

# At the core of the Verbund: Ethylene oxide value chain

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 **BASF**  
We create chemistry

# Cautionary note regarding forward-looking statements

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# Petrochemicals and Care Chemicals: Integral parts of BASF's core businesses and deeply rooted in the Verbund

## Core businesses

### Chemicals



- **Petrochemicals**
- Intermediates

### Materials



- Performance Materials
- Monomers

### Industrial Solutions



- Dispersions & Resins
- Performance Chemicals

### Nutrition & Care



- **Care Chemicals**
- Nutrition & Health

## Role in BASF's portfolio

### Petrochemicals division

- Maintains strong earnings and cash contributions over the cycle
- Secures reliable and cost competitive raw material supply for our downstream businesses

### Care Chemicals division

- Focuses on organic growth and innovative solutions
- Creates value in attractive and resilient markets with high-quality performance products



# Chemicals

The **Chemicals and Nutrition & Care** segments account for more than **40%** sales of our core businesses

The ethylene oxide value chain accounts for around **20%** of sales in the **Chemicals and Nutrition & Care** segments

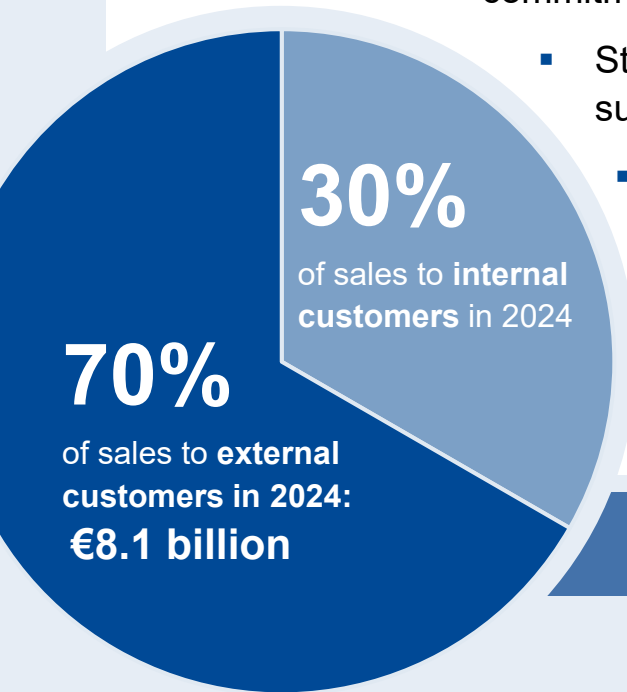
# Nutrition & Care



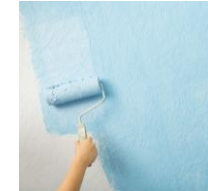
# BASF's Petrochemicals division: Who we are

## Key capabilities

- Profitable starting point for BASF's value chains and **competitive Verbund sites** with world-scale facilities
- **Leading process technologies** and strong commitment to **operational excellence**
  - Strong **global market position** supported by **regional production**
  - Exceptional **market knowledge, technical expertise and innovation capabilities**
  - Enabling **reduction of greenhouse gas emissions**



