

# ENABLING THE CIRCULAR ECONOMY

INVESTOR PRESENTATION | COMPANY DESCRIPTION 2020



AMG ADVANCED  
METALLURGICAL GROUP N.V.

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# AMG IS A CRITICAL MATERIALS COMPANY

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## DEMAND

Innovative new products that are lighter, stronger, and resistant to higher temperatures

## SUPPLY

AMG sources, processes, and supplies the critical materials that the market demands

## GLOBAL TRENDS

CO<sub>2</sub> emission reduction, circular economy, population growth, increasing affluence, and energy efficiency





LEADER IN ADVANCED TECHNOLOGIES  
TO ADDRESS CO<sub>2</sub> REDUCTION

## CO<sub>2</sub> REDUCTION

### A GLOBAL IMPERATIVE FOR THE 21ST CENTURY

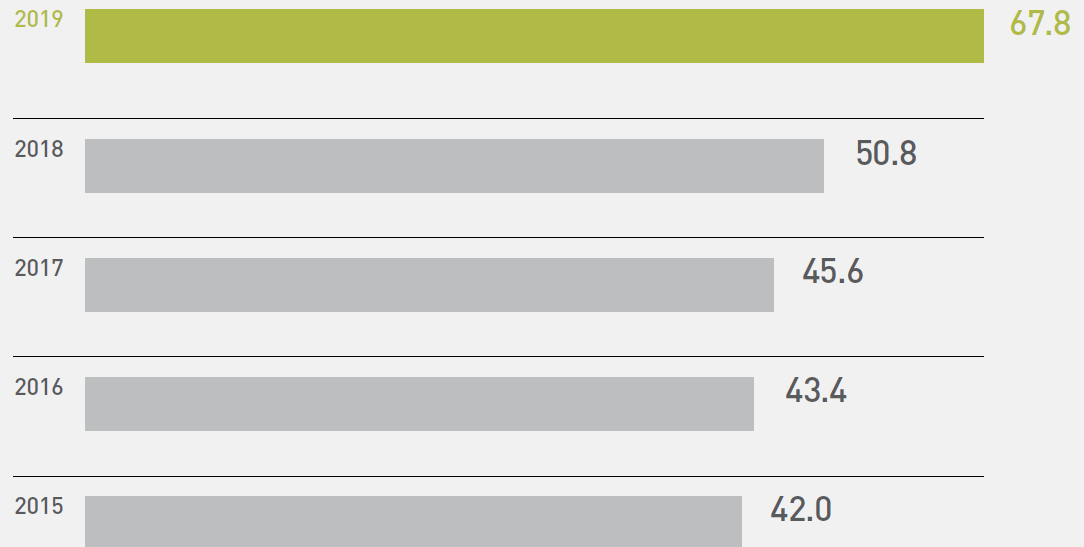
#### AMG: ENABLING TECHNOLOGIES

Products and processes saving CO<sub>2</sub> emissions during use (e.g., light-weighting and fuel efficiency in the aerospace and automotive industries)

#### AMG: MITIGATING TECHNOLOGIES

Products and processes saving raw materials, energy and CO<sub>2</sub> emissions during manufacturing (e.g., recycling of Ferrovanadium)

