

# Leading Beyond Chemistry

Sustainability Relations

November 17, 2020



# On our way to become the world's best specialty chemicals company

**€13.1 billion**

sales\*

**€2.15 billion**

adjusted EBITDA\*

**€1.15**

dividend per share

**16.4%**

adjusted EBITDA margin\*

**80%**

of sales from  
leading market positions

**>30%**

of sales "Next generation solutions"

**>32,000**

employees

**101**



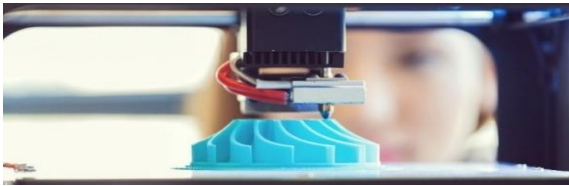

nationalities

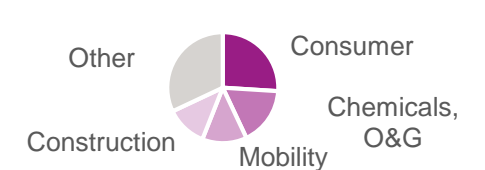
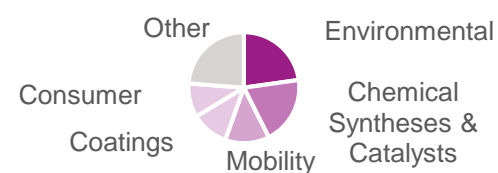
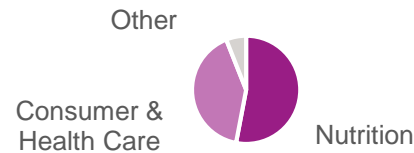
**26%**

share of women at first management level

\* Fiscal 2019, ongoing activities

# Divisional structure – the next logical step in our portfolio transformation

Specialty Additives	Nutrition & Care	Smart Materials	Performance Materials
			
<b>Portrait</b>			
Broad spectrum of additives and versatile crosslinkers for <b>maximum performance</b> which make the key difference	Sustainable solutions for basic human needs in <b>resilient end markets</b> like pharma, personal care and animal nutrition	Innovative materials that enable <b>resource-saving solutions</b> for environment, urbanization, energy efficiency, mobility and health	<b>Basis products</b> for many modern applications, for example for chemical, automotive and plastics industries
<b>Financials 2019</b>			
Sales: €3,381 m Adj. EBITDA margin: 26% ROCE: 1 8%	Sales: €2,922 m Adj. EBITDA margin: 16% ROCE: 8%	Sales: €3,371 m Adj. EBITDA margin: 19% ROCE: 16%	Sales: €2,634 m Adj. EBITDA margin: 9% ROCE: 12%
<b>End market split</b>			



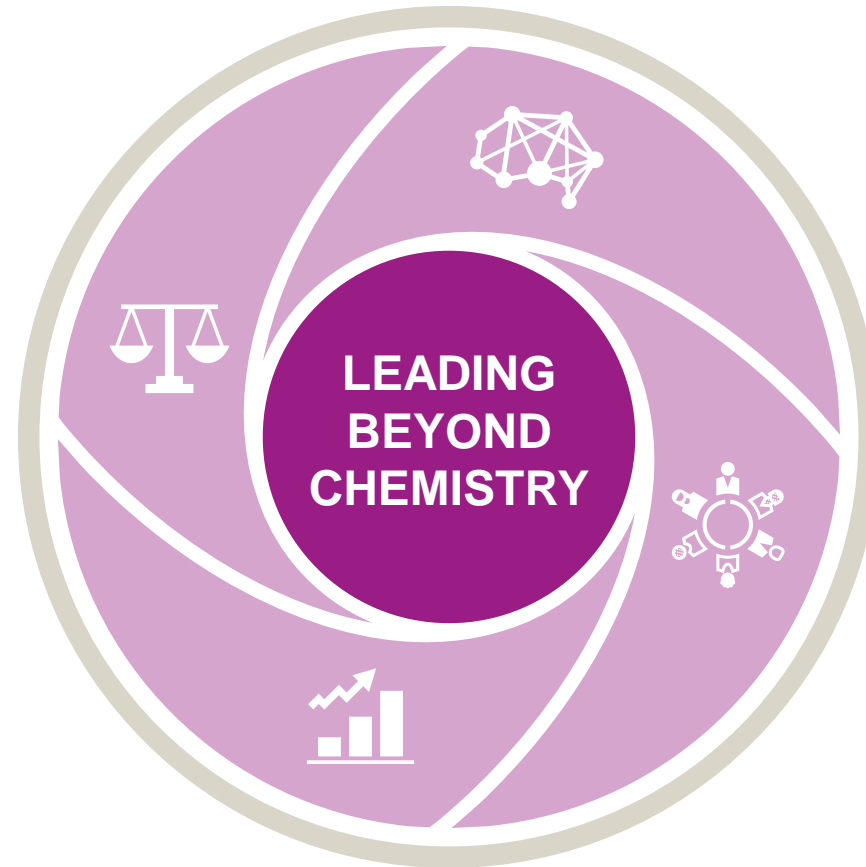
# Targeting excellence in three strategic focus areas

## Ongoing portfolio transformation

- Target: Specialty portfolio with 100% growth businesses

## Ambitious financial targets

- EBITDA margin: 18-20%
- Cash conversion ratio: >40%
- ROCE: 11%



## Innovation & Sustainability as growth drivers

- €1 bn additional sales from innovation growth fields by 2025
- Growing portfolio share of “Next generation solutions”

## Performance-driven corporate culture

- Further drive gender and cultural diversity
- Deliver on efficiency programs in Administration & Operations

# Our sustainability management



**Thomas Wessel**  
Executive Board Member  
responsible for sustainability

Executive Board – Overall responsibility for sustainability

Executive Board member in charge – Chief Human Resources Officer (CHRO)

Divisions  
Functions  
Regions



Executive Committee HR

Corporate Responsibility Panel

Global Corporate Responsibility Committee

CR Expert Circles



# Sustainability highlights

## Excellent Rankings



### Sector leading rankings

“A” MSCI ESG rating<sup>1</sup>, EcoVadis “Gold” rating, “B-”ISS Oekom<sup>2</sup> and “B” CDP rating<sup>3</sup>

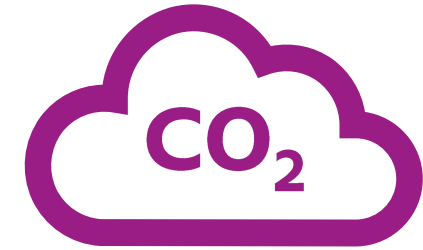
## Sustainable Development Goals



### >50% of sales contribute to SDGs

SDGs “Responsible consumption & production”, “Climate Action”, “Good Health” and “Clean Water” identified as being particularly relevant to Evonik

## Environmental targets



### Ambitious environmental targets

Evonik’s sustainability strategy 2020+ with ambitious climate and water targets

1) Rating on a scale of AAA to CCC | 2) Rating on a scale of A+ to D- | 3) Rating on a scale of A+ to D-  
6 | Public | 2020 | Sustainability | Leading Beyond Chemistry, November 2020

# Our sustainability strategy<sup>1</sup> – combatting climate change

1

## CO<sub>2</sub>



**-50%**  
absolute  
**scope 1 & 2**  
emissions

**2008 - 2025**

2008 - 2019: -42%

**CO<sub>2</sub> pricing**  
as additional  
planning premise  
for large  
investments

**50 € per t CO<sub>2</sub>**

Reduction of  
absolute **scope 3**  
**emissions** from  
upstream value  
chain **by 15%**

**2020 - 2025**

## R&D for “green” energy

**Joint project by Siemens Energy and Evonik  
on artificial photosynthesis to close carbon dioxide cycle**

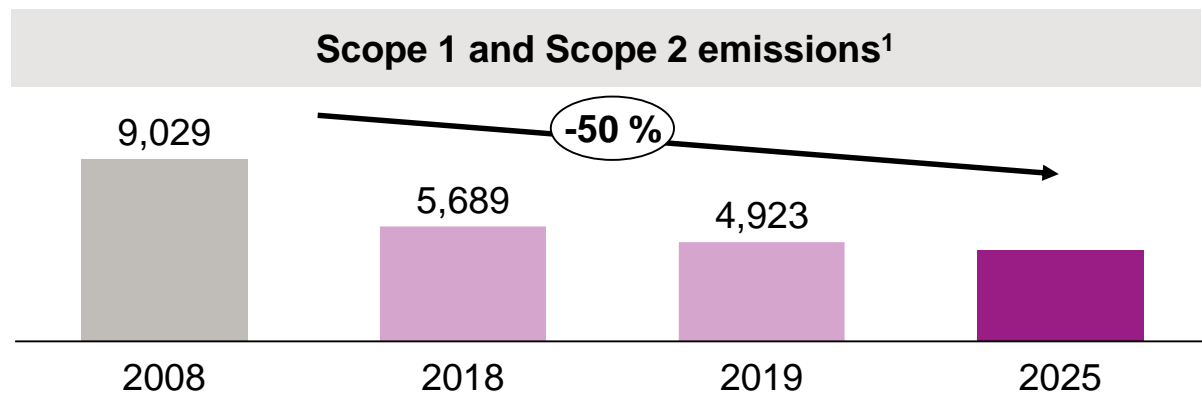
Generation of high-value specialty chemicals  
from carbon dioxide and eco-electricity

Pilot plant commissioned in Marl in September 2020



1) Adopted February 2019 2) using WBCSD Portfolio Sustainability Assessment method, business activities are weighted at the level of PARCs; PARC = product-application-region combination

# New gas and steam turbine power plants in Marl

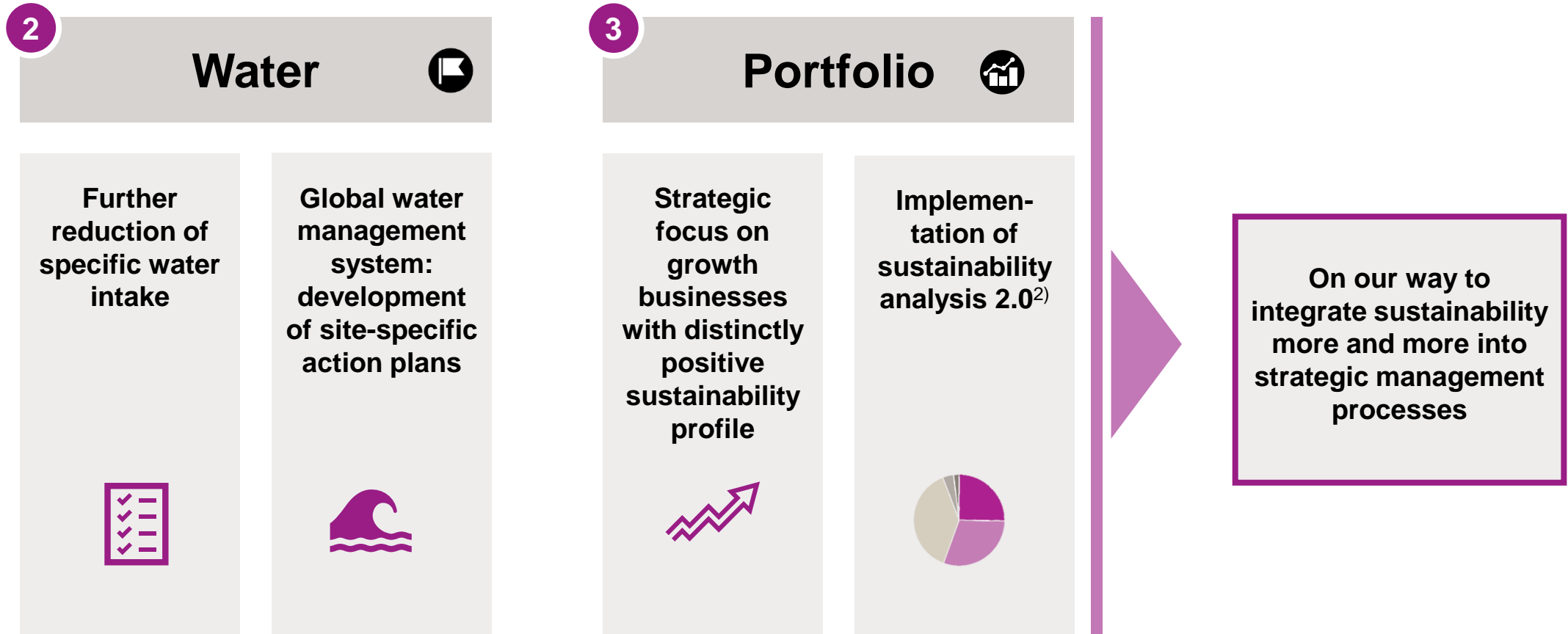


- **Modernization** of Evonik's power plant park as key element in achieving our targeted CO<sub>2</sub> reduction
- Replacement of last coal-fired power plant at Marl Chemical Park by a **flexible gas and steam turbine power plant**
- Total power output of 180 megawatts with an efficiency exceeding 90%
- Global **scope 1** GHG emissions to be cut **by ~20%**, mainly due to **annual reduction of 1 million metric tons CO<sub>2</sub>**
- Plant expected to come on stream by **2022** at the same time as a **new gas and steam turbine reserve power plant<sup>2</sup>**

