

The K+S logo is positioned in the top right corner of the page. It consists of the letters 'K+S' in a bold, white, sans-serif font, set against a dark blue, parallelogram-shaped background that is part of a larger blue graphic element extending from the top right corner of the page.The background of the entire page is a photograph of an underground mine. In the center-left, a large red wheel loader is parked on a dirt path. To the right, two men wearing hard hats and safety glasses are standing and looking upwards. One man is holding a flashlight, illuminating the surrounding rock walls. The rock walls are light-colored and show signs of excavation. The overall scene is dimly lit, with the primary light source being the flashlight and some ambient light from the mine's interior.

# Compendium

Information for investors, analysts, and interested parties

Publication December 2023

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**K+S**

**1 | 7 K+S Group**

# K+S Conspect



The roots of the K+S Group date back to the **middle of the 19th century**. At that time, miners in Germany exploited the world's first potash deposits and started fertilizer production.

Today, the K+S Group is an **internationally oriented raw materials company** with production sites in **Europe and North America**.



## K+S Group financials Q3/2023

**Revenues**  
€880.8 million

**EBITDA**  
€72.2 million

**Adjusted free cash flow**  
€54.6 million

**EBITDA margin**  
8.2%



Mining of **potash and salt** on **two continents**

About **11.000 employees** worldwide

K+S strives for **sustainability** and acknowledges its responsibility towards people, the environment, communities, and the economy in the regions in which it operates.

The claim is to enrich life for generations and to be a **pioneer for environmentally friendly and sustainable mining**.



# Board of Executive Directors



**Dr. Burkhard Lohr**  
Chief Executive Officer  
Mandate until May 31, 2025



**Dr. Christian H. Meyer**  
Chief Financial Officer  
Mandate until March 14, 2026



**Dr. Carin-Martina Tröltzsch**  
Member of the Board  
Mandate until February 19, 2026



**Christina Daske**  
Labor Director  
Mandate until December 01, 2026

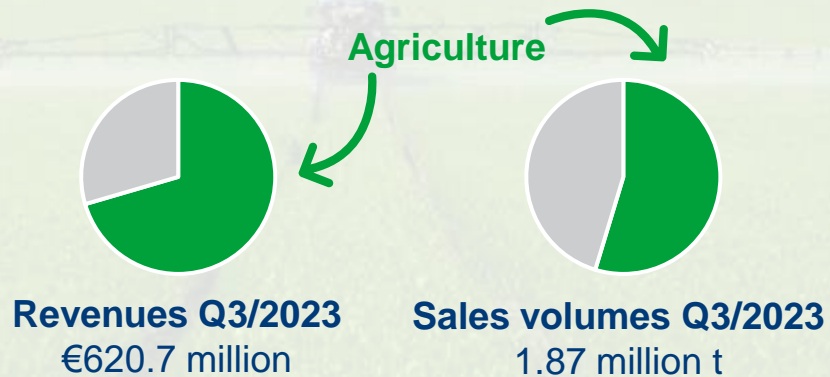
For current information on the responsibilities of the individual members of the Board of Executive Directors, please refer to our bylaws which can also be found on the K+S website at: [www.kpluss.com/executivedirectors](http://www.kpluss.com/executivedirectors)

# K+S at a glance

## Customer segments (no segments according to IFRS)

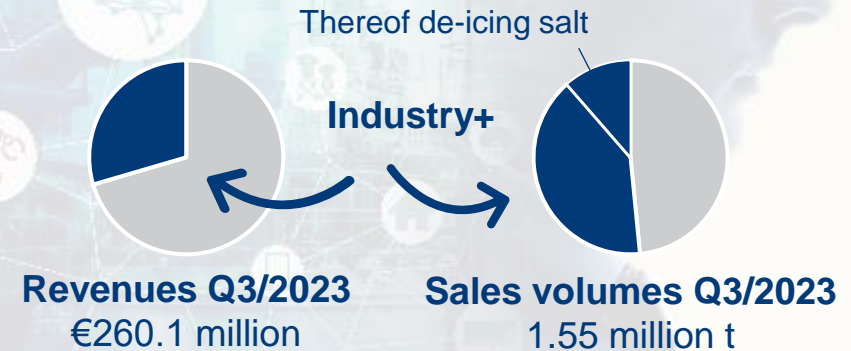
With our wide range of potassium chloride (MOP) and fertilizer specialties, as well as accompanying advice, we support farmers around the world in achieving high yields and the best crop qualities.

Agriculture



We produce, refine, and supply natural raw materials for communities, consumers, and numerous industrial applications - and if residues remain, we have the right disposal solution. Our products and services keep production running.

Industry+



# Sale of the OU Americas in 2021

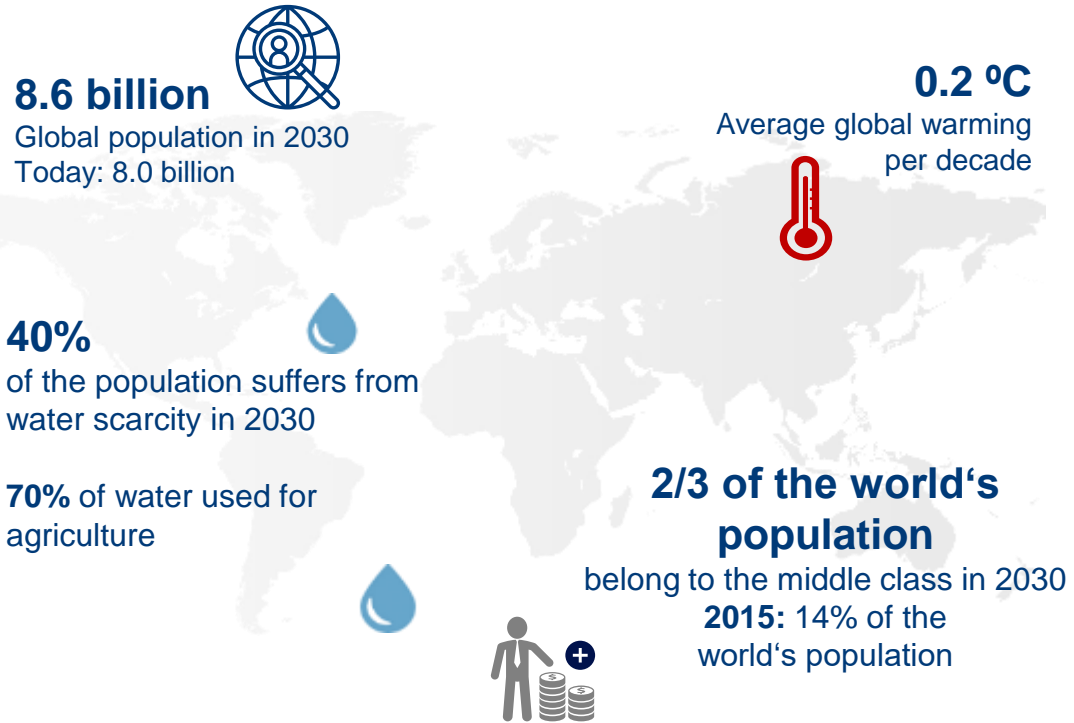
## Key data of the signed agreement

<b>Buyer</b>	Stone Canyon Industries Holdings LLC, Mark Demetree and Partner
<b>Gross proceeds</b>	USD 3.2 billion
<b>EV/EBITDA</b>	12.5x 2019 EBITDA of USD 257 million
<b>Closing</b>	April 30, 2021
<b>Net proceeds</b>	€2.6 billion after tax
<b>Preliminary gain on disposal</b>	€742 million



# Important megatrends and their implications

## Implications for K+S



- **Arable** land shrinking
- **Yield** needs to be **improved**
- Higher efficiency of **fertilization** and **irrigation** needed
- Plants have to be more **stress resistant**
- **Infrastructure** needs to be improved  
→ focus on **renewable energy**
- **Growing population**, especially in **Asia**, needs **more salt** for various purposes

**Sources:** United Nations, 2017; World Population Clock of the Deutsche Stiftung Weltbevölkerung (dated July 2022); "Global temperature change" from James Hansen et al. (September 25, 2006); World Water Report 2021 of the UNESCO; James Davies, Rodrigo Lluberas and Anthony Shorrocks, Credit Suisse Global Wealth Databook 2015



# Why use fertilizers?

“The Natural Laws of Husbandry“, Justus von Liebig, 1863

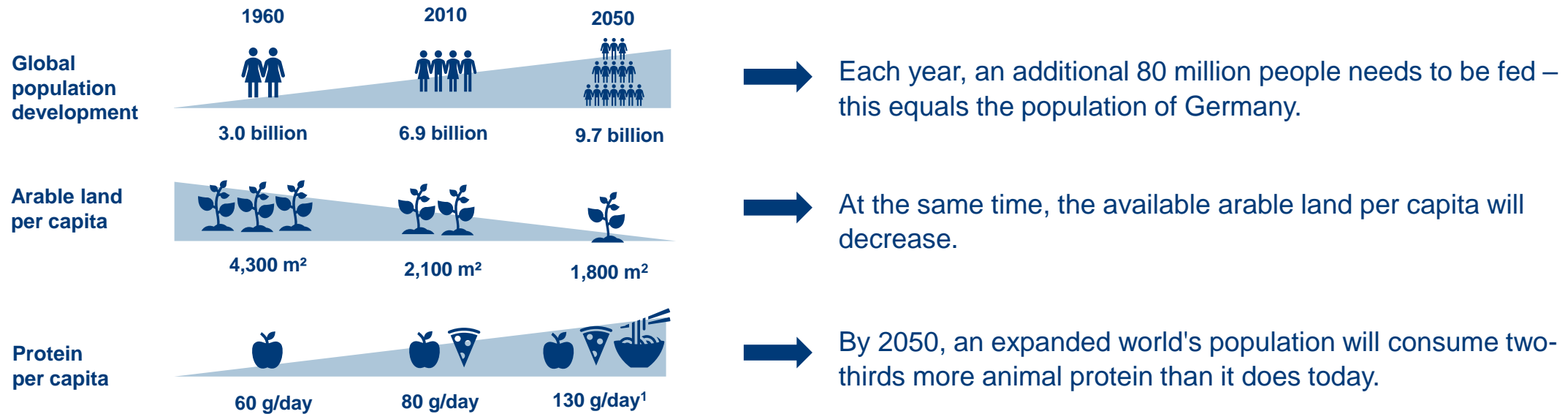


„The growth and yield of a plant is limited by the nutrient available in the smallest amount.“

- Plants need sunlight, water, and **minerals** to thrive.
- There are few soils on earth which have a sufficient content and availability of **plant nutrients** to achieve **high yields** over a longer period without fertilization.
- Potash is an **indispensable** addition to the natural nutrient content of arable soils.
- The deprivation of nutrients by harvesting and other factors must be compensated by **balanced fertilization**.

# Long-term key drivers for our fertilizer business

## Less arable land – but more protein consumption per capita

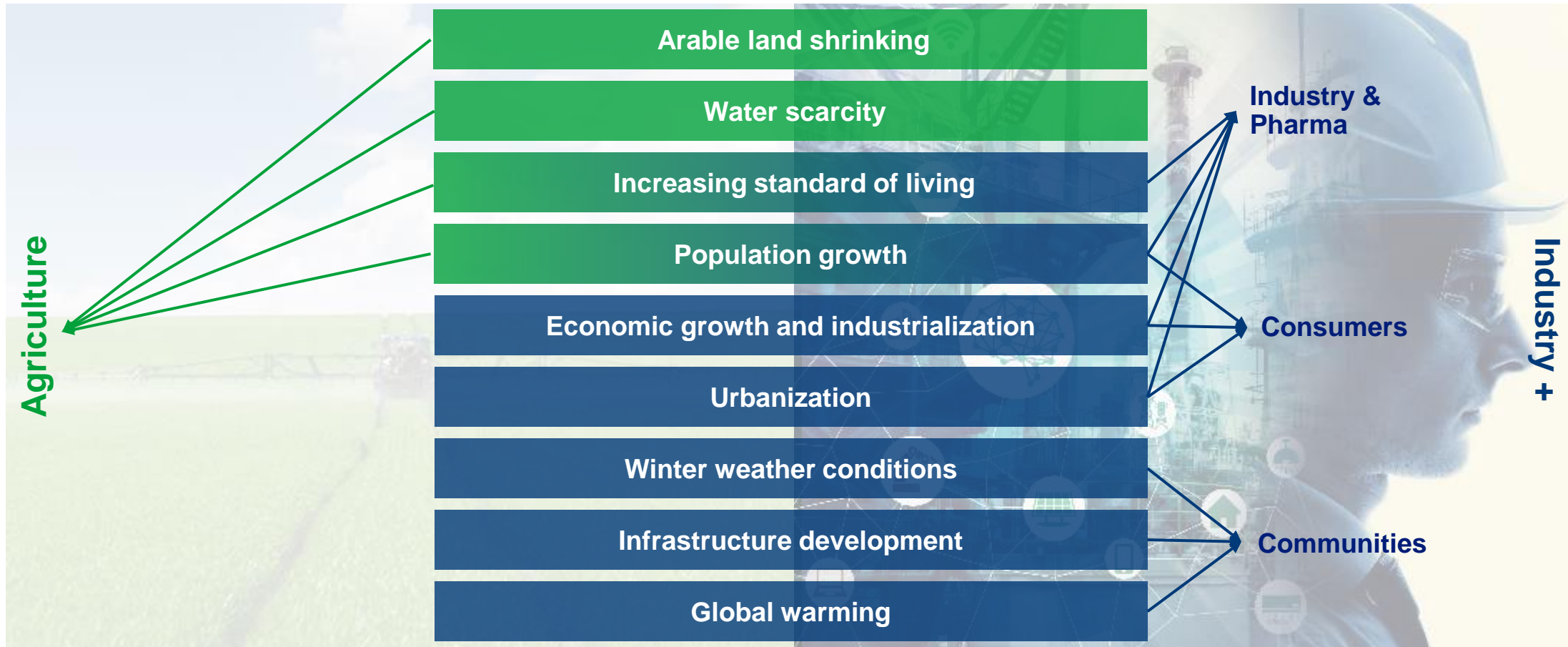


**In 2050, only roughly 25% of a soccer field will be available for a person's annual food supply – 80% of the future growth in agricultural commodity production will result from increases in yields. This is achieved through the use of balanced fertilization.**

Source: UN, World Population Prospects, 2022 Revision, UNDP, 2013; FAOStat 2014; <sup>1</sup> FAO 2014 - Forecasts based on expected increase in animal protein

# Long-term demand drivers

## Demand drivers



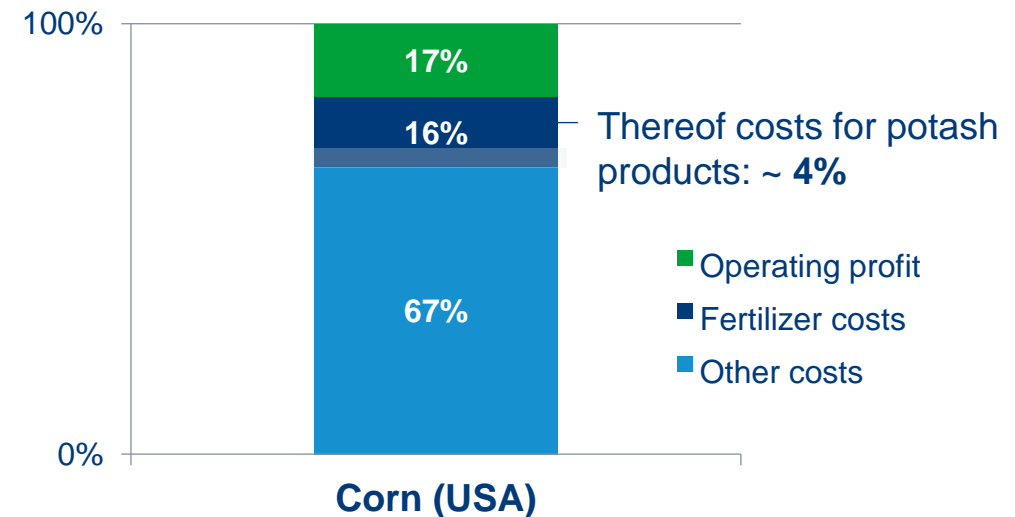
# Farmer profitability of corn (USA)

Expenditure for potash products of an agricultural farm: approx. 4% of the total cost



The earnings prospects should give the agricultural industry sufficient incentive to increase the yield per hectare by using plant nutrients.