### AMG'S ENABLED CO<sub>2</sub> EMISSION REDUCTIONS (Million MT)

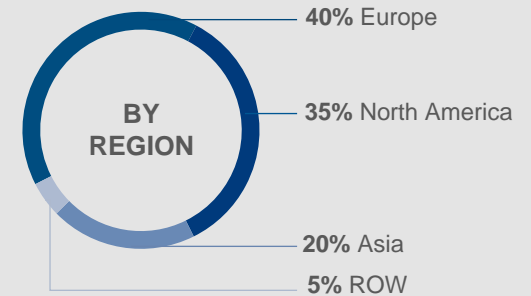
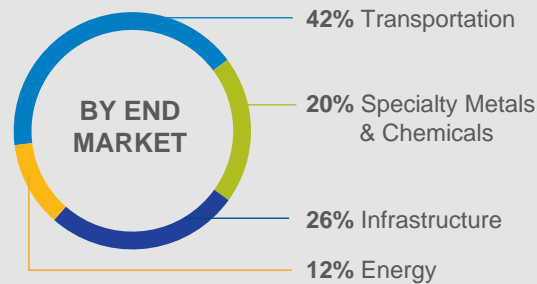
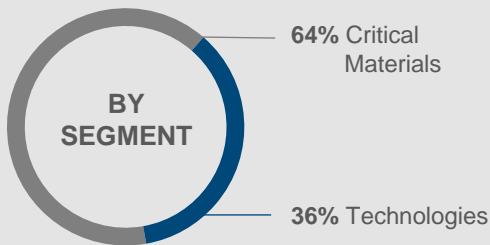


12.7%

CAGR

# AMG AT A GLANCE

## FY 2019 REVENUE



**AMG IS A  
GLOBAL SUPPLIER  
OF CRITICAL  
MATERIALS TO:**



**ENERGY**



**TRANSPORTATION**



**INFRASTRUCTURE**



**SPECIALTY METALS  
AND CHEMICALS**

Market leading producer of highly engineered specialty metals and vacuum furnace systems

**~3,300**  
Employees

**~\$1 billion**  
Annual Revenues

At the forefront of  
**CO<sub>2</sub> Reduction**

# AMG BUSINESS SEGMENTS

## AMG CRITICAL MATERIALS

AMG's conversion, mining, and recycling businesses

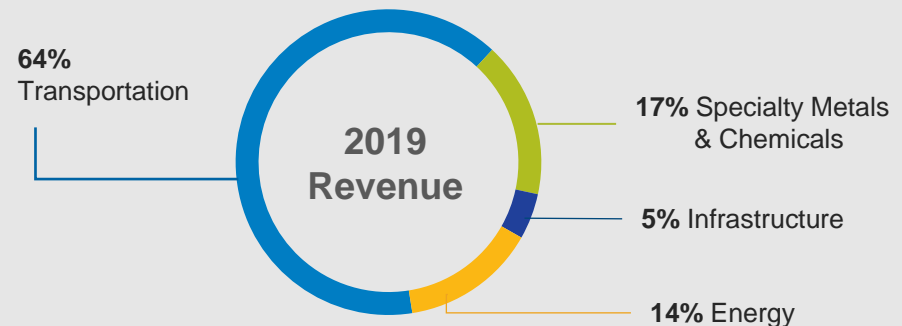
- Vanadium
- Mineração (Tantalum & Lithium)
- Silicon Metal
- Graphite
- Antimony
- Superalloys (Chrome Metal)
- Aluminum (Master Alloys)



## AMG TECHNOLOGIES

AMG's titanium alloys, vacuum systems and services business

- Titanium Alloys & Coatings
- Furnaces
- Heat treatment services



# STRONG FUNDAMENTALS, ADAPTIVE TO GLOBAL DISRUPTION

## Optimized Capital Structure

- Robust liquidity: \$200M in cash; \$170M in undrawn revolver capacity
- Covenant-lite Term Loan B matures in 2025
- \$307M 30-year 4.3% Municipal Bond finances 100% of the ferrovanadium expansion in Zanesville, OH

## Business Resilience

- Focus on operational efficiency
- Reduction of operating costs and capital expenditures
- Momentum on positive business gains, strong backlogs into early 2020

## Disciplined Approach to Growth

- Shell & AMG Recycling B.V joint venture now operational
- Ohio ferrovanadium expansion
- Lithium hydroxide refining plant in Germany

The fundamental positions of our businesses are sound, and AMG remains focused on disciplined, sustainable growth

# STRATEGY

AMG's strategy is to build its critical materials business through industry consolidation, process innovation and product development

