

Sustainable Solutions for Automotive OEM Coatings France Chimie - Webminar

October 19th, 2022

BASF Coatings

Jerome DUPRE – Key Account Manager

 **BASF**

We create chemistry

BASF's segments present in Automotive Industry



Chemicals

Petrochemicals
Intermediates



Materials

Performance Materials
Monomers



Industrial Solutions

Dispersions & Pigments
Performance Chemicals



Surface Technologies

Catalysts
Coatings



Nutrition & Care

Care Chemicals
Nutrition & Health



Agricultural Solutions

BASF Corporate Commitments

Our Corporate Commitments cover every part of our value chain and operations to deliver long-term business success.

Suppliers

BASF operations

Customers

And along the way...

We source responsibly



We produce safely for people and the environment



We produce efficiently

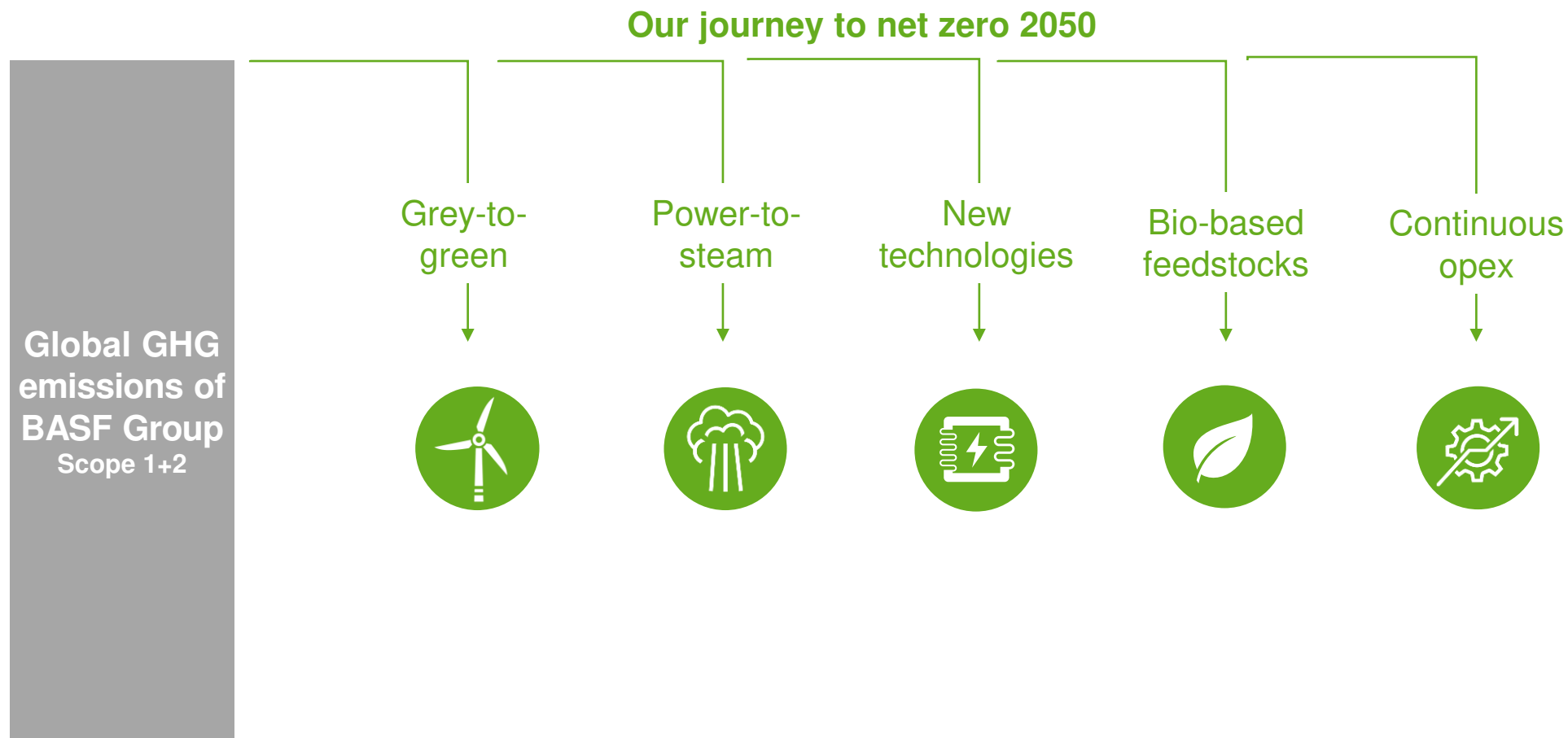
We drive sustainable solutions



We value people and treat them with respect



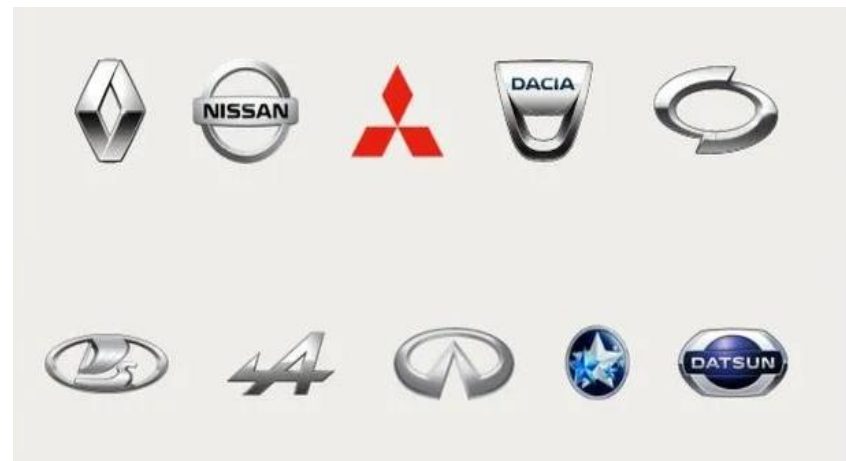
Our levers to reduce BASF's CO₂ emissions



