

6 November 2019

Manfred Schaffer, President Mining

MINING MARKET AND STRATEGY

WE DISCOVER POTENTIAL

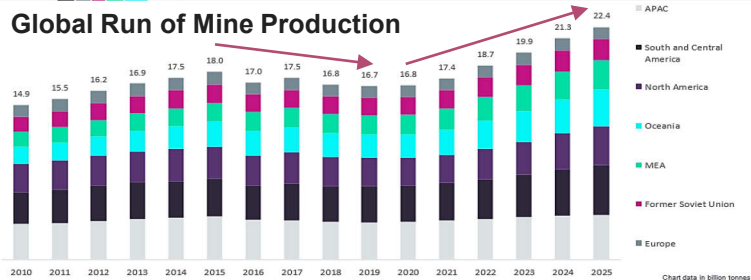
 FLSMIDTH

Key messages

- Mega-trends provide a **positive outlook** for the Mining Industry
- Our understanding of the Mining Customers' **Sustainable Productivity** challenges creates new business opportunities
- The Mining strategy, through innovative technologies and products, digitally assisted services and customer intimacy, will provide ample **growth opportunities for FLSmidth**
- The successful execution of our strategy will provide **more stable sustainable profitable growth**

Global trends provide a positive outlook for the mining industry

- Global production is estimated to **increase by 4.2% CAGR by 2025**
- CAPEX will continue to recover, supported by **ongoing brownfield spend**
- Stable demand and supply for most metals mean **less need to initiate large greenfield projects**
- “Social licence to operate”** is increasing focus on sustainable productivity
- Shift of new mine developments to geographies with historically **higher geopolitical risks**
- Ore grade decline** continues, requiring more investments in production capacity
- Commodity cost curves to remain **above incentive levels** for main commodities
- Mining companies have a **strong cash position and liquidity**, and therefore capacity to invest



2019 Global Corporates Outlook Summary

Sector	Outlook	Rating trajectory	Leverage trend	Cash flow generation	Liquidity position
Metals & Mining	Stable	Static	Steady	Positive	Strong
Aerospace and defence	Stable	Static	Steady	Strong	Manageable
Automotive	Stable	Static	Steady	Moderately Positive	Robust
Big Pharma & biotech	Stable	Down	Steady	Strong	Robust
Consumer	Stable	Static	High but Falling	Strong	Robust
Engineering & construction	Stable	Static	Steady	Limited	Mixed
Oil & Gas	Stable	Static	Broadly Stable	Robust	Generally Robust
Retailing	Negative	Static	Steady	Mixed	Mixed
Shipping	Negative	Mixed	Steady	Diverse	Manageable
Utilities	Stable	Static	Steady	Neutral	Robust

Source: Fitch Ratings

FitchRatings

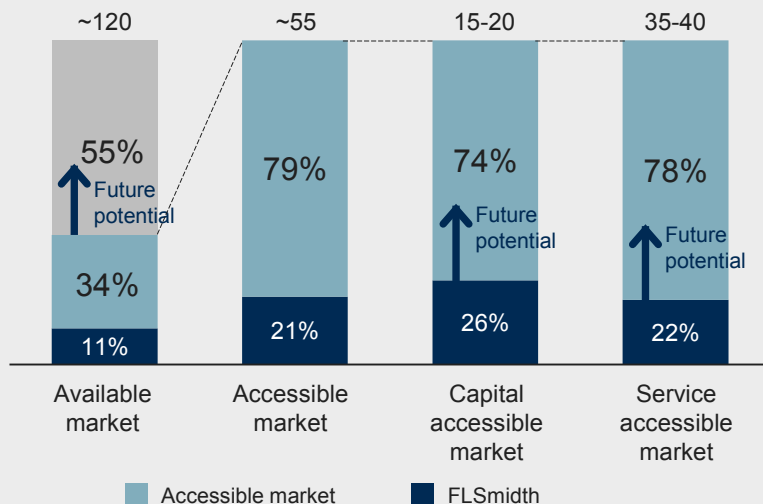
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Sources: GlobalData, Fitch Ratings