## **PROCESS INNOVATION & PRODUCT DEVELOPMENT**

Continue to focus on process innovation and product development to improve the market position of AMG's businesses

## **INDUSTRY CONSOLIDATION**

Pursue opportunities for horizontal and vertical industry consolidation across AMG's critical materials portfolio

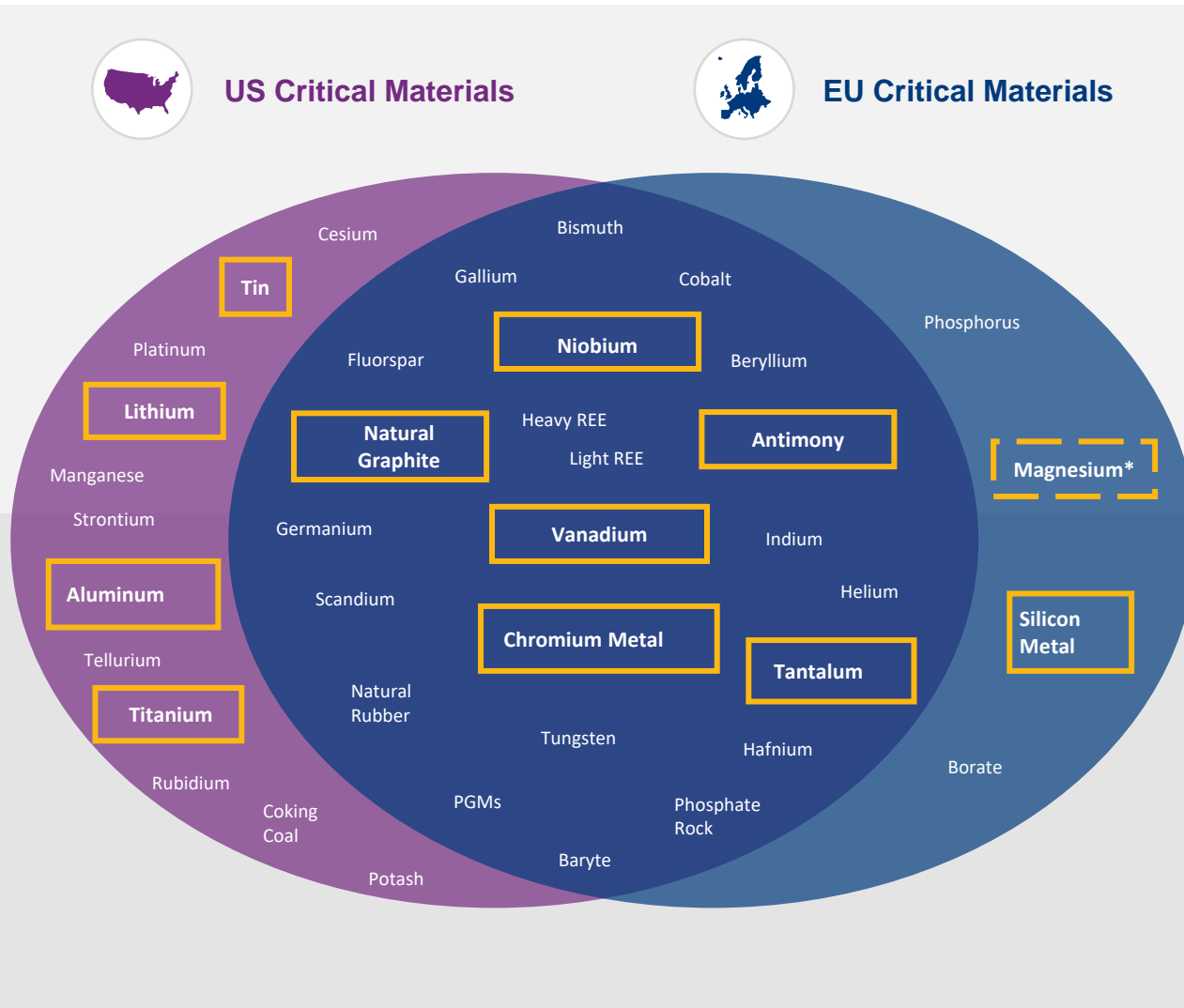
## **EXPANSION OF EXISTING HIGH-GROWTH BUSINESSES**