## Our key products have leading market positions



### Styrenics, alkylene oxides and glycols

**Key products:**  
Ethylene oxide, MEG

**Key products:**  
Styrene, XPS

### Acrylics

**Key products:**  
Acrylic acid

**Key products:**  
Butyl acrylate, 2-EHA

### Super-absorbents

**Key products:**  
Super-absorbent polymers

#1-2<sup>1</sup>

#1<sup>1</sup>

#1

#1

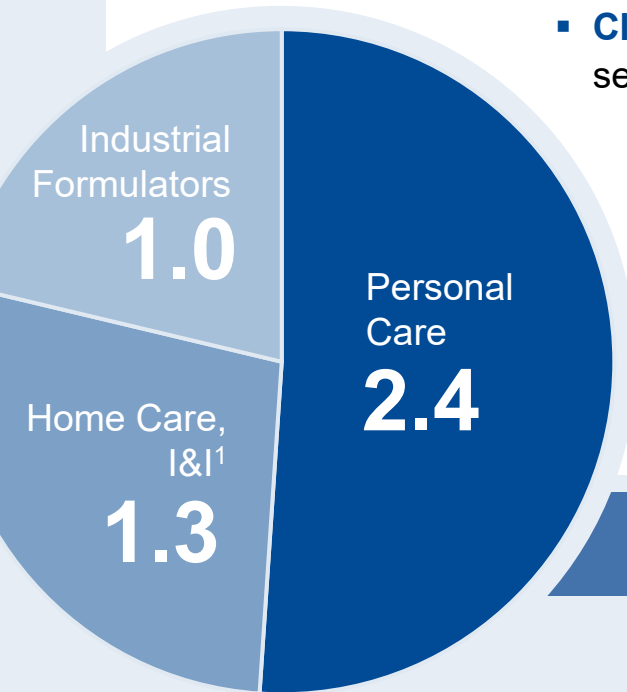
#2

<sup>1</sup> Denotes European position

# BASF's Care Chemicals division: Who we are

## Key capabilities

- **Global leader**, consistently among **top 3 suppliers**
- **Resilient earnings** in **attractive markets**
- **Deeply integrated** in multiple value chains
- **Well-invested** for future growth
- **Close to customers** in **high-innovation segments**
- **Enabling green transformation** in consumer industries
- **Cost competitiveness** through backward integration, **technology leadership and execution focus**



Sales 2024 (billion €)

## Care Chemicals has leading market positions



### Personal Care

UV filters, emollients, bioactives, surfactants

Sunscreens, lotions, moisturizers, shampoos

#1



### Home Care and I&I<sup>1</sup>

Surfactants, polymers, chelates

Laundry detergents, dishwashing liquids, industrial degreasers

#1



### Industrial Formulators

Surfactants, additives, methanesulfonic acid

Metal surface treatment, cleaning agents, biocides

#1-3

<sup>1</sup> Industrial & institutional cleaning

# We have invested in the ethylene oxide value chain in recent years to deliver earnings growth and balance our footprint