FLSmidth has a large opportunity to grow in Service

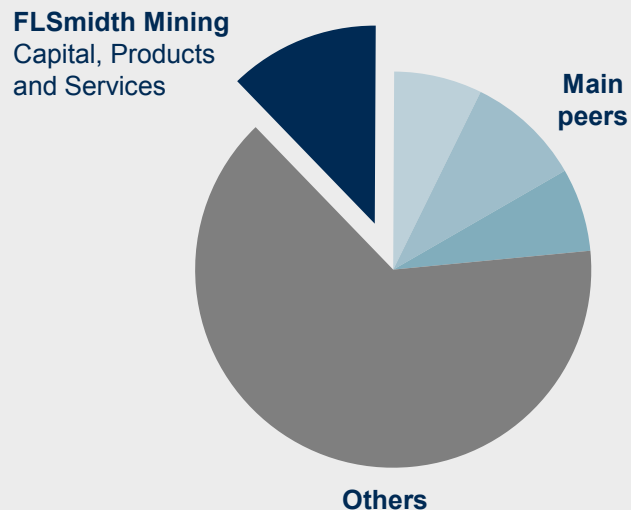
INDICATIVE

**ESTIMATED MINING CAPEX
(SUSTAINING AND EXPANSION) AVAILABLE
MARKET ESTIMATE (2018, DKKbn)**



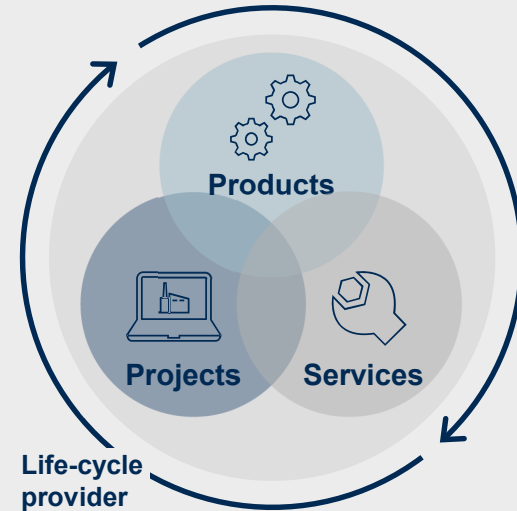
Note: Capital incl. Projects and Products; Service incl. Spare parts, Wear parts, Services, Upgrades and Retrofits; Accessible market definition varies by segment and is on a high level based on FLSmidth technology and offering. Source: FLSmidth analysis

**ESTIMATED MARKET SHARES
(TOTAL AVAILABLE MARKET)**



Our understanding of mining customers' productivity and sustainability challenges creates new business opportunities

- **Drop of ore grades** (increase in ROM production) requires optimised process and increased efficiencies
- **Ageing machinery and high utilisation rates** drive the need for replacements and service intensity
- **Digitalization** becomes a key tool for asset health management and improved minerals processing
- **Focus around “Social license to operate”** is increasing attention on miners' environmental footprint
- Financing of projects and **access to capital** contingent on sustainable practices
- Cost and discharge of **waste and water** are under heavy scrutiny, negatively affecting operations



Selected elements

Mining strategy



Capital Projects

Improved project execution

- Project hubs concept



Service

Wear parts business

- Expansion of mill liner offering



Digitalization

Process optimisation and asset health

- Connected equipment
- Service response and uptime



Sustainability

Technological potential

- Water recycling and Tailings management
- Reduced energy and pollution

Current challenges in mining capital projects execution

Project execution close to customers, but through many locations

- Fragmented, sub-optimal project organisation
- Resource availability and competence issues
- Difficulties with global overview and control