Pursue opportunities in high-growth areas within the existing product portfolio

AMG's overriding strategic objective is to achieve industry leadership while being the low-cost producer



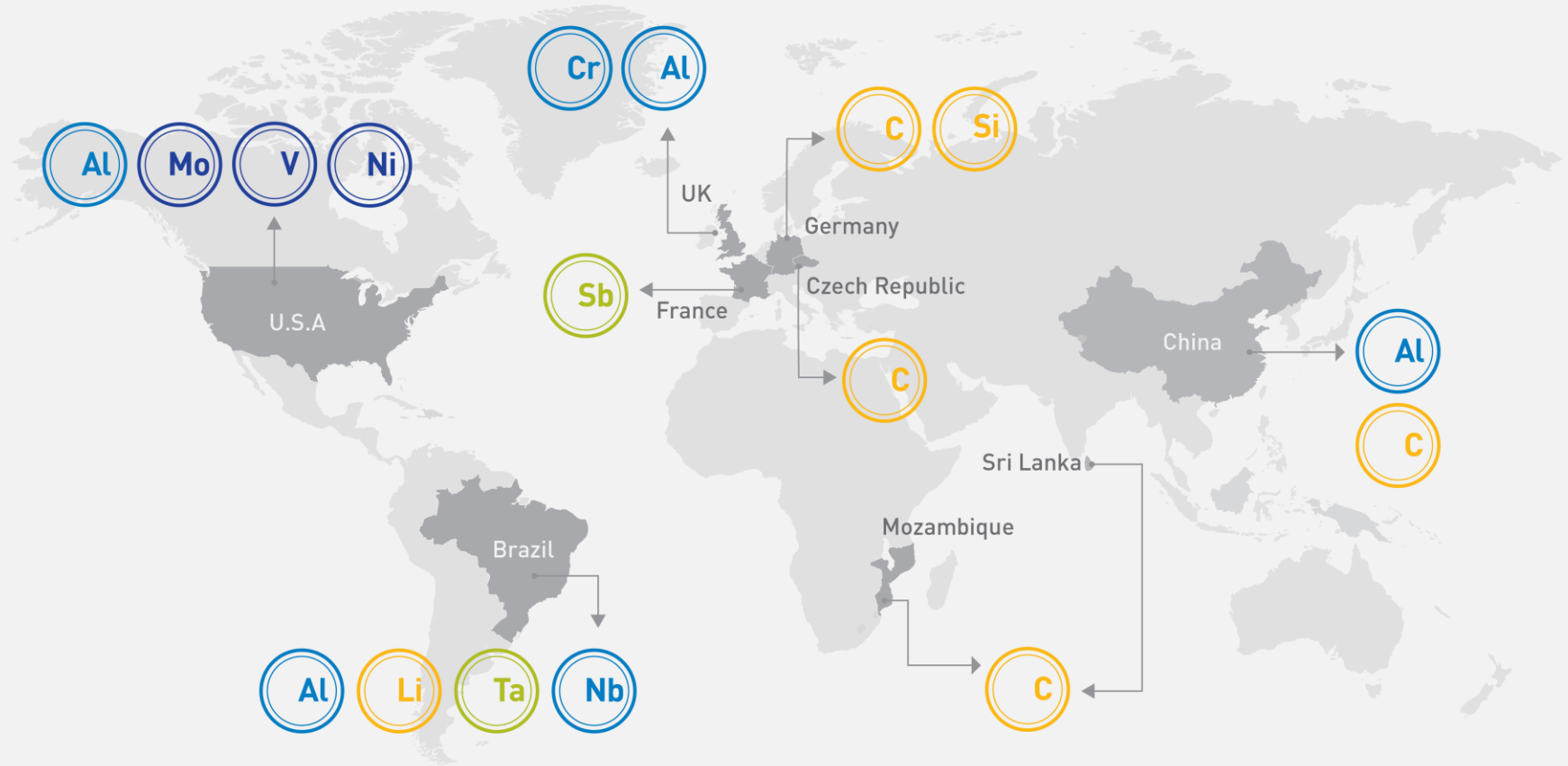
# CRITICAL RAW MATERIALS: AMG PRESENCE



- AMG has a