## Profit potential in % of revenues



# Guiding principles of strategy and management focus



## Financial ambitions

- Earn cost of capital over a 5-year cycle
- At the same time, an EBITDA margin of > 20% is aimed for over this cycle
- Striven leverage (net debt/EBITDA): maximum 1.5x

# Optimize the existing

70 %

**EBITDA impact: around €30 million p.a. from 2023**

## Agriculture

- Increase of marketing in USA ex Bethune
- Increase of trading business in Middle East, China and India
- Improved leveraging of local sales network

## Industry+

- Focus on potash product groups for industrial product sales
- Capacity expansion of high-purity salts
- Optimization of de-icing salt setup

## Supply Chain

- Warehouse and network optimization for European salt logistics
- Optimization of warehousing
- Improved use of infrastructure

# Clear focus of our sites

70 %

## Bethune

- Long-term ramp-up to up to four million tonnes of capacity
- Improvement of cost position
- Increase in granulated products



## Zielitz

- Improvement of the cost position
- Optimization of maintenance
- Increase in energy efficiency
- Increase in KaliSel production capacity



## Werra

- Optimization of product mix and production volumes
- Optimization of maintenance
- Increase in energy efficiency
- Increase in granulation capacity for potassium sulphate



## Neuhof-Ellers

- Improvement of the mineral content through AI
- Increase of the granulating capacity of kieserite



➔ **EBITDA impact: around €50 million p.a. from 2023**

# Werra 2060 – Securing a sustainable future

70 %

## How do we want to achieve this?

### Innovations in extraction and production



- Unterbreizbach and Wintershall sites: Focus on wastewater-free processing methods
- Unterbreizbach mine: Expansion of secondary mining operations (drill and blast)
- Hattorf-Wintershall mine: Introduction of secondary mining (drill and blast)
- Unterbreizbach and Hattorf-Wintershall mines: Dry backfill utilization
- Hattorf plant: Continued operation unchanged for the time being

Methods already tested or in use on other sites!

### Future-oriented product portfolio



- New processing methods in Unterbreizbach and Wintershall have an energy-saving effect with CO<sub>2</sub>-reduction, and also change the product portfolio:
- Further development of specialties portfolio with unchanged production volumes
- Increase in share of round granules
- The products become more competitive under cost, sustainability, and quality criteria.

### Reduction in environmental impact



**Reduction solid residues:**  
by 8 to 7 million t eff. p.a.  
▶ avoiding tailings pile expansion  
Wintershall beginning of the 2030s

**CO<sub>2</sub> emissions reduced**  
by 190kt to 650kt p.a.;  
Reduced steam requirement: higher  
flexibility regarding the energy source




**Saline process waters reduced:**  
by 1.2 to 1.0  
million m<sup>3</sup> p.a.



# Value contribution of Werra 2060\*

70 %

	NPV drivers	Ø FCF advantage p.a. 2026-2060
Significantly higher and more stable production over time/changed product mix	+€100m	+€45m
ESG improvements <ul style="list-style-type: none"> <li>• Reduction of solid residues and thus avoiding tailings pile expansions and enabling backfill and secondary mining</li> <li>• Reduction of CO<sub>2</sub> emissions</li> <li>• Reduction of saline process waters and thus reducing remote disposal</li> </ul> 	+€425m	+€40m
Mid-term adjusted personnel requirement	+€275m	+€25m
Present value of additional capex compared to unchanged operation mode	-€275m	
<b>Total</b>	<b>&gt;~500€m</b>	<b>+~€110m</b>

\* As of November 10, 2022

# We create value for our stakeholders!

70 %

Werra 2060 increases site NPV by > €0.5 bn to > €1.5 bn\*



**Total NPV Werra site\***  
with Werra 2060 project  
**> €1.5 billion or 7.80 €/share**

\* As of November 10, 2022



Even an eternal price of ~330 \$/t (MOP Brazil) after 2026 results in NPV of more than €1 billion.



Even 50% higher initial capex would still result in NPV advantage of more than €300 million.

Sensitivities

Variation of  
MOP Brazil price  
after 2026:

+/- 10 \$/t



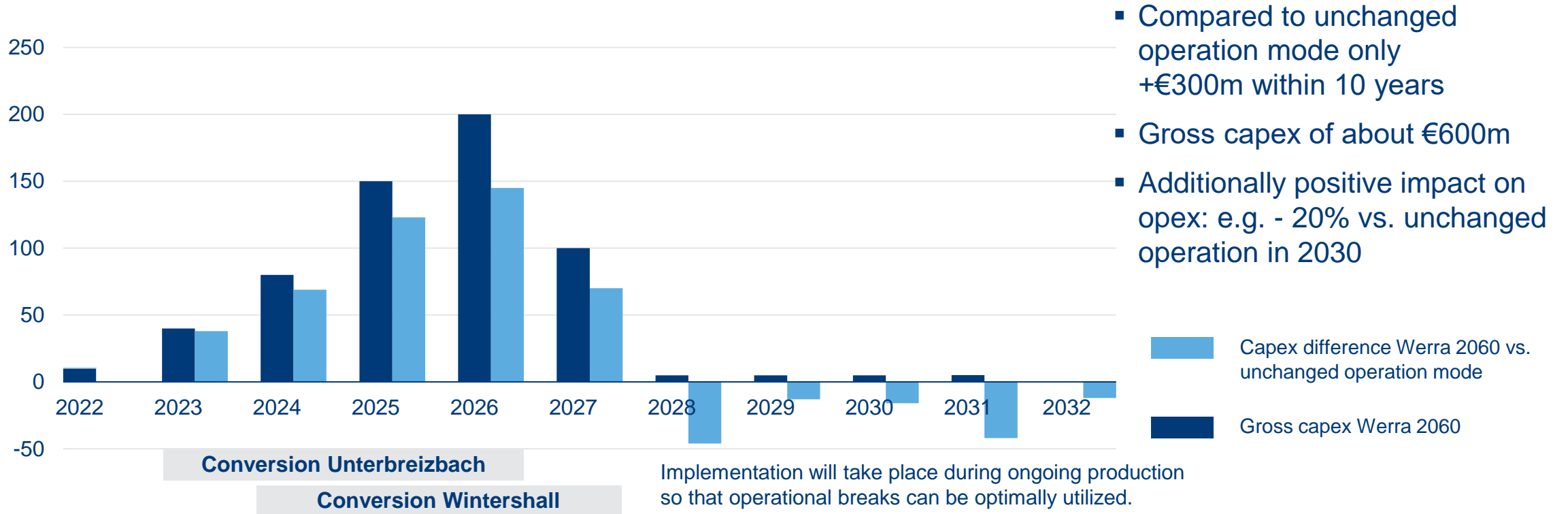
Change in NPV

+/- ~ €150 m

# Capex: Werra 2060

70 %

## Schematic course of capex



➔ Capex amortization period: < 10 years (as of today)

# Grow the core

20 %

We enable farmers to achieve greater economic success



## Expansion of the portfolio

- Fertilization
- Micronutrients
- Biostimulants
- Concepts for soil health
- Further additions to the portfolio

## Logistic access

- Circular economy
- Last Mile Distribution

## Digital sales

- Agronomic services
- Digital sales channels (e.g., web shops)
- New digital business models
- Direct access to the farmer

# New business areas

10 %

## Subsequent use of existing assets and development of new business areas

### Renewable and green energy

- Increasing use of renewable energies (wind, sun) at our sites
- Use of available space at our sites
- Research into the production and use of green hydrogen

### Carbon dioxide (CO<sub>2</sub>)

- CCS: underground storage (solid and gaseous)
- CCU: use for the production of biomass or as a raw material for basic chemicals

### Waste management and circular economy

- Underground recovery, underground storage
- Extraction of valuable minerals from waste streams (e.g., magnesia)

### Reuse of our mines

- Research into alternative uses for agriculture or as a production area for biotechnology

Mines

Caverns

Tailings piles

Land

Technical/structural  
infrastructure

Technological  
know-how

Agronomic  
know-how



# Performance Indicators

## Key Financial Performance Indicators

The Company's activities are managed based on the following key financial performance indicators, which are the most important financial performance indicators within the meaning of the German Accounting Standards (DRS) 20:

- EBITDA
- Group earnings after tax, adjusted
- Capital expenditure
- Adjusted free cash flow
- Return on capital employed (ROCE)
- Net financial liabilities (incl. financial lease liabilities)/ EBITDA
- Net debt/EBITDA

## Non-financial Performance Indicators

Performance indicators and target values in sustainability management were defined for the K+S Group in 2018. Since the 2020 financial year, we have also managed the Company using the non-financial indicators stated below. These have formed the basis for part of the long-term incentive (LTI) as a variable component of the Board of Executive Directors' as well as all LTI-entitled employees' remuneration since 2020. They are the key non-financial performance indicators within the meaning of the German Accounting Standard (DRS) 20.

- Lost Time Incident Rate (LTI rate<sup>1</sup>)
- Reduction of saline process water in Germany
- Sustainable supply chains, specified by the performance indicators "Proportion of critical suppliers aligned with the Supplier Code of Conduct of the K+S Group" and "Coverage of purchasing volume by the Supplier Code of Conduct of the K+S Group"

Other financial and non-financial performance indicators that are relevant for the K+S Group include revenues, sales volumes, average selling prices, and number of employees. However, these figures are not considered financial or non-financial key performance indicators within the meaning of German Accounting Standards (DRS) 20.

<sup>1</sup> The so-called LTI rate measures occupational accidents with lost time in relation to one million hours worked.

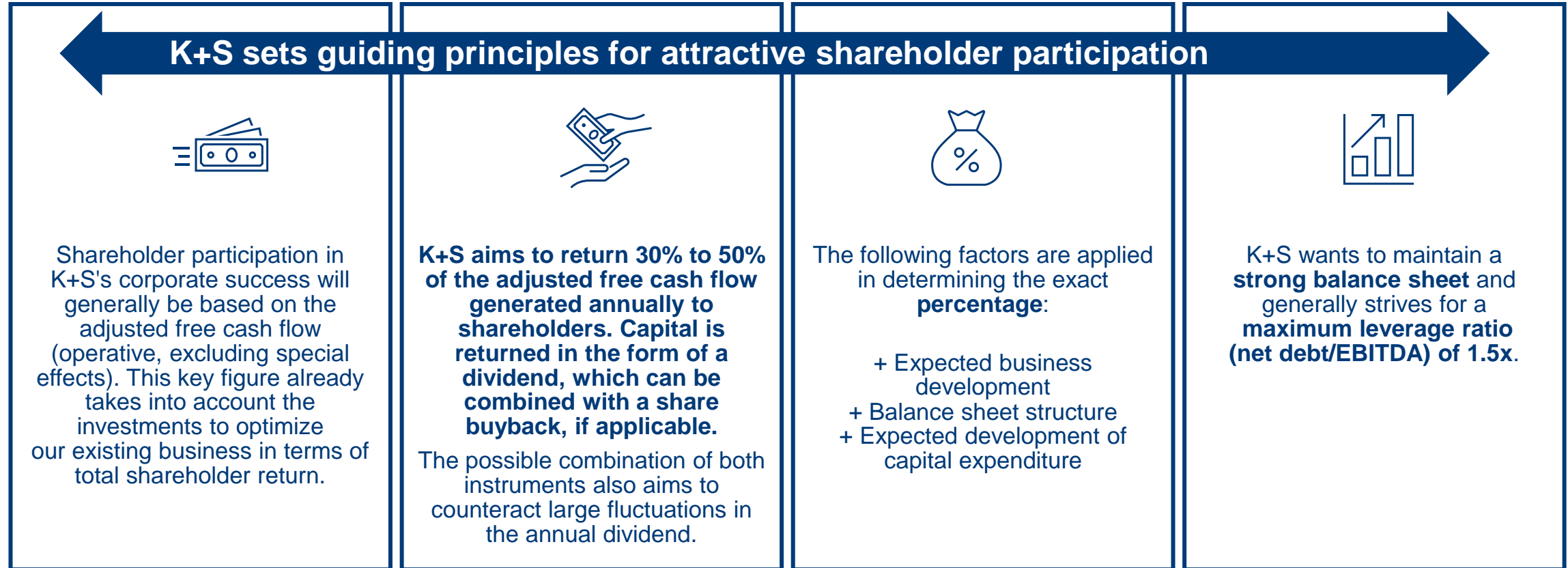
# Performance Indicators

Key Financial Performance Indicators		2018	2019	2020	2021	2022	9M/23
EBITDA	€ million	606.3	640.4	444.8	1,067.3	2,422.9	550.2
Group earnings after tax, adjusted	€ million	85.4	77.8	-1,802.5	2,182.4	1,494.0	153.1
Capital expenditure	€ million	443.2	493.2	526.0	334.3	403.8	347.2
Adjusted free cash flow	€ million	-206.3	139.7	-42.2	92.7	932.0	328.2
Return on Capital Employed (ROCE)	%	2.6	2.3	-22.8	42.9	25.7	8.3
Net financial liabilities (including financial lease liabilities)/EBITDA (LTM)	x-times	5.3	5.4	7.8	0.7	- 1	- 1
Net debt/EBITDA (LTM)	x-times	7.3	7.1	10.5	1.7	0.3	0.8

<sup>1</sup> There are no longer any net financial liabilities as of December 31, 2022.

Non-Financial Performance Indicators <sup>2</sup>		2018	2019	2020	2021	2022	
Lost Time Incident Rate	LTI rate	-	10.4	8.8	11.3	8.3	<sup>2</sup> Yearly numbers.
Saline process water in Germany	million m <sup>3</sup>	-	3.5	2.9	3.3	2.3	
Sustainable supply chains, specified by the performance indicators “Proportion of critical suppliers aligned with the Supplier Code of Conduct of the K+S Group” and “Coverage of purchasing volume by the Supplier Code of Conduct of the K+S Group”	%	-	23.2	77.4	86.6	89.6	

# Distribution policy



## Shareholder participation in the company's success

		2019	2020	2021	2022	2023
Capital repayment per no-par value share eligible for dividend payment	€	0.25	0.04	-	0.20	2.00
- thereof dividend	€	0.25	0.04	-	0.20	1.00
- thereof share buyback		-	-	-	-	1.00



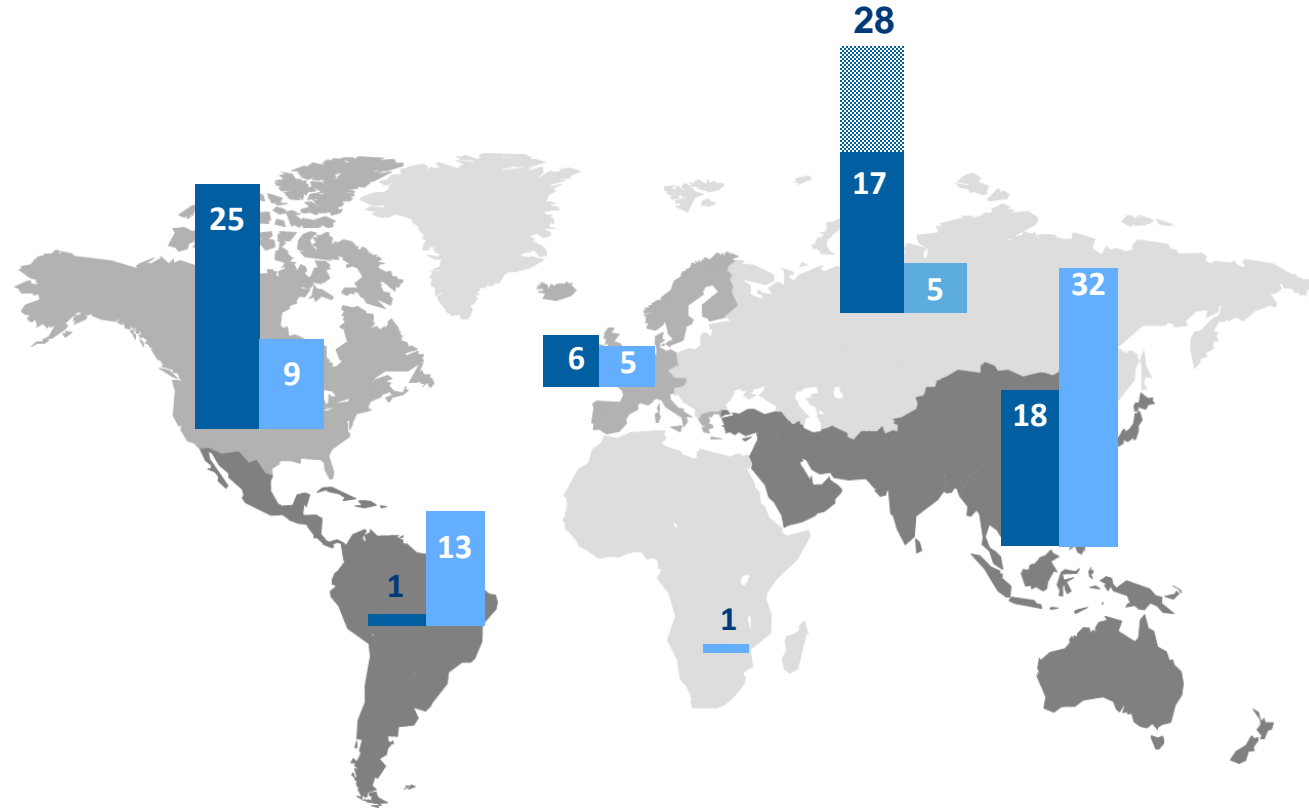
A photograph of a man carrying a young child on his back in a cornfield. The man is wearing a red shirt and a dark vest. The child is wearing a white shirt and a large straw hat. They are standing in a field of tall corn plants, looking towards the horizon where the sun is setting, creating a warm, golden glow. The sky is a mix of orange and blue. In the background, there are some distant buildings and hills.