More projects executed in phases (Stop-and-Go) and delayed contract completion

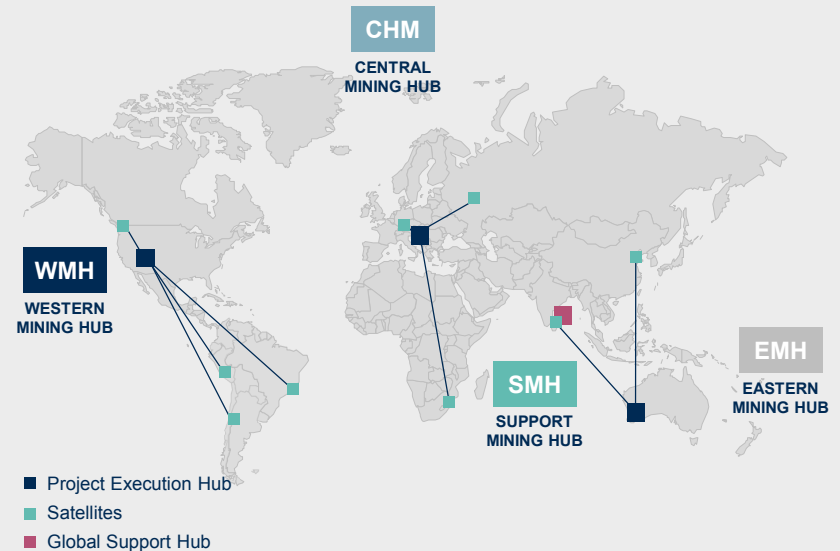
- Slow and unpredictable customer decisions
- Interrupted workflow and resource absorption issues
- Customers not eager to take-over equipment and plants

- Project margin erosion from higher execution costs
- Re-assessment of margin expectations from backlog
- Improvement by consolidation of sites and resources

Capital projects: New execution model will drive focus and increased profitability

- **Cyclicality in Mining Capital** business will continue, need model to better manage **volatility and fluctuating** impacts to our business mix
- Professional global project execution requires **availability of competence resources**, difficult with too many locations
- We are streamlining project execution through:
 - **Western, Central and Eastern Hub:** Critical mass of project management, engineering, procurement capabilities
 - **Adding crucial resources** for commercial, risk and claim management in Hubs
 - **Regional “satellites”** focusing on day-to-day interaction with the customer and local suppliers
 - **Global pool** of mobile experts for critical tasks

IMPROVED PROJECT MARGIN BY BETTER EXECUTION THROUGH RESOURCES WITH ‘RIGHT SKILL SET’



Service: Implementing a global strategy that enhances customer wear liner productivity