**Sustainable solutions for
automotive OEM coatings**
– our approaches and
solutions

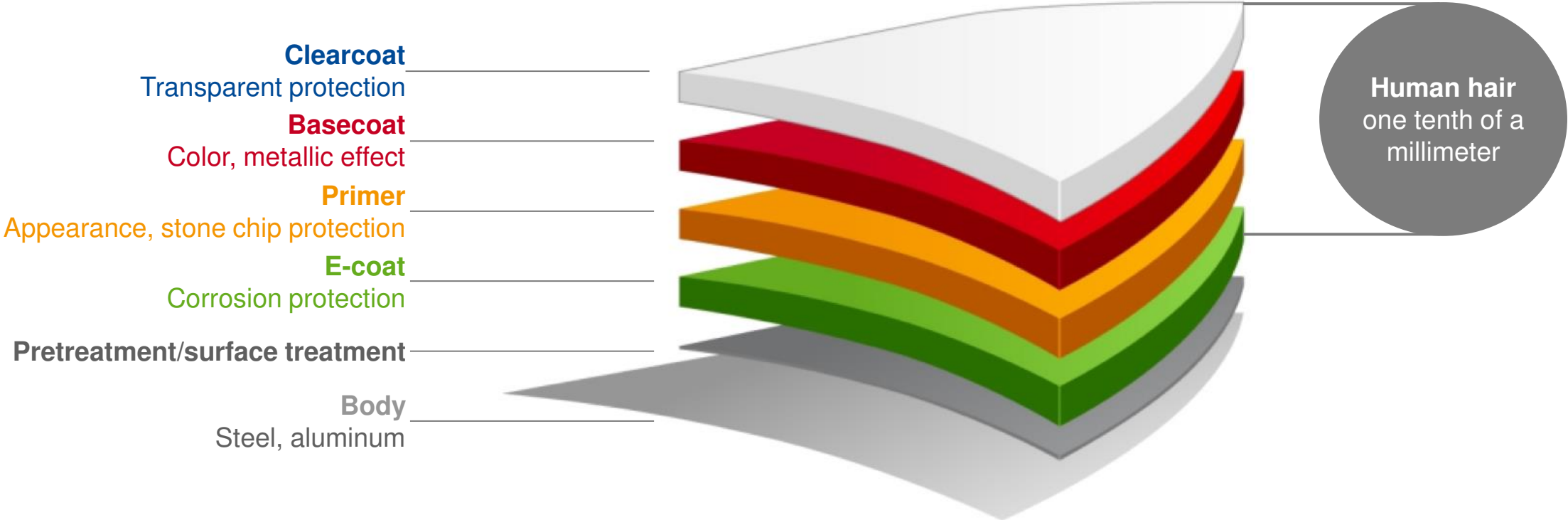


Some customers



Our competence comprises all steps in the coating process

Structure of different functional layers



Processus de mise en peinture

Gamme conventionnelle