Port Arthur ■



Geismar ■

Antwerp ■ ■



Ludwigshafen ■ ■



Nanjing ■ ■



Zhanjiang ■ ■



Startup 2025/2026

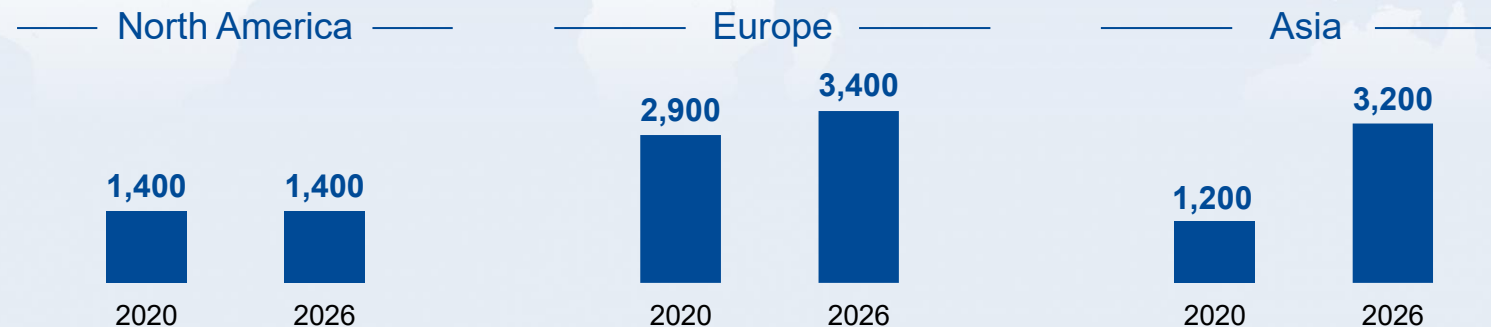
## Petrochemicals division

- Steam cracker
- Ethylene oxide

## Care Chemicals division

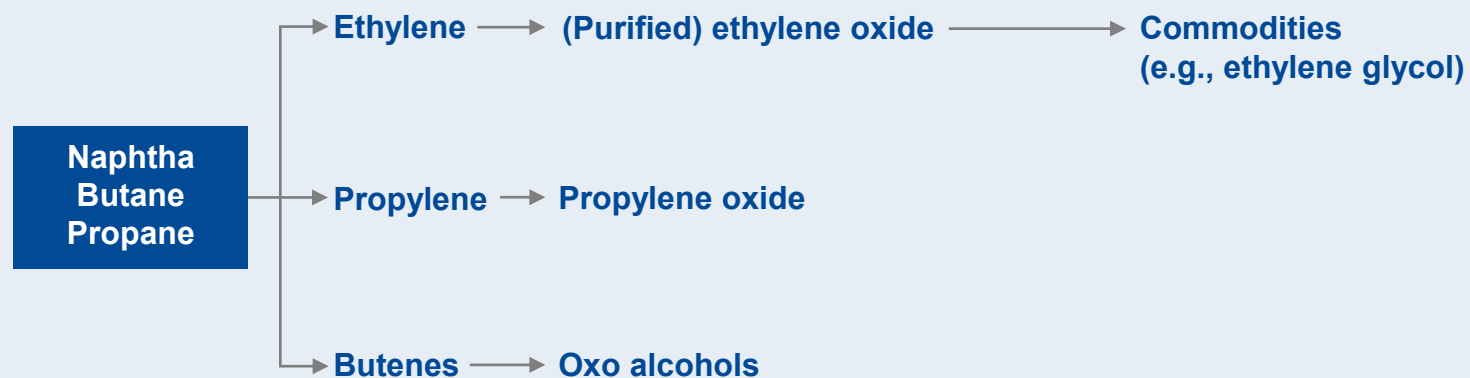
- Non-ionic surfactants

## Capacities EO value chain<sup>1</sup> (thousand metric tons per year)



<sup>1</sup> Capacities of ethylene, ethylene oxide, non-ionic surfactants; all capacities (including joint ventures) included at 100%

