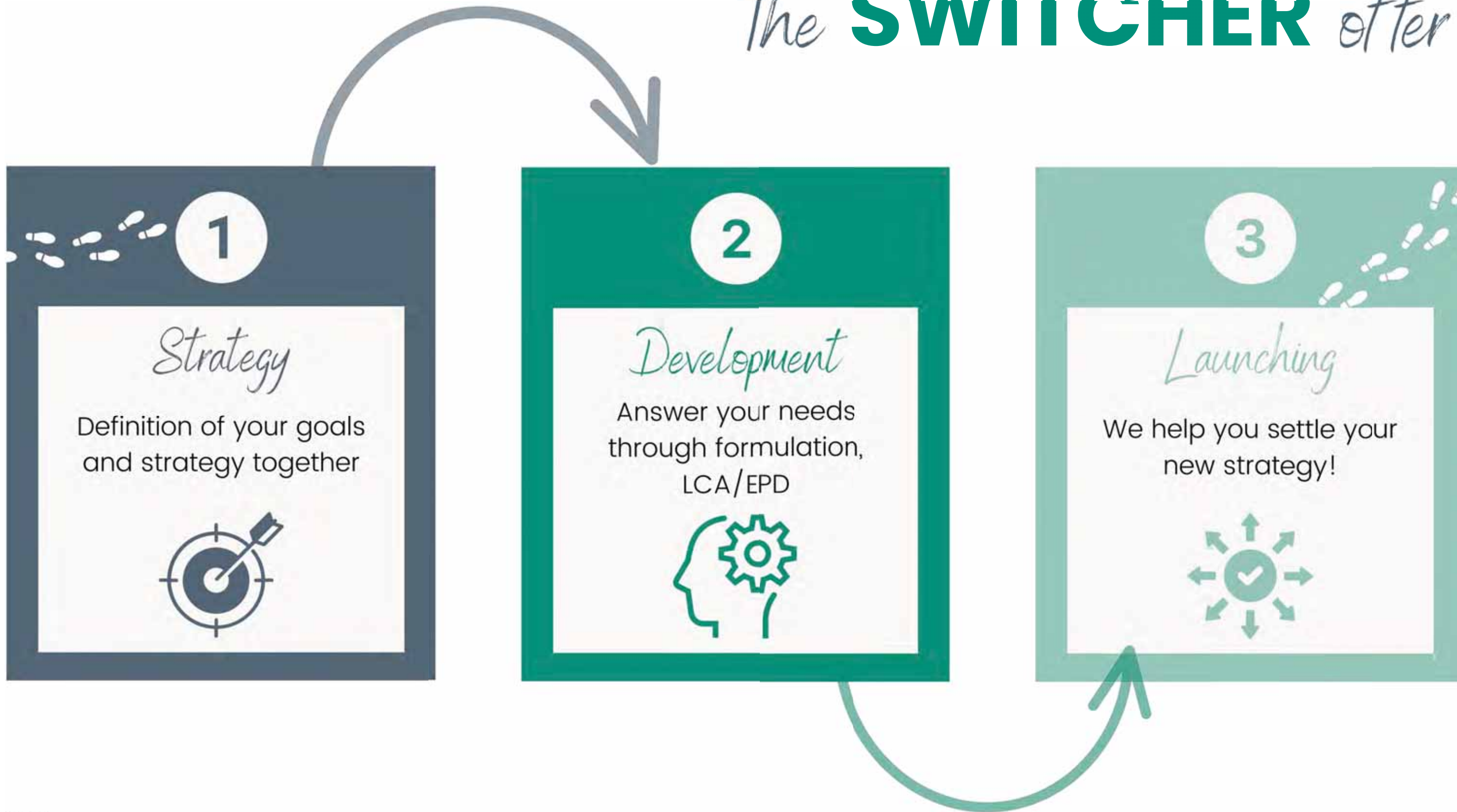
- ✓ Support, structure and accelerate the industrial development of plant-based chemistry and biobased products
- ✓ Promote the advantages of plant-based chemistry, raise its profile and increase awareness of its assets

ECOAT IS INVOLVED IN DIFFERENT WORKING GROUPS:





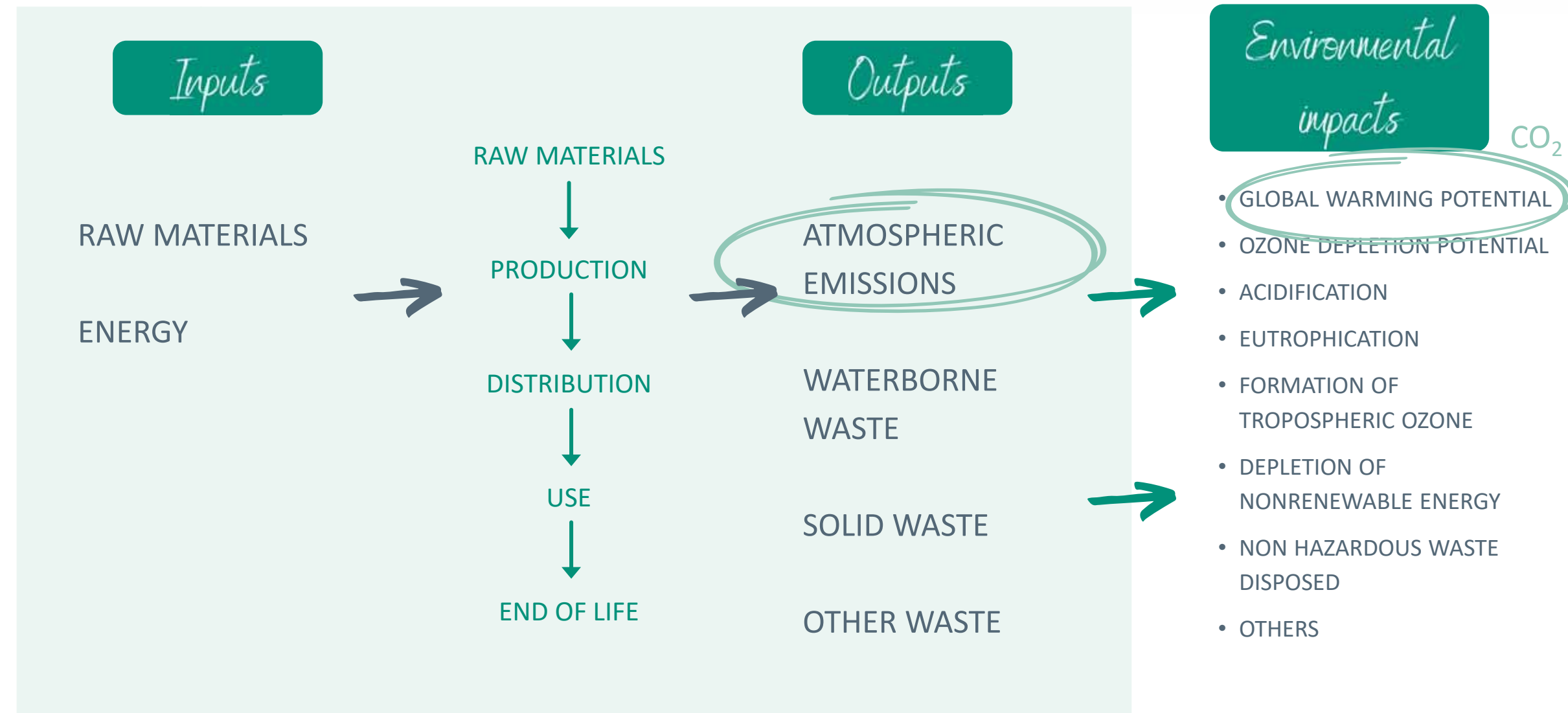
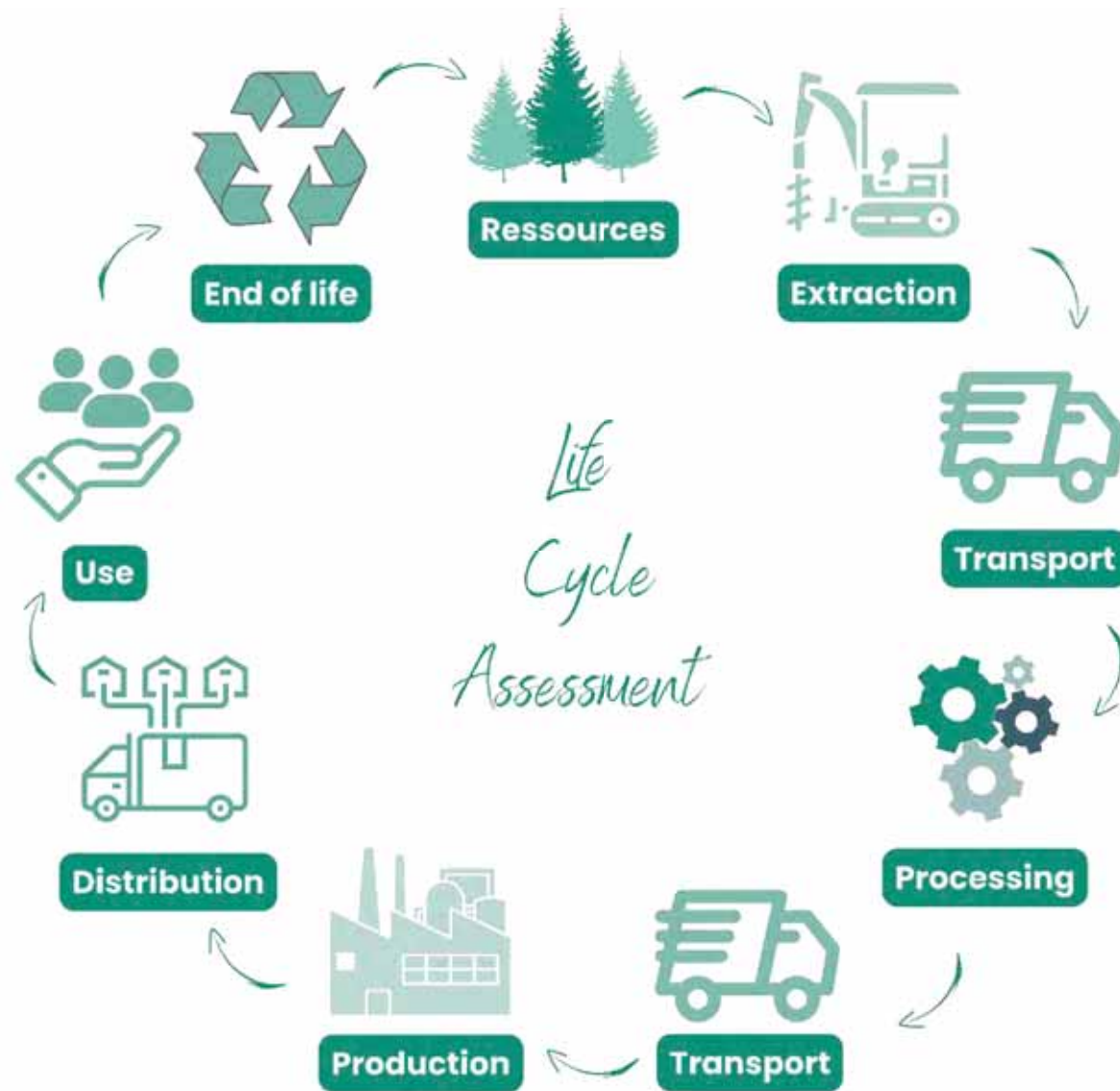
The **SWITCHER** offer