unique critical materials portfolio comprising of 7 EU critical materials and 10 US critical materials
- The EU identifies 27 total critical raw materials, the US 35

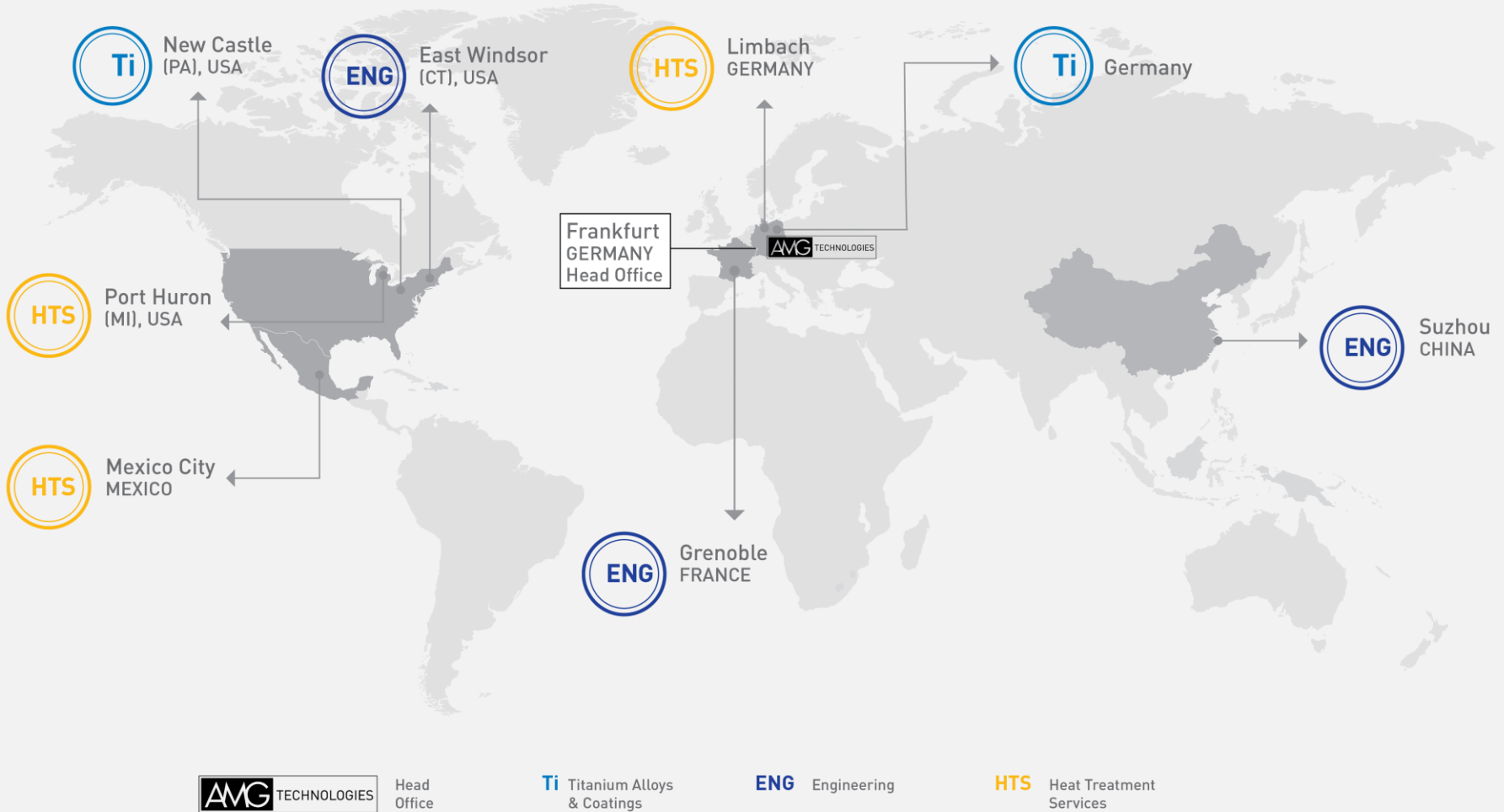
\* AMG possesses technology license patent for production of Magnesium products