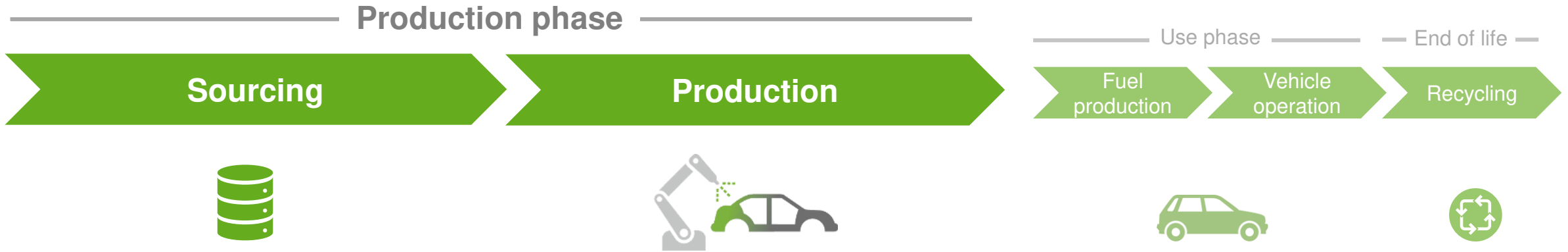


Gamme courte



We make the vehicle life cycle more sustainable

We help our customers to reduce their ecological footprint



We create transparency

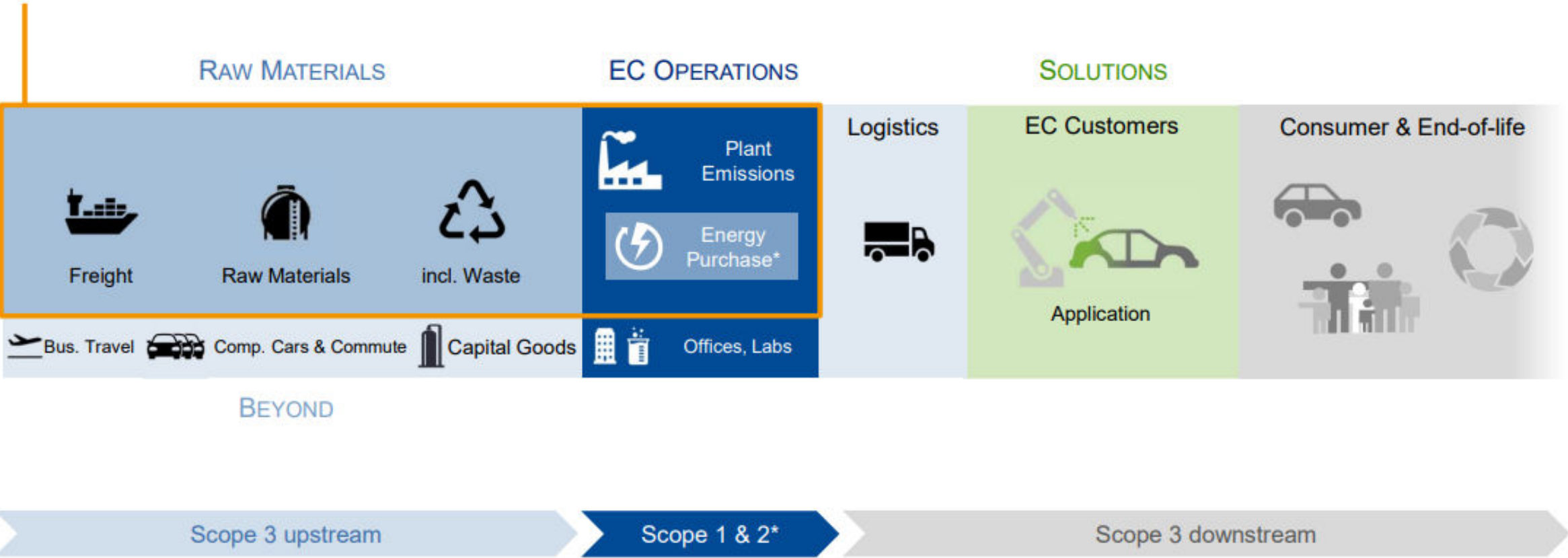
- Product carbon footprint (SCOTT)
- Life cycle assessment (GLASS)