**K+S**

## 2 | 7 Market situation

# World potash production and sales volumes by region

in million tonnes



- Even before limitation of Russian exports and sanctions against Belarus, the potash market was fully used at capacity limit.
- Until 2021, Russia's Uralkali and Belarus each accounted for approx. 16% of global potash production (28 mt in total). Most of the future capacity expansions (11 mt) would have come from these producers.
- 28% of global *wheat* exports come from Russia and Ukraine.

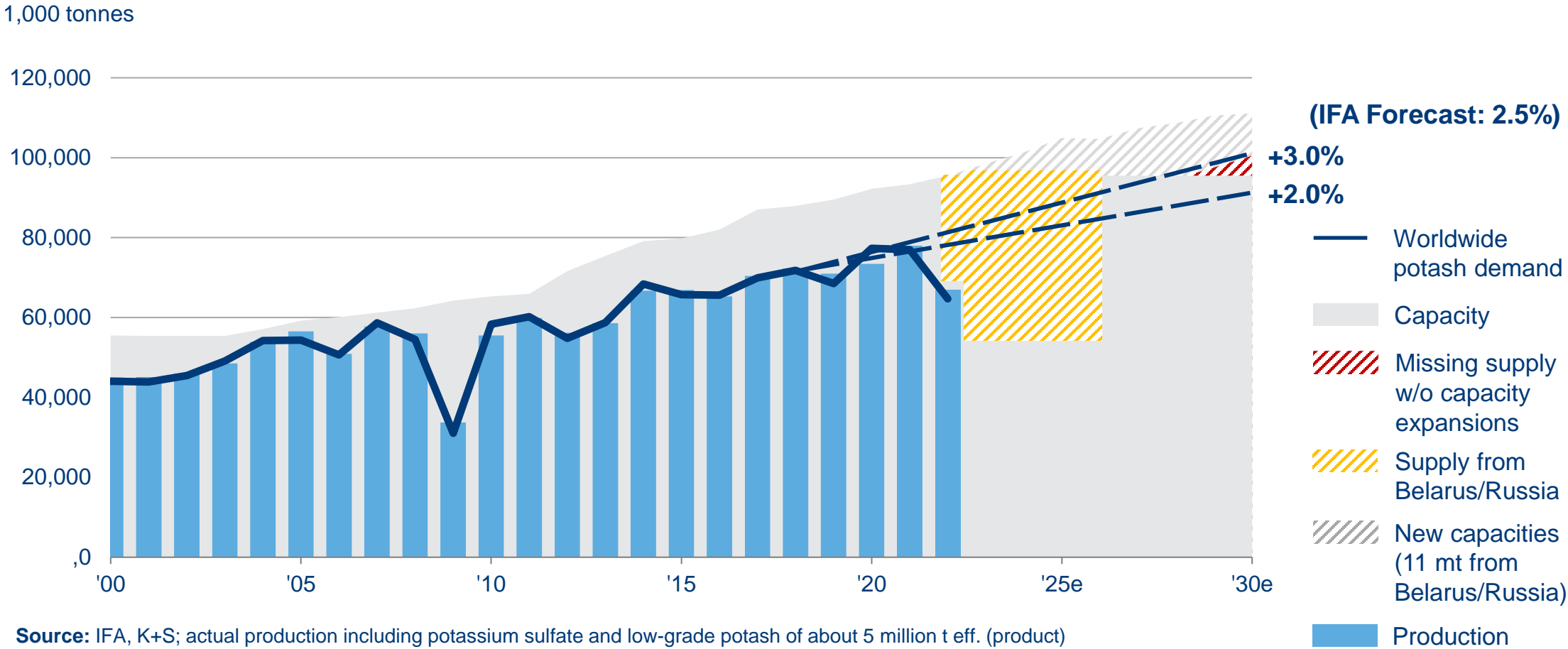
	2020	2021	2022 preliminary
World potash production	75.3 mt	77.9 mt	67.0 mt
World potash sales volume	77.3 mt	77.0 mt	64.7 mt

Sources: IFA 2022 preliminary, K+S

Basis: Year 2022 – incl. Potassium sulfate and low-grade potash

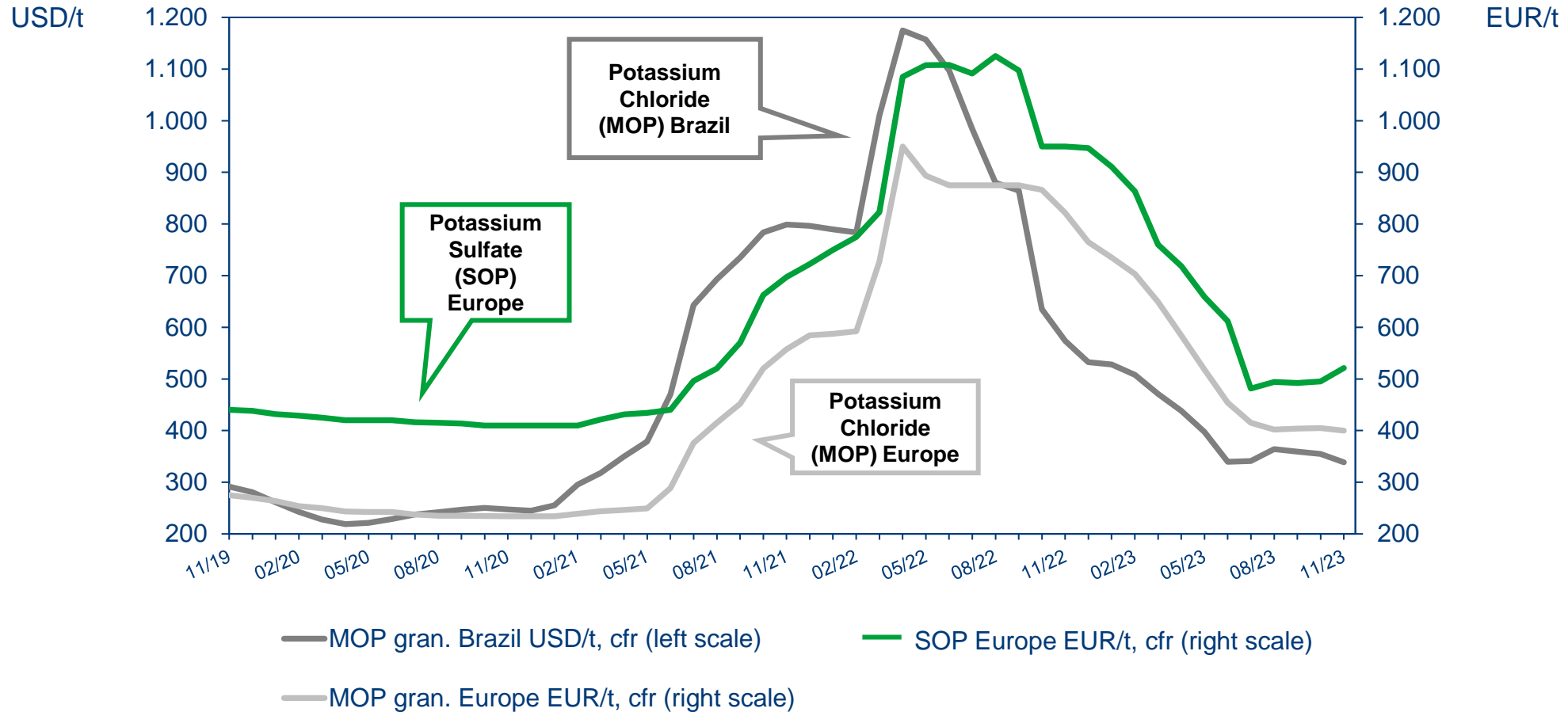
# Increasing demand for potash

## New potash capacities needed to meet rising demand



Source: IFA, K+S; actual production including potassium sulfate and low-grade potash of about 5 million t eff. (product)

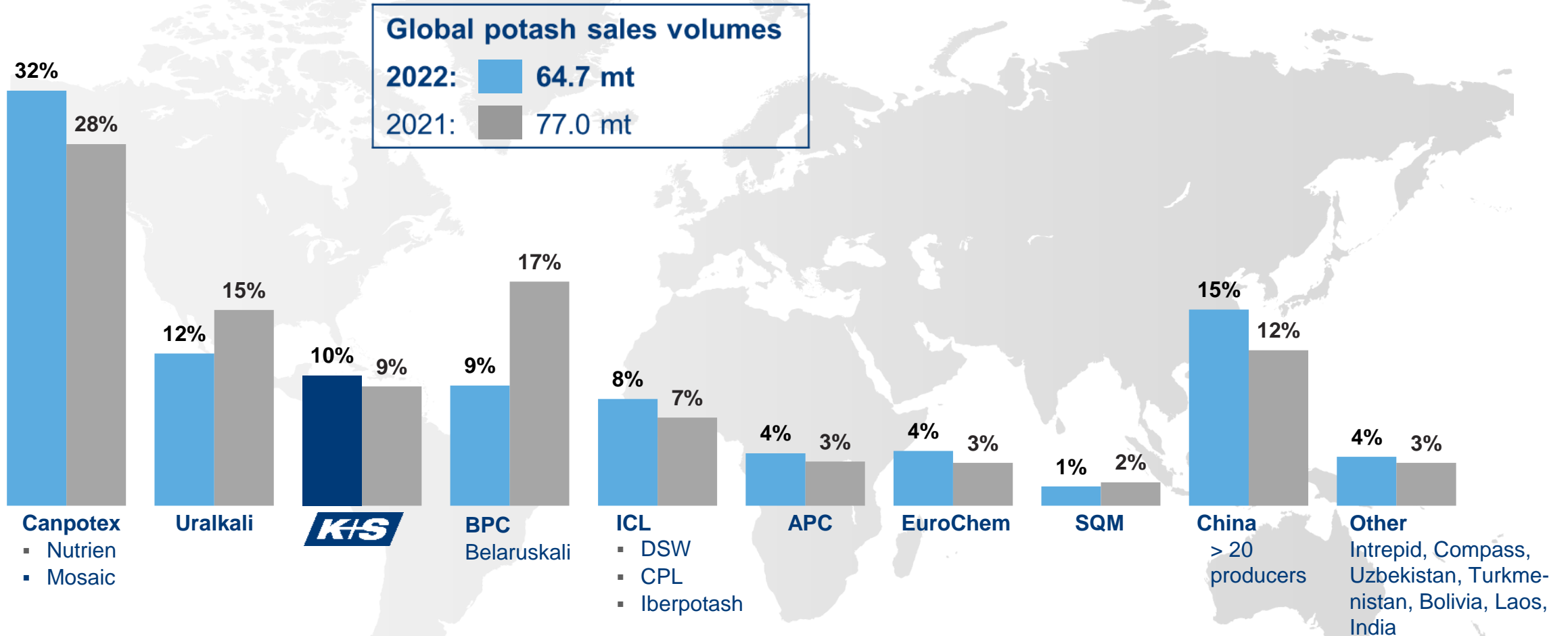
# Potash price development



Source: FMB Argus Potash

# Supplier structure on the global potash market 2022

preliminary



Source: IFA 2022 preliminary, K+S, company data

Basis: Year 2022 – incl. Potassium sulfate and low-grade potash

# Between desire and reality

## Classification of potash projects announced since 2006 (Greenfield)

### Announced projects

Various greenfield projects planned in Thailand, Laos, Russia, Kazakhstan, Uzbekistan, Belarus, Canada, USA, Brazil, and Argentina, among others. Companies involved include BHP Billiton, K+S, state-owned companies, and new, start-up companies.



### Reasons for project cancellation



### Current projects in ramp-up

**K+S** accelerates annual ramp-up at Bethune to 150,000 t (2022: good 2 million t, target: 4 million t per year). Since H1/2020, **EuroChem** has been producing potash at one of two Russian mines.

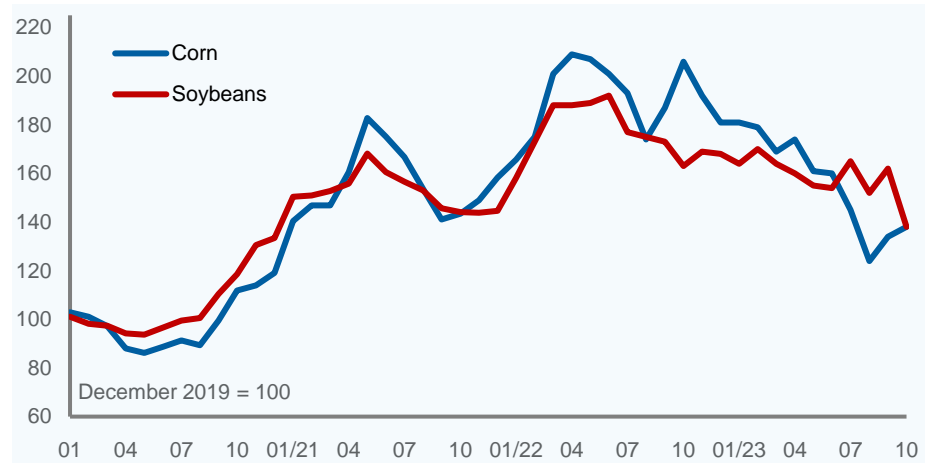


Source: World Potash Developments, Mark D. Cocker & Greta J. Orris, 2012

# Continued positive environment

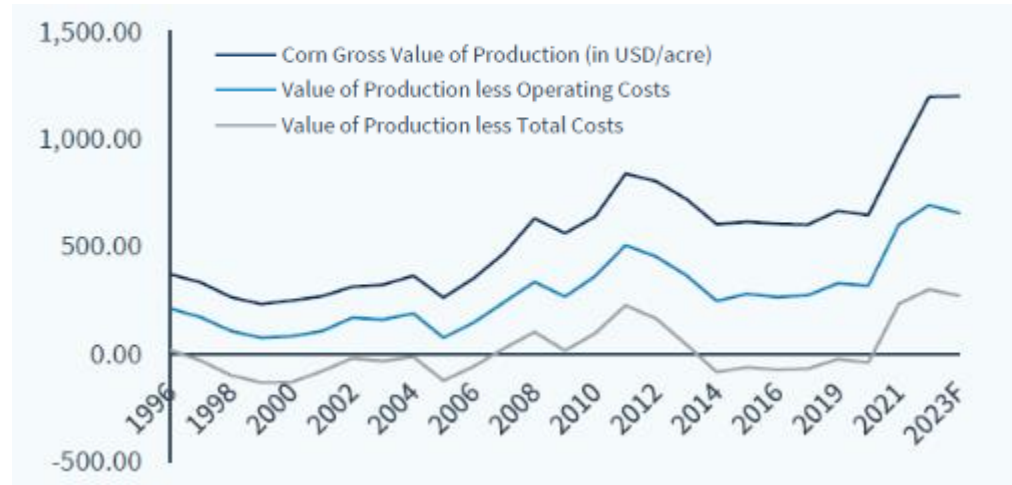
## Farmer profitability at historically high level

Price development of agricultural commodities since 01/2020



Source: Worldbank

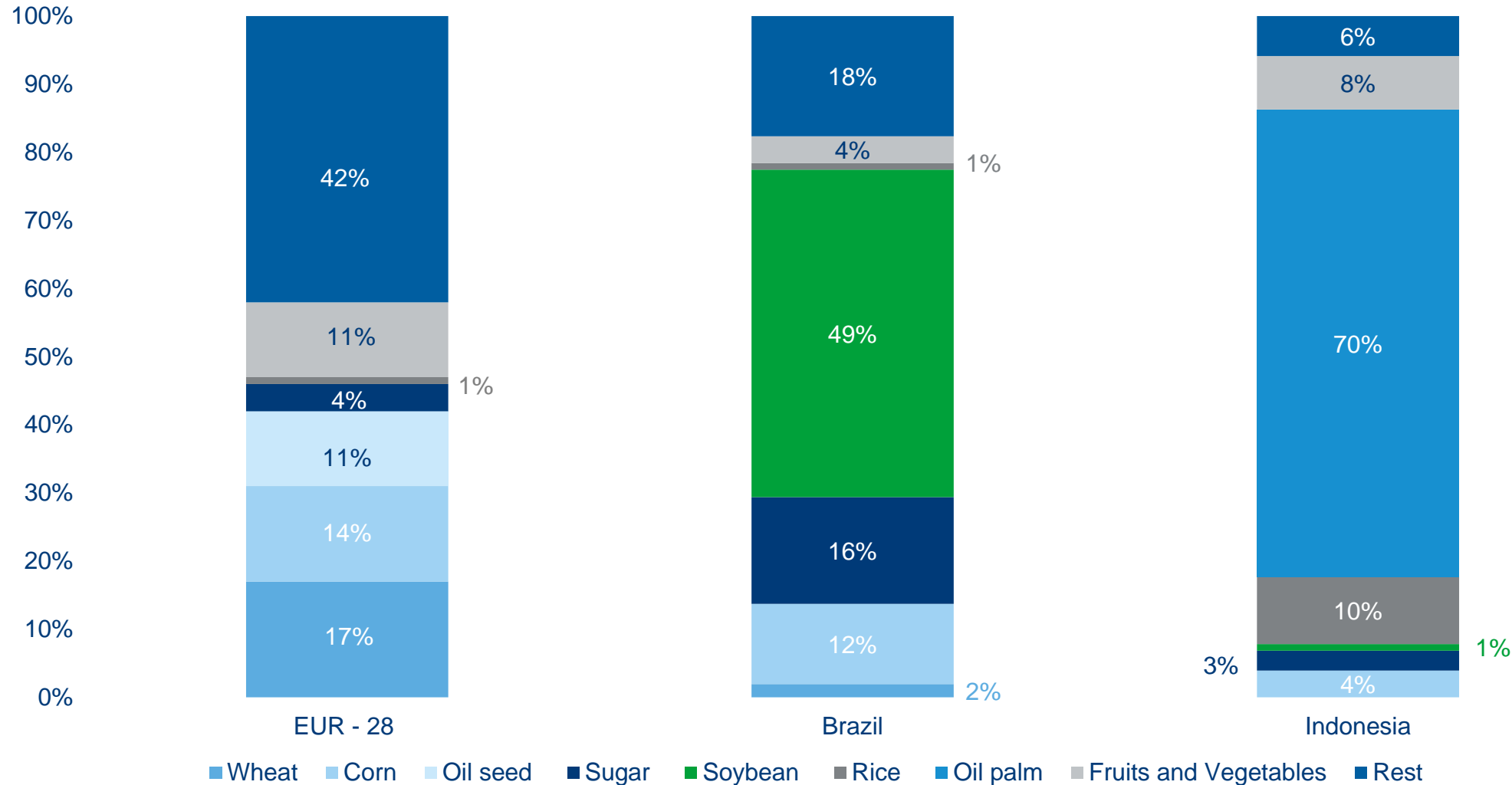
US corn farmer profitability in USD/acre since 01/1996