# BASF uses flex-feed crackers as a starting point for its value chains<sup>1</sup>

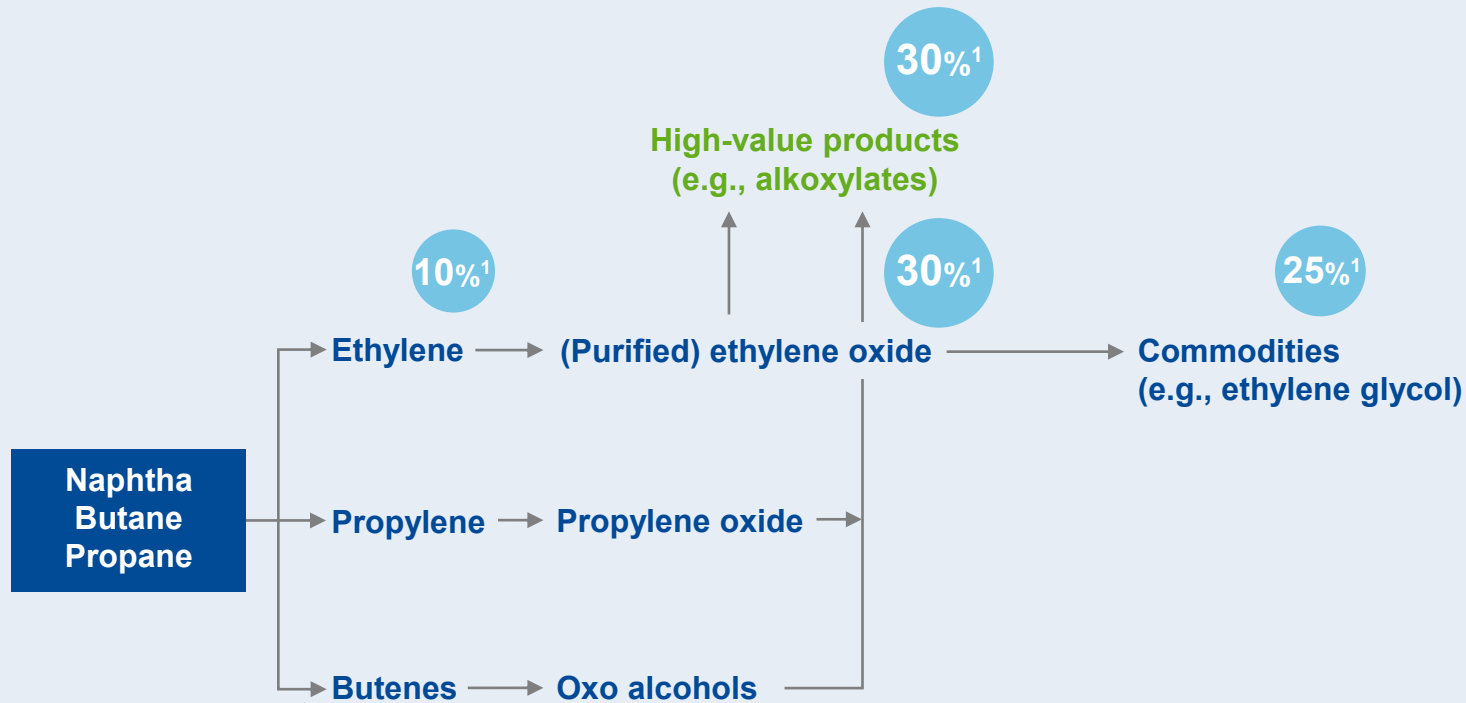


## Petrochemicals division

- **Flex-feed crackers** produce a **wide spectrum of key raw materials**, allowing BASF to use the **lowest cost feedstock** for its various value chains
- **Ethane crackers** are used by **competitors** to produce raw materials **solely for value chains based on ethylene**

<sup>1</sup> Simplified diagram for illustrative purposes only

# Integrated ethylene oxide value chain enables growth in high-value products



## Petrochemicals division

- **Access to commodity markets** enables scale and provides **cost-competitiveness** and **flexibility**
- Competitive and reliable supply fosters **growth in high-value downstream products**