1) In thousand tons CO<sub>2</sub>eq 2) Agreements signed in June 2020

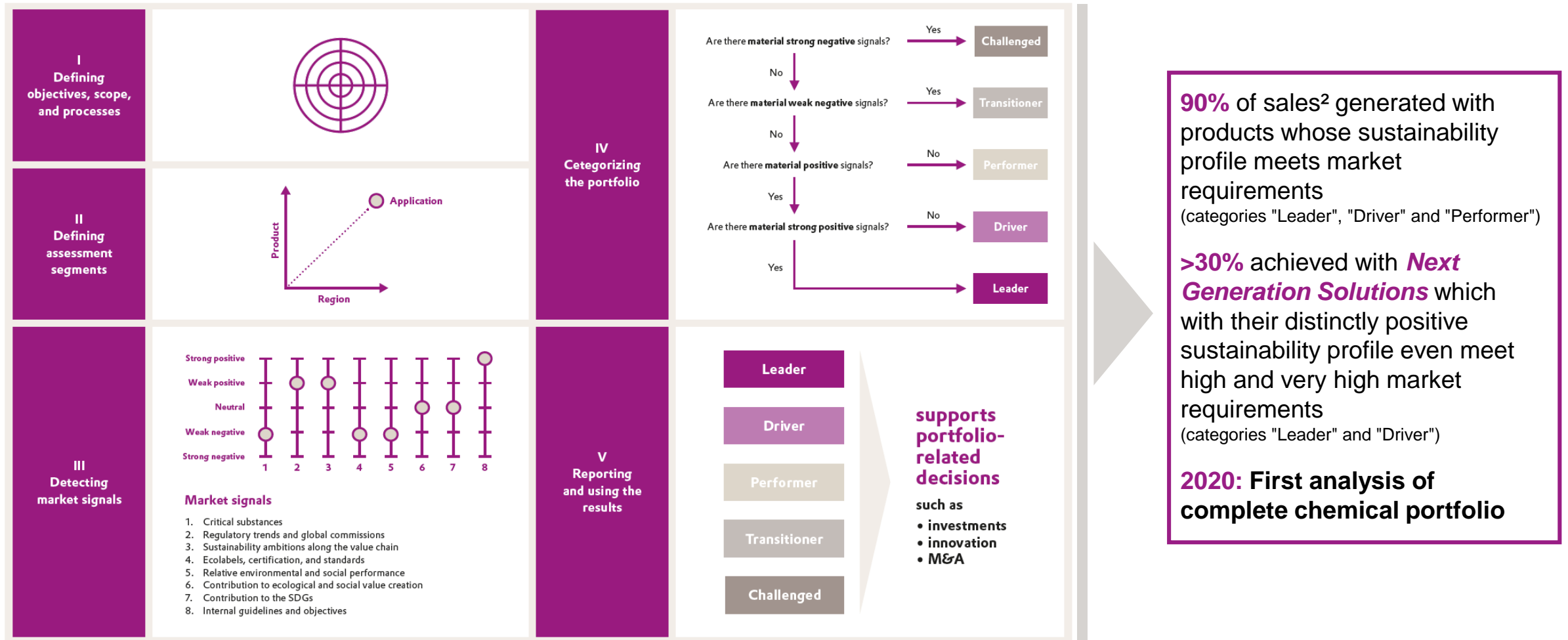


# Our sustainability strategy<sup>1</sup> – integrating sustainability into strategic processes



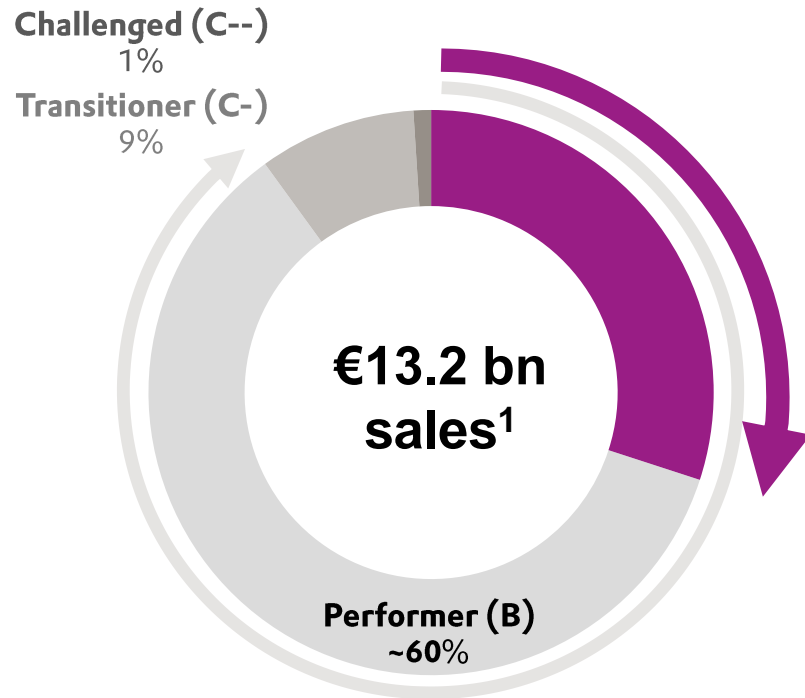
1) Adopted February 2019 2) using WBCSD Portfolio Sustainability Assessment method, business activities are weighted at the level of PARCs; PARC = product-application-region combination

# Sustainability analysis of our business 2.0<sup>1</sup>



1) Methodology published on Evonik's website 2) The analysis covers 99% sales and thus almost all of Evonik's continuing chemicals operations in 2018 (excluding MMA)

# Share of sales from Next Generation Solutions



>30%

## Next Generation Solutions<sup>2</sup>

- address globally **increasing demand** for sustainable solutions
- deliver **above-average growth**

▶ Target to further increase share of *Next Generation Solutions*

# Next Generation Solutions - Examples

## Biosurfactants



*Biosurfactants used in personal and household care applications*

### Evonik's superiority to market

- Evonik only company to produce bio-based surfactants on an **industrial scale**

Growth  
>10%

## Sustainable Food Packaging



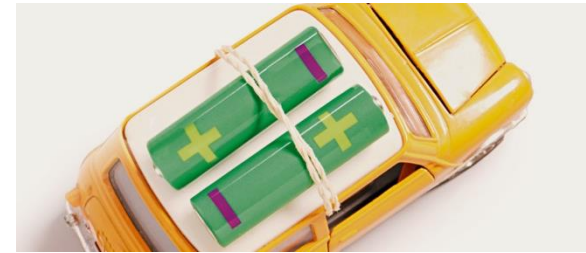
*Food stays fresh for longer due to O<sub>2</sub> absorbing packaging*

### Evonik's superiority to market

- Evonik only provider of **additive** to capture oxygen molecules inside of packages to keep them fresh longer and **reduce global food waste**

Growth  
>5%

## Improving Lithium-Ion-Batteries



*High-performance separators for more powerful batteries*

### Evonik's superiority to market

- Evonik's high-quality pure silica and metal oxides **increase safety, lifetime** and **performance** of **batteries** for EVs

Growth  
>20%

## Superinsulation



*Purely mineral high-performance insulation material*

### Evonik's superiority to market

- **Silica-based** insulation material which is **fully recyclable** and **incombustible** for sustainable housing

Growth  
>20%

# Acquisition of Porocel – a leading global provider of specialty catalysts

## Porocel

- Headquarter in Houston, Texas (USA)
- Ownership: privately held company
- Headcount: ~300 globally
- Locations: 6 manufacturing facilities in USA, Canada, Luxemburg, Singapore and China

### Key products:

- Full suite of critical hydro-processing catalyst services, including a patented technology for highly efficient rejuvenation of desulfurization catalysts
- Leading supplier of purification adsorbents and sulfur recovery catalysts used in the petrochemical, fine chemicals and petroleum refining industries

The logo for Porocel, featuring the word "POROCEL" in a bold, green, italicized sans-serif font. The letters "P" and "O" are connected, and the "R" is stylized with a vertical line through it. The logo is underlined with a thin blue line.

ADSORBENTS, CATALYSTS & SERVICES

Sales 2019:

~\$100 m

adj. EBITDA 2019:

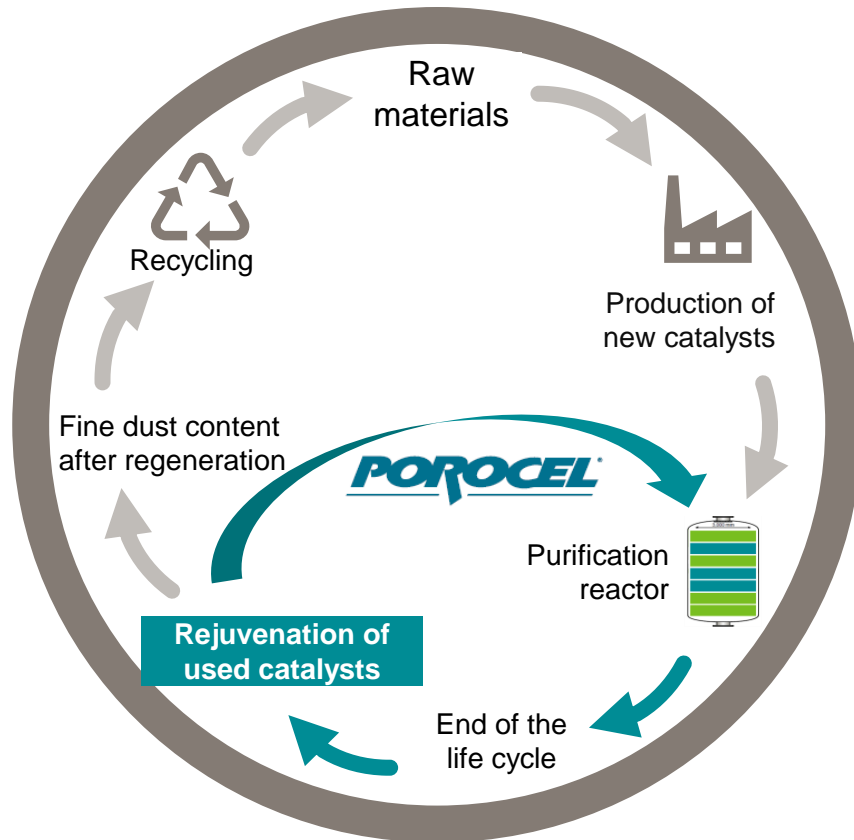
~\$23 m

adj. EBITDA margin: ~23%



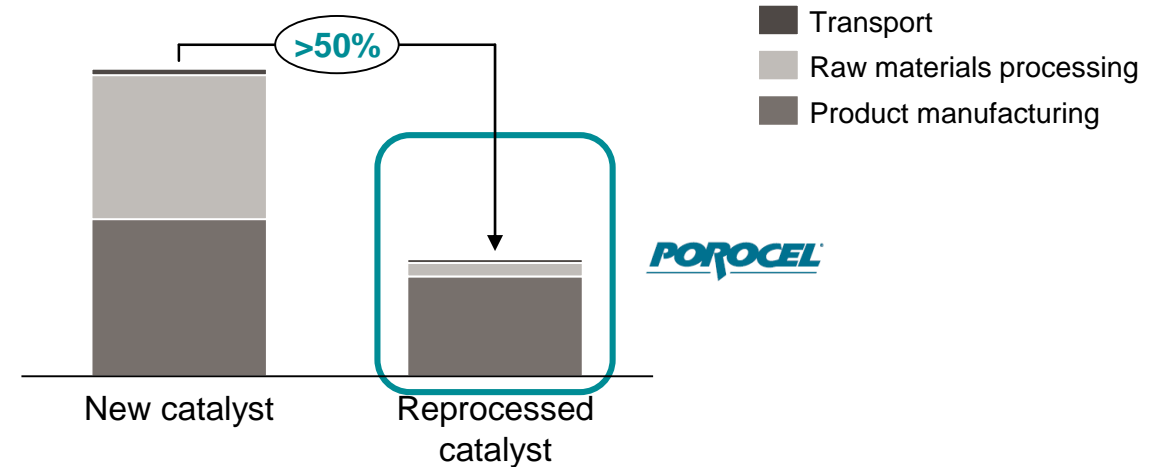
# Porocel – rejuvenation catalysts contribute to considerable CO<sub>2</sub> savings

## Rejuvenation of used catalysts saves resources



## Comparison of CO<sub>2</sub> emissions from catalyst production

CO<sub>2</sub> emission [kg per ton of catalyst]



- Rejuvenated catalysts save >50% CO<sub>2</sub> compared to new catalyst
- Since 2004, Porocel products have saved ~1 million tons of CO<sub>2</sub>

# Summary: Our sustainability strategy<sup>1</sup>

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1

**Sustainability is part of Evonik's market proposition and purpose**

2

**Evonik is committed to foresighted resource management**

3

**Evonik's strategic focus is on growth businesses with positive sustainability profile**

4

**Evonik integrates sustainability into its strategic management processes**

5

**Evonik sets high standards for continuous improvement of reporting**

1) Adopted by the executive board, February 2019

# Disclaimer

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In so far as forecasts or expectations are expressed in this presentation or where our statements concern the future, these forecasts, expectations or statements may involve known or unknown risks and uncertainties. Actual results or developments may vary, depending on changes in the operating environment. Neither Evonik Industries AG nor its group companies assume an obligation to update the forecasts, expectations or statements contained in this release.



**EVONIK**







**Leading Beyond Chemistry**

# Appendix

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# Our Top 10 sustainability targets

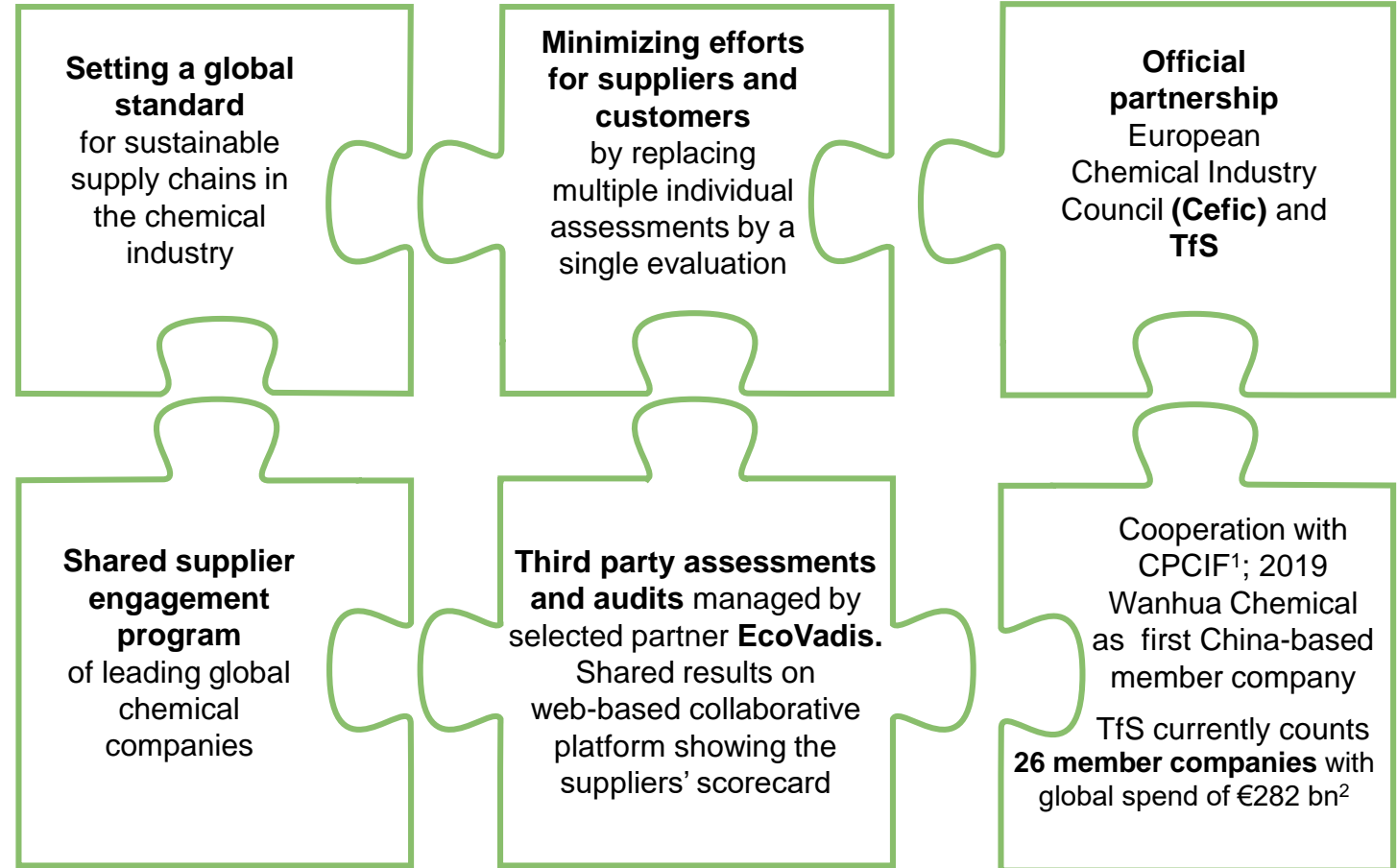
		Status 2019
 <b>Strategy and growth</b>	<ul style="list-style-type: none"> <li>Complete sustainability analysis of our business 2.0 by year-end 2020</li> </ul>	60 <sup>1</sup>
 <b>Governance and compliance</b>	<ul style="list-style-type: none"> <li>27.3% women at 1st management level below the executive board and 25.0% at 2nd management level by year-end 2020</li> </ul>	26.1% 24.1%
 <b>Value chain and products</b>	<ul style="list-style-type: none"> <li>100% of all raw materials suppliers with annual procurement volume &gt; €100k to be covered by TfS assessments by year-end 2025</li> <li>Increase sales of products and applications developed in the past five years to 16 % in the mid term</li> <li>Establish a risk estimate for &gt;99 % of substances placed on the market in quantities of &gt;1 metric ton p.a. by year-end 2020</li> </ul>	66% 13% 85%
 <b>The environment</b>	<ul style="list-style-type: none"> <li>Reduce absolute scope 1 and scope 2 emissions by 50% by 2025 (reference base: 2008)</li> <li>Reduce absolute scope 3 emissions from the upstream value chain—principally from the “carbon backpack” by 15% by 2025 (reference base: 2020)</li> </ul>	-42% —
 <b>Employees</b>	<ul style="list-style-type: none"> <li>Occupational health performance index <math>\geq 5.0</math></li> </ul>	5.5%
 <b>Safety</b>	<ul style="list-style-type: none"> <li>Accident frequency rate <math>\leq 1.30</math>; target for 2020 and subsequent years</li> <li>Incident frequency rate <math>\leq 1.10</math>; target for 2020 and subsequent years</li> </ul>	1.18 1.10

1) PARC = product-application-region combination, an element of the PSA method developed by the WBCSD; total number of PARCs at year-end 2019: 229.

# Upstream: Responsible supply chain management

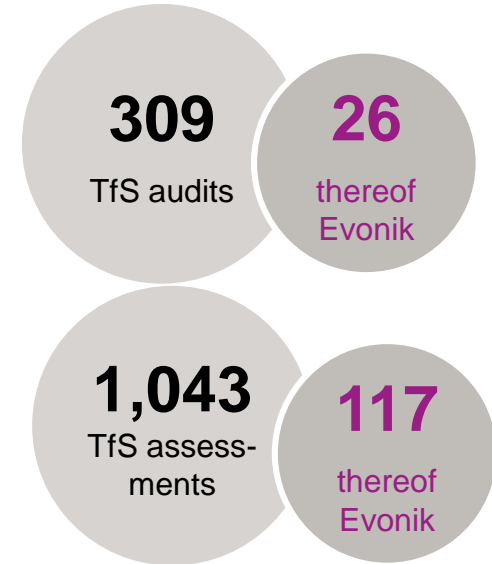
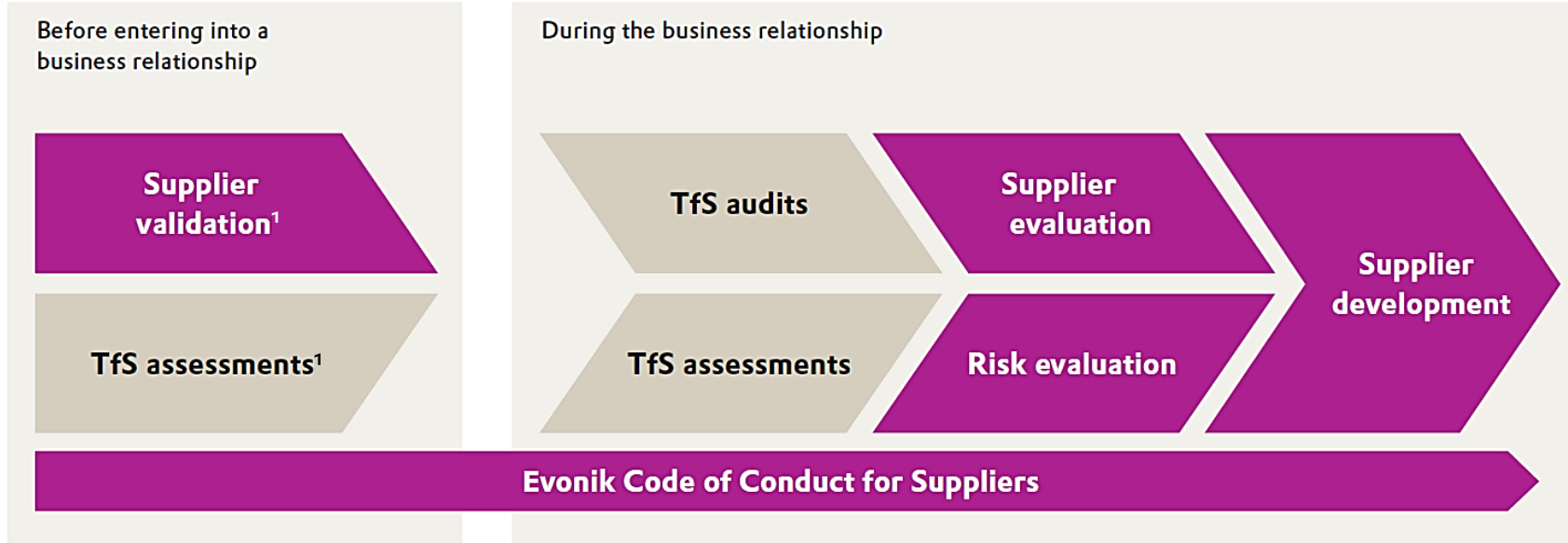


Evonik **founding member** of “Together for Sustainability” (TfS) initiative of chemical industry driving transparency and sustainability along the supply chain.