Source: USDA, Kepler Cheuvreux

- **Sharp increase in crop prices** significantly exceeds higher input costs; leading to **farmer profitability at all-time highs in some regions**
- **Potash costs** only account for **~5% of total input costs**

# Potassium use by crop in selected countries



Source: IFA, "Fertilizer Use by Crop" based on data from 2014, published 2017



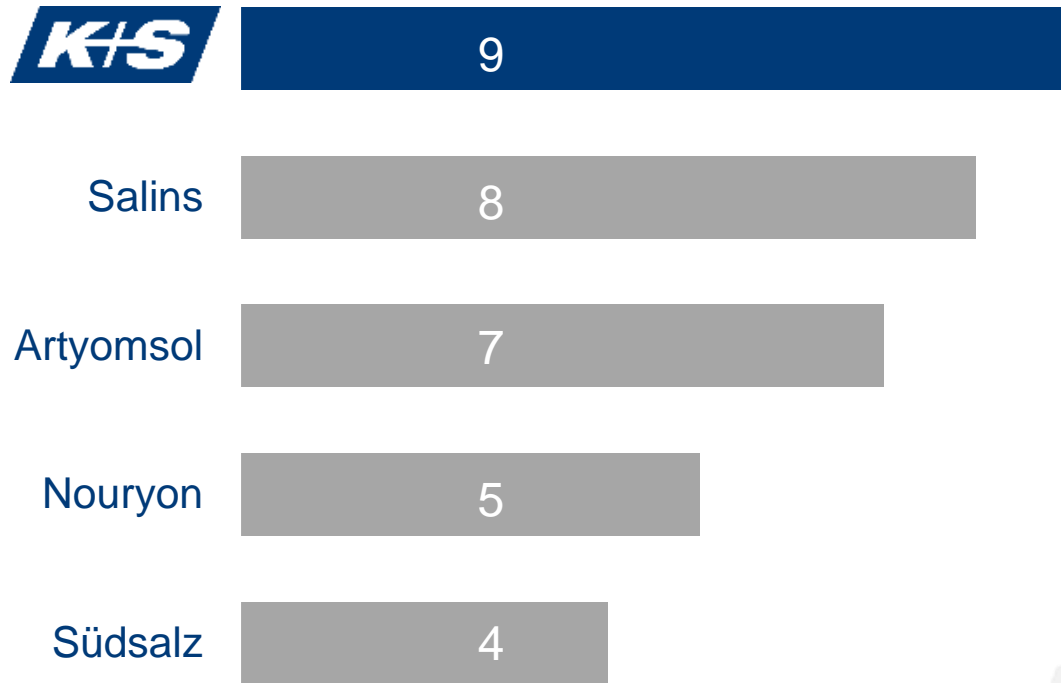
# Global potash sales volume by region

million tonnes	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Western Europe	5.6	5.8	6.2	6.0	5,9	6,2	6,2	6,0	6.2	6.5	5.0
Central Europe/FSU	5.1	4.7	4.4	4.8	4.8	5.2	5.4	5.5	5.6	6.2	5.3
Africa	0.7	0.8	1.0	1.0	1.1	1.4	1.6	1.4	1.6	1.9	1.4
North America	9.1	9.7	11.8	9.5	10.9	11.2	11.5	9.8	11.7	12.4	9.2
Latin America	10.5	11.0	11.9	11.5	12.2	12.7	13.7	13.5	15.8	17.2	13.0
Asia	23.4	26.2	32.4	32.3	30.1	32.5	32.6	31.6	35.7	32.0	30.2
- thereof China	12.0	13.8	16.7	18.5	16.2	16.2	16.3	17.8	19.5	16.3	17.2
- thereof India	2.8	3.5	4.5	4.1	4.0	5.0	4.5	4.5	5.4	3.3	2.6
Oceania	0.4	0.5	0.7	0.6	0.6	0.7	0.8	0.7	0.7	0.8	0.6
<b>World total</b>	<b>54.8</b>	<b>58.7</b>	<b>68.4</b>	<b>65.7</b>	<b>65.6</b>	<b>69.9</b>	<b>71.8</b>	<b>68.5</b>	<b>77.3</b>	<b>77.0</b>	<b>64.7</b>

Incl. potassium sulfate and low-grade potash of around 5 million tonnes eff. ; **Sources:** IFA, K+S

# Supplier structure on European salt market

Capacity in million tonnes (crystallized salt and salt in brine; excl. captive use)

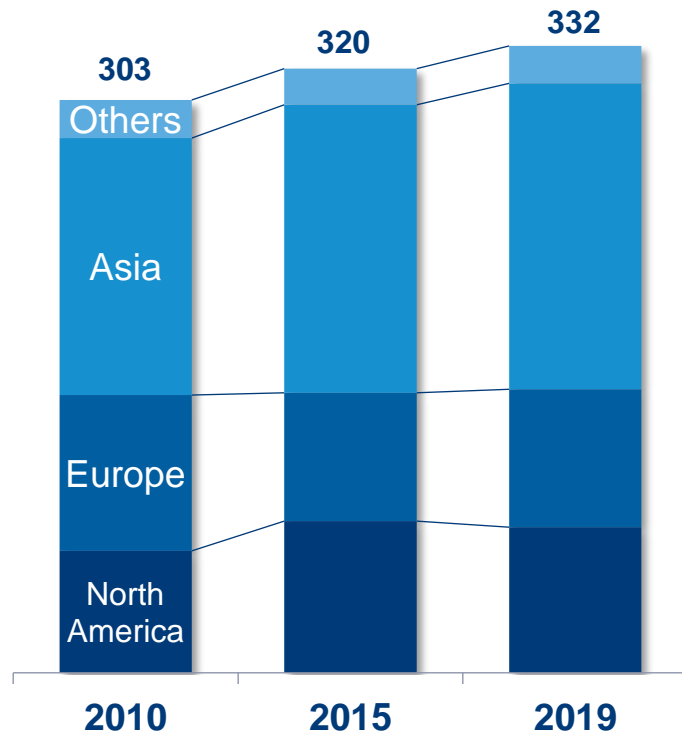


Source: Roskill, K+S

# Development of salt consumption and production

## Consumption (in million tonnes)

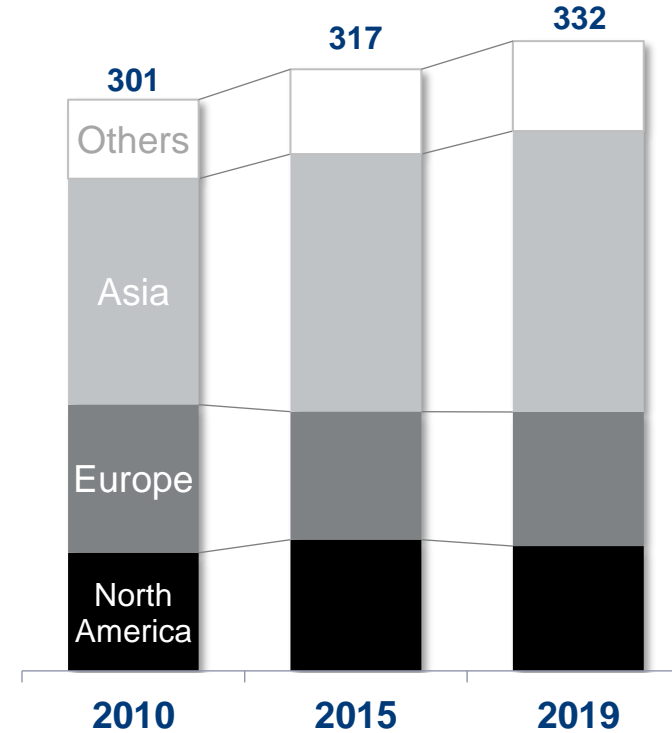
Between 2010 and 2019, global consumption increased by about 0.90% yoy to a record 332 million tonnes.



Source: K+S, Roskill

## Production (in million tonnes)

World production reached a record of more than 330 million tonnes in 2019. It increased by an average of 1% yoy between 2010 and 2019.



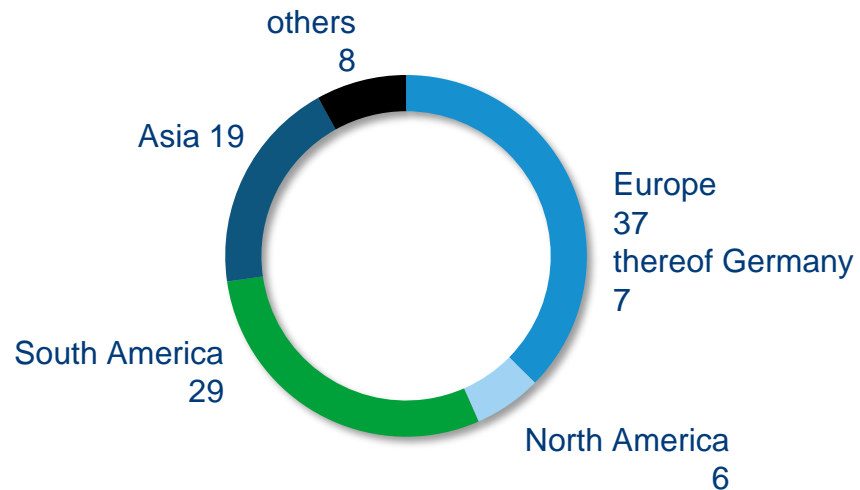


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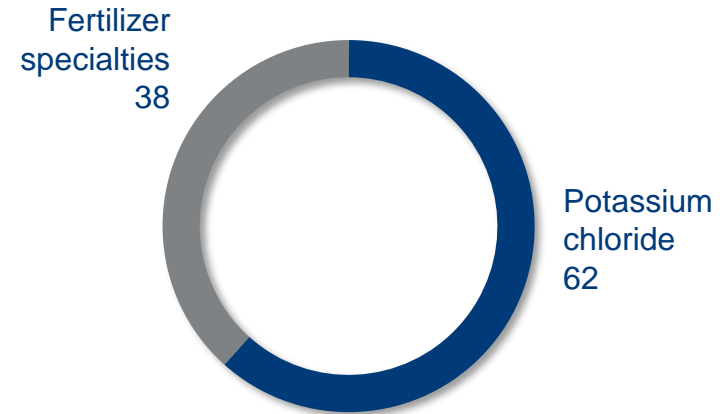
**3 | 7 Customer Segment Agriculture**

# Agriculture customer segment at a glance

## Revenue split by region 2022 (%)



## Revenue split by products Q3/2023 (%)



## Characteristics

- Close proximity to our most important customers as a logistical advantage
- Shipments to overseas customers at competitive costs from Hamburg harbour
- Solid and long-term customer relationships
- Broad specialty portfolio provides flexibility and stability, partly following different trends and seasons

in € million	Q3/2022	Q3/2023
Revenues	1,162.8	620.7
Sales volumes (million tonnes)	1.56	1.87

# Our ingredients of natural origin

## Soil fertilizer



- Korn-KALI®** ✓ Our all-rounder - for your most different applications
- Korn-KALI<sup>+B</sup>®** ✓ Our all-rounder - for you also now with boron
- Roll-KALI** ✓ Our all-rounder - for you also now with boron
- KALIMOP** ✓ Our potassium chloride - your first choice
- Magnesia-Kainit®** ✓ Our specialist for your healthy forage production
- KALISOP®** ✓ Our top quality - for your specialty crops
- KALISOP<sup>PREMIUM</sup>®** ✓ Our rolled granulate for wide, precisely distributed application
- PatentKALI®** ✓ Our formula for success - for the highest quality for your crops
- ESTA® Kieserit** ✓ Our highly concentrated - magnesium sulfur power for plants

## Foliar and liquid fertilizer



- epsoTOP®** ✓ The basic ingredient for foliar fertilization
- epsoMICROTOP®** ✓ Our specialist for root and leaf crops
- epsoCOMBITOP®** ✓ Our specialist for health and quality
- epsoBORTOP®** ✓ Our specialist for rapeseed and sugar beet
- epsoPROFITOP®** ✓ Our specialist for all your cereals
- soluMOP®** ✓ Our frost professional - for your winter yield security
- soluSOP<sup>52</sup> ORGANIC** ✓ Our perfect source - potassium and sulfur for your crops

Further information on our products:

[www.kpluss.com/fertilizer](http://www.kpluss.com/fertilizer)



# 4 | 7 Customer Segment Industry+

**K+S**

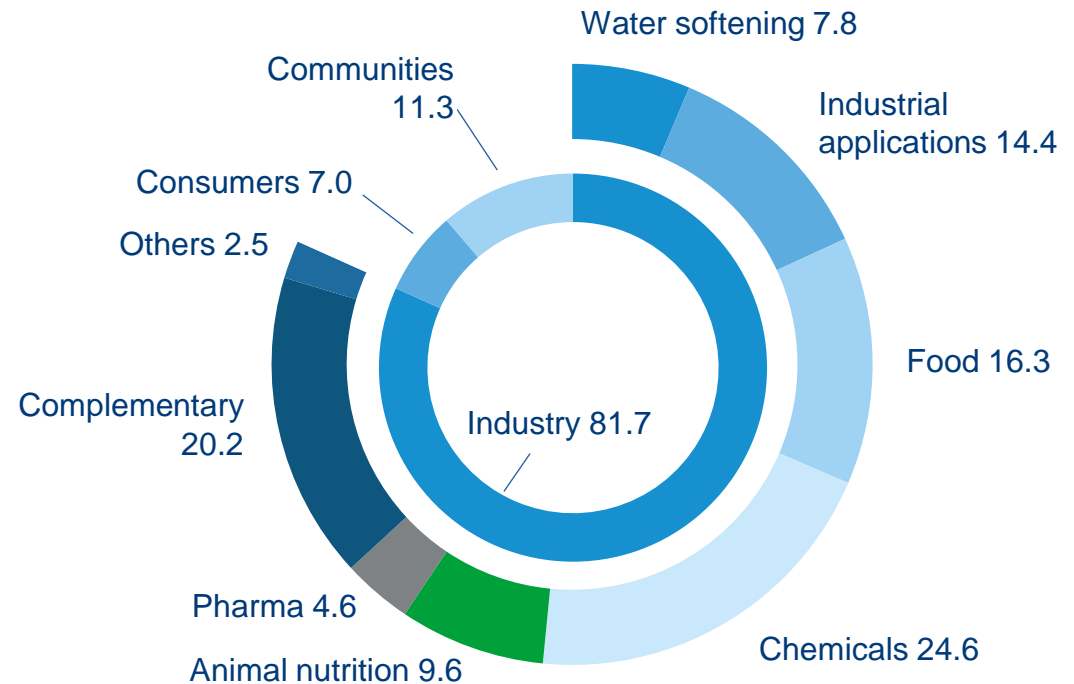


# Industry+ customer segment at a glance

## Characteristics

- Emerging markets: Growth, especially in Asia, leads to increasing demand for electrolysis.
- Electrolysis and specialties: Focus on product quality, service and proximity to the customer.
- Pharma: High quality standard, certified, innovative, and overarching customer focus as well as reliability.
- Consumers: Strong brands in table salt, water softening salt, pool salts, and de-icing salt.
- Communities: Public road construction authorities, winter road clearance service providers and large commercial users procure de-icing salt from K+S largely through public tenders.