LIFE CYCLE ASSESSMENT (LCA) - AT A GLANCE

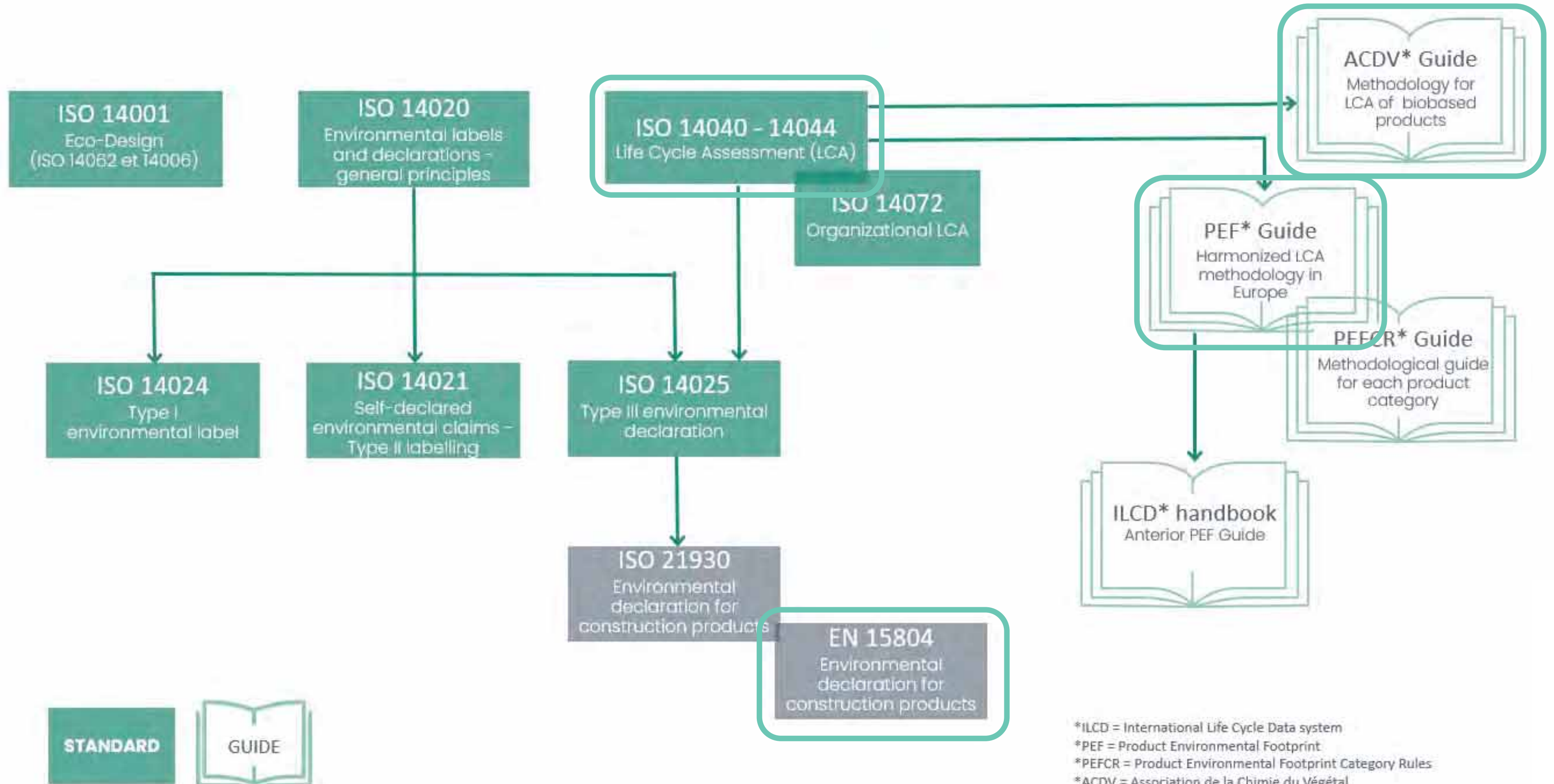


A TOOL IN THE HEART OF SUSTAINABILITY TO ASSESS THE ENVIRONMENTAL IMPACTS

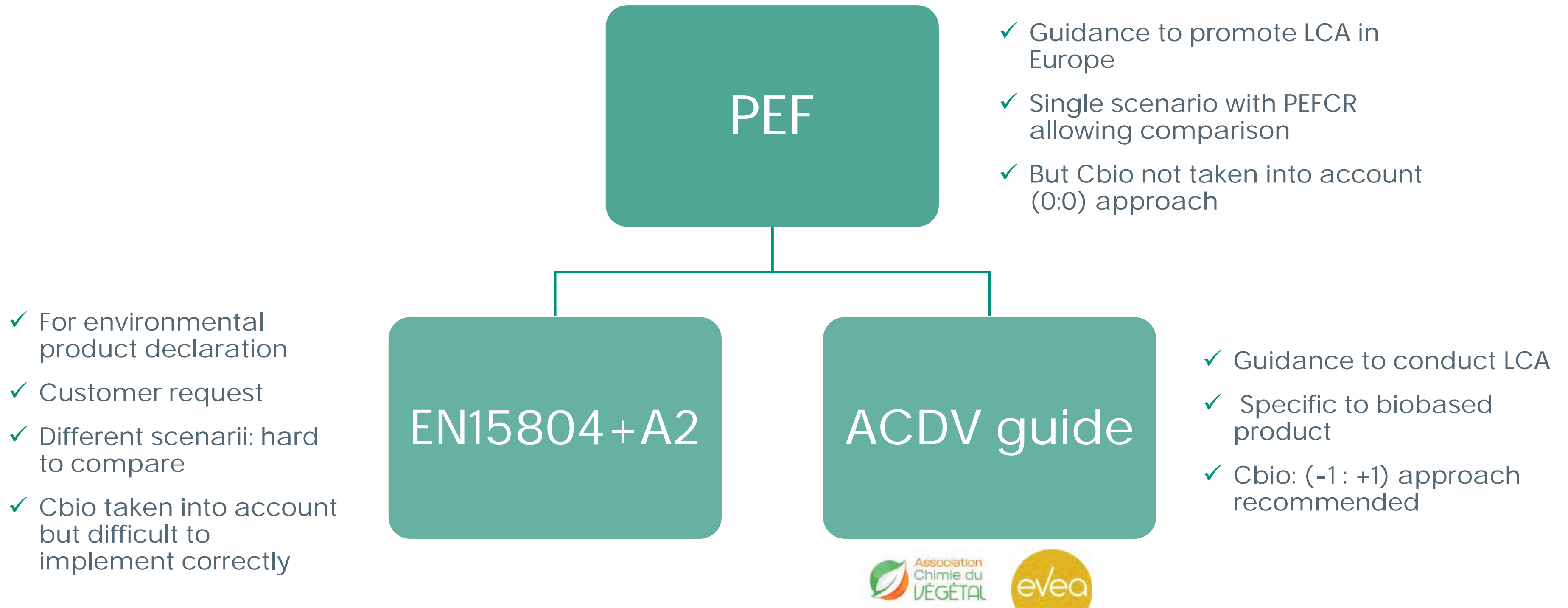


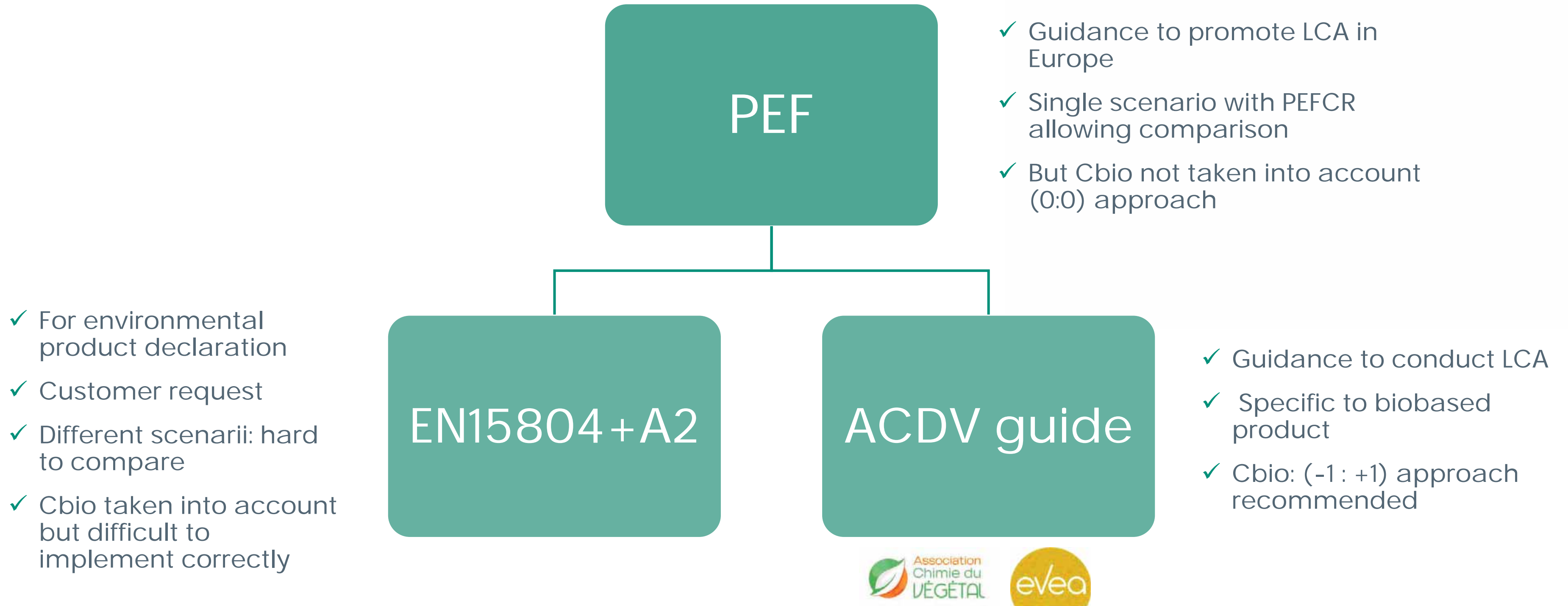
Objective: Compare products, eco-design, communicate on good practices

LCA REFERENCE FRAMES



*ILCD = International Life Cycle Data system
 *PEF = Product Environmental Footprint
 *PEFCR = Product Environmental Footprint Category Rules
 *ACDV = Association de la Chimie du Végétal
 (French biobased chemistry association)