SCOTT = Strategic CO₂ Transparency Tool

GLASS = Global Life Cycle Assessment of Automotive Surface Solutions

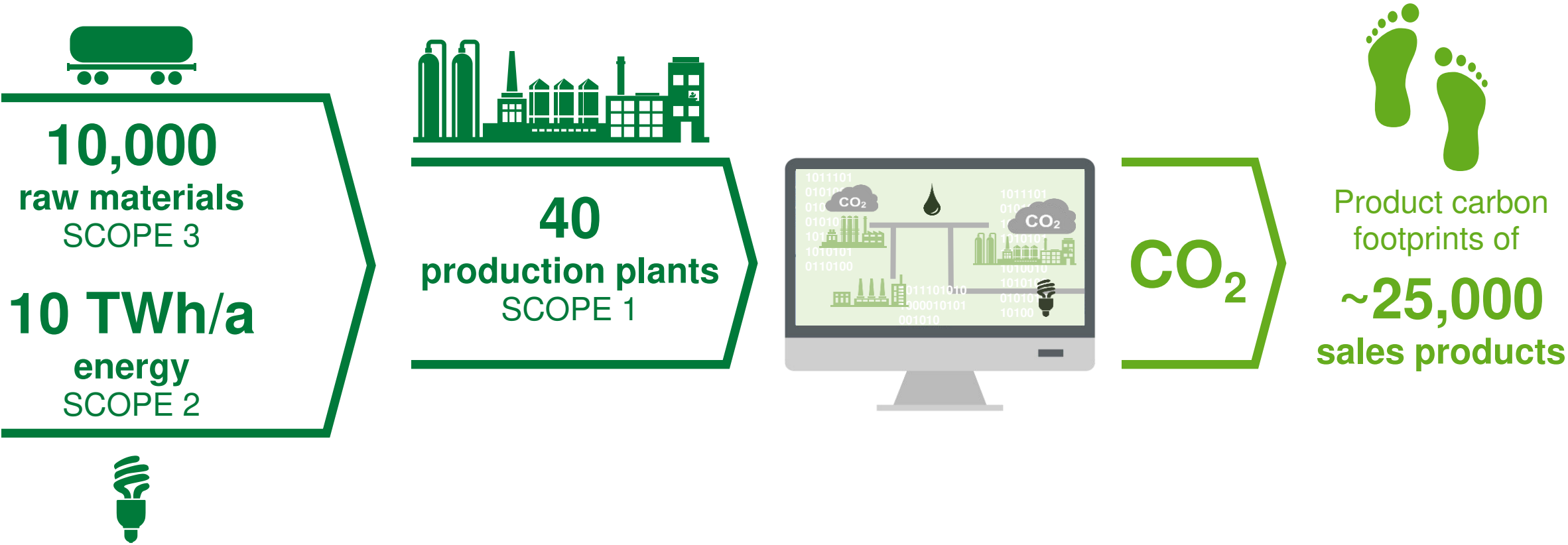
Product Carbon Footprint (PCF) the life cycle greenhouse gas (GHG) emissions of a product