# AMG GLOBAL FOOTPRINT: CRITICAL MATERIALS



**Al** Aluminum Master Alloys, Aluminum Powders   
 **Sb** Antimony   
 **C** Natural Graphite   
 **Si** Silicon Metal   
 **Cr** Chromium Metal   
 **Mo** Molybdenum   
 **Ni** Nickel   
 **Ta** Tantalum  
**Li** Lithium   
**Nb** Niobium   
**V** FeV

# AMG GLOBAL FOOTPRINT: AMG TECHNOLOGIES






# HEALTH AND SAFETY FOCUS



## Safety Indicators

AMG compares itself to the industry average for Primary Metal Manufacturing (NAICS 331).











The most recent data provided in 2018 by the United States Bureau of Labor Statistics reports that the Primary Metal Manufacturing industry's total recordable case rate was **4.60** and the lost time rate was **2.80**.

YEAR	LOST TIME INCIDENTS IN THE LAST 12 MONTHS	12 MONTH AVERAGE LOST TIME INCIDENT RATE	12 MONTH AVERAGE TOTAL INCIDENT RATE
2018	17	0.58	1.23
2019	25 	0.80 	1.46 




Internal safety performance in both lost time incidence rate and recordable incidence rate has slightly regressed year-over-year, interrupting a 5-year improvement trend.

# CRITICAL MATERIALS – MARKET TRENDS

















CRITICAL MATERIALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
<b>AMG VANADIUM</b> FERROVANADIUM FERRONICKEL-MOLYBDENUM	<b>INFRASTRUCTURE</b>	<b>INFRASTRUCTURE GROWTH</b>	 
<b>AMG BRAZIL</b> TANTALUM & NIOBIUM	<b>MICRO CAPACITORS, SUPERALLOYS</b>	<b>COMMUNICATIONS &amp; ELECTRONICS</b> <b>FUEL EFFICIENCY</b>	 <b>ATI</b> <b>H.C. Starck</b> 
<b>AMG LITHIUM</b> LITHIUM CONCENTRATE (SPODUMENE)	<b>BATTERIES</b>	<b>RENEWABLE ENERGY</b> <b>COMMUNICATIONS &amp; ELECTRONICS</b>	<b>CONFIDENTIAL</b>
<b>AMG SILICON</b> SILICON METAL	<b>ALUMINUM ALLOYS, SOLAR</b>	<b>FUEL EFFICIENCY</b> <b>CLEAN ENERGY</b>	 
 <b>ENERGY</b>	 <b>TRANSPORTATION</b>	 <b>INFRASTRUCTURE</b>	 <b>SPEC. METALS AND CHEM.</b>