Different frames available → need to align and take into account Cbio

CASE STUDY

SECOIA® 1400: BIOBASED BINDER FOR ARCHITECTURAL



ULTRA LOW CARBON FOOTPRINT & OUTSTANDING PERFORMANCES IN SOLE BINDER FORMULATIONS



FORMULATION CHANGES TOWARDS BIOBASED

- REMOVAL OF COALESCING AGENT (VOC-FREE)
- ADDITION OF DRIER FOR EXTRA SCRUB RESISTANCE
- LOWERING THE THICKENERS CONTENT
- BETTER OPEN TIME
- CLASS 1 ACHIEVABLE



Validated** in May 2022
Validation ID:

CDA022

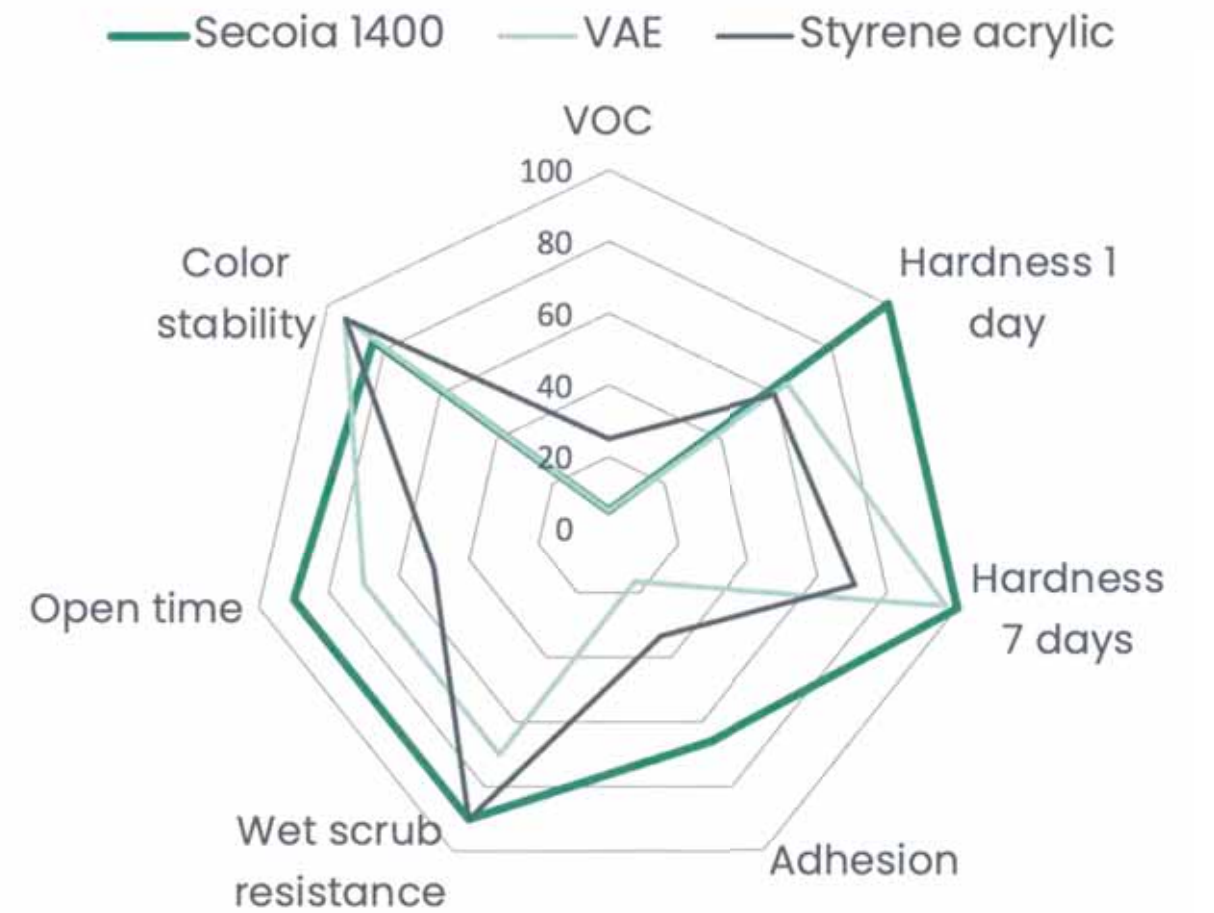
Verifiable at
www.impact-forecast.com



Mitigates climate change with an impact reduction potential Vs. standard styrene acrylic of:

-1,7

kgCO₂ eq
Per kg of product substituted



*Based on C content measured according to EN 16640

**Validated during European Innovation Council EIC-EIT Climate race to net-0 program

CASE STUDY: LCA STEPS



1. Define the goal and scope of the study
2. Life cycle Inventory
3. Life cycle Assessment
4. Interpretation

For coatings formulations

	Cradle to gate	Cradle to grave
Function	Protect and/or decorate a substrate over a certain duration	
System boundaries	Includes steps from raw materials extraction to paint production	Includes all the life cycle as presented by the PEFCR for decorative paints of the European Commission
Functional unit	kg of produced paint	Protect and decorate 1 m ² of substrate for 50 years with a minimum of 98% opacity
Reference flow	1 kg of paint	kg of paint = $\frac{1 \text{ m}^2 \times \text{Paint density} \times \text{Maintenance multiplier}}{\text{Coverage} \times \text{Applied paint factor} (= 0,89)}$