## Revenue split by products 9M/2023 (%)



€ million	Q3/2022	Q3/2023
Revenues	307.1	260.1
Sales volume (mt)	1.68	1.55
- thereof: de-icing	0.48	0.44



# Main areas of application

## Chemical

- Chlor-Alkali-processes (PVC)
- Polycarbonates and MDI (isocyanate) (plastics, synthetic resin)
- Synthetic Soda ash (glass)



## Food processing

- Food processing industry
- Baking industry
- Condiment and preservative agent
- Preserving of fish



## Pharma

- Infusions, dialysis solutions
- Pharmaceuticals



## Oil and Gas

- Drilling fluids



## Animal nutrition

- Animal feed
- Lick blocks



## Water softening

- Water softening
- Water treatment



## Complementary

- Waste management and recycling
- Granulation of Catsan® for Mars GmbH
- CFK (Trading)



## Others

- Dyeing works
- Leather treatment



The K+S logo is positioned in the top right corner of the image. It consists of the letters 'K+S' in a bold, white, sans-serif font, set against a dark blue, trapezoidal background that is part of a larger blue graphic element on the right side of the page.The text '5 | 7 Production' is located in the bottom left corner of the image. It is written in a bold, dark blue, sans-serif font. The background of this text is a photograph of an industrial facility, showing a large white cylindrical tank on the left, a metal walkway with railings in the center, and a large white archway in the background. Three workers in high-visibility yellow jackets and hard hats are standing on the walkway, looking towards the archway.

# Adding value along our entire supply chain

## Exploration



Our potash and salt deposits came into being millions of years ago. They are either our property or we have corresponding rights or approvals that allow the extraction or solution mining of the raw material reserves.

## Mining



We extract raw materials in conventional mining below ground as well as through solution mining. We also use the power of the sun and extract salt by evaporating sea water or saline water.

## Production



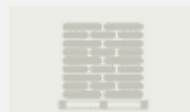
The refining of raw materials is one of our core competencies. Above ground, the crude salt is processed in complex, multi-phase, mechanical, or physical processes, with the natural properties of the mineral remaining unchanged.

## Logistics



The long-term securing of freight capacity is of strategic importance to us. A large part of our international transportation volume is forwarded by service providers with which we maintain long-standing partnerships.

## Sales/ Marketing



The K+S Group wants to be the preferred partner of its customers in the market. High product quality and reliability are crucial prerequisites for this. K+S offers a comprehensive range of services for agriculture, industry, and private consumers.

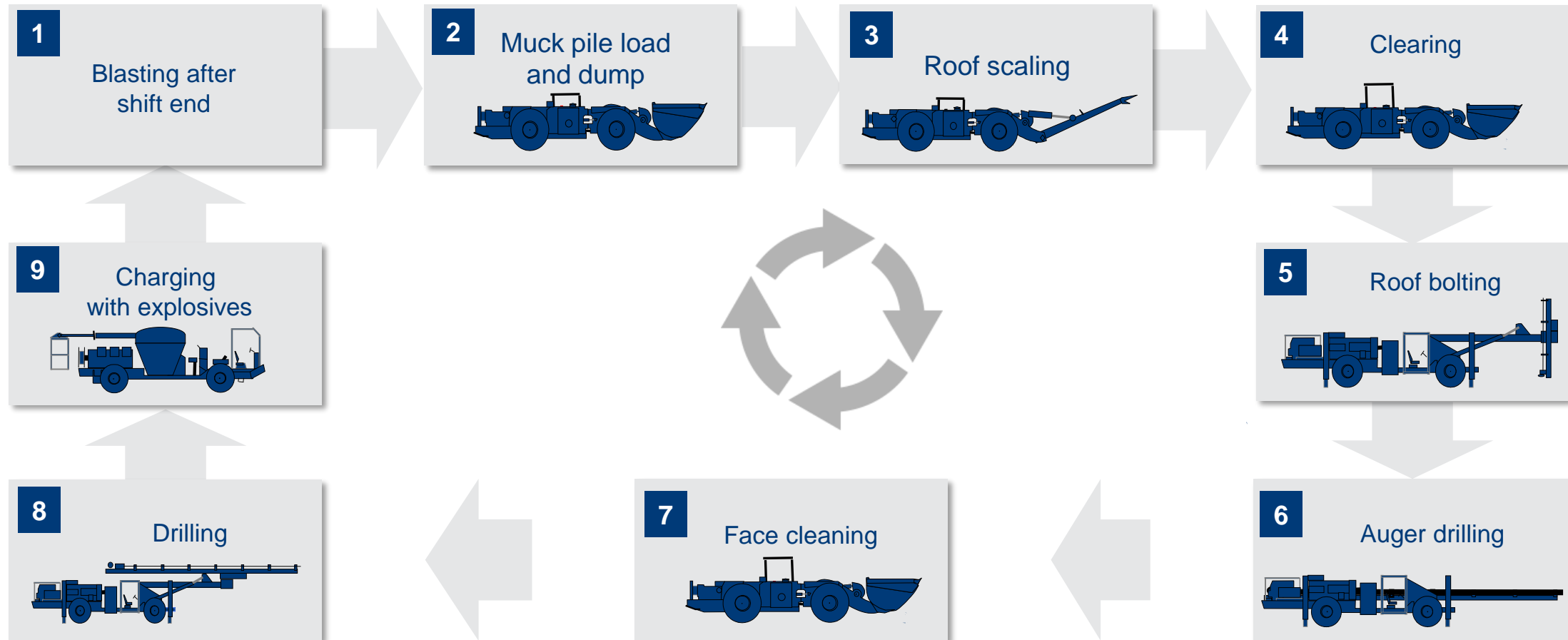
## Application



Our customers apply our products, use our raw materials in their processes or process them in their products. We make extensive product information available and advise our customers on the application of our products.

# Underground mining production cycle

## Conventional mining



# Main production methods

## Rock salt

Conventional mining



## Sea/solar salt

Crystallization of sea water



## Evaporated salt

Recrystallization of purified brine



## Brine

Controlled solution mining



- Around 60% of worldwide salt production (more than 290 million tonnes including brine) is obtained from rock salt mining and solution mining.
- Approximately 40% of production is obtained from seawater and salt lakes.<sup>1</sup>

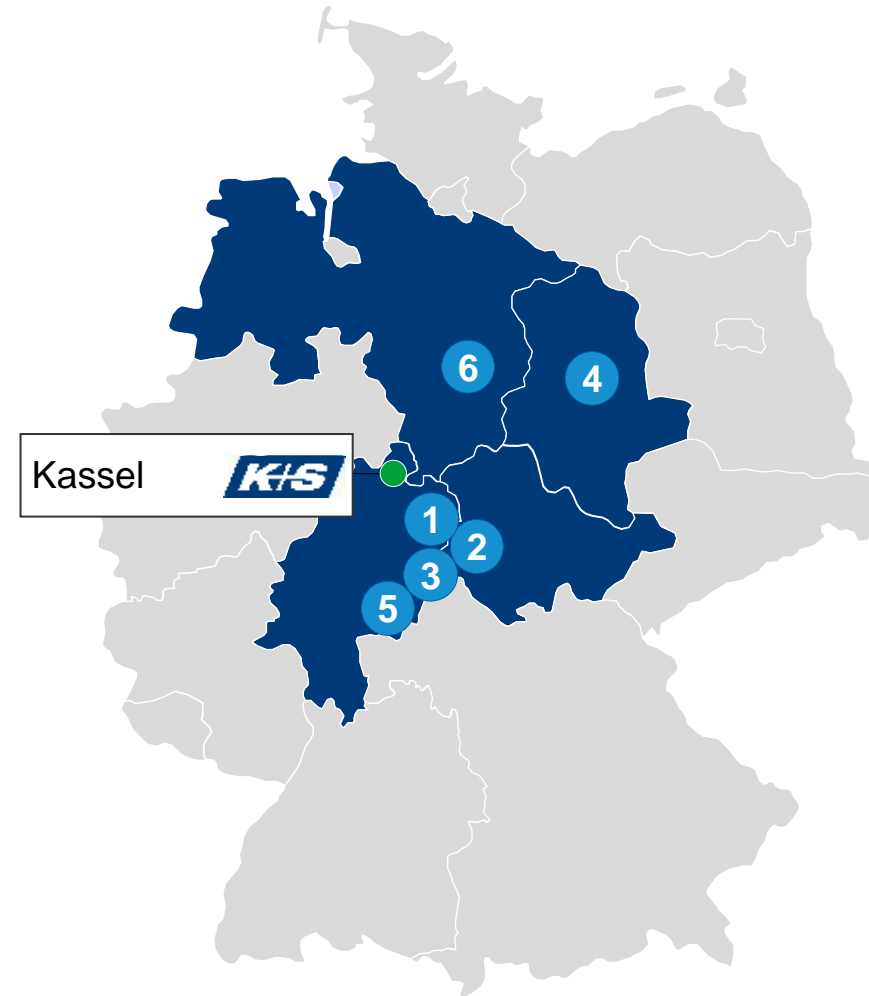
Salt is produced in almost every country in the world. Due to the high share of transportation costs in production costs, markets are generally regionally limited to the area around the production sites.

<sup>1</sup> Roskill Information Services Ltd., 2020

# Potash sites in Germany

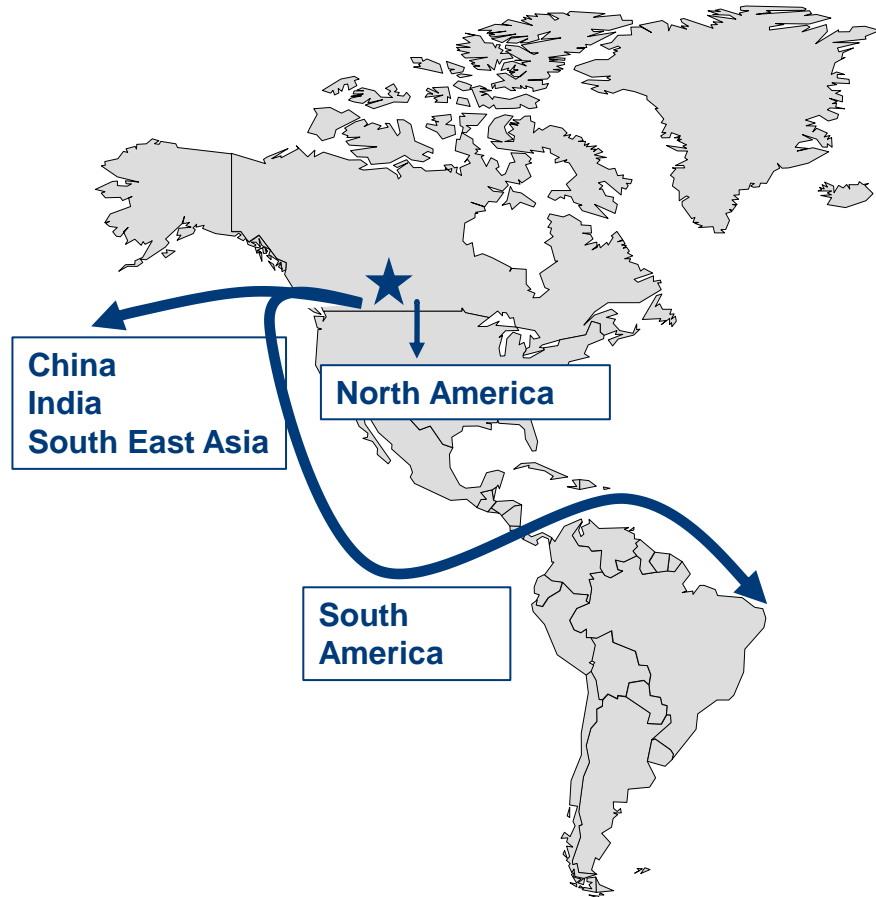
Share of annual production capacity (in %)

- |                         |                            |      |
|-------------------------|----------------------------|------|
| 1. Wintershall          | } <b>Verbundwerk Werra</b> | ~ 50 |
| 2. Unterbreizbach       |                            |      |
| 3. Hattorf              |                            |      |
| 4. Zielitz              |                            | ~ 25 |
| 5. Neuhof-Ellers        |                            | ~ 20 |
| 6. Bergmannsseggen-Hugo |                            | ~ 5  |
- (production site, no mining)



# K+S in Canada: Bethune

## Strengthening our global presence



- Expanding our current production portfolio in Germany with a North American production site  
→ **Only supplier with production on two continents**
- Securing a **good asset base with competitive production costs**
- Sales and distribution through **existing distribution structures** of the K+S Group
- **Regional growth projects** in China and Southeast Asia
- **Flexible multi-product strategy**

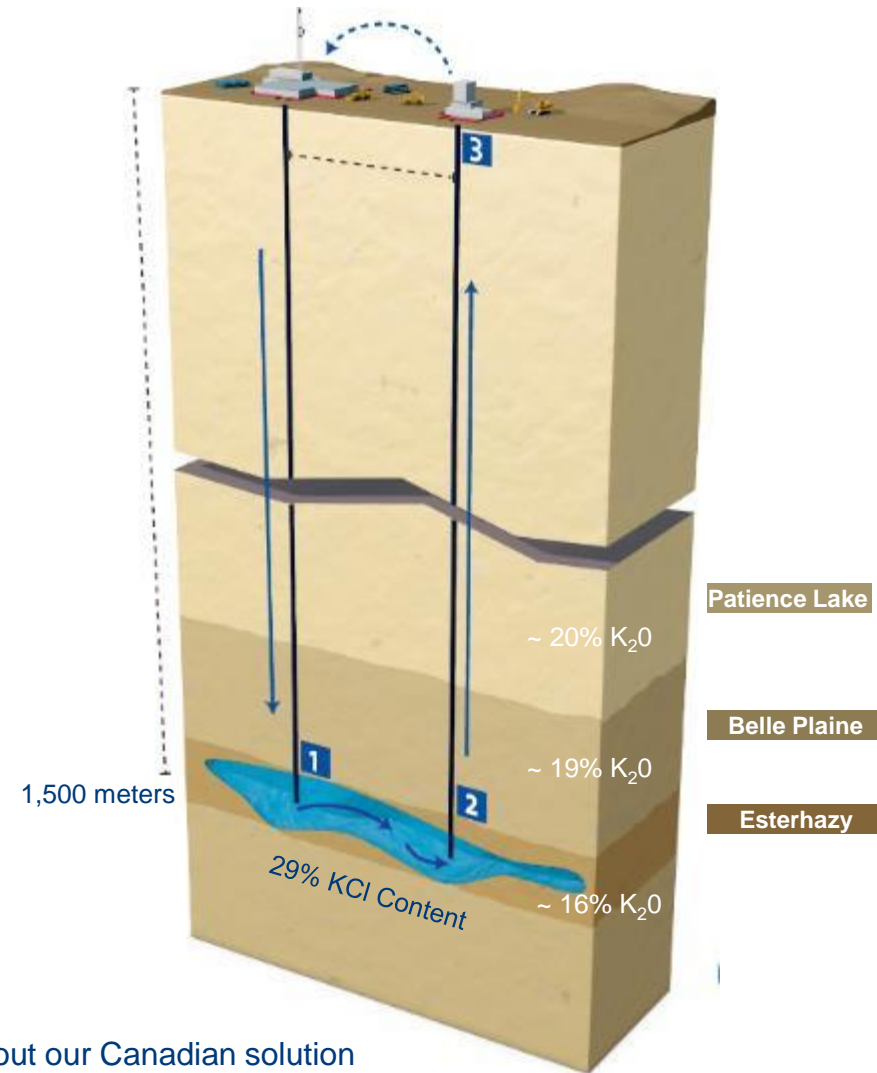
# Bethune – Solution Mining

## Procedure (Primary Mining)

Mining technique	Solution Mining
Depth	1,500 meters
Thickness	33 meters
K <sub>2</sub> O / KCl Content	18% / 29%

- 1 In solution mining, freshwater is brought into solvent (salt) rock through a drill hole, therefore creating chambers, or caverns, filled with a water-salt solution.
- 2 In a subsequent step, the saturated brine is brought to the surface through an additional pipeline.
- 3 This brine is then evaporated in the factory and processed into potash products. The water obtained during evaporation is recirculated back into the caverns.

 Environmental impact statement approved for up to 4 million t KCl p.a.