Wear liners Center of excellence

Product development

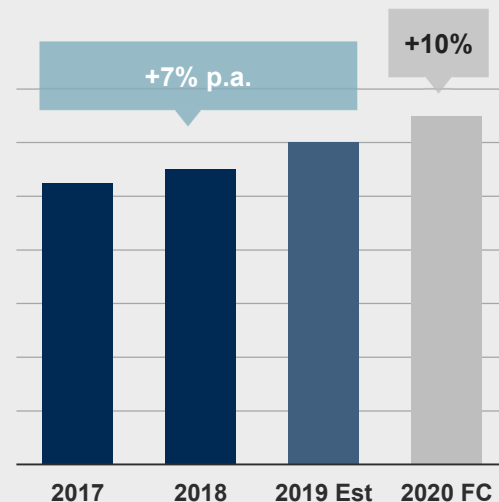
In-house production and supply chain

Expansion of offering

Distribution and packaging

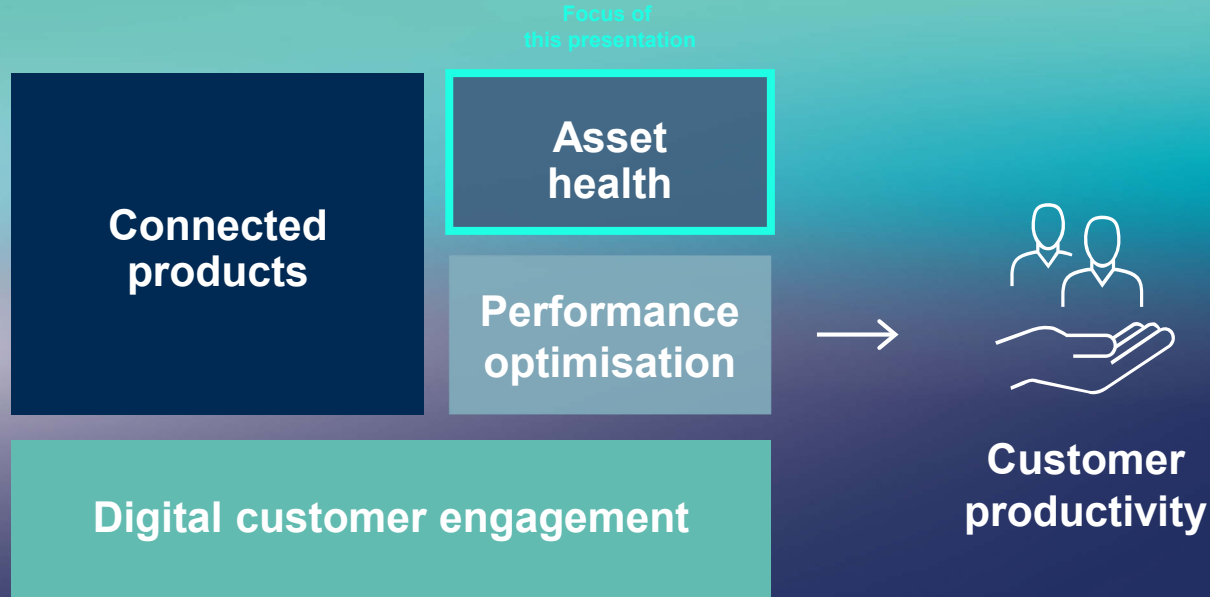
- Establishment of in-house **engineering** excellence and **metallurgical expertise** for metallic and composite wear liners
- Ability to prototype and validate customised solutions through a **1st Article Liner Foundry**
- Increased **in-house production** capabilities coupled with strategic supplier agreements
- Product line expansion of **composite liner** technology
- Utilisation of **global** service centre footprint to assure sufficient **local** availability of products