CASE STUDY: WATERBORNE WALL PAINT



100% Conventional
styrene-acrylic

VS

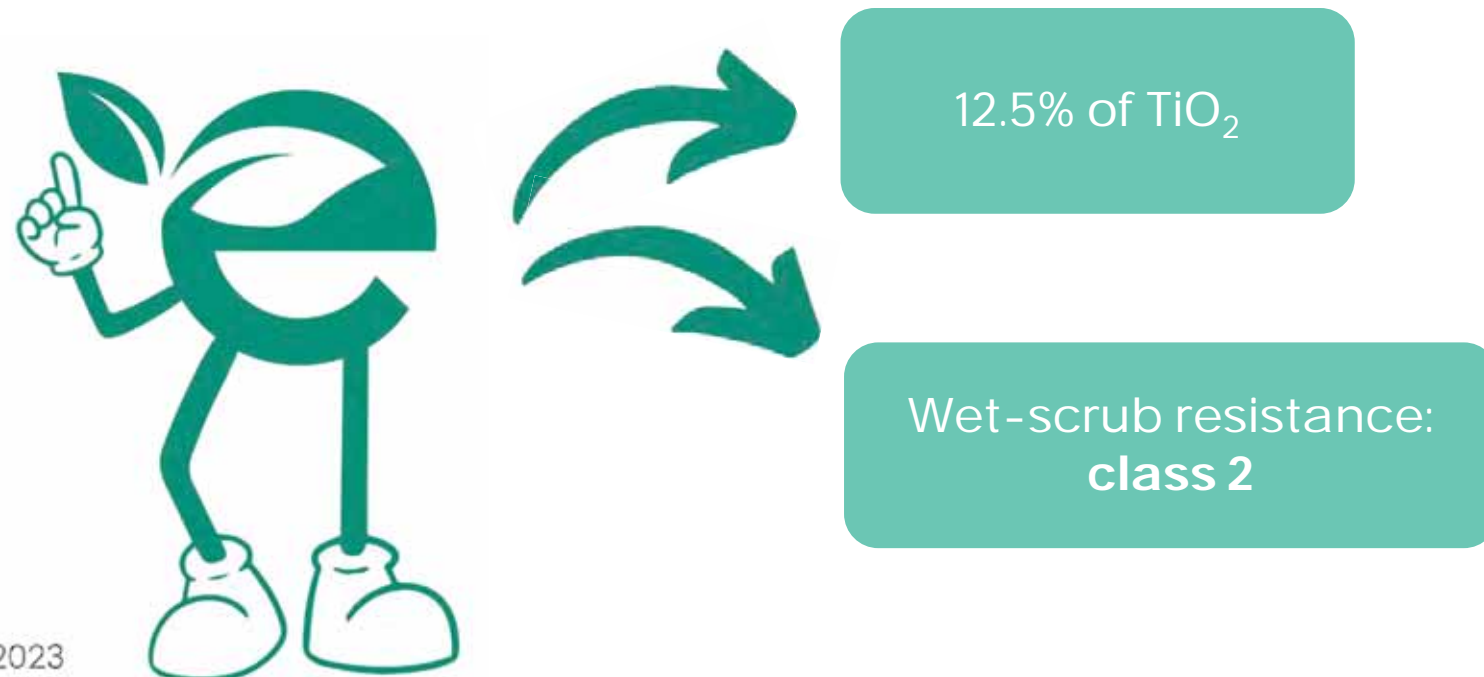
100% Secoia® 1400

Paint formulation parameters

Dry binder	8.5%
TiO ₂ rate	12.50%
PVC	68%
$\lambda = \text{PVC/CPVC}$	1.093

Application parameters

	Paint based on acrylic binder	Paint based on Secoia® 1400
Paint density (kg/L)	1.53	
Maintenance multiplier (for 50 years)	8.33	
Coverage (m ² /L)	6.3	7.5
Applied paint (fraction)	0.89	
Reference flow (kg/m ²)	2.27	1.91
Solid content (% weight)	61	
Dry reference flow (kg/m ²)	1.23	1.04

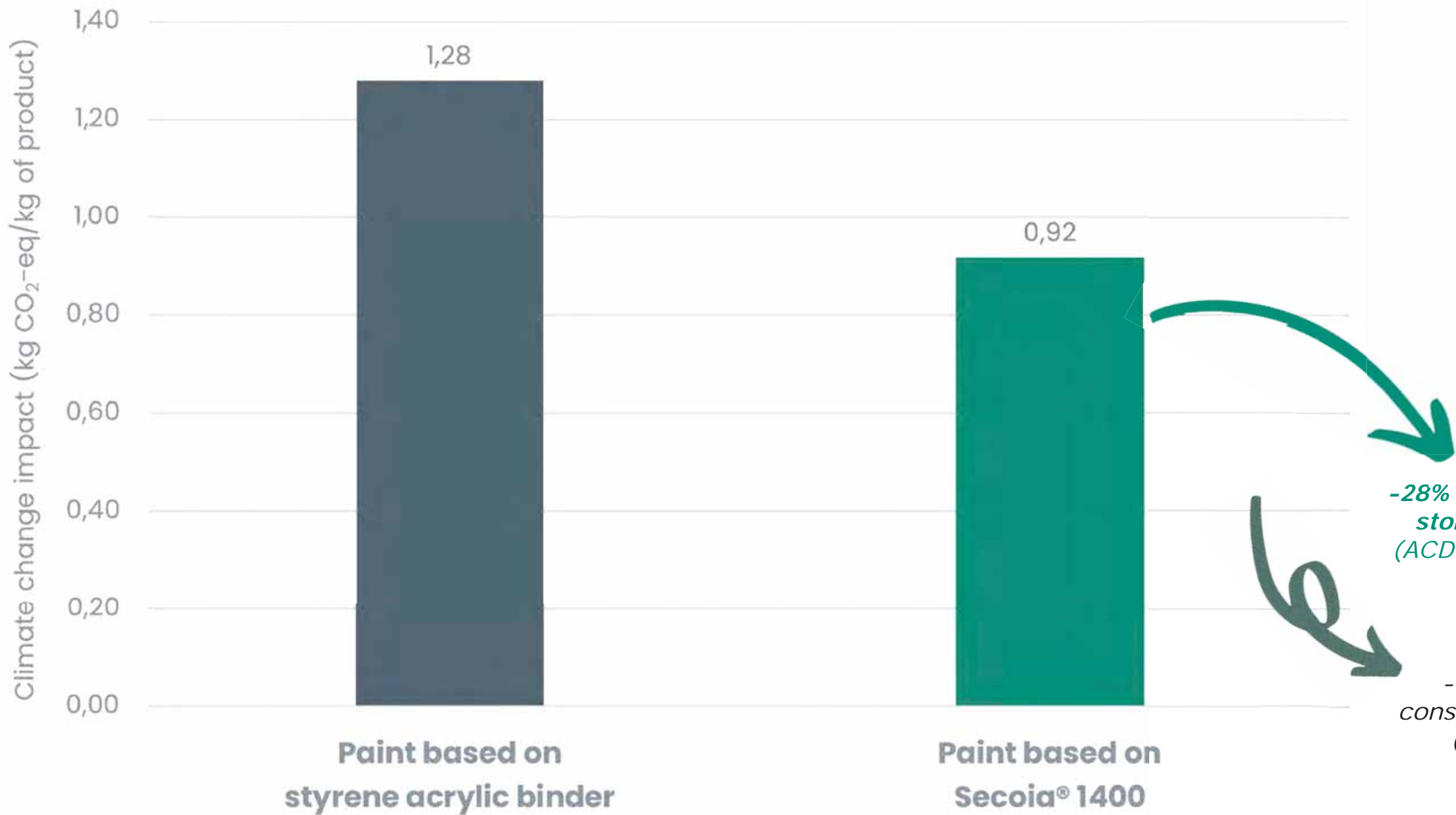


CRADLE TO GATE STUDY (paint manufacturer gate)