1) CPCIF = Chinese Petroleum and Chemical Industry Federation 2) estimated figure  
20 | Public | 2020 | Sustainability | Leading Beyond Chemistry, November 2020

# Upstream: Responsible supply chain management



## Our target



100% of raw materials suppliers with annual procurement volume of >€100k to be covered by TfS assessments by year-end 2025 (2019: 66%)

~80% (>50%) of Evonik's direct (indirect) purchasing volume covered by TfS assessments

# Gate to gate: Sustainability evaluation part of our R&D

**€428 million**

R&D expenses  
R&D expenses to sales ratio: 3.3%

★ **DSM and Evonik** combine expertise in JV Veramaris for omega-3 fatty acids from natural marine algae for animal nutrition in aquaculture



Global R&D network:

**~2,600** employees

**38** sites

**~225**

New patent applications filed

**~24,000**

Patents and pending patents

**47%**

of sales patent-protected



★ **Biosurfactants on industrial scale: Evonik and Unilever** teamed up

★ **Tissue Engineering** project house in Singapore



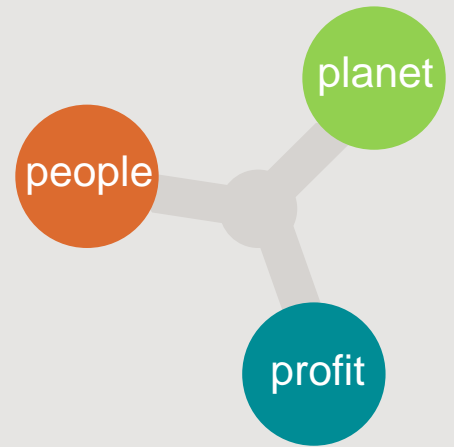
Current market growth<sup>1</sup> of ~30% p.a.; market volume<sup>1</sup> of US \$3 bn by 2021

**13%**

of sales with products and applications less than 5 years old



★ Innovation Award: AEROSIL® E2D



Systematic sustainability assessment for strategic R&D projects<sup>2</sup>

# Gate to gate: Our innovation targets

## R&D expenses to sales ratio

Group level: 3.3%  
Growth engines: 4–6%

## Sales with new<sup>1</sup> products and applications

🚩 Medium term target: 16% of sales  
2019: 13% of sales

## Corporate Venturing

~ 30 investments since 2012  
2019: **2nd venture capital fund launched** (€150 million), more than doubling amount under management to €250 million

## Evonik Innovation Growth Fields: 25% p.a. CAGR

### Sustainable Nutrition



### Advanced Food Ingredients



### Healthcare Solutions



### Cosmetic Solutions



### Membranes



### Additive Manufacturing







**Additional contribution to sales  
by 2025: > €1 billion; 2019: ~ €300 million**

1) Developed in the past 5 years



# Downstream: Sustainability as growth driver<sup>1</sup>

Growth engines	Growth trends and drivers	„Sustainable“ products	Market growth in %
<b>Specialty Additives</b> “Small volume, big impact“ 	<ul style="list-style-type: none"> <li>▪ Rising requirements on additive effects</li> <li>▪ Need for increased product performance and efficiency</li> </ul>	<ul style="list-style-type: none"> <li>▪ Additives for eco-friendly coatings</li> <li>▪ PU additives for insulation</li> <li>▪ Oil additives for fuel savings</li> </ul>	5 – 6
<b>Health &amp; Care</b> Preferred partner in Pharma and Cosmetics 	<ul style="list-style-type: none"> <li>▪ Increasing health awareness</li> <li>▪ Bio-based products and eco-safe cosmetics</li> </ul>	<ul style="list-style-type: none"> <li>▪ Pharma polymers</li> <li>▪ Oleochemicals</li> <li>▪ Advanced biotechnology</li> </ul>	5 – 6
<b>Smart Materials</b> Tailored functionalities for sustainable solutions 	<ul style="list-style-type: none"> <li>▪ Trend towards resource efficiency in highly-demanding applications</li> <li>▪ Engineered materials to fulfill high performance requirements</li> </ul>	<ul style="list-style-type: none"> <li>▪ Silica &amp; silanes („green“ tire)</li> <li>▪ HPP<sup>2</sup> for lightweight applications or 3D-printing</li> <li>▪ Membranes for biogas upgrading</li> </ul>	4 – 7
<b>Animal Nutrition</b> Comprehensive portfolio for sustainable food chain 	<ul style="list-style-type: none"> <li>▪ Sustainable nutrition</li> <li>▪ Improving food quality and safety</li> </ul>	<ul style="list-style-type: none"> <li>▪ Amino acids for animal nutrition</li> <li>▪ Probiotics</li> </ul>	5 – 7

1) Examples 2) HPP: High Performance Polymers

# Products with significant contributions to sustainable development<sup>1</sup>

## Insulation & Circular Economy

**POLYVEST® HT**  
for sealing compounds for  
insulating glass windows  
(triple glazing)



**VESTENAMER®**  
process additive allows  
rubber waste to be processed  
to low-noise asphalt



**PU-Additives**  
for furniture applications  
and the automotive  
industry (low VOC)



**CALOSTAT®**  
purely mineral high-perform-  
ance insulation material; fully  
recyclable; incombustible



## Mobility

**Silica-organosilane**  
reinforcing system  
for „green tire“ technology



**DYNAVIS®**  
oil additives for energy-  
efficient hydraulic fluids



**ROHACELL®**  
light-weight technology  
for automotive and  
aircraft industry



**DRIVON™**  
technology for cost-  
efficient engine oils  
and transmission fluids



## Renewable Energies

**Catalyst NM 30**  
for cost-efficient biodiesel  
production



**Crosslinkers, silica,  
oil additives, silicone  
epoxy resins** for wind power



**SEPURAN®**  
customized hollow-fibre  
membranes for efficient  
biogas purification



**TAICROS® Crosslinkers**  
for photovoltaic cell  
encapsulation



1) Examples

# We create value for society<sup>1, 2</sup>



**€1 : €4.27<sup>3</sup>**

Every €1 value added by Evonik creates a total of €4.27 **added value** for society



**1 : 7.9 jobs<sup>3</sup>**

One Evonik employee secures an average of 7.9 **jobs** in the value chain



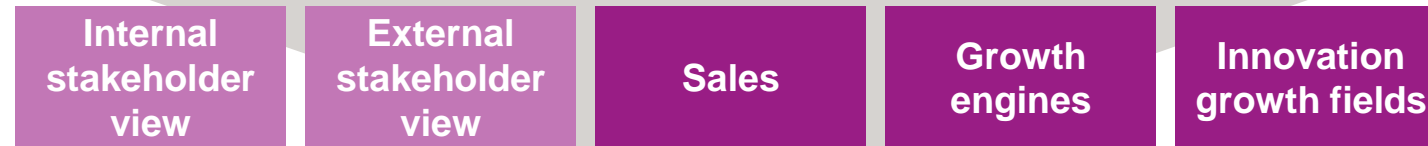
**€1 : €1.82<sup>3</sup>**

Every €1 value added by Evonik results in **public revenue** of €1.82

1) Impact valuation of our business in 2019 along the value chain (excluding the methacrylates business) covering Germany, the rest of Europe, USA, Canada, Mexico, Asia-Pacific, Middle-East, Africa, and Central & South America on the basis of currently available data. 2) Data outside the scope of the limited assurance review. 3) The total includes Evonik's direct impact.

# UN Sustainable Development Goals (SDGs)

**2017**  
Our contributions to the SDGs



**2018**  
Most relevant SDGs for the Evonik Group



**2019/2020**  
Inclusion in sustainability analysis of business

# Our positive impact on the SDGs of most relevance for Evonik<sup>1</sup>

## Our contribution to SDG 12

- High safety standards
- Responsible supply chain management
- Responsible management of chemicals and waste
- Products for resource efficiency in highly demanding applications

## Our contribution to SDG 3

- APIs<sup>2</sup> and intermediates
- Food ingredients and nutritional delivery
- Highly purified amino acids
- Parenteral and drug delivery
- Medical devices

## The SDGs of most relevance for Evonik



## Our contribution to SDG 13

- Ambitious CO<sub>2</sub> reduction targets
- Silica-silane technology for „green“ tires
- Oil additives to extend life of hydraulic machines and save fuel
- Membranes for biogas upgrading
- DL methionine for animal nutrition
- High-performance insulation materials

## Our contribution to SDG 6

- Global water management system: development of site-specific action plans within Evonik Group
- Oxidation agents, waste water treatment
- Biosurfactants

1) Examples 2) API = Active Pharmaceutical Ingredient

# Ratings & Rankings: Evonik well-positioned

- ✓ **Oekom Research** (Prime Standard B-)
- ✓ **Sustainalytics** (among Top 10 of chemicals sector)
- ✓ Together for Sustainability/**EcoVadis** (“Gold Standard”)
- ✓ **Dow Jones Sustainability Index Europe**
- ✓ **FTSE4Good** Europe, FTSE4Good Global
- ✓ **STOXX**® Global ESG Leaders
- ✓ **MSCI** World ESG Leaders Index; Socially Responsible Index MSCI Europe
- ✓ **Vigeo Eiris** Euronext Index (Europe 120, Eurozone 120)
- ✓ **CDP** Climate Change: B; **CDP** Water: B





# Evonik member of newly launched<sup>1</sup> DAX<sup>®</sup> 50 ESG index

This makes Evonik **one of the 50 largest and most sustainable companies in Germany.**

The DAX<sup>®</sup> 50 ESG index combines the two most popular sustainable approaches for equity investing:

- negative exclusions and
- individual ESG scores, as calculated by **Sustainalytics**' rating model.

Market capitalization and stock exchange turnover as further criteria.