WEAR PARTS GROWTH

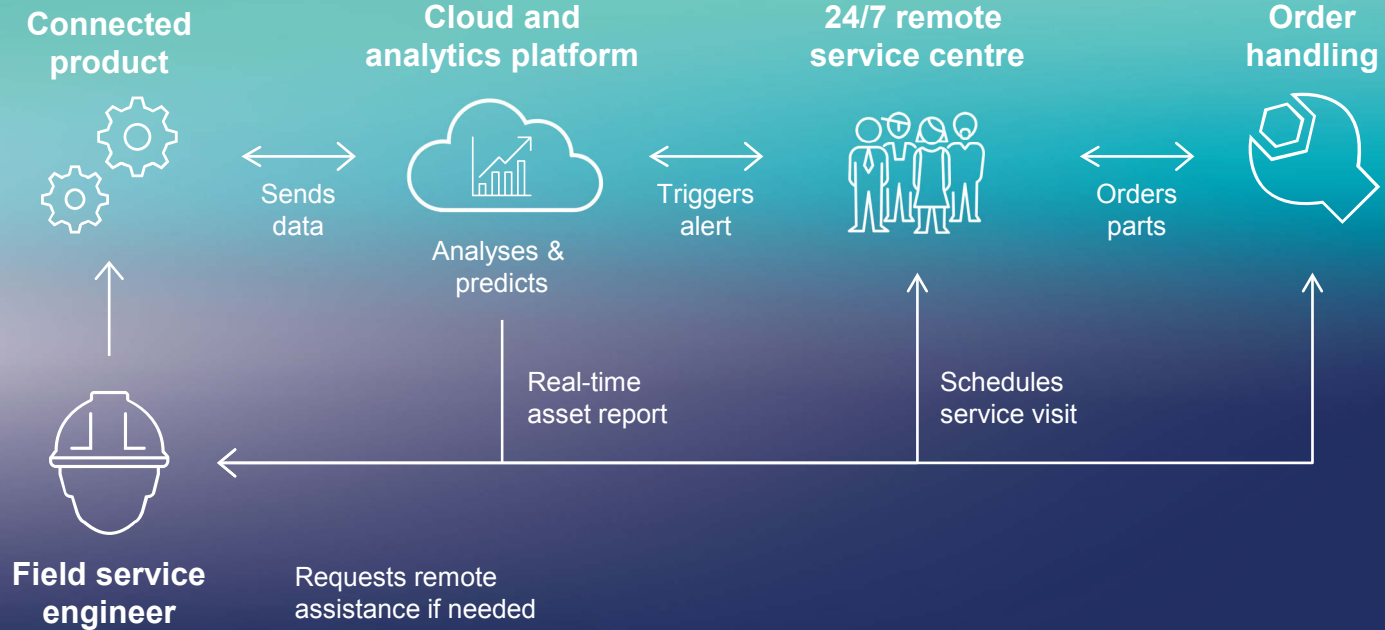


With over 500 mills and large gyratory crushers globally installed, FLSmidth is well positioned to take leadership position in this > 10 bn DKK per annum market

Delivering customer productivity through connected products and bundled services



Increasing uptime through digital



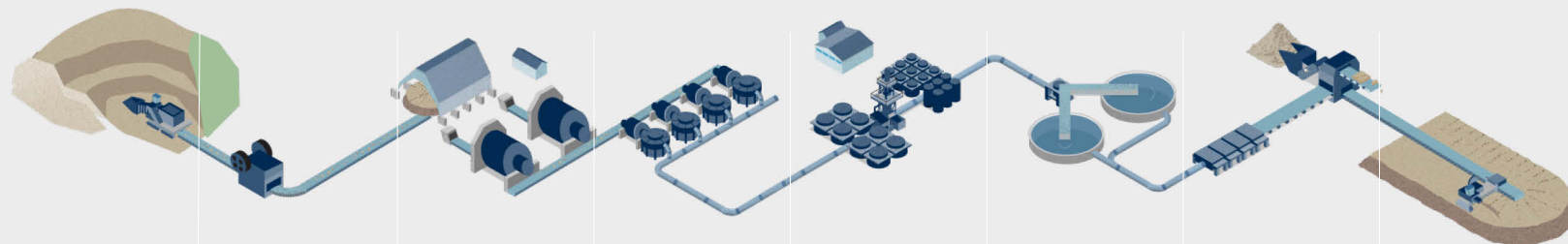
Increasing uptime through digital

- **Remote support** for our field service technicians
- **Access to FLSmidth experts** across the globe
- **Faster resolution** of incidents and **reduced cost** of service delivery