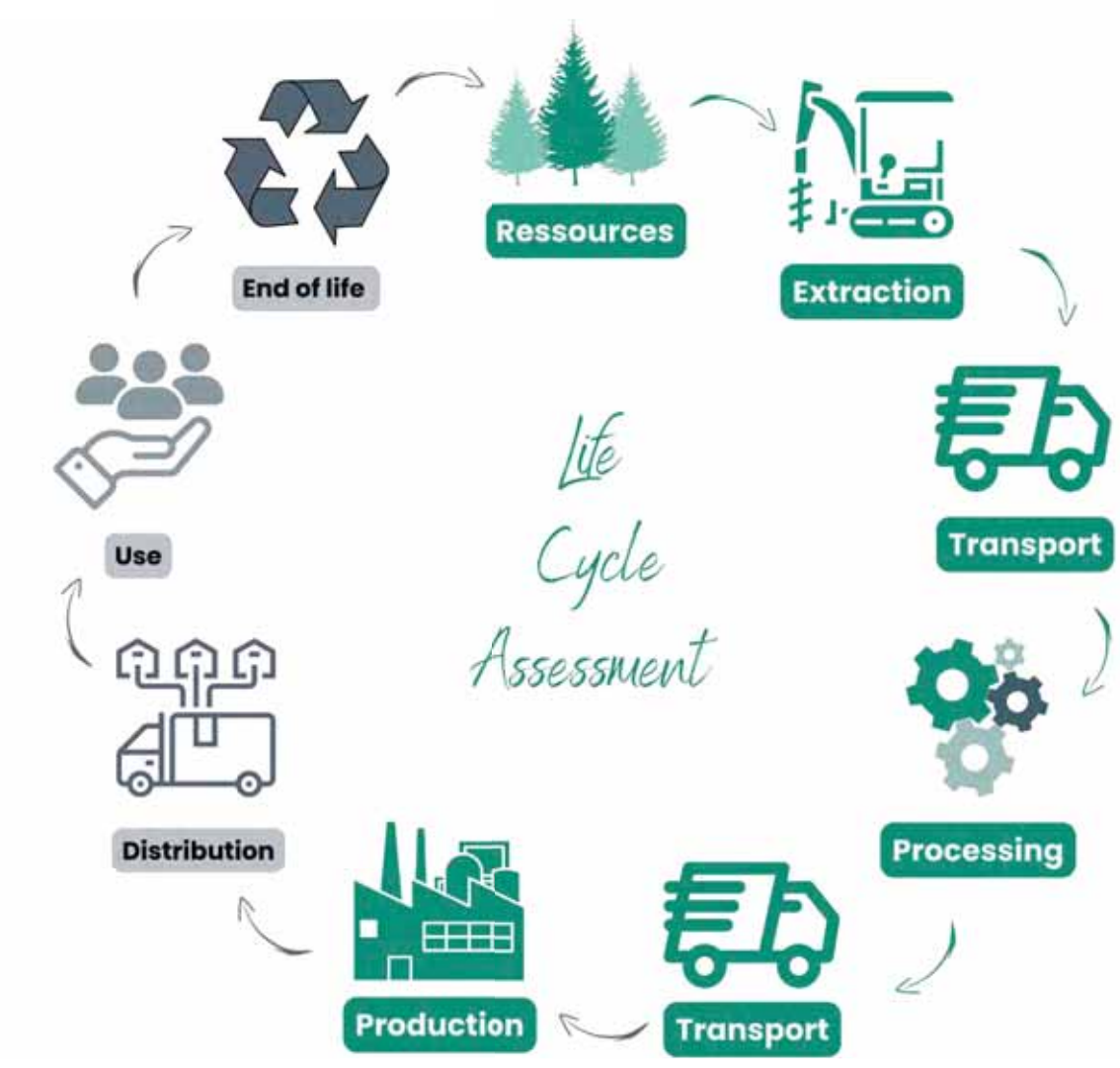
Climate change impact of matte paint (as bulk) based on 8,5% dry binder and 12,5% TiO₂

Cradle to gate - SimaPro v9.5 - IPCC 2021 GWP100 method + Cbio storage



-28% considering the CO₂ storage of biogenic C (ACDV recommendation)

-11% if we do not consider the biogenic C (IPCC method)



For information purposes only