DAX<sup>®</sup> **50** ESG - The New Standard in German ESG Investing



1). March 4, 2020



# Our sustainability commitments

## External



### UN Global Compact

Aligning companies' operations and strategies with 10 universally accepted principles in the areas of human rights, labor, environment and anti-corruption



### Responsible Care

The global chemical industry's initiative to improve health, environmental performance, enhance security, and to communicate with stakeholders about products and processes



### Chemie<sup>3</sup>

An alliance of VCI, IG BCE and BAVC underpinning sustainability as a guiding principle of the chemical industry in Germany and providing inspiration for the international community

## Internal



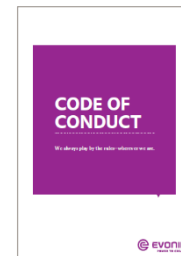
### Global Social Policy

Evonik's internal commitment to human rights, core labor standards, international standards and principles of conduct



### ESHQ Values

Protecting people and the environment, treating partners fairly, and focusing on the needs of customers as core beliefs for everyone at Evonik



### Code of Conduct

Containing corporate values and principles, governing conduct of all Evonik employees; externally operated whistleblower system

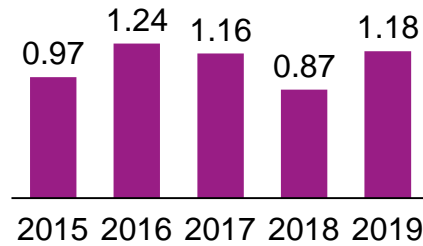
# Sustainability Report 2019: High recognition




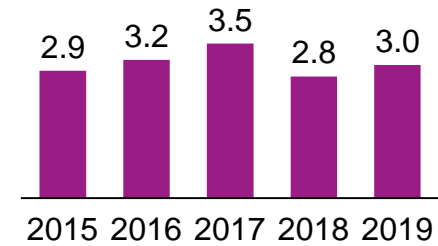
# Safety is at the top of our agenda



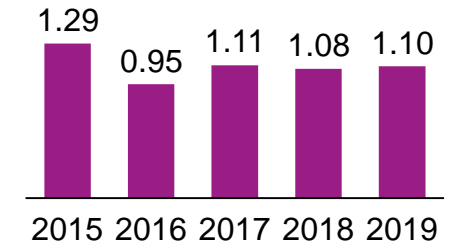
## Occupational safety & plant safety





**Accident frequency rate<sup>1</sup>**  
 for Evonik employees  
 increased due to  
 accidents in logistics;  
 no fatal accident.  
 target 2019 ( $\leq 1.30$ ) ✓



Accident frequency rate<sup>1</sup>  
 for **contractors'** employees  
 slightly higher due to  
 accidents in catering  
 services;  
 no fatal accident.




**Incident frequency rate<sup>2</sup>**  
 at very good level  
 Target 2019 ( $\leq 1.10$ ) ✓

Incorporation of safety performance in remuneration systems<sup>3</sup>; culture initiative "Safety at Evonik" firmly established. Implementation of new global server-based platform ESTER<sup>4</sup>

1) This indicator contains all work-related accidents (excluding traffic accidents) resulting in absences of at least one full shift per 1 million working hours.

2) Number of incidents per 1 million working hours. 3) Please see Financial Report 2019, P. 86 (Remuneration Report) 4) ESTER = Evonik Standard Tool ESHQ and Reporting

# Management compensation: Executive Board

Fixed salary  
~1/3

- To be paid in cash for each financial year on a monthly basis

Bonus  
~1/3

- Pay-out calculated on the basis of the achievement of focused KPIs; aligned to mid-term strategic targets:
  1. Progression towards EBITDA margin target
  2. EBITDA growth (yoy)
  3. Contribution to FCF target
  4. **Accident performance (frequency and severity of accidents)<sup>1</sup>**
- Factor of between 0.8 and 1.2 to take into account the achievement of further individual targets
- Bonus capped at 200% of initial target

Long-term  
incentive plan  
~1/3

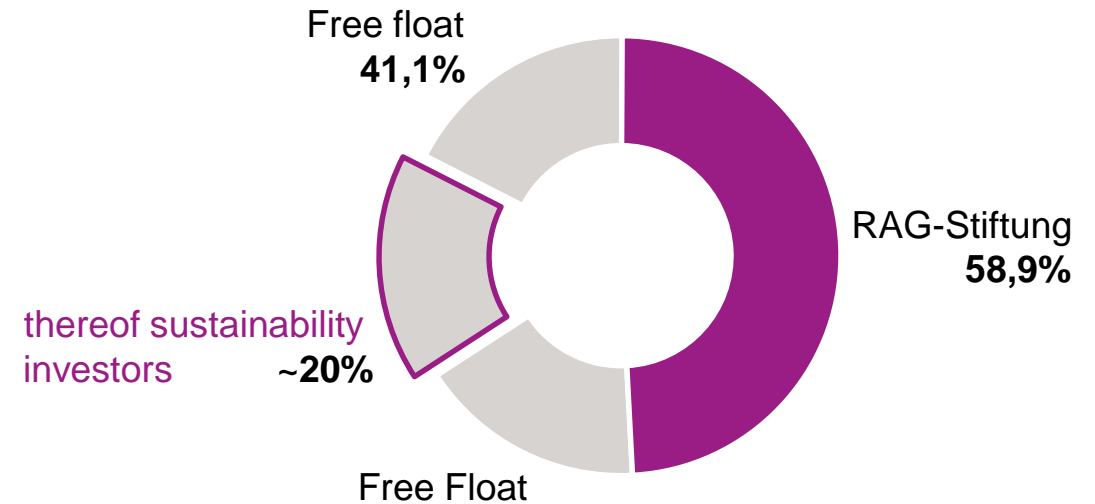
- Granted LTI target amount is calculated in virtual shares (4-year lock-up)
- Value of LTI to mirror the development of Evonik's share price (incl. dividends)
- Amount payable is determined by two performance elements
- Absolute performance: Real price of the Evonik share
- Relative performance against external index benchmark (MSCI Chemicals)
- Bonus capped at 300% of initial amount
- To be paid out in cash after lock-up period

1) Please see Financial Report 2019, P. 86 (Remuneration Report)

# Shareholder structure

## RAG-Stiftung (RAG Foundation)

- Obligation to finance the perpetual liabilities arising from the cessation of hard-coal mining in Germany
- Evonik as integral and stable portfolio element with attractive and reliable dividend policy
- Clear intention to remain significant shareholder
- RAG-Stiftung capable to cover annual cash-out requirements with Evonik dividend (~€325 million dividend in 2019)



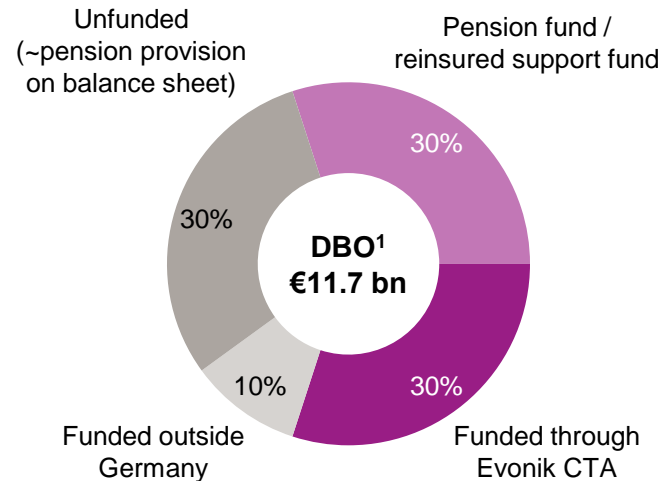
# Sustainability embedded in pension asset management

## Evonik Pensionstreuhand e.V. (CTA)

Sustainability process initially developed for portfolio held directly by Evonik Industries AG and thus directly under Corporate control (Contractual Trust Agreement, **CTA**)

- CTA: **>80%** of total plan assets under management supervised by managers committed to UN Principles for Responsible Investment (UN PRI)
- CTA: **>50%** of liquid assets overlapping with renowned sustainability indices such as FTSE4Good etc.

Funding level at ~70%



## Pensionskasse Degussa VVaG (Pension fund)


As one of the first pension funds in Germany, Pensionskasse Degussa VVaG (**PKD**) with own **ESG strategy** since April 2019

- Main focus on Governance requirements (compliance, audits, risk management, cyber security etc.)
- From 2020 on, 50% women in PKD Board of Management
- Investment criteria: managers required to have signed UN PRI; focus on democratic countries, respect for human rights, anti-corruption etc.
- Asset Class Specific: Suitable ESG factors taken into account in investment process




# Animal welfare

- Wherever possible, usage of published data to minimize animal testing
  - Teaming up with other companies to carry out joint tests
  - Taking read-across, grouping and in-silico-/in-vitro approaches
  - Active involvement in EPAA<sup>1</sup>, SET Foundation<sup>2</sup>
- Toxicological/ecotoxicological data still needed to assess safety of Evonik products
  - Tests on animals in many cases only way of reliably generating these data
  - Under national/international regulations (e.g. REACH) animal testing still required
- Evonik exclusively selects certified contract research organizations with high animal welfare standards
- Within Evonik, **animal protection guidelines** and **animal protection officers** installed



## Animal welfare at Evonik

### Animal tests and alternatives



#### Introduction

Evonik bears tremendous responsibility for the safety and quality of its products throughout the entire product life cycle ("from cradle to grave") and for protecting people and the environment. The ability to assess product safety requires toxicological and ecotoxicological data, and, in many instances, animal tests remain the only reliable source of these data from a scientific perspective. In addition, the corresponding laws at both a national and international level require manufacturers to perform animal tests. Evonik actively supports the development of alternatives to animal tests in order to continue reducing the number of animal tests performed now and to completely eliminate them in the future. Evonik is guided by the 3R concept\*: Reduce – Refine – Replace

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Rellinghauser Straße 1-11  
45128 Essen  
www.evonik.de

Evonik. Power to create.

1) European Partnership for Alternative Approaches to Animal Testing 2) Foundation for the promotion of alternate and complementary methods to reduce animal experiments  
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# Sustainable use of palm oil

## TEGO® Betain P 50 C

The cost-efficient, concentrated Cocamidopropyl Betaine based on RSPO certified palm kernel oil.



Since 2014 RSPO-certified products offered such as emulsifiers, consistency enhancers for creams and lotions.

Today, BL Care Solutions offers >100 ingredients for the cosmetic industry according to MB supply chain rules.

Evonik member of Roundtable on Sustainable Palm Oil (RSPO) since 2010

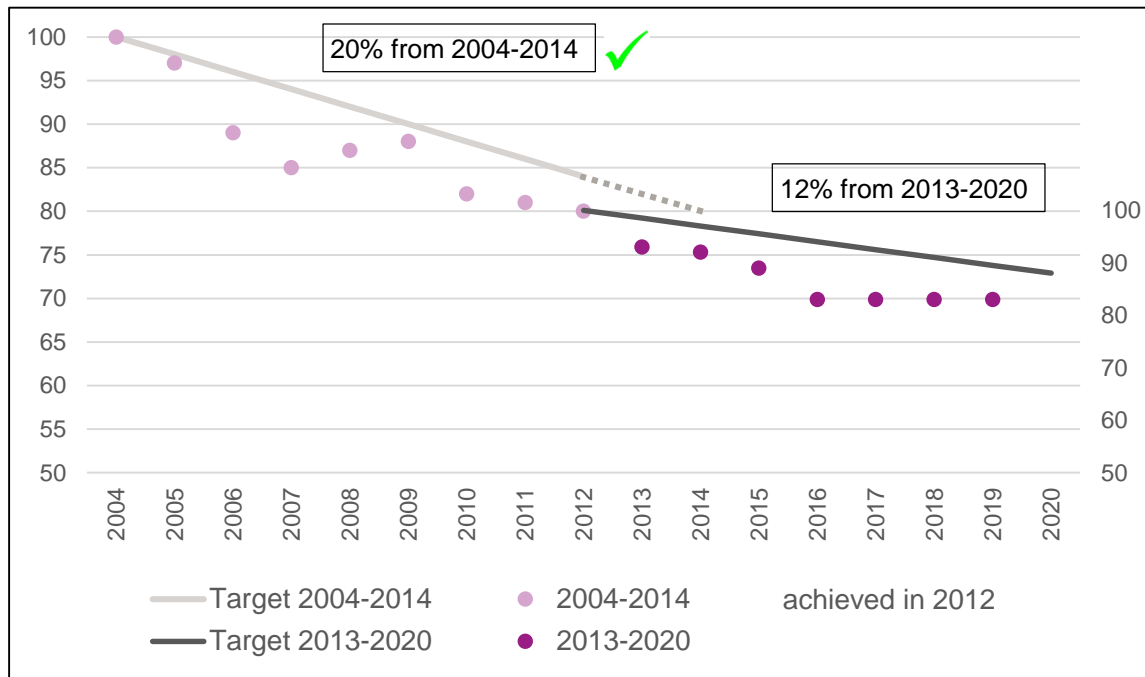
All main Evonik sites<sup>1</sup> processing palm oil certified according to RSPO Standard (MB<sup>2</sup>, SG<sup>3</sup>)