## Care Chemicals division

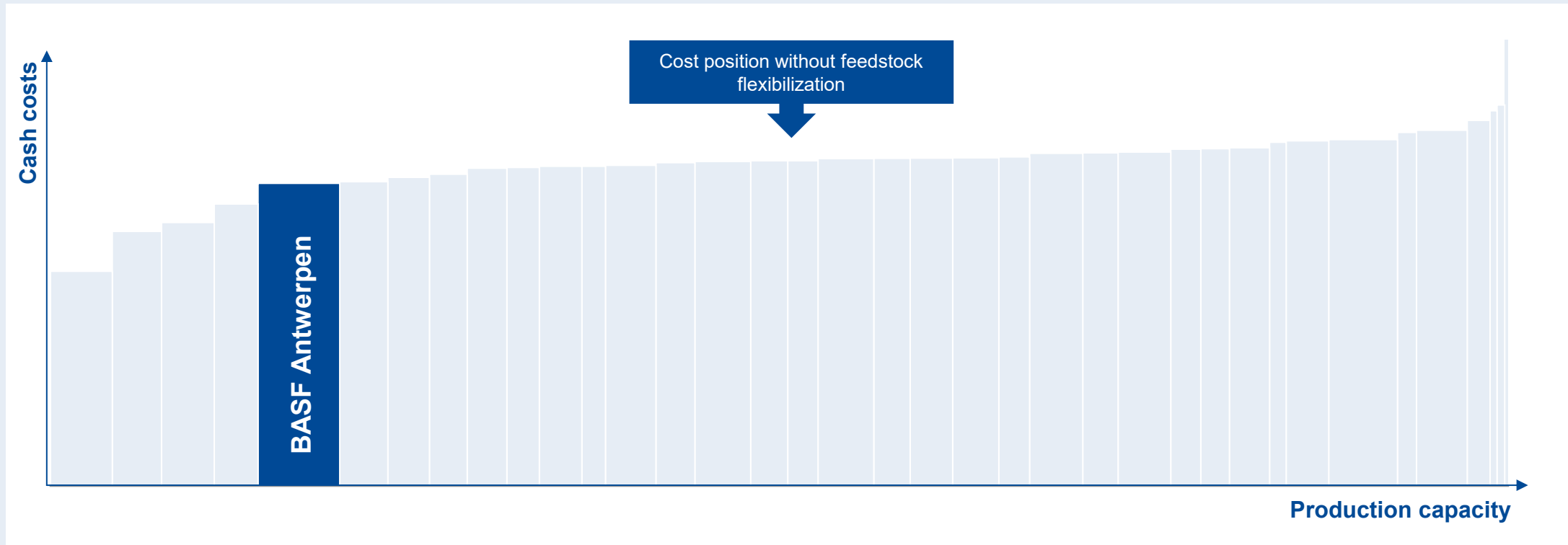
- **Important outlet to attractive end markets** converting ~700 kt per year of materials globally from upstream divisions
- **Backward integration ensures competitiveness** against local players and Asian imports

<sup>1</sup> BASF market share in EMEA

# Feedstock flexibility positions Antwerp steam cracker in the first quartile of the ethylene cost curve

## Ethylene cash cost curve for Western Europe

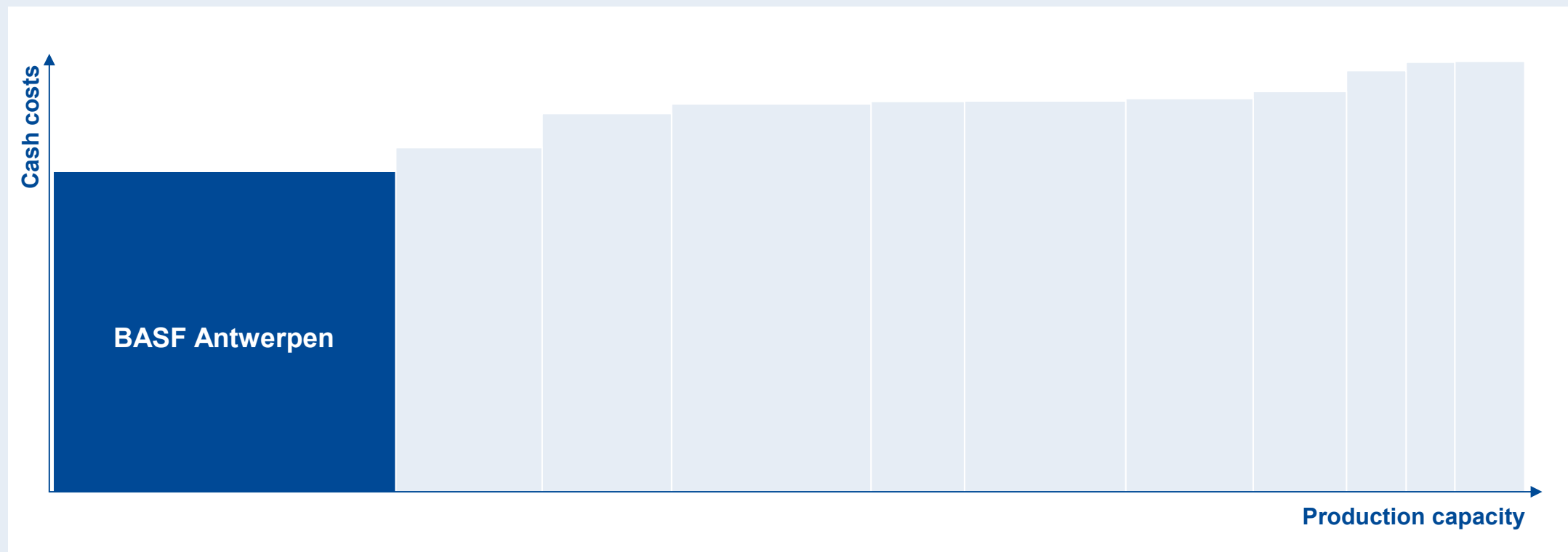
Average estimated cash costs 2025 (volume in kt, cost in \$/t)