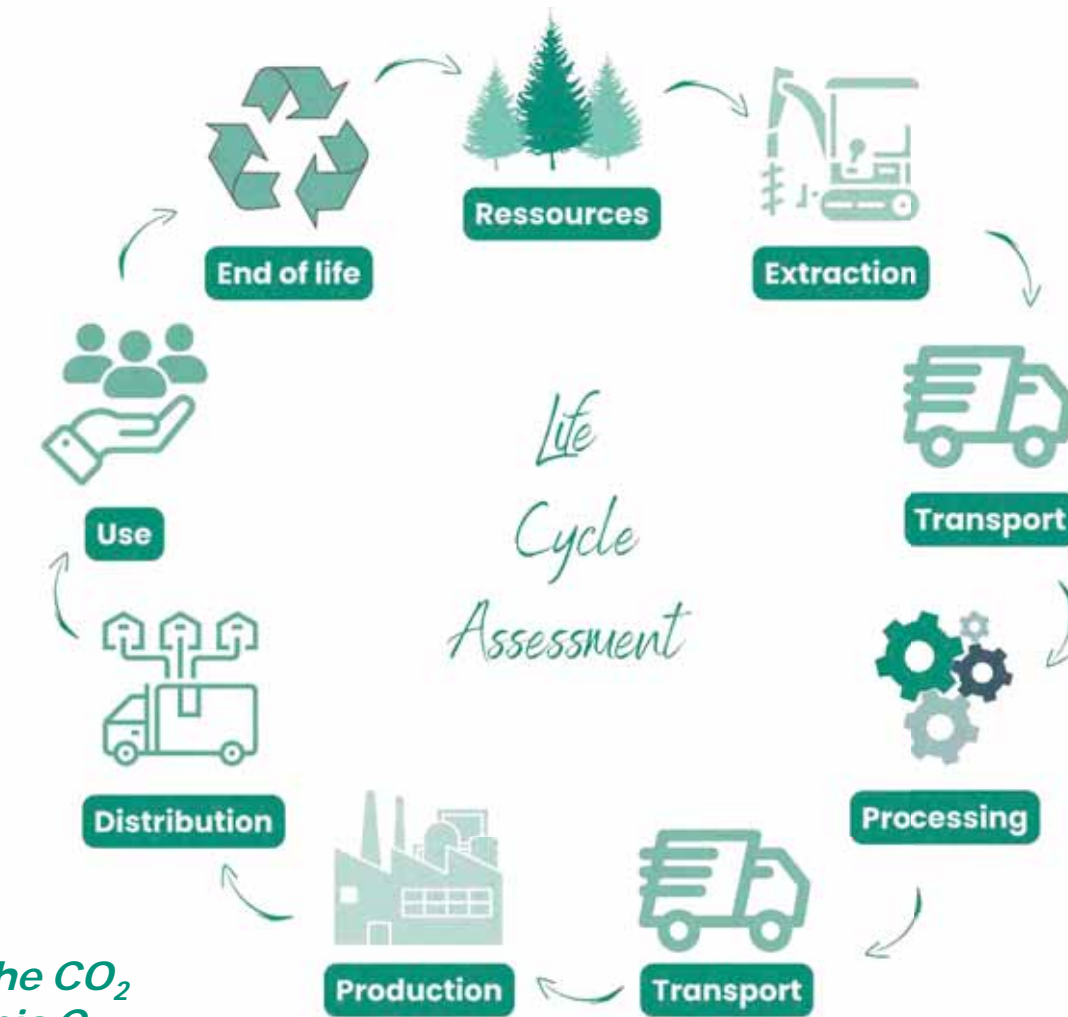
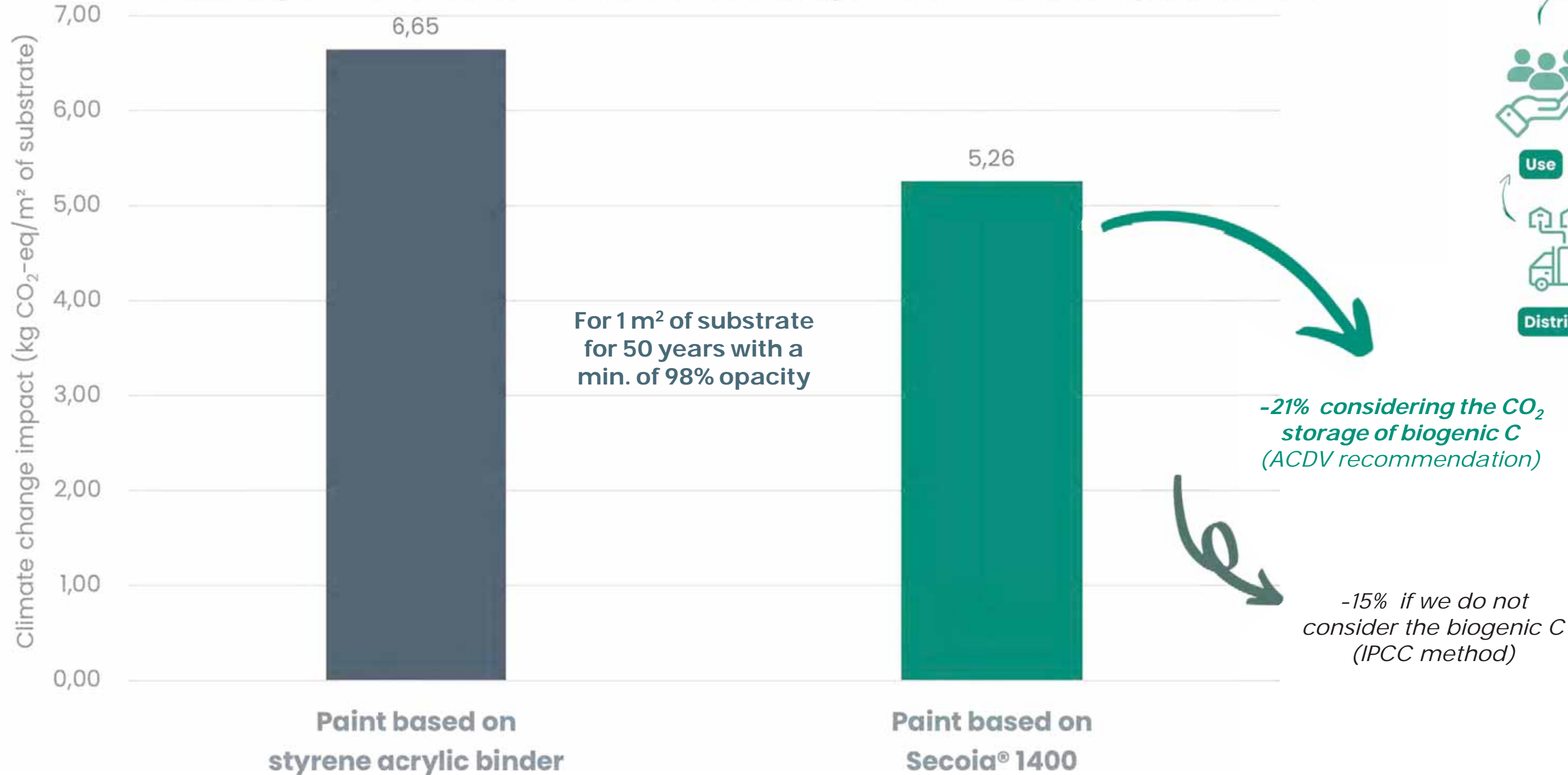
Conditions of Life Cycle Assessment : Styrene acrylic binder : LCA made by the EPDLA (European Polymer Dispersion and Latex Association) - Ecoat's product : internal primary data modelled with Ecoinvent v3.8 cut-off database and supplier LCA data
 ©ECOAT 2023 Coatings : Ecoinvent v3.8 cut-off and CEPE database