Product Carbon Footprint



Product carbon footprints create transparency for our customers

Digital application to calculate greenhouse gas emissions of 25,000 sales products by BASF Coatings



Cradle-to-gate product carbon footprints for BASF's portfolio available by end of 2021 based on process emissions, energy demand and upstream emissions.

Offering our customers choices to reduce their CO₂ footprint

Advanced Sustainability Solutions (AdvSS) BASF
We create chemistry

My Sustainability Status [Sustainability Optimizer](#) [General Information](#)

Sustainability Optimizer ! Make your choice! See how you can improve your sustainability by selecting a more sustainable alternative. ● Standard ● Alternative feedstock ● Low PCF ● Emission

Quantity of purchased products and related CO₂ emissions (YTD Dec 2021) Improve your sustainability by CO₂ emissions based on selection

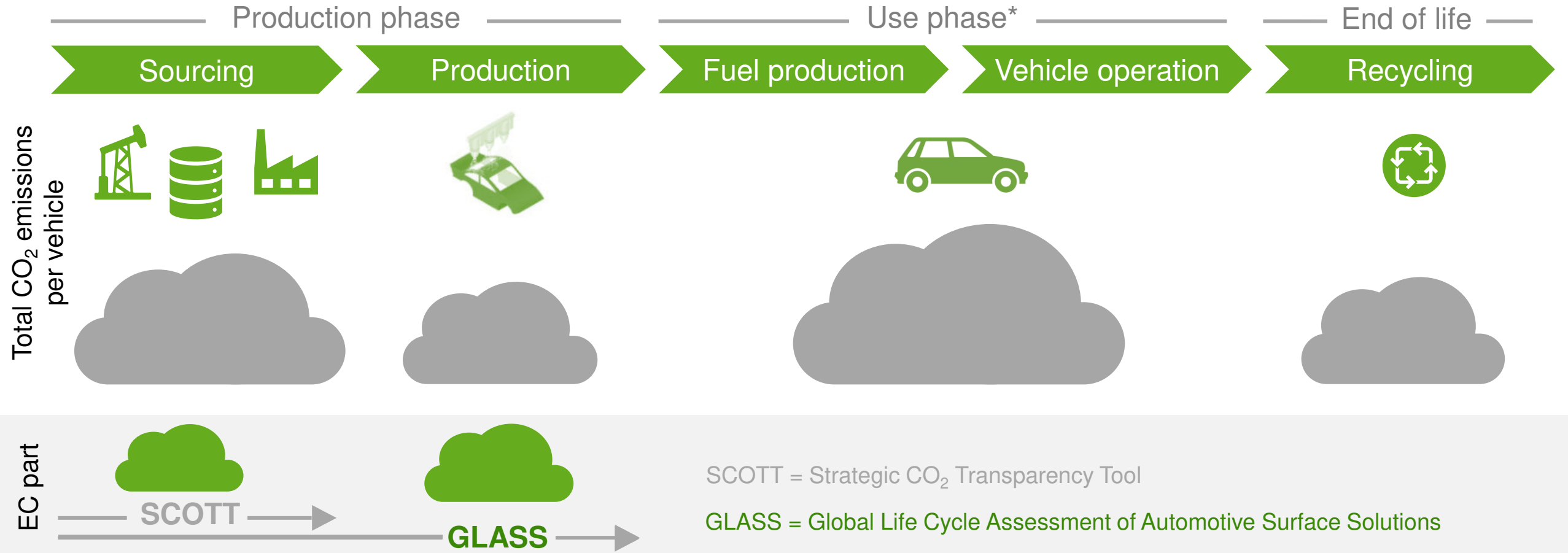
Name	Quantity in MT	PCF	Total CO ₂ emissions in MT	Selection	PCF result	Total CO ₂ emissions incl. emission savings in MT	Emission savings in MT
Product A	18,290	2.0	36,501	Zero PCF	0.0	0	36,501 100%
Product B	6,318	2.4	15,453	Low PCF	2.3	14,618	835 5.4%
Product C	3,983	5.3	21,241	BMB	0.5	1,899	19,341 91.1%
Product D	1,656	4.9	8,099	Bio-based	3.3	5,465	2,634 32.5%
Product E	1,409	3.9	5,487	Low PCF	3.9	5,487	0.0%
Product F	696	4.7	3,253	Standard	4.7	3,253	0.0%
Product G	592	6.0	3,579	Standard	6.0	3,579	0.0%
Product H	225	0.0	0		0.0	0	0.0%
Product I	50	2.8	139		2.8	139	0.0%
Product J	43	2.6	110	Standard	2.6	110	0.0%
Total	33,287	2.8	93,996		1.0	34,685	59,311 63.1%