Share of RSPO certified raw materials amounts to ~25% for the Evonik Group, 65% for BL Care Solutions

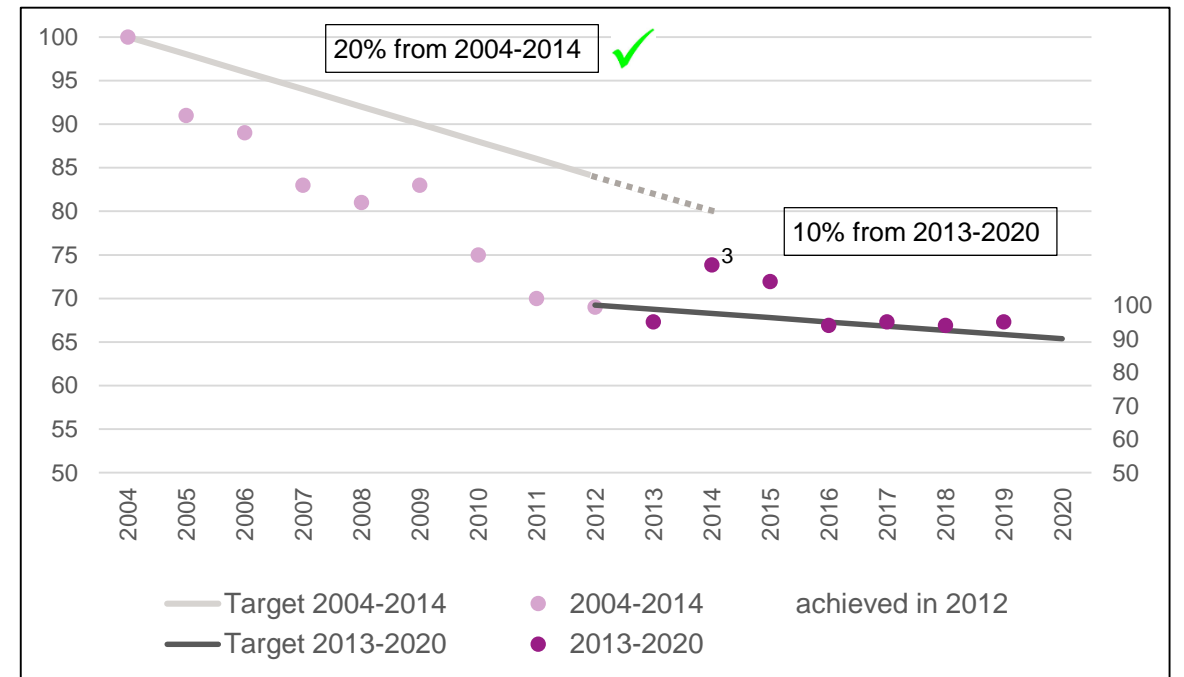
**Our goals:** We intend to purchase only certified palm-based raw materials by 2023. Moreover, we will further expand our certified product portfolio.

# Ambitious environmental targets 2004 – 2020

## Specific GHG emissions<sup>1</sup>



## Specific water intake<sup>2</sup>

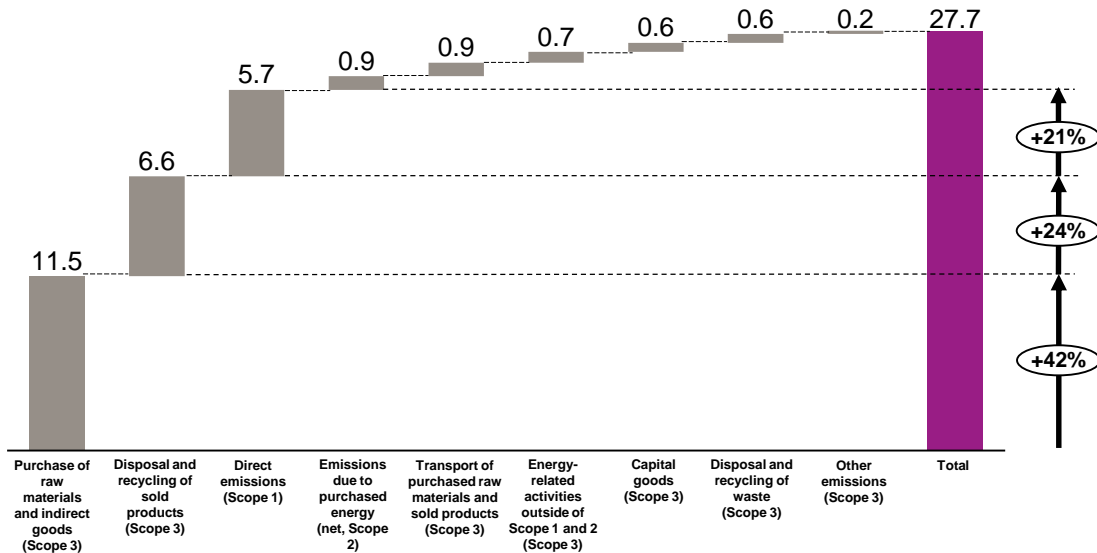


1) Energy- and process-related emissions as defined by the Greenhouse Gas Protocol, scope 2 emissions calculated using market-based method 2) Reporting on specific water intake has been recalculated retrospectively. Based on our regular analytical verification - checks on random samples of reported data and audits - gaps in reporting in one organizational unit were identified and corrected 3) Start-up of hydrogen peroxide facility in Jilin (China).

# Managing Evonik's carbon footprint

## Carbon footprint

Evonik Carbon Footprint in 2018 (27,6 Mt CO<sub>2</sub>e)

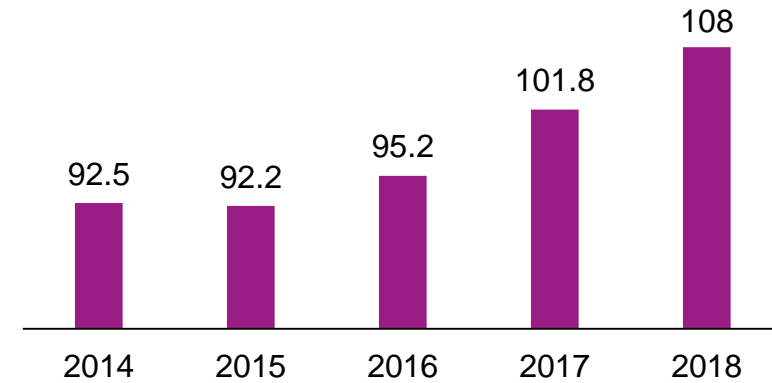


## Avoided emissions

108 million metric tons CO<sub>2</sub>eq<sup>1</sup> avoided emissions

by use of selected Evonik products<sup>2</sup> compared to conventional alternatives on the market

CO<sub>2</sub>eq<sup>1</sup> in million metric t



# New energy target 2020 – 2025

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Energy target 2020 - 2025:

**5 + 5 until 25**

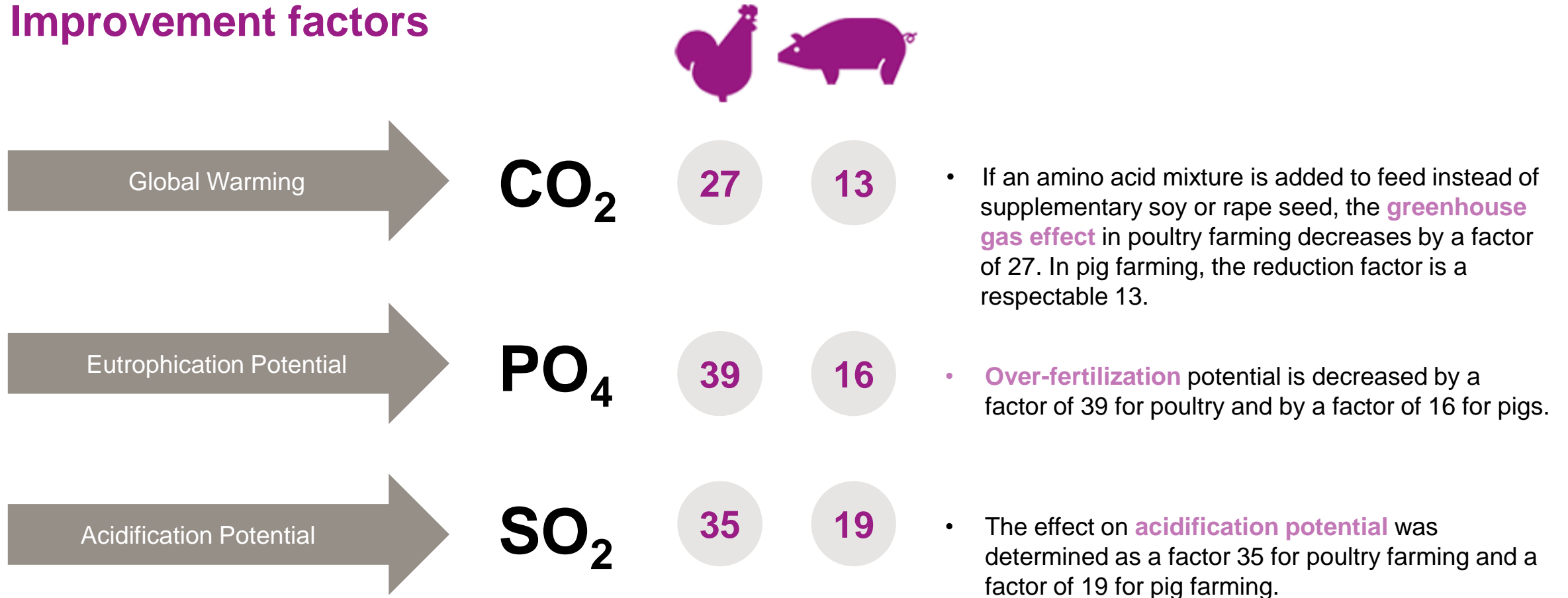
Base year 2020

Reduction of  
**absolute**  
energy  
consumption by  
**5%**

Reduction of  
the specific  
energy  
consumption by  
**5%**

# LCA TÜV Rheinland<sup>1</sup> of Evonik's amino acids for animal nutrition

## Improvement factors



1) Life cycle assessment by German standardization body TÜV Rheinland, 2015  
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# Evonik is expanding its business with environment-friendly oxidation agents