A film about our Canadian solution mining can be found [here.](#)





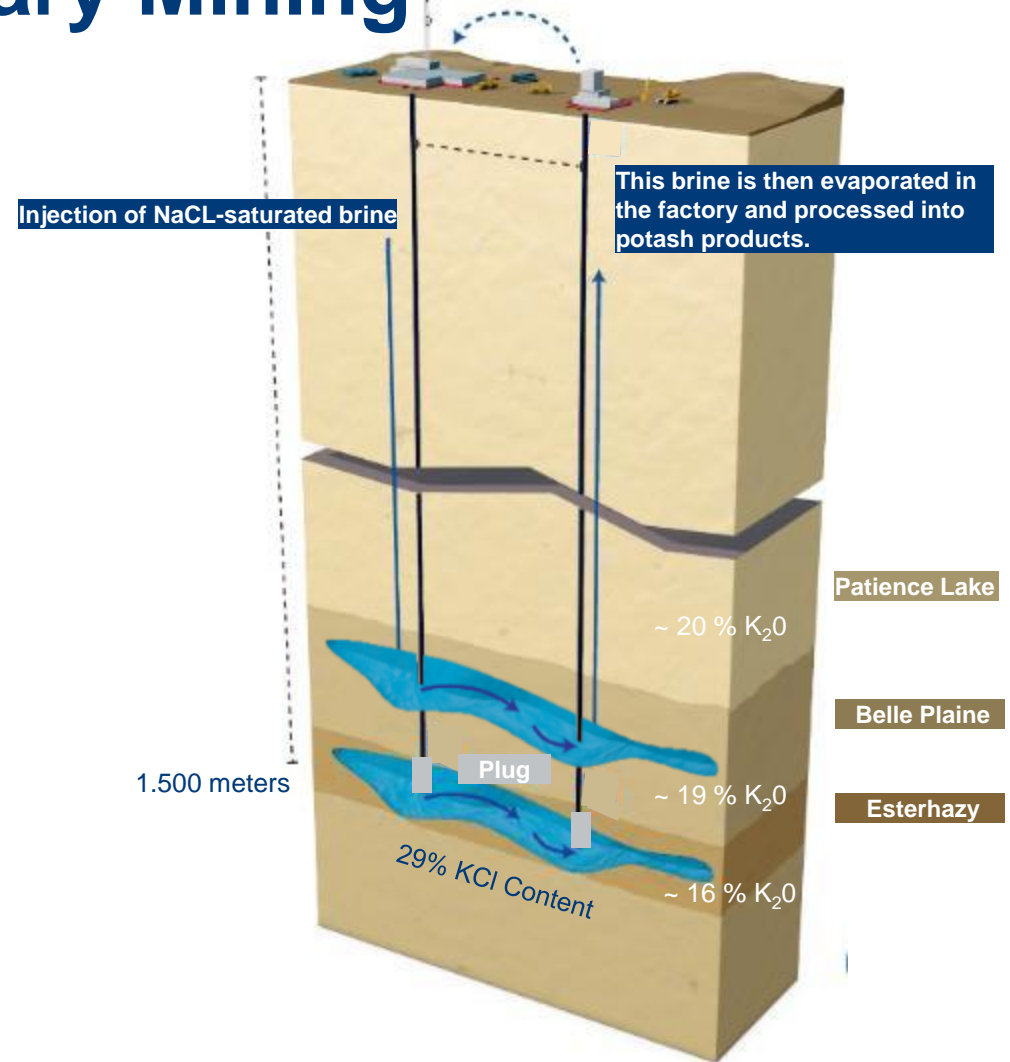
# Bethune – Primary vs. Secondary Mining

## Secondary Mining

Secondary mining uses exclusively saturated NaCl solution to selectively dissolve residual KCl from existing caverns.

## Advantages (in comparison to primary mining)

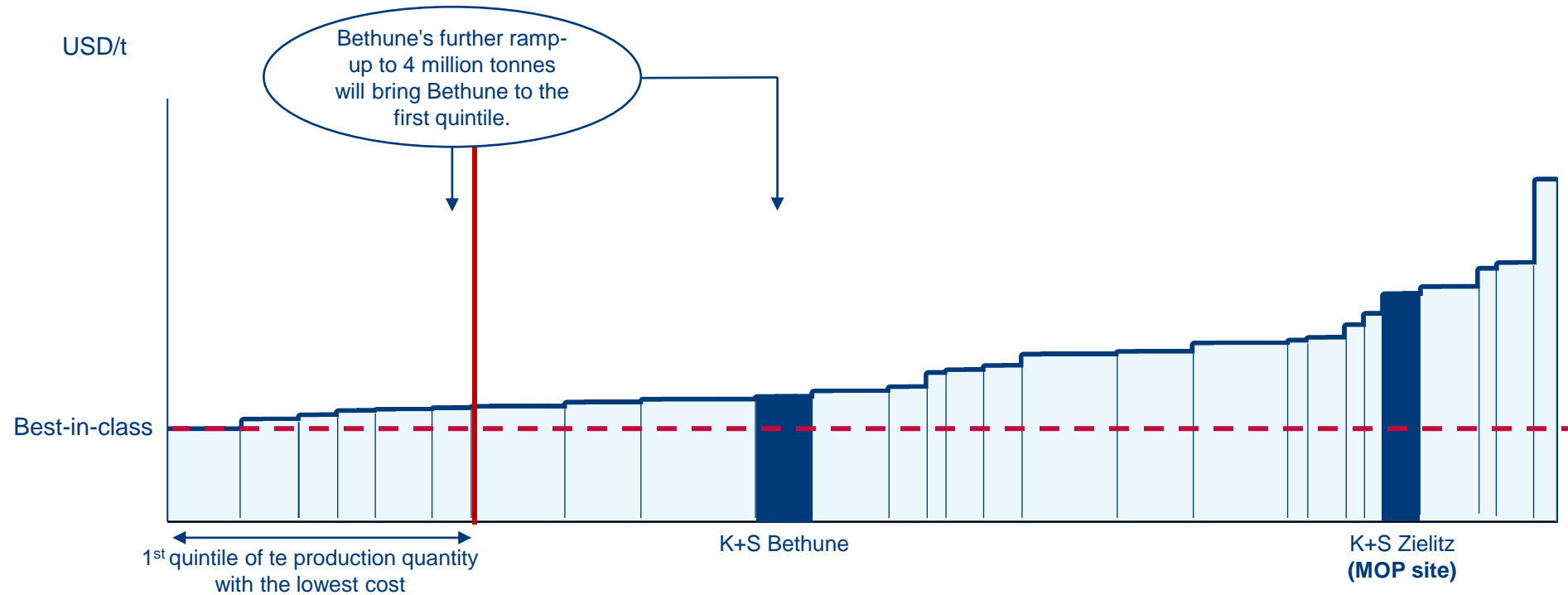
- Less energy-intensive (e.g., the solution is heated by residual heat from the evaporators and KCl crystallizes by natural cooling in outdoor ponds)
- Significantly more water-efficient
- Reduces salt to be piled up to by 30%



➔ The production costs for NaCl solution mining are 50% of the production costs of primary mining.

# Site costs (at mine gate) in comparison

Ramp-up of Bethune as well as measures to optimize the portfolio business



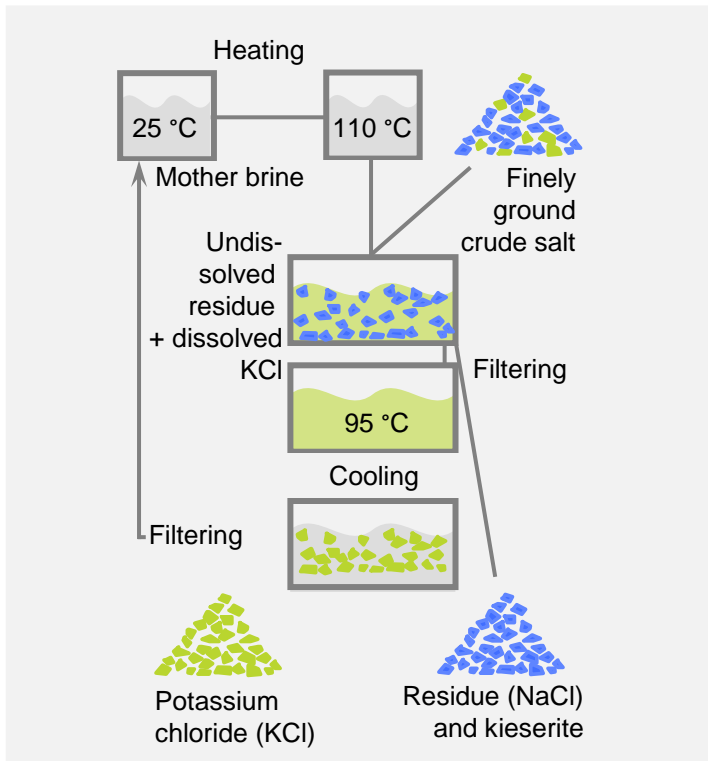
Source: S&P Global, Fertecon, July 2023

Column width = Production capacity in million tonnes

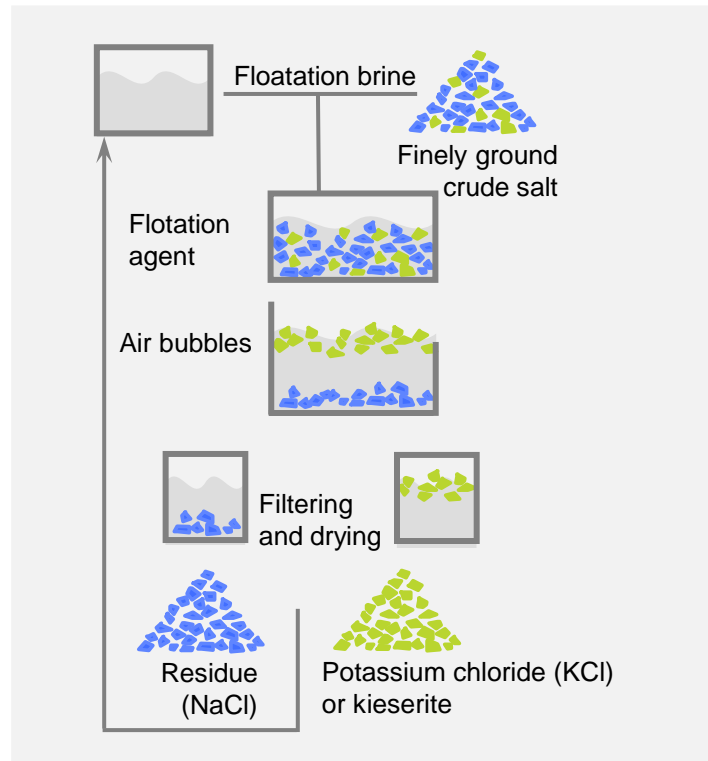
➔ Increasing improvement in cash costs and competitive position

# Potash processing above ground

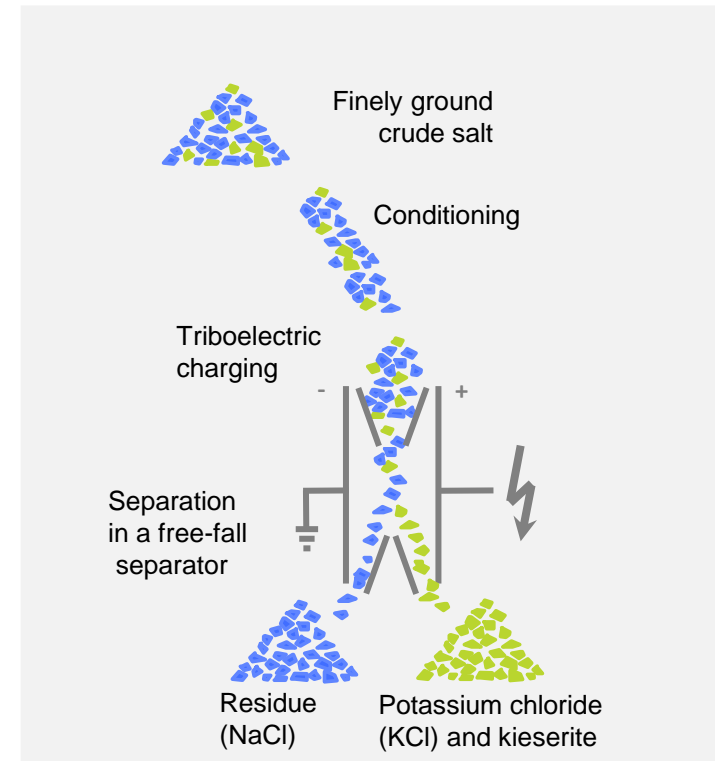
## Thermal dissolution



## Flotation

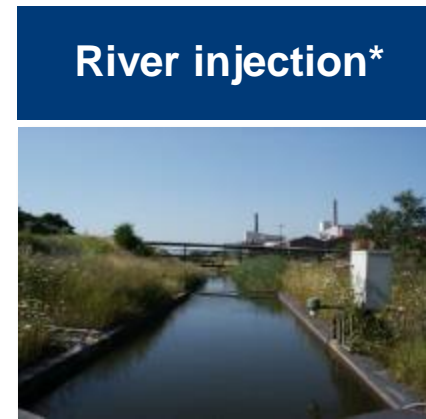
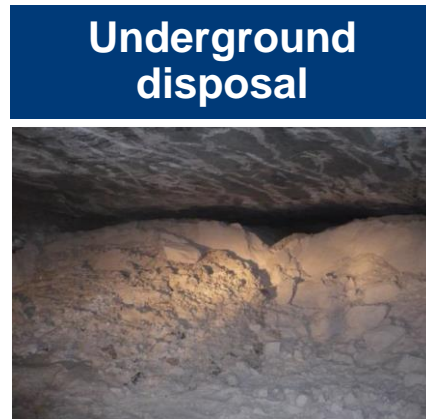


## Electrostatic separation (ESTA®)



# Potash production: management of residues

- Crude salt has only a limited recyclable content (max. 30%), therefore the generation of residues is inevitable. All potash producers worldwide face this challenge.
- The recycling of partial volumes is performed at all producers.
- The methods, processes, and equipment for the construction of tailings piles from solid residues are **scientifically justified, tried and tested in practice**. These ways of disposal – depending on the corresponding site – are used also in combination. They currently represent the **best available technique**. Solid or liquid residues are disposed of worldwide in the following ways:



Ø Share\*\* of residue disposed by this method in the Hessian-Thuringian potash district in 2022:

~84%

~7.5%

~5%

~3.5%

\* With low river water levels in the Werra, there are possibilities for K+S in the Hessian-Thuringian potash district to temporarily store liquid residues in water basins or suitable mine spaces on site or temporary ways of disposal by flooding decommissioned mines or gas caverns in Lower Saxony or Saxony-Anhalt.

\*\* Percentage by mass of salt

# Green investments = long-term planning security

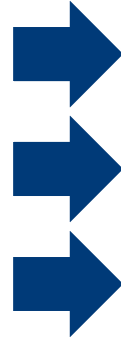
## Tailings piles extensions



Hattorf

Wintershall

Zielitz



- Approval of Hattorf tailings pile expansion (phase 3) in mid-2025 and investments required
- Next approval and significant investments in tailings pile extensions will not be necessary again until the end of the 2020s

## Liquid residues



Werra



- Deep-well injection ended 2021
- Future: Permanent storage underground (subject to approval)
- From 2028: Higher utilization of underground storage through further treatment of saline water
- Injection from 2028: only less concentrated tailings pile waters and no process waters

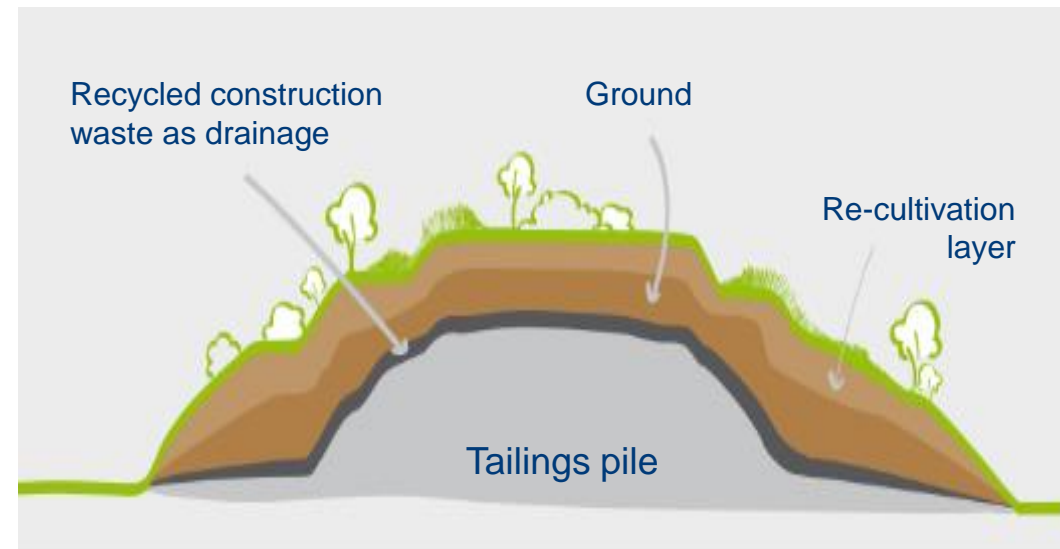
# Tailings pile coverage and greening

## Our objectives

- From 2030 onwards, K+S will be able to use three million tonnes of residue annually for purposes other than rearming.
- By 2030, we want to cover a further 155 hectares of tailings pile area and thus further reduce or avoid the accumulation of tailings pile water.

## The procedure

- Soil and construction rubble are installed in several layers on the stockpile in a precisely defined process.
- Formation of a cover, the upper layer of which is permanently greened.