CRADLE TO GRAVE STUDY



Climate change impact of matte paints based on 8,5% dry binder and 12,5% TiO₂

Cradle to grave - IPCC 2021 GWP100 method + Cbio storage - PEFCR for decorative paints scenario



For information purposes only

Conditions of Life Cycle Assessment :

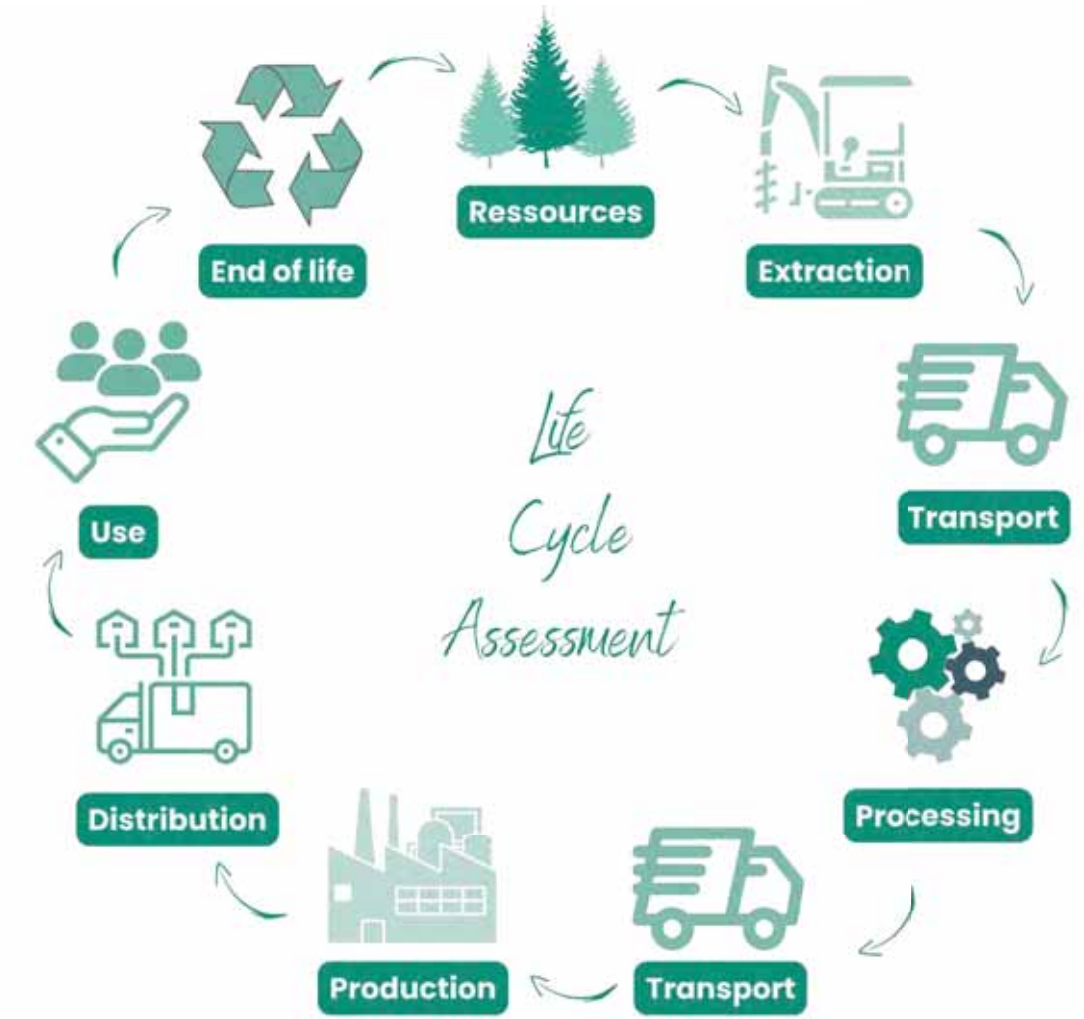
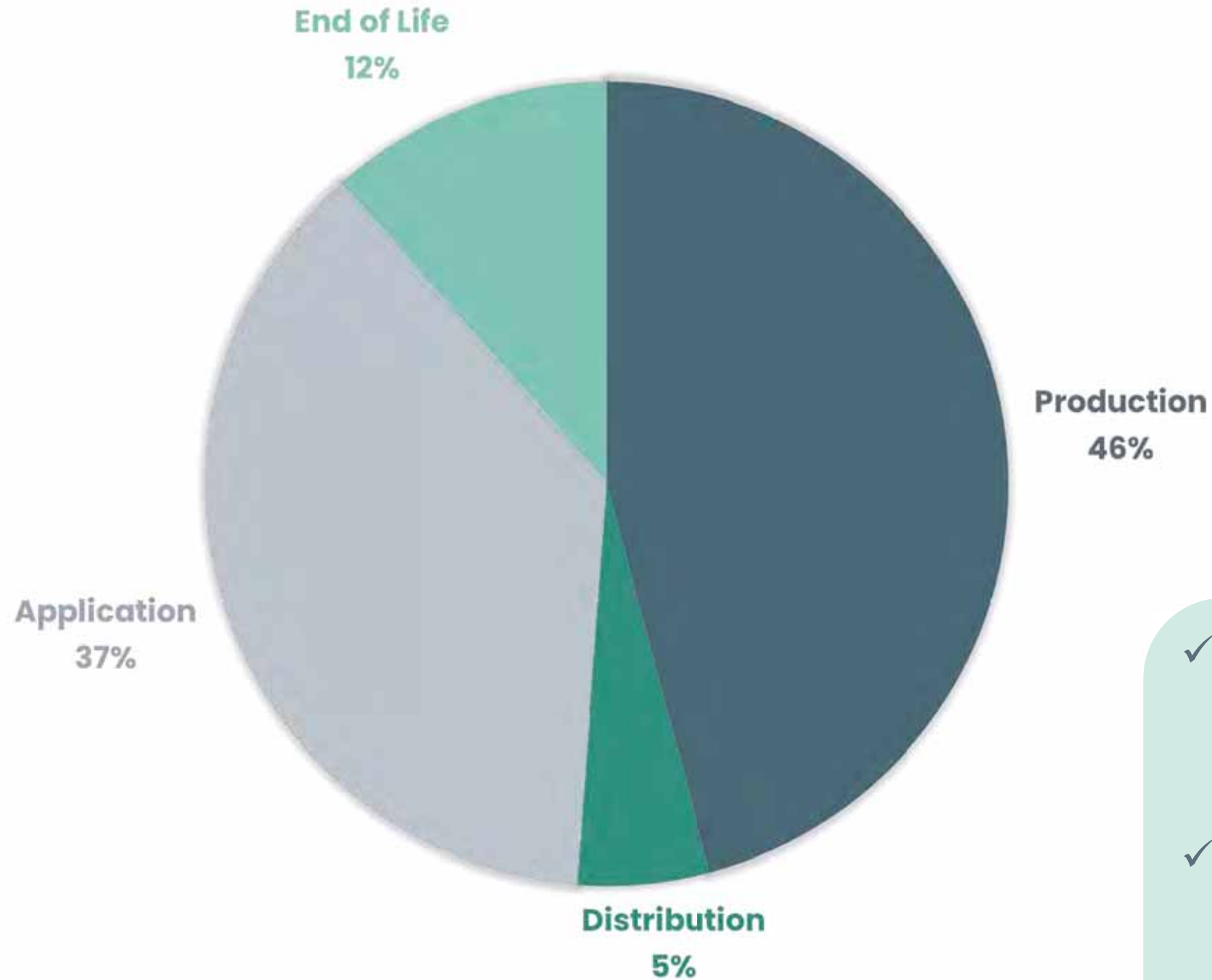
Styrene acrylic binder : LCA made by the EPDLA (European Polymer Dispersion and Latex Association) - *Ecoat's product* : internal primary data modelled with Ecoinvent v3.8 cut-off database and supplier LCA data

Coatings : Ecoinvent v3.8 cut-off and CEPE database

CRADLE TO GRAVE STUDY - The most impactful steps on CF value



Paint based on styrene-acrylic binder



- ✓ **46% of the impact due to the paint production:** major contribution of raw materials
- ✓ **37% of the impact for the paint application:** transportation from the Point of Sales to the paint applicator site is the second major contribution

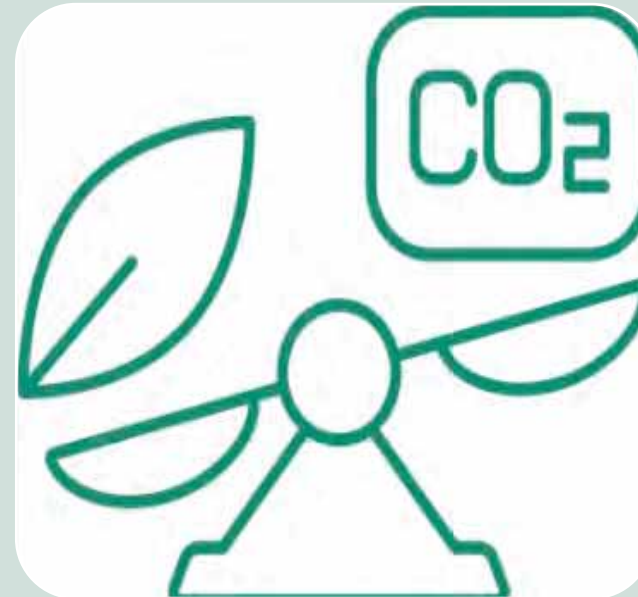


TIME TO SWITCH TO LOWER IMPACT COATINGS



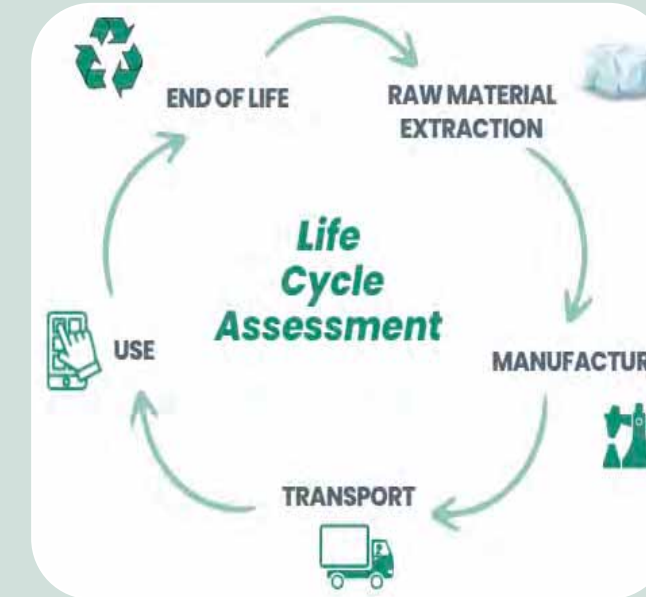
Coatings industry
needs to enter in
ecological
transition

**~40% carbon
footprint linked to
raw materials**



**CO₂ pumping effect
of biomass**

**Biobased binders
with low carbon
footprint available**



LCA a powerful tool

Several frames:
PEF/EN15804/ACDV
guides

Alignment needed
at Eu scale

**CO₂ footprint is not
the only impact**

WHERE IS YOUR DESTINATION?



Contact us so we can discuss your project and find the solution to your needs!



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***READY TO ENTER THE
ECOLOGICAL TRANSITION?***