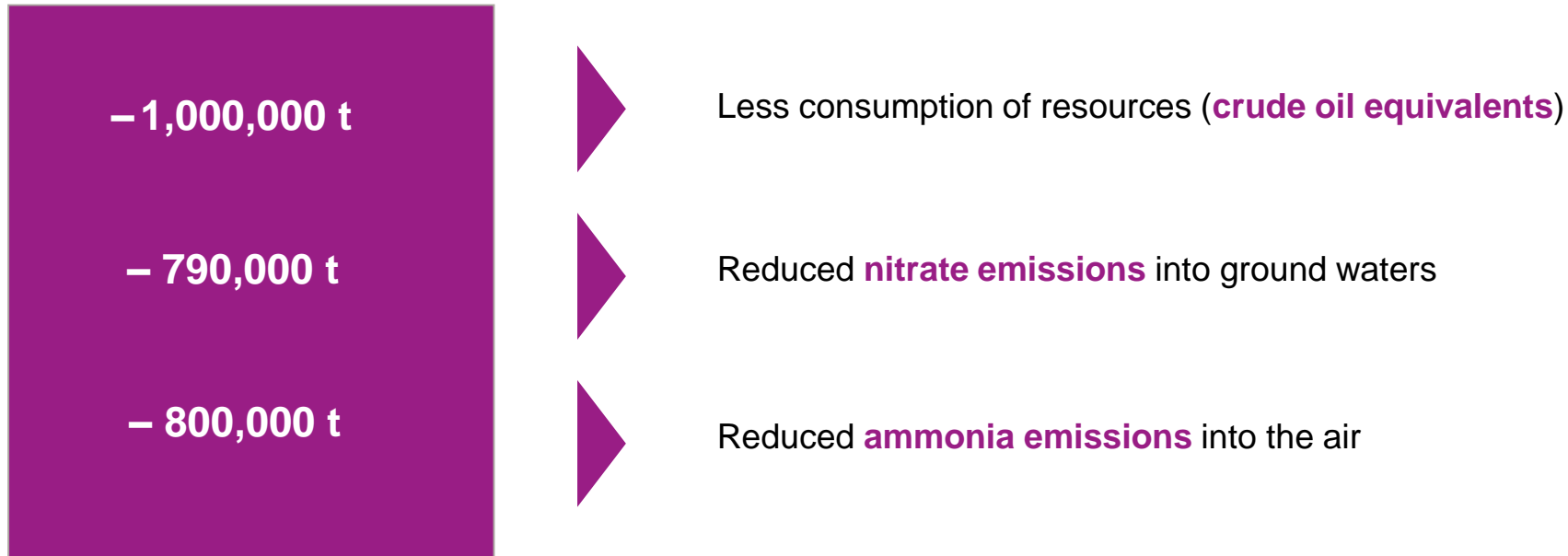
- Acquisition of PeroxyChem (Philadelphia, USA) with attractive hydrogen peroxide (H<sub>2</sub>O<sub>2</sub>) and peracetic acid (PAA) businesses in February 2020
- Sales of approx. US\$300 million, adj. EBITDA of >US\$64 million in 2019
- Focus on high-margin specialty applications in the **environmental, food safety, and electronics semiconductor industries**
- Businesses with low cyclicalities, unlocking additional growth opportunities. Demand driven principally by need for **sustainable disinfectants**
- Successful start-up of **wastewater treatment** plant using PAA in Memphis (Tennessee, USA) in 2019; long-term supply agreement with City of Memphis
- PAA **biodegradable** in water; H<sub>2</sub>O<sub>2</sub> as environmentally friendly and resource-efficient **“green” chemical**



# Substantially lower resource consumption & emissions

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With 1 kg of DL-Methionine, up to 260 kg of soybean meal can be replaced in feed. The use of 100,000 t DL-Methionine<sup>1</sup> means:



1) The calculation is based on LCA Methionine 2003



# Algae to produce omega-3 fatty acids, skipping over the food chain in the ocean



Specialist in developing industrial biotechnology processes and in operating large scale manufacturing sites for fermentative processes



Specialist for the cultivation of marine organisms including algae



## A combination of complementary expertise<sup>1</sup>

- **Start-up of new plant in July 2019**
- **Market-pull** from the feed value chain, consumers and NGOs
- **Committed customers** like Norwegian salmon farmer Lingalaks & German retailer Kaufland
- Initial **sales potential** of ~€150 - 200 m from first plant<sup>1</sup>
- **Evonik site in Blair offers flexibility** and opportunity for further investments to expand production

1) 50:50 JV Evonik & DSM

# Tissue Engineering Project House following Medical Devices



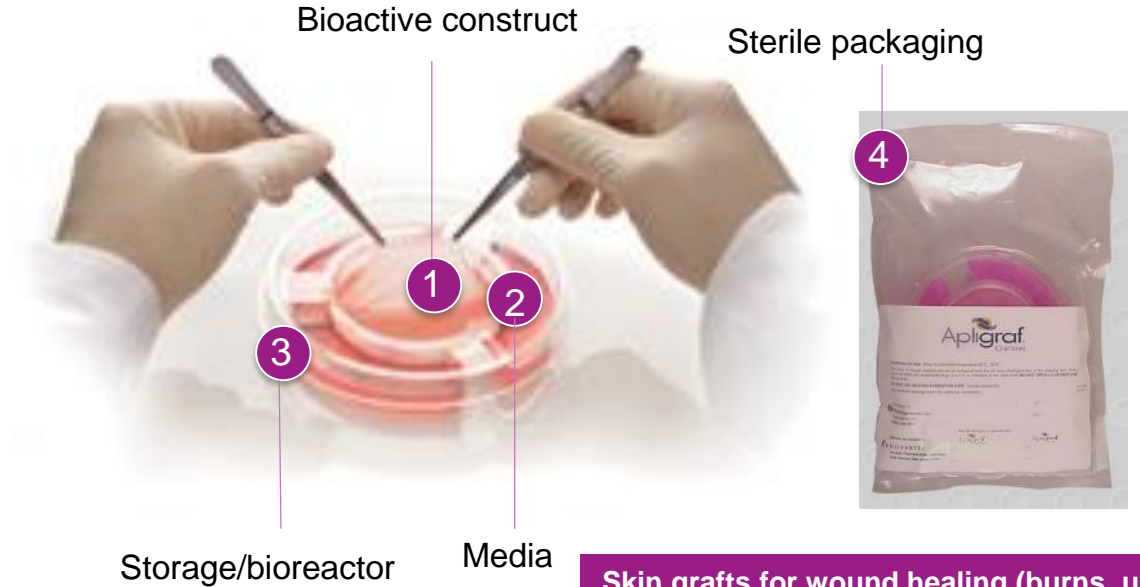
Biodegradable Bone Screw



Biodegradable Stent

Next  
Project  
House

- Network with more than 15 universities and institutes
- More than 10 customer projects launched
- More than 10 patents filed
- First product launched



- Evonik's right to play: eg materials (amino acids, growth factors, resorbable polymers)
- CAGR 30%
- Evonik addressable markets: 3B (2021)

# Sustainability as a growth driver: efficiency in construction

## Silica

**Non-combustible high-performance insulation materials** are recyclable and allow for slim insulation at new and refurbished buildings.



## Silanes

**Best practice anti-corrosion systems** avoid maintenance costs caused by corrosion over a time period of **more than 35 years.**

## Binding agents

**Durable road markings** improve road safety and save **more than 33%** of the CO<sub>2</sub> footprint over the life cycle compared to other technologies.

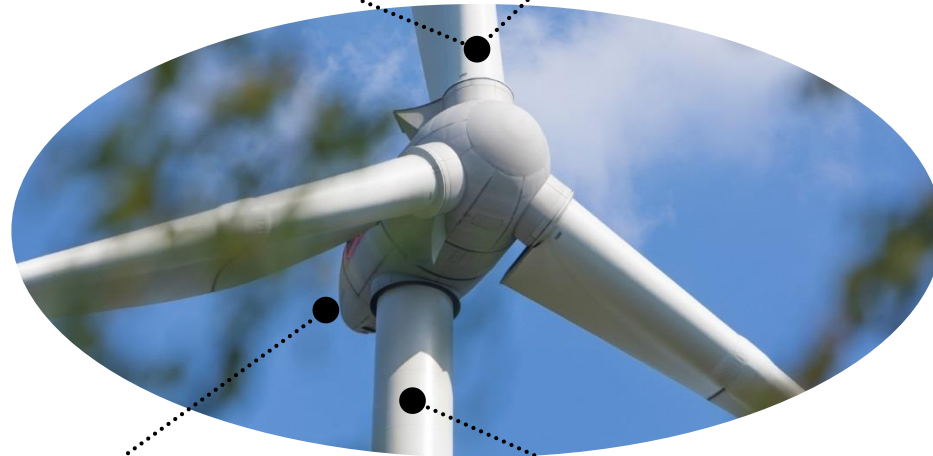
## Processing aid

**Efficient use of ground tire rubber** in asphalt, along with reduction of lane grooves, crack formation and noise generation.

# Sustainability as a growth driver: wind power

## Crosslinkers

**Composite materials in rotor blades** have gained wide acceptance due to their high carrying capacity and their low weight.



## Oil additives

**Wind turbine gear oils** with high reliability reduce lubricant cost by **20%**.

## Silica

**High-performance adhesives** enable the sustainable construction and stability of glued rotor blades **longer than 75 m**.

## Silicone Epoxy Resins

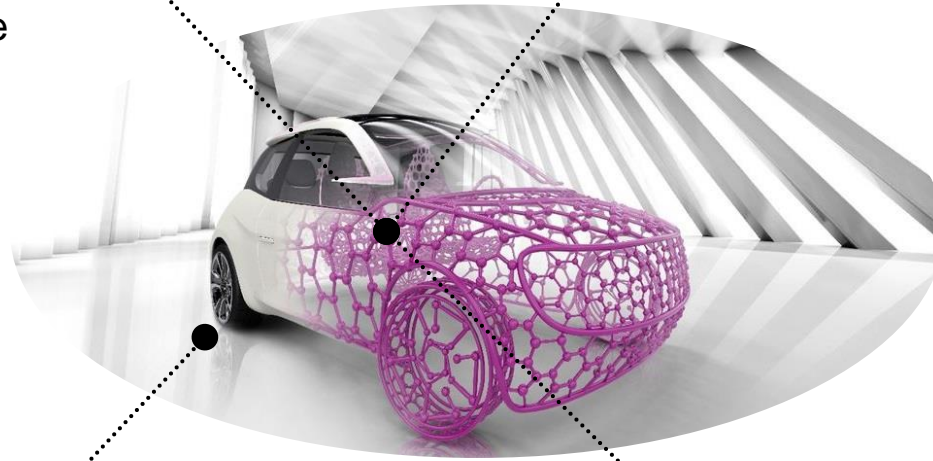
**Anti-corrosion coatings** are **approx. 50%** thinner, at the same performance.

# Sustainability as a growth driver: efficiency in mobility

## Polymer powder

### Additive Manufacturing (3D printing)

enables new design freedom, light weight components, rapid prototyping and more efficient spare parts logistics.



## Membranes

### Energy carriers methane and hydrogen

from renewable sources emit significantly less CO<sub>2</sub> over the life cycle than petrol and diesel.

## Silica/Silane system

The **Green Tire** with lower rolling resistance reduces fuel consumption and CO<sub>2</sub> emissions by **up to 8%**, compared to conventional automobile tires. Road safety is improved due to reduced braking distance on wet roads.