# Tailings pile and process water at the Werra site

## Development of saline wastewater

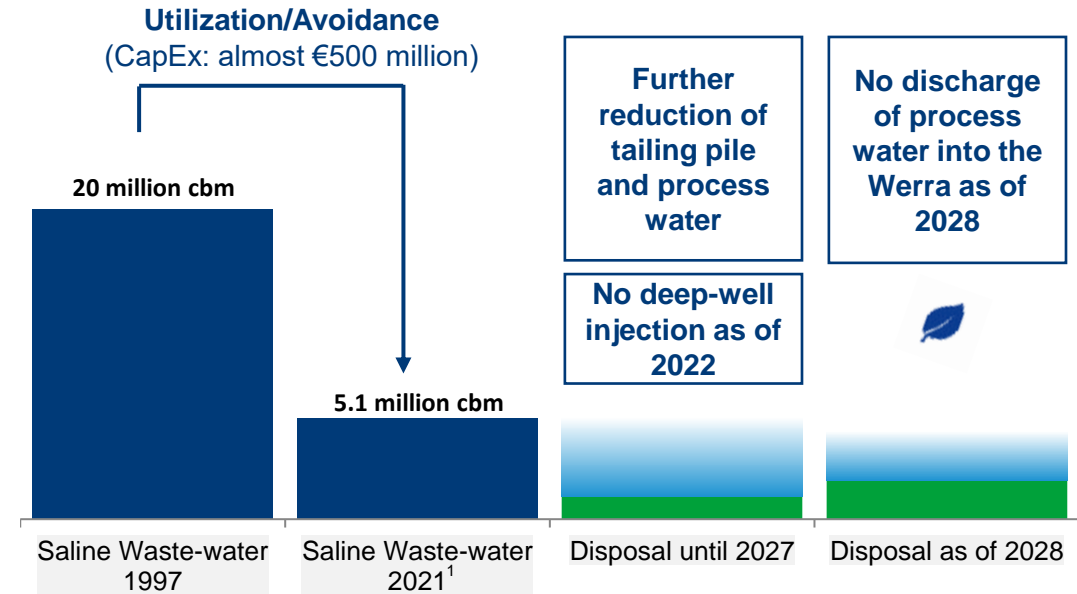
Reduction of saline wastewater based on various measures within the last 25 years:

- Underground disposal in Unterbreizbach
- Optimization of production and manufacturing processes
- ESTA - facility, cold preliminary decomposition and high consistency facility, kainite crystallization and MgCl<sub>2</sub> facility
- Establishment of a kainite crystallization and flotation facility; advantage: additional product

## Additional ways of disposing saline wastewater

- **On-site:** Temporary storage possibility of up to 1.0 million m<sup>3</sup> (basins and temporary storage underground).
- **Off-site:** Flooding of decommissioned mines or caverns for their restoration.
- As part of our strategy and the optimization of our existing business, the focus at the Werra site will be on reducing solid and liquid residues as well as energy consumption and therefore CO<sub>2</sub> emissions.

## Disposal of saline wastewater



Remote flooding of abandoned mines or caverns and temporary storage underground  
 as of 2022: permanent storage underground (subject to approval);  
 as of 2028: higher utilization of storage underground with additional processing

Discharge Werra<sup>2</sup> in compliance with the target values of the FGG Weser  
 as of 2028: only tailing pile water

<sup>1</sup> Including Neuhof

<sup>2</sup> Further reduction and avoidance of tailing pile water targeted by covering tailings piles; continuing R&D developments with external partners, among others

# Underground storage in Springen

## Our objective

- Our first goal of discontinuing the injection of saline wastewater into the plate dolomite as of 2022 has been accomplished.
- Discontinuing the discharge of saline wastewater into the Werra as of 2028.

**The solution:** Storage of process water into disused cavities



→ Mine field Springen offers 21,000,000 m<sup>3</sup> of space for underground storage.

## The procedure

- Highly concentrated saline solution from potash production is discharged into the mine field via existing lines.
- Due to the high salt concentration of the liquid, the salt pillars, which are responsible for the stability of the shaft, are not damaged.
- Finally, the old shafts are tightly closed with gravel and clay so that no saline water can discharge.



The background of the slide is a photograph of a vast, green landscape. In the foreground, there is a field of tall, green grasses that appear to be blowing in the wind. In the middle ground, there is a wide, flat expanse of green field. In the background, a large, rounded green hill rises under a bright blue sky filled with scattered white clouds. The overall scene is bright and natural, suggesting a focus on agriculture or environmental sustainability.

# 6 | 7 Sustainability

# K+S Sustainability Goals



We have set ourselves ambitious goals in these three areas of action:

## **Society & Employees, Environment & Resources and Business Ethics & Human Rights**

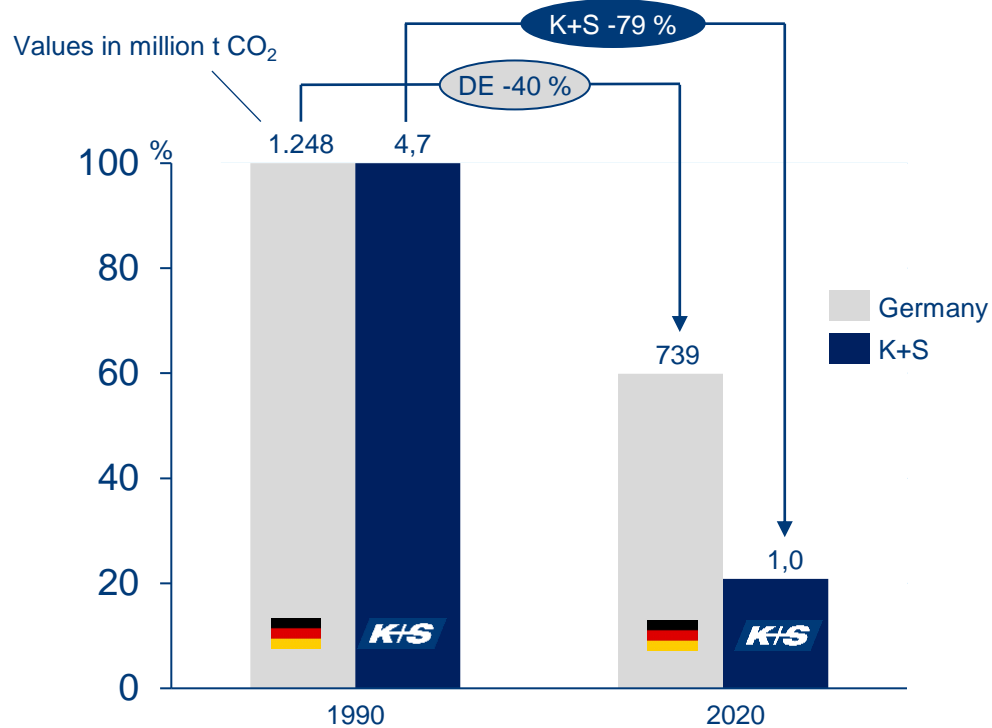
- The human being is our focus
- Active commitment to environmentally friendly production
- Integrity & a sense of responsibility characterize our actions



# K+S Climate Strategy

## Germany compared to K+S

(German potash production, Scope 1)



**80% of CO<sub>2</sub> emissions already reduced (1990 – 2020):**

Through fuel change, increased energy efficiency and site closures.

## Short-term goal

Introduction of a “**K+S climate protection fund**” from 2022 to reduce our CO<sub>2</sub> emissions.

## Mid-term goal

Reduction of our **CO<sub>2</sub> emissions by 10% by 2030** compared to 2020.

## Long-term goal

K+S supports the goals of the “**Paris Agreement**”: **Climate neutrality in 2050** can be internationally achieved with a supportive regulatory framework.

K+S calls for fair competitive conditions worldwide (this requires carbon leakage protection), sufficient and resilient energy **infrastructure, funding** for the conversions and **affordable renewable energies**.

# K+S Sustainability Goals 2030

	Goal	KPI	2022	Target value 2030	Base year	Achievement of targets
Society & Employees	Health & Safety	Injury with lost time (LTIR)*	8.3	0 Vision 2030	2017 (11.5)	28%
	Diversity & Inclusion	Positive perception of an inclusive work environment by employees <sup>1</sup>	87%	> 90%	2019 (54.4)	97%
Business Ethics & Human Rights	Sustainable Supply Chains	Percentage of critical suppliers that have acknowledged the Supplier Code of Conduct of the K+S Group*	89.6 %	100% end 2025	2017 (0)	90%
		Coverage of the purchasing volume by the Supplier Code of Conduct of the K+S Group*	84.5 %	> 90% end 2025	2017 (0)	94%
		Coverage of relevant suppliers with a sustainability risk assessment.* <sup>2</sup>	-	100 % end 2027	2023	
	Compliance & Anti-Corruption	Coverage of the K+S companies with a standardized compliance risk analysis (was designed 100% in 2020 after achieving the previous target)	66.7 %	100 % end 2023	2020 (0)	67%

\* LTI-relevant (Board of Executive Directors and management)

<sup>1</sup> The first survey was conducted in 2019 (different base year), and an updated survey with new questions was conducted in 2022

<sup>2</sup> Comprises suppliers with annual revenues of at least €5,000 whose registered office is in a country with a relative value of ≤ 75% in the Sustainability Development Report ranking. This includes consolidated and non-consolidated K+S Group companies managed via the SAP system.

# K+S Sustainability Goals 2030





	Goal	KPI	2022	Target value 2030	Base year	Achievement of targets
Environment & Resources	Resource efficiency	Additional reduction of saline process water to be disposed of from potash production in Germany (million m <sup>3</sup> p.a.)* <sup>1</sup>	-0.4	-0.5 (excluding reduction by KCF facility and end of production SI)	2017 (0)	82%
		Amount of residue used for purposes other than tailings piles formation or avoided by increasing the yield of raw material (million t p.a.)	0.2 <sup>1</sup>	3	2017 (0.2)	7%
		Additional covered tailings piles area	14.1	155	2017 (0)	9%
	Energy & Climate	Absolute CO <sub>2</sub> emissions in the K+S Group worldwide	-3.0%	-10%	2020	30%
		Reduction in specific CO <sub>2</sub> emissions* <sup>2</sup>	-	254.6 kg/t end 2027	2023	
		Specific greenhouse gas emissions (CO <sub>2</sub> ) in logistics (kg CO <sub>2</sub> e/t)	-13.1%	-10%	2017	100%

\* LTI-relevant (Board of Executive Directors and management)

<sup>1</sup> Excluding a reduction due to the KCF plant and the end of production at Sigmundshall.

<sup>2</sup> Calculated by the ratio of CO<sub>2</sub> emissions (Scope 1 and Scope 2) of all potash and rock salt producing sites in kilograms to the primary production volume of the Hattdorf, Wintershall, Unterbreizbach, Bethune, Zielitz, and Neuhoef-Ellers sites.

# K+S Sustainability Management

Organization	Rating scale	Previous rating	Current rating
 MSCI	Rating scale from AAA to CCC	AA	AA
 ISS ESG	Rating scale from A+ to D-	C-	C
 SUSTAINALYTICS <small>a Morningstar company</small>	Rating scale from 0 to 40+ (The lower, the better)	36.8	35.2
 FTSE Russell	Rating scale from 0 to 5 (The higher, the better)	3.2	3.3
 CDP <small>DISCLOSE INSIGHT ACTION</small>	Rating scale from A to D-	Water: B Climate: C	<b>Water: B</b> <b>Climate: C</b>

## International Engagement



EU principles for sustainable raw materials



# Our contribution to the 17 SDGs

K+S makes a direct contribution to a number of global sustainable development goals – and thus contributes to the fulfillment of the goals. More information and more details about our article can be found [here](#).



# Our future – The **climate-friendly** potash production

In future, we want to produce "**green potash**" with the lowest possible CO<sub>2</sub> footprint – compared to today and compared to our foreign competitors.

To do this, we are treading two paths in parallel:



The **change in production and processing processes** – from wet to dry processing



The **change in energy use** – from fossil fuels to renewable energies

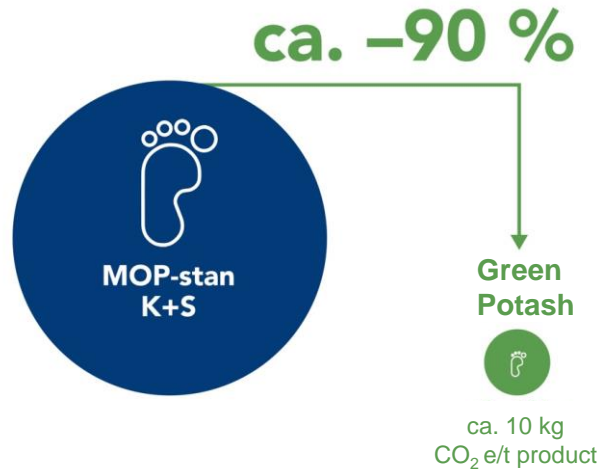
With the "Werra 2060" project, we are taking the first major step in **changing our production processes**. To do this, we need to extract and process the crude salt from the reservoir in a way that is as climate-neutral as possible. This transformation project is the only one of its kind in potash mining in the world. In Zielitz, we have launched a pilot project for the use of power-to-heat, thereby pushing a **change in energy use** ahead.

The de-carbonisation of the entire German potash production requires **state support**: in the provision of infrastructure and green energy sources, in the development of legal frameworks, in procedures (planning acceleration) and in the **provision of subsidies**.



# Green potash for sustainable agriculture

## Development of CO<sub>2</sub>e footprint green potash (MOP)



The reduction in emissions results from the conversion of consumption from fossil to renewable energy.

The remaining emissions are distributed across sub-processes that (so far) cannot be converted.



Aggregated CO<sub>2</sub>e footprint MOP  
K+S



Green potash with renewable  
energy use

## Essential requirements for the change in technology

In future, we will be able to produce “green potash” in Germany with the lowest possible CO<sub>2</sub> footprint. Both ways of achieving this – changing the production and processing methods as well as changing the use of energy – require **high investments**.

The potash industry needs a **supportive regulatory framework** for this:



High availability of green electricity to facilitate the production of green potash



Expansion of renewable energies and targeted grid connection to meet increased electricity demand



Offsetting additional expenditure incurred by using green electricity through government funding

(The calculations are based on average German production, excluding Canadian production).

The K+S logo is positioned in the top right corner of the slide. It consists of the letters 'K+S' in a bold, white, sans-serif font, set against a dark blue, trapezoidal background that is part of a larger blue graphic element on the right side of the slide.

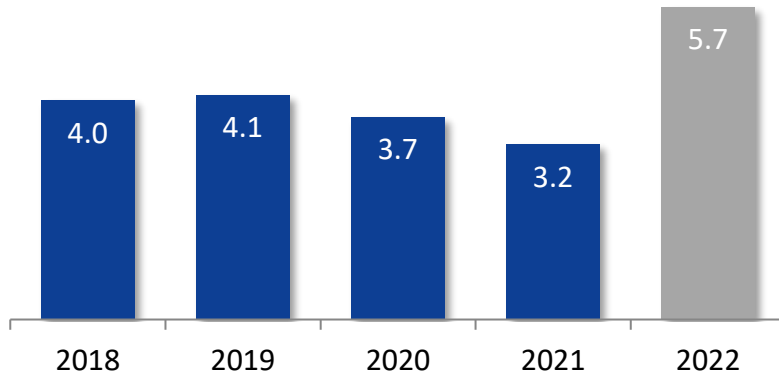
**K+S**

The background of the slide is a photograph of an underground mine. A large, black, rectangular haul truck is filled with a pile of grey, rocky material. The truck is positioned in the center of the frame. The surrounding environment is a dimly lit, cavernous space with rough, grey rock walls and ceiling. A bright light source from the left creates a strong beam of light that illuminates the truck and the surrounding rock. In the background, there are some faint markings on the rock wall, including the number 'E30'.