# Combined cost position of ethylene and ethylene oxide puts BASF in the leading cost position in Western Europe

## Ethylene oxide cash cost curve for Western Europe

Average estimated cash costs<sup>1</sup> 2025 (volume in kt, cost in \$/t)



<sup>1</sup> Combines cost position of ethylene and cost position of the ethylene oxide production steps.



**~€65 million**

saved in 2025 through continuous improvements



### Examples from Antwerp and Ludwigshafen

- Improved heat and steam usage leads to **~€4 million** in annual cost savings

- Reaction optimization in BASF's ethylene oxide plants leads to **~€3 million** in annual cost savings

## We secure our leading cost positions through operational excellence and continuous improvements

- Raw material consumption reduced through continuous catalyst improvements
- Application and continuous improvement of advanced control concepts to operate plants at optimized conditions
- Operator training simulator to maintain high plant reliability, optimize non-routine situations and increase efficiency
- Plant inherently designed for high reliability of operations
- Recipe optimization for strategic asset use and increased cost-efficiency



# Backward integration as key enabler for Care Chemicals to compete and differentiate in alkoxylation markets

**Alkoxylation<sup>1</sup>** is a significant outlet for purified ethylene oxide and enables Care Chemicals' broad portfolio, serving diverse markets

Additional **key success factors**

- Backward integration into alcohols
- Asset footprint for standard and specialty products
- Innovation capabilities and technological expertise

Cost-competitive products for standard applications



Differentiated solutions to meet specific customer and consumer requirements

<sup>1</sup> Alkoxylation is a chemical process in which ethylene oxide or propylene oxide is added to alcohols, amines or other substrates to produce non-ionic surfactants and specialty chemicals.



€3.9 billion

Sustainable-Future  
Solutions sales<sup>1</sup> 2024

## High-impact R&D enables Care Chemicals to meet market needs through differentiation

- **Global R&D and application** expertise hubs
- Forward-thinking solutions for rapidly **evolving** market and regulatory demands
- **Strategic alliances** to drive and accelerate growth opportunities



● R&D, application technology and technical services centers

>90 New patents  
in 2024

35% Vitality  
Index<sup>2</sup>

<sup>1</sup> Total sales of products with positive sustainability contribution in the value chain in line or above market standard

<sup>2</sup> Percentage of sales from innovative products launched in the past five years from major customer accounts



Key customers consistently value **BASF** as a partner to drive innovation and sustainability

## Procter & Gamble



External business partner  
Excellence Award  
BASF Care Chemicals 2023

## Henkel



Henkel Consumer Brands  
Sustainability Award:  
2021, 2022  
Best Innovation Contributor Award:  
Home Care 2023

## Unilever



Home Care Innovation Award:  
2024, 2025  
Home Care Clean Future Award:  
2024



**Carsten Knobel**  
Chief Executive Officer

## In the words of a key global customer



“BASF is one of our most trusted business partners. Together, we go beyond a traditional supplier relationship – creating value along the supply chain, driving innovation and sustainability, and creating joint business value. For example: By closely collaborating on our sustainability agendas, we advance transformation and contribute to real progress on the path to decarbonization and circular economy.”