Sustainability & Productivity

Technological potential

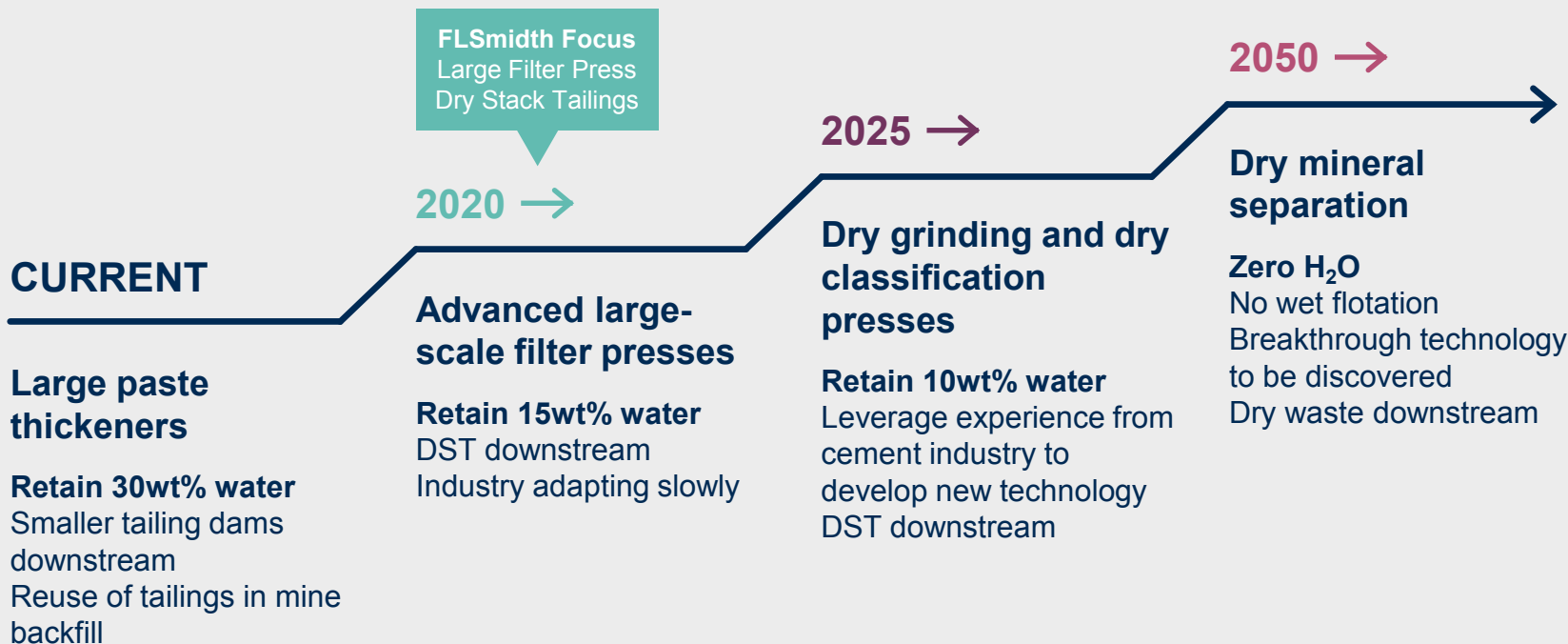


1. Extraction	2. Minerals material handling	3. Comminution	4. Pumps, valves and cyclones	5. Beneficiation and recovery	6. Thickening	7. Filtration	8. Tailings management
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- | | | | | | | | |
|---|---|---|--|---|---|---|--|
| <ul style="list-style-type: none"> ▪ Early waste rejection ▪ In situ processing ▪ Semi-mobile Processing | <ul style="list-style-type: none"> ▪ Bulk ore sorting ▪ Stockpile management ▪ IPCC | <ul style="list-style-type: none"> ▪ New Milling Technology ▪ Wear technologies (composites) | <ul style="list-style-type: none"> ▪ Energy recovery ▪ Wear & Lifetime ▪ Displacement pumps | <ul style="list-style-type: none"> ▪ Coarse flotation ▪ Dry processing ▪ Reflux tech ▪ ROL | <ul style="list-style-type: none"> ▪ High performance deep cone thickeners ▪ Paste plants | <ul style="list-style-type: none"> ▪ New continuous pressure filtration technology | <ul style="list-style-type: none"> ▪ Ecotails ▪ Smart tailings flowsheet (reduction of fines) |
|---|---|---|--|---|---|---|--|

Towards zero-H₂O

How can a mine become water-neutral



Dry Stack Tailings are a step change in water management

2016 - 2017

Testing pilot plant and optimisation

- Potential savings in water costs in a typical mine: USD 81m/year → **USD 1.2 bn over 15yrs mine life**
- **Estimated addressable market of 1.3-2 bn DKK** (approx. 50:50 split CAPEX and OPEX) **per year**

2018 - 2020

1st full-scale pilot and demo plant

- The <20 ktpd filtered tailings market is active; FLSmidth is winning projects
- Systems for Filtered Paste plants (Hindustan Zinc, Lundin Gold)
- Supply of world's largest Paste Thickener system to Kazakhstan
- Collaboration with key customer on tailings (incl. a first order for 30 disc filters in Brazil)

2021 -

Commercialisation and market penetration

- Continue development of filtration technologies for large scale tailings operations (>200.000 tpd)
- Work on full-size plants for dry stacking of tailings and eliminate the risks from wet Tailings Storage Facilities / Dams