# CRITICAL MATERIALS – MARKET TRENDS

CRITICAL MATERIALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
<b>AMG GRAPHITE</b> NATURAL GRAPHITE	<b>EXPANDED POLYSTYRENE (EPS), BATTERY ANODES</b>	<b>ENERGY SAVING</b> <b>ENERGY STORAGE</b>	 
<b>AMG ANTIMONY</b> ANTIMONY TRIOXIDE ANTIMONY MASTERBATCHES ANTIMONY PASTES	<b>FLAME RETARDANTS</b>	<b>PLASTICS</b>	 
<b>AMG SUPERALLOYS UK</b> CHROMIUM METAL	<b>AEROSPACE</b>	<b>FUEL EFFICIENCY</b>	 
<b>AMG ALUMINUM</b> ALUMINUM MASTER ALLOYS ALUMINUM POWDERS	<b>AEROSPACE, AUTOMOTIVE</b>	<b>FUEL EFFICIENCY</b>	  
 ENERGY	 TRANSPORTATION	 INFRASTRUCTURE	 SPEC. METALS AND CHEM.



# AMG TECHNOLOGIES – MARKET TRENDS

CRITICAL MATERIALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
<b>AMG TITANIUM ALLOYS &amp; COATINGS</b> TITANIUM MASTER ALLOYS & COATINGS	<b>AEROSPACE</b>	<b>FUEL EFFICIENCY ENERGY SAVING</b>	 
<b>AMG ENGINEERING</b> CAPITAL GOODS (VACUUM FURNACES)	<b>AEROSPACE, AUTOMOTIVE</b>	<b>FUEL EFFICIENCY ELECTRONICS</b>	      
<b>AMG ENGINEERING</b> VACUUM HEAT TREATMENT SERVICES	<b>AEROSPACE, AUTOMOTIVE</b>	<b>FUEL EFFICIENCY</b>	  
 <b>ENERGY</b>	 <b>TRANSPORTATION</b>	 <b>INFRASTRUCTURE</b>	 <b>SPEC. METALS AND CHEM.</b>

# FINANCIAL HIGHLIGHTS



## FY 2019 AT A GLANCE

AMOUNTS IN \$M (EXCEPT EARNINGS PER SHARE)	FY 2019	FY 2018	% CHANGE
Revenue	<b>\$1,188.6</b>	\$1,310.3	(9%)
Gross Profit	<b>\$118.3</b>	\$315.2	(62%)
Gross Margin %	<b>10.0%</b>	24.1%	(59%)
(Loss) Profit before Income Taxes	<b>(\$53.7)</b>	\$139.8	N/A
EBITDA	<b>\$121.4</b>	\$217.1	(44%)
EBITDA Margin %	<b>10.2%</b>	16.6%	(39%)
Net Debt (Cash)	<b>\$162.9</b>	(\$0.5)	N/A
Return On Capital Employed (ROCE)	<b>13.7%</b>	35.4%	(61%)
Adjusted Net Income*	<b>\$19.8</b>	\$97.1	(80%)
Diluted Earnings per Share	<b>(1.64)</b>	2.97	N/A

- Profitability was lower in 2019 than in 2018 due largely to an unprecedented fall in critical materials prices across the AMG portfolio
- AMG's status as a low-cost producer across all nine of its business units ensured that each one was EBITDA positive throughout 2019

\*Adjusted net income is adjusted for inventory cost adjustments and asset impairment expense, net of tax.