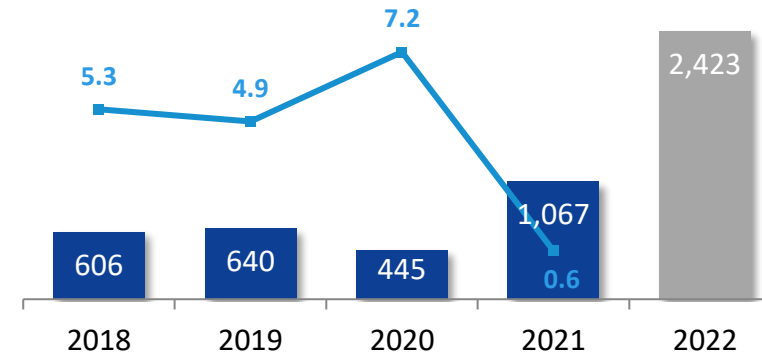
**7 | 7 Financial data & IR**

# Key financial figures<sup>1</sup>

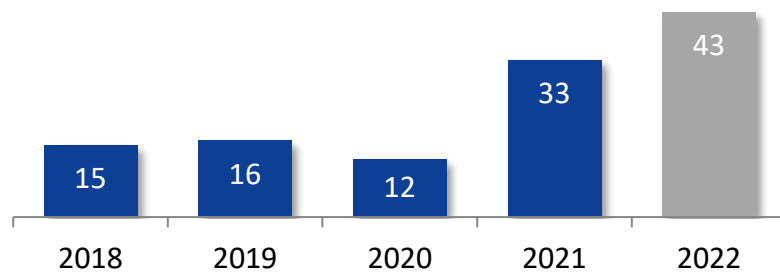
## Revenues (€ billion)



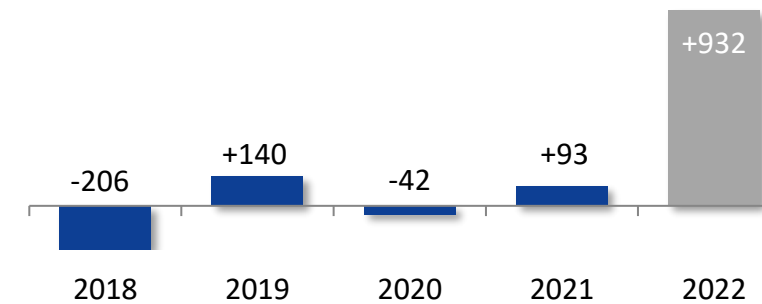
## EBITDA vs. Net financial liabilities/EBITDA<sup>2</sup>



## EBITDA margin (%)



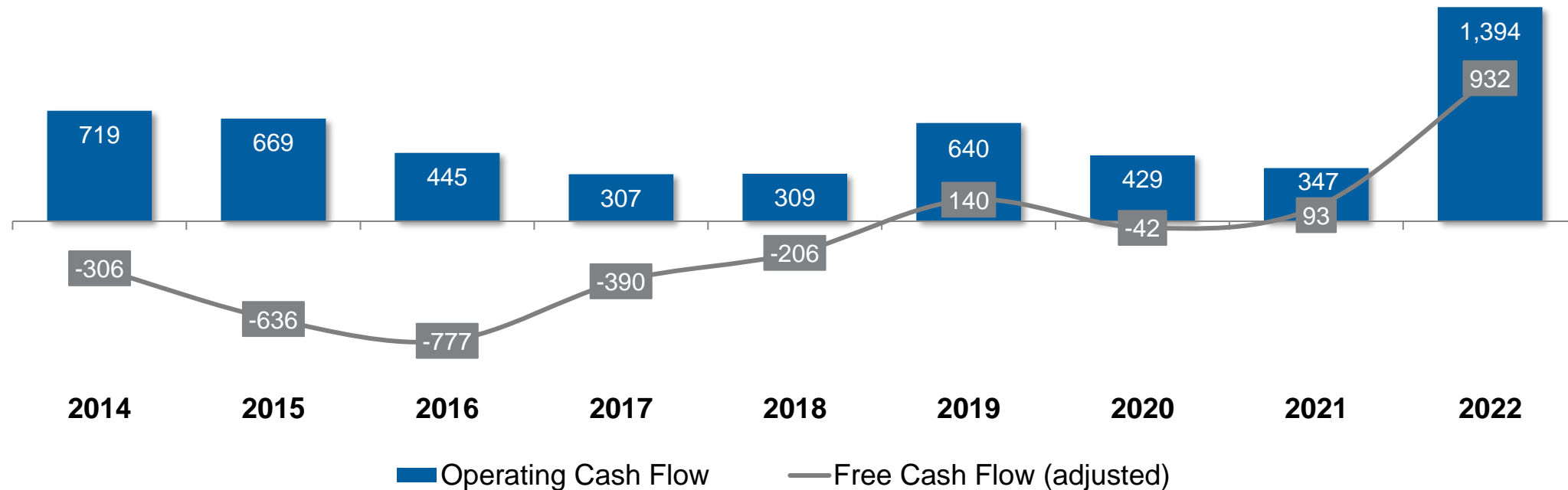
## FCF (€ million)



<sup>1</sup> The figures relate to the continuing and discontinued operations of the K+S Group for the years 2018 to 2020. For the years 2021 and 2022, the figures relate to the continuing operations of the K+S Group.

<sup>2</sup> As of December 31, 2022, there are no longer any net financial liabilities.

# Operating and adjusted cash flow<sup>1</sup>



<sup>1</sup> The figures relate to the continuing and discontinued operations of the K+S Group for the years 2014 to 2020. For the years 2021 and 2022, the figures relate to the continuing operations of the K+S Group (in € million).

# Cash flow and balance sheet

	FY/21	3M/22	H1/22	9M/22	FY/22	3M/23	H1/23	9M/23
Operating cash flow - thereof continuing operations	347	254	486	1,143	1,394	221	484	657
Investing cash flow (pre-sale/purchase of securities and other financial investments) - thereof continuing operations	-255	-151	-252	-329	-462	-107	-210	-329
<b>Adjusted free cash flow - thereof continuing operations</b>	<b>2,691 93</b>	<b>103</b>	<b>234</b>	<b>814</b>	<b>932</b>	<b>113</b>	<b>274</b>	<b>328</b>
Capex - thereof continuing operations	334	49	125	240	404	78	199	347
<b>Net financial liabilities (-); Net financial asset position (+)<sup>1</sup></b>	<b>-606</b>	<b>-520</b>	<b>-426</b>	<b>+152</b>	<b>+245</b>	<b>+347</b>	<b>+261</b>	<b>+241</b>
Net financial liabilities/EBITDA <sup>1</sup> (LTM)	0.6	0.4	0.2	-	-	-	-	-
Equity ratio	61%	63%	65%	65%	68%	71%	71%	71%

<sup>1</sup> As of December 31, 2022, there are no longer any net financial liabilities.

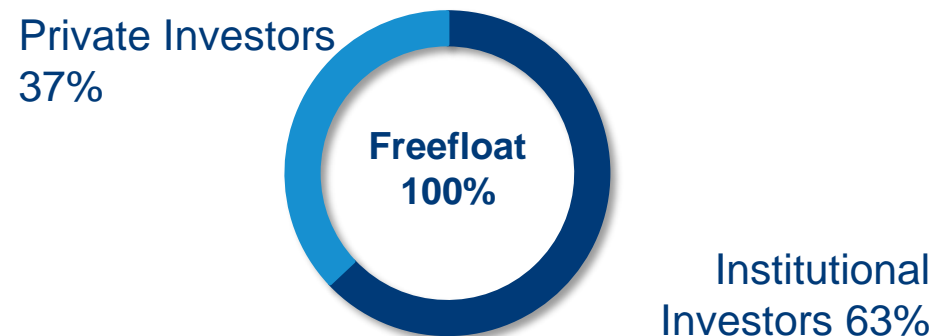
# K+S Share

## Key data

- **WKN:** KSAG88
- **ISIN:** DE000KSAG888
- **Type of shares:** registered shares of no-par value
- **Total number of shares:** 191,400,000<sup>1</sup>
- **Trading segment:** Prime Standard
- **Ticker symbols:** Bloomberg SDF/Reuters SDFG

<sup>1</sup> of which 12.3 million shares have been repurchased as of November, 2023

## Shareholder structure as of Dec 31, 2022



## The following banks publish research studies about K+S

- Baader Helvea Equity Research
- Bank of America
- Bank Pekao Equity Research
- Berenberg Bank
- BMO Capital Markets
- Citi Research
- Deutsche Bank
- DZ Bank AG
- Exane BNP Paribas
- Jefferies Equity Research
- J.P. Morgan
- Kepler Cheuvreux
- LBBW
- M.M. Warburg
- Morgan Stanley
- Oddo BHF
- Pareto Securities AS
- Scotia Capital
- Société Générale
- Stifel
- UBS

# Share buyback 2023

## **K+S has successfully completed the share buyback.**

Since mid-May 2023, K+S has bought back a total of 12.3 million of its own shares for just under €200 million (ISIN DE000KSAG888) at an average price of around €16 per share. This corresponds to 6.4 percent of the Company's share capital. K+S aims to cancel the bought-back shares by the end of 2023.

- **12.3 million own shares (6.4% of the share capital) bought back for just under €200 million**
- **Average price of about €16 per share**

The share buyback supplemented the dividend payment of €1.00 per share for the 2022 financial year. K+S has therefore returned capital totaling around €390 million to its shareholders – this corresponds to a good 40 percent of the adjusted free cash flow for 2022.

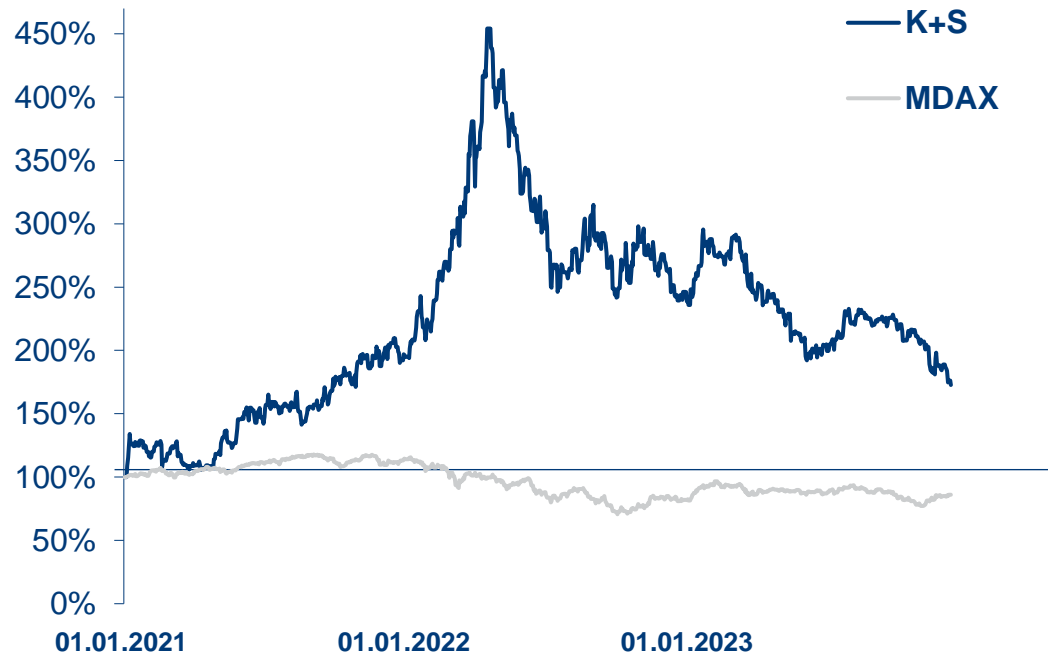
“After the record year 2022, it was important for us to let our shareholders participate in this success. With the completion of the share buyback and the dividend payment for 2022, we have returned a total of around €2 per share to our shareholders, taking appropriate account of the different interests within our shareholder structure,” says Dr. Burkhard Lohr, Chairman of the Board of Executive Directors.

Further information on the share buyback can be found on our website: [www.kpluss.com/sharebuyback](http://www.kpluss.com/sharebuyback)

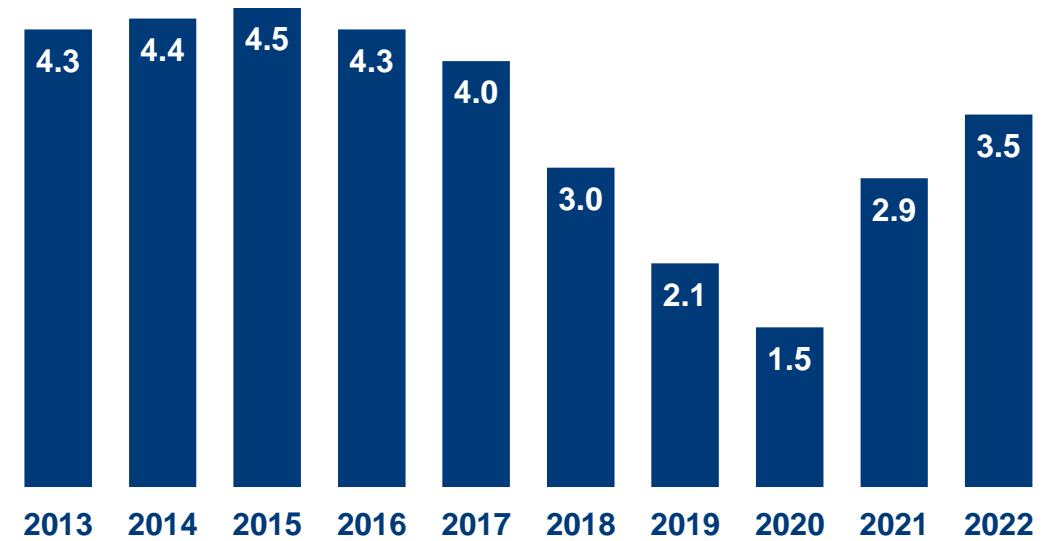
# Share performance

## Performance of the K+S Share

Index: December 31, 2020 = 100



## Market capitalization



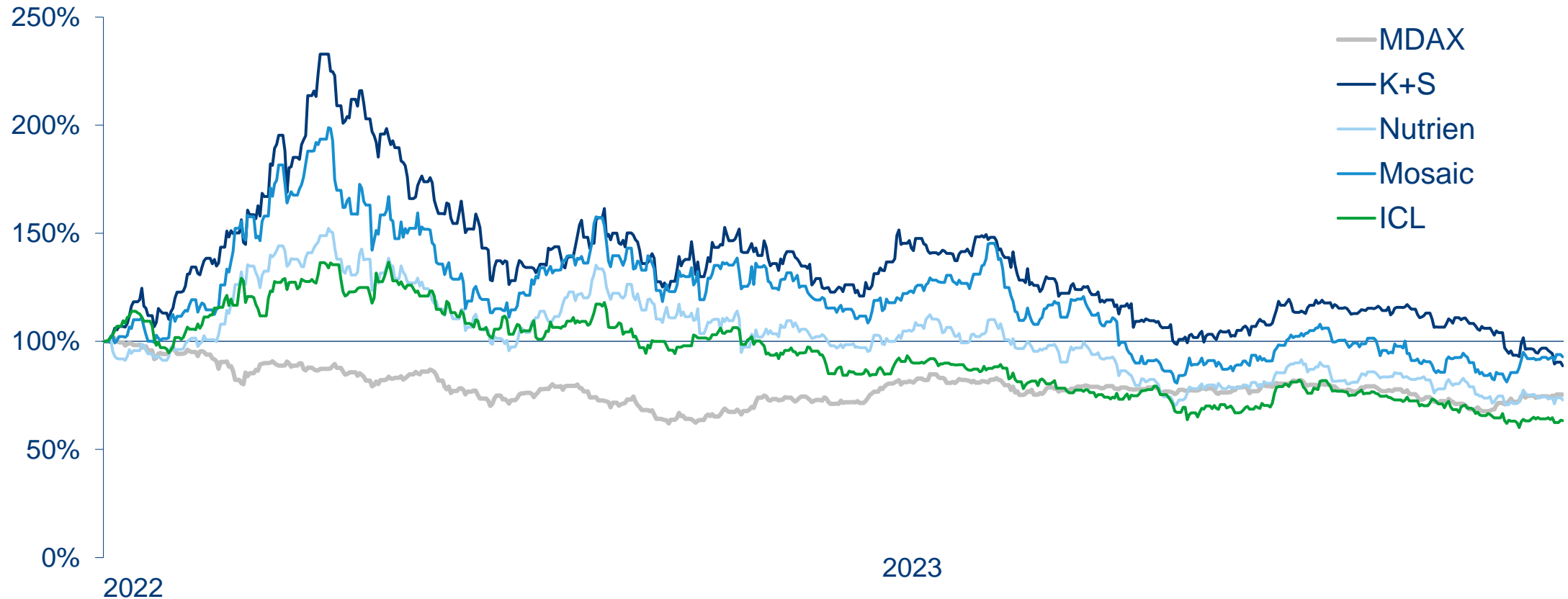
As of Dec. 31, 2022, in € billion

Source: Bloomberg; as of December 2023



# Performance of the K+S share in comparison

Index: December 31, 2021 = 100



Source: Bloomberg; as of December 2023

# K+S ADR Programme

The K+S ADR Program offers North American investors the opportunity to take stock in K+S. Since the ADRs are quoted in US dollars and dividends are also distributed in US dollars, this financial instrument closely resembles an American share. Two ADRs represent one K+S ordinary share. The K+S ADRs are traded in the United States under a level 1 ADR Program in the over-the-counter market (OTC).

## Trade on OTCQX

**Symbol:** KPLUY  
**CUSIP:** 48265W108  
**Ratio:** 2 ADRs = 1 Share  
**Country:** Germany  
**ISIN:** DE000KSAG888  
**Depository:** The Bank of New York Mellon

## Benefits to North American investors

- Clear and settle according to normal U.S. standards
- Stock quotes and dividend payments in U.S. dollars
- Can be purchased/sold in the same way as other U.S. stocks via a U.S. broker
- Cost-effective means of international portfolio diversification

Further information: [www.kpluss.com/adr](http://www.kpluss.com/adr)

# K+S debt instruments and issuer rating

**Issuer rating (S&P):** BBB- (outlook: stable), June 2023

	<b>Bond 07/2024</b> (3-months-par-call)
<b>WKN</b>	A2N BE7
<b>ISIN</b>	XS1854830889
<b>Listing</b>	Luxembourg SE
<b>Issue volume</b>	€600 million
<b>Outstanding volume</b>	€278 million
<b>Issue price</b>	100.000%
<b>Coupon</b>	3.250%
<b>Maturity</b>	18.07.2024
<b>Denomination</b>	€100,000

+ Syndicated credit facility up to €400 million  
+ Commercial paper program as an additional source of liquidity

# Financial calendar

2023 Annual Report: December 31, 2023

March 14, 2024

Quarterly Report: March 31, 2024

May 13, 2024

Annual General Meeting

May 14, 2024

Half-Year Financial Report; June 30, 2024

August 14, 2024

Quarterly Report: September 30, 2024

November 14, 2024

## More content available online

- K+S Website: [www.kpluss.com](http://www.kpluss.com)
- Annual reports: [www.kpluss.com/ar2022](http://www.kpluss.com/ar2022)
- Newsletter subscription: [www.kpluss.com/newsletter](http://www.kpluss.com/newsletter)
- Social Media: 

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