Alternative feedstock share (AFS): 71.9%

Load Configuration Save Configuration Reset Configuration Report to Sales

Project GLASS - Background

Evaluation of the process related emissions in OEM paintshop



*Combustion engine **All layers incl. pretreatment

PCF-Tool (SCOTT) and GLASS as major tools to create transparency on products and processes



We drive global life cycle assessments of surface solutions

How does it work?



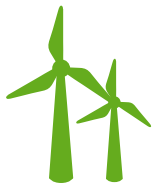
Material LCA profiles

+



Various formulations & technologies

+

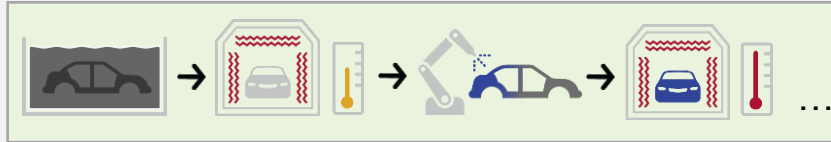


Energy eco-profiles

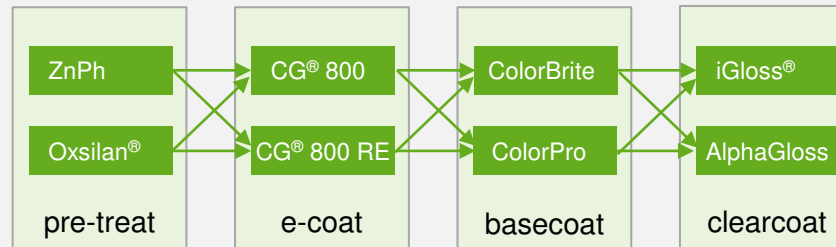
Climate modelling
(DE, US, CN...)