Rapid Oxidative Leaching – a process for handling ‘difficult (oxide)’ and ‘polluted (arsenic)’ ores

2017
Pilot plant

2018 - 2019
1st Demonstration plant

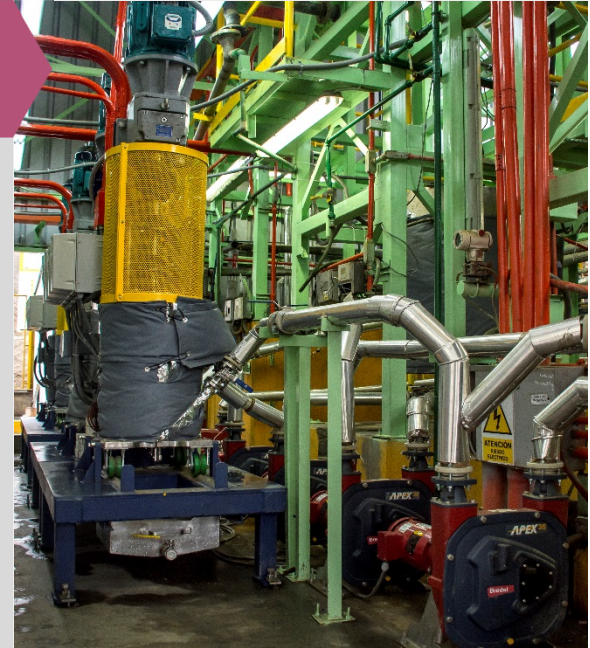
2020 - 2021
Full-scale project

Addressable market:

- Conversion of oxide to sulphide (50% of plants) – **CAPEX USD 1 bn over 10 yrs**
- 10% of mines containing high arsenic – **CAPEX USD 1.5 bn over 10 yrs**
- Total estimated potential for RoL **1-2 bn DKK per year**

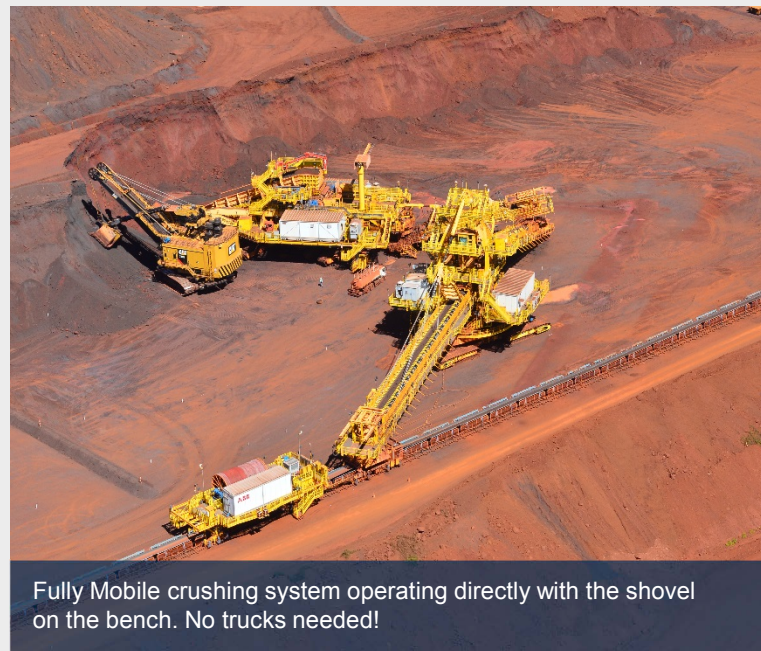
- Successful completion of pilot plant testing
- Development, supply and start-up of demo plant in Peruvian Copper operation
- Continuation of testing for gold and other applications

- Realisation of full-size plant and proof of feasibility
- Commercialisation of applications in copper
- Demo plant in gold application and proof of technology