# Care Chemicals holds leading positions across highly relevant alkoxylation product lines in attractive markets

<p><b>Non-ionic surfactants</b></p>	<p><b>Amine ethoxylates</b></p>	<p><b>Alcohol alkoxyates / ethoxylates</b></p>	<p><b>Polyethylene glycol</b></p>	<p><b>EO/PO copolymers</b></p>
<p><b>Attractive markets</b></p>	<p>Home Care and I&amp;I<sup>2</sup></p>	<p>Home Care and I&amp;I<sup>1</sup>, Personal Care, Industrial Formulators</p>	<p>Home Care and I&amp;I<sup>1</sup>, Personal Care, Industrial Formulators</p>	<p>Industrial Formulators</p>
<p><b>Market-leading brands</b></p>	<p>Sokalan® HP</p> 	<p>Lutensol®, Plurafac®, Dehypon®</p> 	<p>Pluriol®</p> 	<p>Pluronic®</p> 

<sup>1</sup> Industrial & Institutional Cleaning

# Innovation is a key value driver to address customer and market needs, building on the strong backbone of the value chain

- Low-foaming specialty alkoxyate for **concentrated laundry formulations**
- Improves stain removal, even at **low temperatures**
- Readily **biodegradable** and suitable for ecolabels

Launch year  
**2024**



**Sokalan® EcoBoost**



**Plurafac® LF 2260**

Launch year  
**2026/27**

- High-performance non-ionic surfactant built on TDN<sup>1</sup>
- Unique formulation and proven **superior effectiveness** with exceptional wetting and foam control; ideal for **industrial cleaning** applications
- **Strategic launch** in Zhanjiang for **Asian markets**

<sup>1</sup> Isotridecanol-N

**BASF is enabling the green transformation of its customers through multiple entry points into the Verbund**



Key customers have Scope 3 greenhouse gas emission reduction commitments of **30% to 50% until 2030**

### Greenhouse gas emissions of EO production (t CO<sub>2</sub> / t EO)

BASF site in Antwerp vs regional peers



### Key enablers

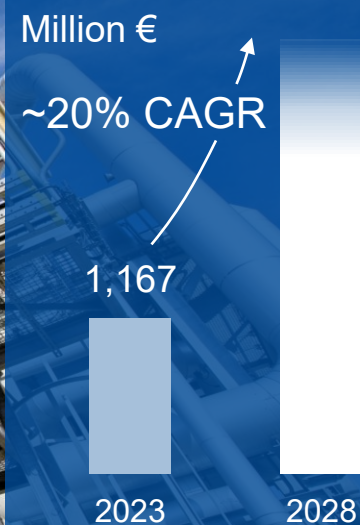
- Flexible feedstocks
- Green energy
- Renewable carbon
- Low-PCF feedstocks

<sup>1</sup> Source: BASF proprietary SCOTT system and further internal data, EU ETS data

# The EO value chain will play a key role in delivering on the segment targets for 2028

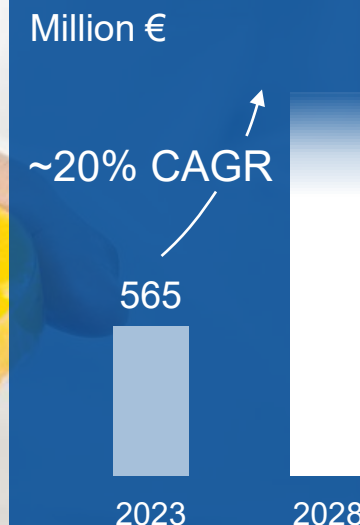
## Chemicals segment

Targeted EBITDA bsi increase of  
**€1.5 – €2.1 billion**  
between 2023 and 2028



## Nutrition & Care segment

Targeted EBITDA bsi increase of  
**€800 – €900 million**  
between 2023 and 2028



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