Process modelling



Flexible and modular approach



Calculations along the LCA¹ model



Quantified results based on customer specific parameters

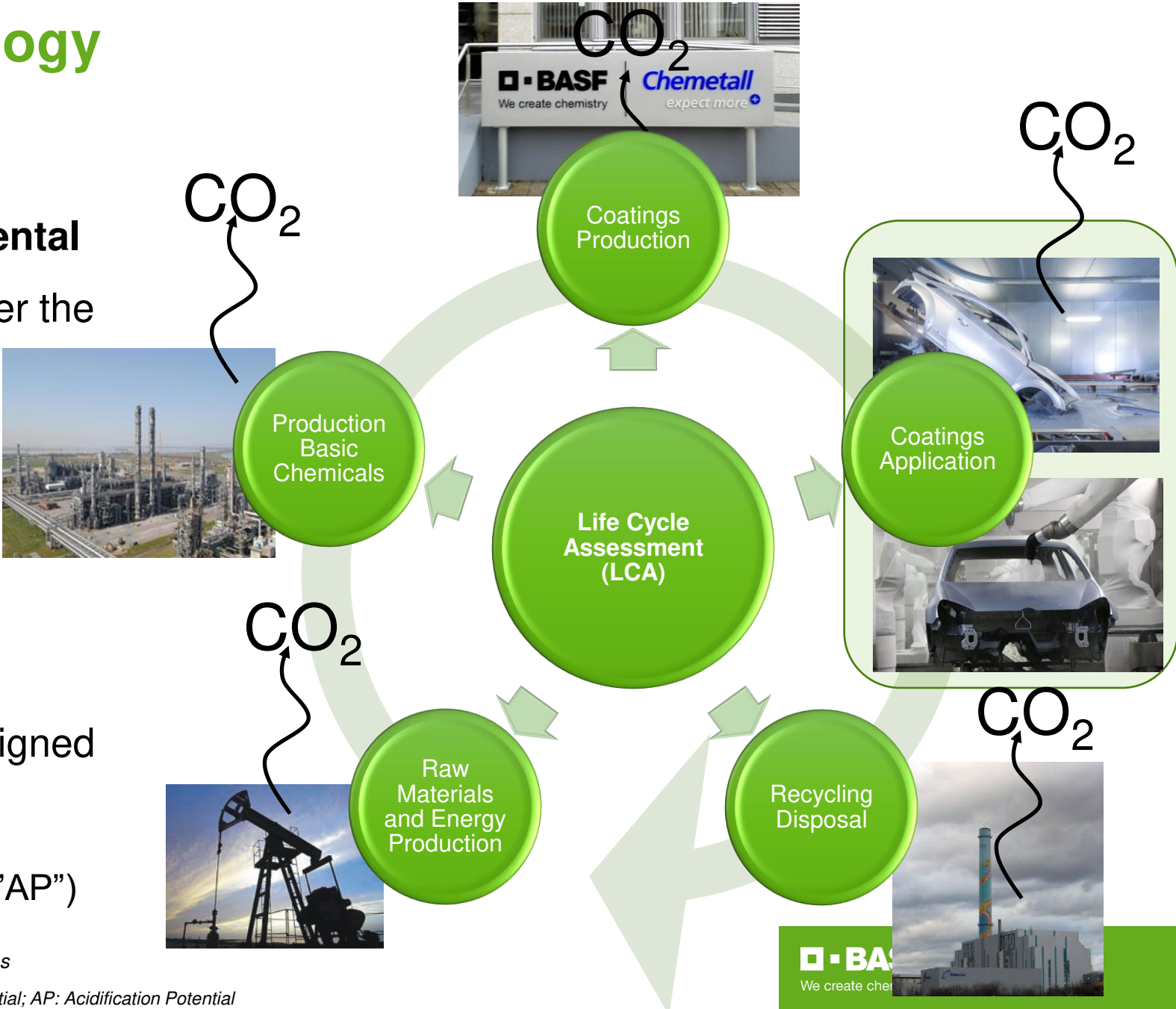
¹LCA = Life Cycle Assessment; not only CO₂, but also other air emissions (e.g., VOC), water emissions, etc. covered

Project GLASS : Flexible tool to calculate process related emissions for all layers

Project GLASS - Methodology

Life Cycle Assessment (LCA)

- Quantitative analysis of environmental impacts of product and processes over the entire life cycle
- Accounting of relevant flows
 - Material flows
 - Energy flows
 - Related emissions
- Combine flows & emissions with assigned environmental issues
- Leading to results ("GWP", "POCP", "AP")