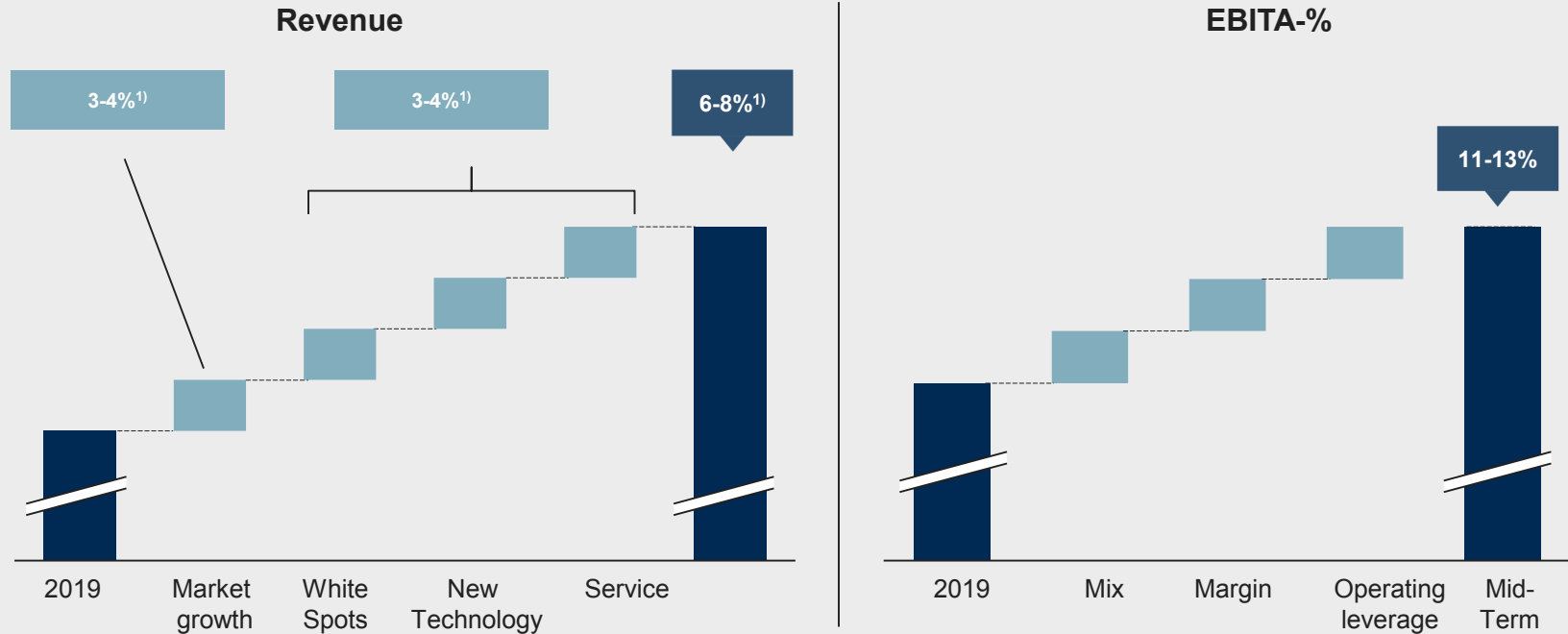


Energy savings and CO₂ reduction by In-Pit Crushing and Conveying (IPCC) systems

- **Market / Application**
 - Deeper mines and higher production rates require more efficient material transportation
 - Market potential: **1-4bn DKK per year** (<10% of conventional truck & shovel operations)
- **Highest grades of digitalization**
 - Continuous flow technology
 - IPCC systems are always semi or fully automatic
- **Direct reduction of environmental footprint**
 - Reduced CO₂ emissions through electric drives and limited use of diesel-powered trucks in mines
 - Water savings through less dust suppression
- **Reduced operational costs**
 - Less operations and maintenance personnel required
 - Less supporting logistics required, no haul-road maintenance
- **Increased safety**
 - Less mobile equipment and less room for human error



Mining revenue and EBITA margin



¹⁾ Average annual growth rate over the cycle

Size of bars does not reflect relative share

Thank you



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