## Crosslinkers, polymers, resins

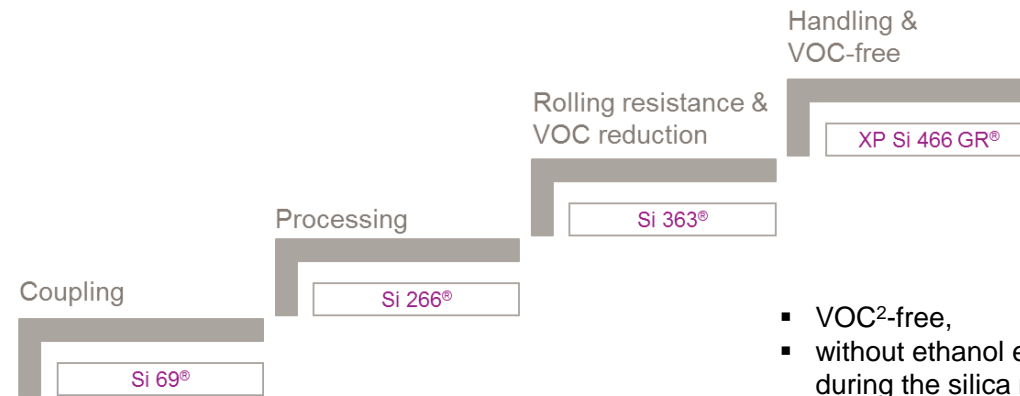
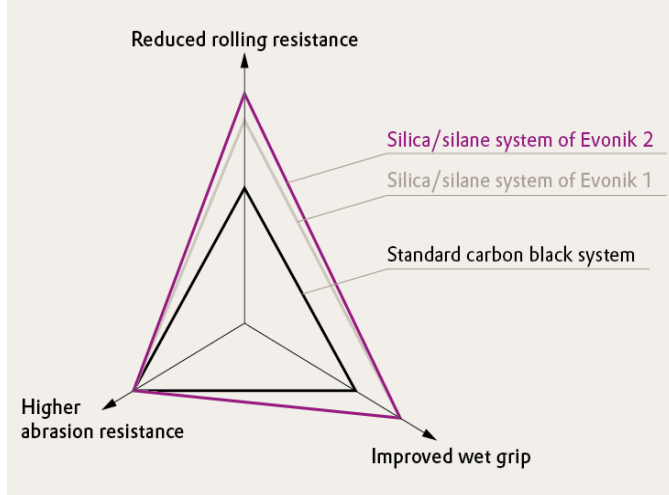
**Light weight solutions** reduce the weight of selected components with the same function by **up to 60%** in comparison to aluminum.



# Sustainable mobility: „Green tire“



- Sustainable mobility more and more important to consumers worldwide
- Low resistance tires lead to fuel reduction by up to 8%<sup>1</sup>; silica/silane systems as essential components of the rubber mixture of these tires
- Since 2010, market for "green tires" has grown by 30% p.a.; labeling requirements as growth driver
- Evonik is improving "green tires" even further, bringing a new silane on the market in the near future



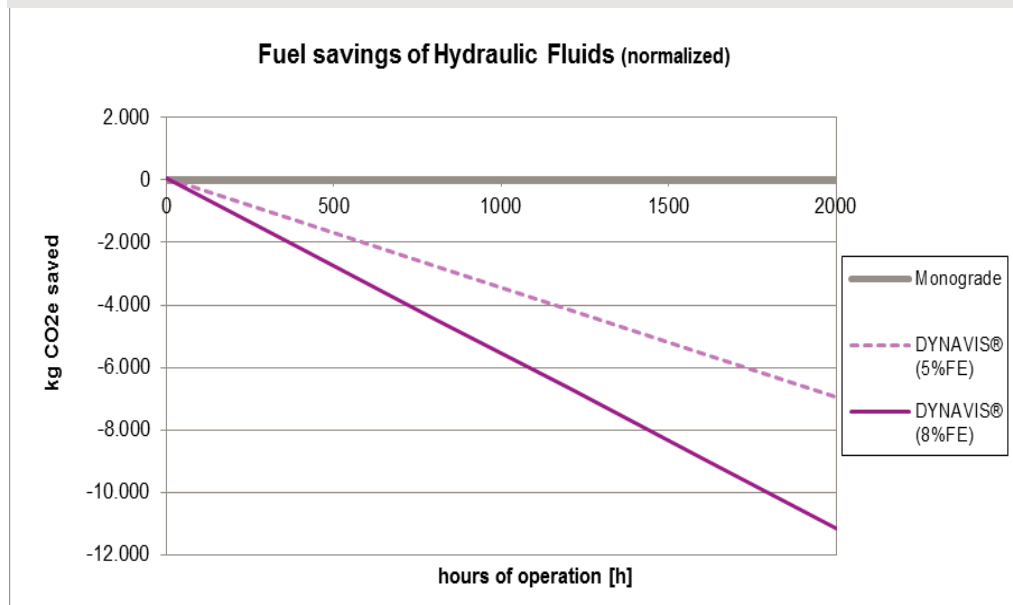
- VOC<sup>2</sup>-free,
- without ethanol emissions during the silica reaction or from the finished tire

Development of rubber silanes follows market demands

1) Compared to conventional passenger car tires 2) VOC = volatile organic compounds  
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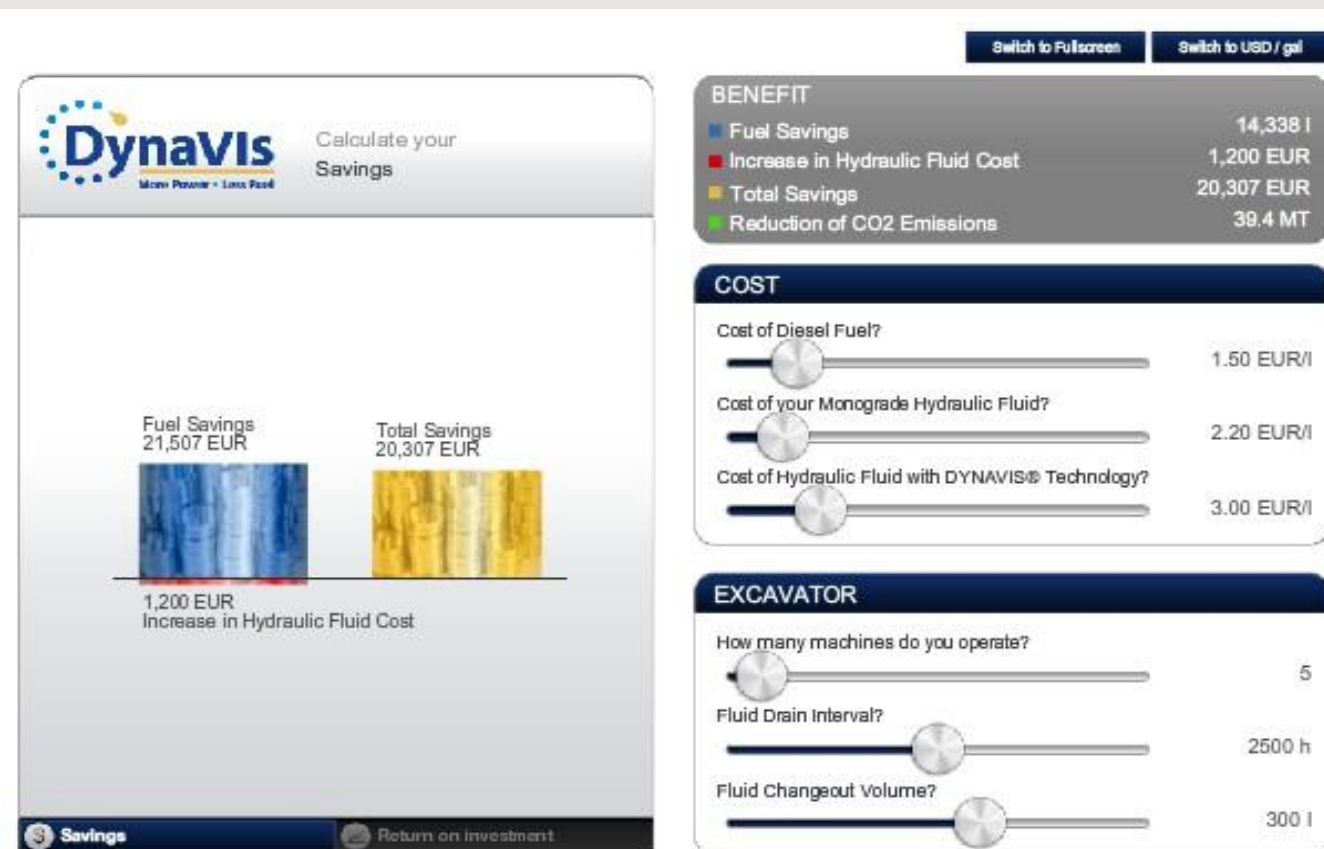
# DYNAVIS® additive technology for hydraulic fluids

## DYNAVIS® technology: More power, less fuel



- Up to **30%** less fuel consumption for the same amount of work
- Up to **30%** more hydraulic power under full-load conditions

## Calculate your savings directly on the DYNAVIS® website





# Membranes for efficient separation of gas mixtures

**Internal innovation achievement**  
(Creavis)

Polyimide membrane modules for efficient and energy-saving gas separation, tailoring selectivity and permeability exactly to the specific application

**Stepwise tapping new growth markets**

**2011:** SEPURAN® Green for upgrading biogas to biomethane; today: >300 biogas upgrading installations operating worldwide, reducing CO<sub>2</sub>-emissions by nearly 2 million metric tons p.a.

**2015:** SEPURAN® Noble for energy efficient helium recovery from source gas

**2016:** SEPURAN® N<sub>2</sub> for energy efficient nitrogen generation from air

**Strategic partnership with Linde**

**2016:** Reference plant for helium upgrading in Mankota (Canada)

**2018:** Exclusive cooperation agreement on the use of membranes for natural gas processing

**Growth**

- Already mid-double digit million € business<sup>1</sup> in BL High Performance Polymers (Resource Efficiency Segment)
- Strongly growing with 20% CAGR

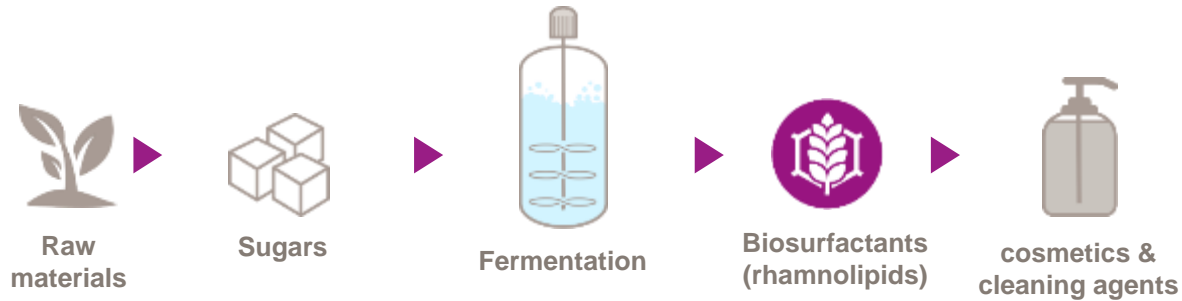


1) Sales 2018

# Biosurfactants are the next game changer in Evonik's innovation portfolio

## Large-scale production of world's first "green" biosurfactant (rhamnolipids)

### A unique process resulting in a unique product



- 100% **renewable natural resource & biodegradable**
  - **Plant based sugars** as only carbon source – no oils used
  - **Unique product properties**, especially cleansing & foaming (comparable products usually made from petrochemicals)
- **First large-scale biosurfactant** for cosmetics and cleaning

### Commercialization to capture future growth



- **Unilever** has successfully launched a product in Chile in 2019
- Next step in commercializing **Evonik's leading biotechnology capabilities**: designs of a **global scale production plant**
- Evonik will be the **first company to produce biosurfactants on industrial scale** with focus on attractive markets in personal and home care

# RHEANCE® One – completely natural raw material for cosmetics

**First ever glycolipids product**, launched during in-cosmetics tradeshow in Amsterdam in April 2018.

Glycolipids are made up of sugar and fatty acids, avoiding use of tropical oils. RHEANCE® One is **100 percent based on renewable raw materials** and manufactured using a **fermentation process**.

RHEANCE® is **fully biodegradable** and offers extremely good environmental compatibility.

Glycolipids stand out for generating a dense, creamy foam and having a **pleasant, natural skin feel**.

In skin, hair and oral care products, RHEANCE® One ensures **effective yet gentle cleansing** – and is ideally suited for even the most demanding skin types.



**RHEANCE® One: 2019 Ringier Innovation Award for Personal Care in China**



**EVONIK**

**Leading Beyond Chemistry**