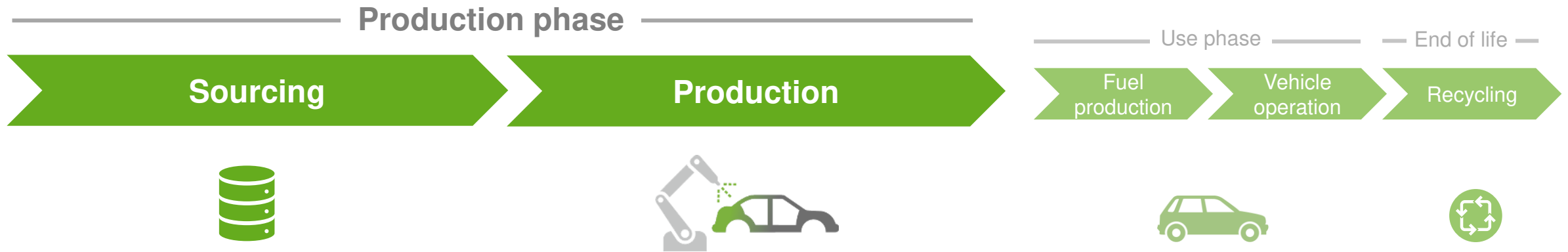


GLASS = Global Life Cycle Assessment of Automotive Surface Solutions

GWP: Global Warming Potential; POCP: Photochemical Ozone Creation Potential; AP: Acidification Potential

We make the vehicle life cycle more sustainable

We help our customers to reduce their ecological footprint



We create sustainable solutions

- Products based on biomass balance approach
- Tin-free e-coats
- E-coat solutions for electric vehicles
- Thin-film technologies
- Efficient processes
- Low-VOC technologies



Biomass Balance supporting customer's sustainability journey

May 12, 2022

BASF and BMW Group rely on renewable raw materials for automotive coatings

The BMW Group is the first carmaker to place its trust in more sustainable automotive OEM coatings certified according to BASF's biomass balance approach. The BMW Group has chosen to use BASF Coatings' CathoGuard® 800 ReSource e-coat at its plants in Leipzig, Germany, and Rosslyn, South Africa, and the iGloss® matt ReSource clearcoat throughout Europe.

"By reducing our use of fossil raw materials, we can conserve natural resources and lower CO₂ emissions at the same time. To achieve this, we are increasingly relying on sustainability innovations in our supplier network. Innovative paints based on renewable raw materials are an important step in this direction."

Joachim Post
Board of Management BMW AG

Concept Citroën oli [all-ë]

+ Le concept Citroën oli [all-ë] répond aux **besoins essentiels** et apporte une **nouvelle mobilité responsable** et **durable**



La collaboration avec BASF a été un facteur clé dans la conception d'Oli et dans le développement d'un véhicule électrique aussi amusant et efficace que possible pour l'avenir proche. Cette voiture électrique innovante va à l'encontre de la tendance à construire des véhicules de plus en plus lourds et complexes, en privilégiant la facilité et la simplicité. Elle démontre comment réduire au minimum l'impact sur l'environnement, tout en redonnant le plaisir d'un véhicule électrique fonctionnel"
Laurence Hansen Citroën Product & Strategy

> Véhicule **électrique**, avec une **autonomie allongée**, et constitué de **matériaux recyclés** et **recyclables**, pour un usage polyvalent par un plus large public

> Réduction significative du **poids du véhicule constitué** de pièces **légères et robustes**, qui contribuent à une **plus longue durée de vie**.

> **A l'intérieur** : un **seul matériau** utilisé pour ainsi **réduire la complexité** et faciliter le recyclage mécanique à la **fin du cycle de vie du produit** et des **sièges fabriqués par impression 3D** avec un **revêtement élastique à base d'eau** pour plus de protection contre l'abrasion, les UV, les produits chimiques.

> La **couleur** de la **carrosserie** est créée avec l'un des revêtements de finition les plus **respectueux de l'environnement**, ainsi qu'un blanc pur avec des particules de mica, pour montrer la simplicité, et un orange vif pour l'intérieur.



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