# CONSOLIDATED BALANCE SHEET

AS OF IN MILLIONS OF US DOLLARS	DECEMBER 31, 2019	DECEMBER 31, 2018
Fixed assets	430.0	328.0
Goodwill and intangibles	41.9	35.1
Other non-current assets	96.5	74.4
Restricted cash	309.6	1.7
Inventories	204.2	316.7
Receivables	119.1	138.5
Other current assets	44.5	44.6
Cash	226.2	381.9
<b>TOTAL ASSETS</b>	<b>1,472.0</b>	<b>1,320.9</b>
<b>TOTAL EQUITY</b>	<b>184.4</b>	<b>344.0</b>
Long-term debt	669.5	357.0
Long-term lease liabilities	46.5	—
Employee benefits	175.9	149.2
Other long-term liabilities	41.2	50.0
Current debt	29.2	24.4
Current lease liabilities	4.2	—
Accounts payable and accruals	217.6	290.6
Advance payments	57.6	50.2
Other current liabilities	45.9	55.5
<b>TOTAL LIABILITIES</b>	<b>1,287.6</b>	<b>976.9</b>
<b>TOTAL EQUITY AND LIABILITIES</b>	<b>1,472.0</b>	<b>1,320.9</b>

# CONSOLIDATED INCOME STATEMENT

FOR THE YEAR ENDED IN MILLIONS OF US DOLLARS	DECEMBER 31, 2019	DECEMBER 31, 2018
Revenue	1,188.6	1,310.3
Cost of sales	1,070.3	995.1
<b>Gross profit</b>	<b>118.3</b>	<b>315.2</b>
Selling, general & administrative	143.5	143.6
Environmental expense	0.7	8.8
Other income, net	(0.2)	(0.5)
<b>Operating (loss) profit</b>	<b>(25.8)</b>	<b>163.3</b>
Net finance costs	27.9	23.5
<b>(Loss) profit before income taxes</b>	<b>(53.7)</b>	<b>139.8</b>
Income tax (benefit) expense	(5.1)	45.0
<b>(Loss) profit for the period</b>	<b>(48.6)</b>	<b>94.8</b>
Shareholders of the Company	(48.3)	94.6
Non-controlling interest	(0.3)	0.2
<b>ADJUSTED EBITDA</b>	<b>121.4</b>	<b>217.1</b>

# CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED IN MILLIONS OF US DOLLARS	DECEMBER 31, 2019	DECEMBER 31, 2018
EBITDA	121.4	217.1
Change in working capital and deferred revenue	76.2	(73.1)
Other operating cash flow	(103.3)	(7.0)
<b>Cash generated from operating activities</b>	<b>94.3</b>	<b>137.0</b>
Finance costs paid, net	(23.1)	(18.3)
Income tax paid	(24.6)	(21.3)
<b>Net cash flow from operating activities</b>	<b>46.6</b>	<b>97.4</b>
Capital expenditures	(79.4)	(73.0)
Change in restricted cash (municipal bond)	(307.9)	(0.9)
Other investing activities	(22.6)	2.6
<b>Net cash flow used in investing activities</b>	<b>(409.9)</b>	<b>(71.3)</b>
<b>Net cash flow from financing activities</b>	<b>208.7</b>	<b>182.7</b>
Net (decrease) increase in cash and equivalents	(154.6)	208.8
<b>Cash and equivalents at January 1</b>	<b>381.9</b>	<b>178.8</b>
Effect of exchange rate fluctuations on cash held	(1.1)	(5.7)
<b>CASH AND EQUIVALENTS AT DECEMBER 31</b>	<b>226.2</b>	<b>381.9</b>



# NET (LOSS) INCOME TO EBITDA RECONCILIATION

FOR THE YEAR ENDED IN MILLIONS OF US DOLLARS	DECEMBER 31, 2019	DECEMBER 31, 2018
Net (loss) income	(48,586)	94,781
Income tax (benefit) expense	(5,119)	44,971
Net finance cost *	27,626	22,949
Equity-settled share-based payment transactions	5,514	7,499
Restructuring expense	3,265	2,052
Inventory cost adjustment	87,792	—
Asset impairment expense	4,519	3,333
Environmental provision	725	8,757
Exceptional legal expense	3,133	—
Others	546	(243)
<b>EBIT</b>	<b>79,415</b>	<b>184,099</b>
Depreciation and amortization	41,967	33,034
<b>EBITDA</b>	<b>121,382</b>	<b>217,133</b>

\*Excludes foreign exchange expense (income)