

CRITICAL MATERIALS FOR A SUSTAINABLE PLANET

Investor Presentation | Company Description 2023

AMG CRITICAL MATERIALS N.V.



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AMG: A CRITICAL MATERIALS COMPANY

GLOBAL TRENDS

CO₂ emission reduction, circular economy, population growth, increasing affluence, and energy efficiency

DEMAND

Innovative new products that promote CO₂ reduction, including materials with higher energy density and higher temperature resistance, as well as products that are lighter and stronger than competing materials

SUPPLY

AMG sources, upgrades, purifies, and supplies the critical minerals that the market demands



AMG PROVIDES CRITICAL MATERIALS AND RELATED PROCESS TECHNOLOGIES TO ADVANCE A LESS CARBON-INTENSIVE WORLD

A GLOBAL IMPERATIVE FOR THE 21ST CENTURY

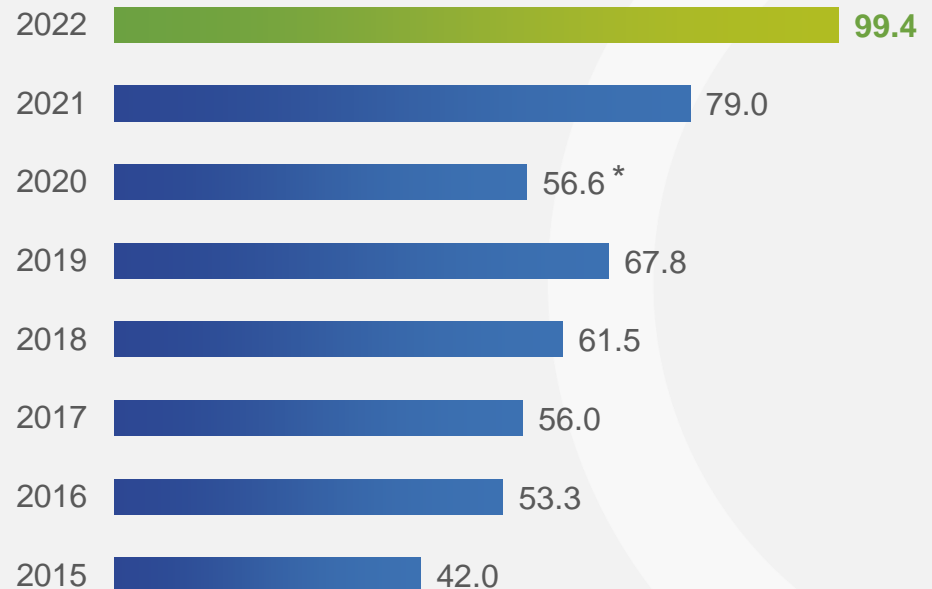
AMG: ENABLING TECHNOLOGIES

Products and processes saving CO₂ emissions during use (e.g., light-weighting and fuel efficiency in the aerospace and automotive industries)

AMG: MITIGATING TECHNOLOGIES

Products and processes saving raw minerals, energy and CO₂ emissions during manufacturing (e.g., recycling of ferrovanadium)

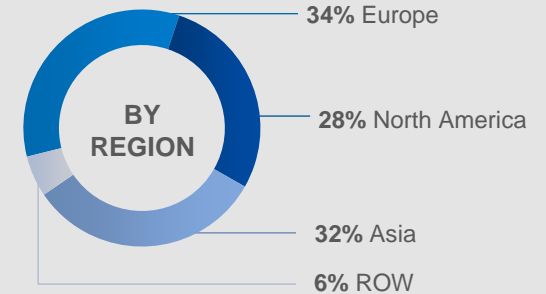
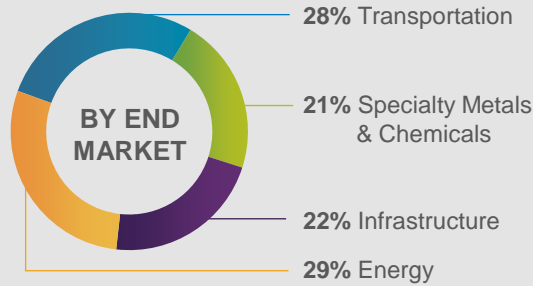
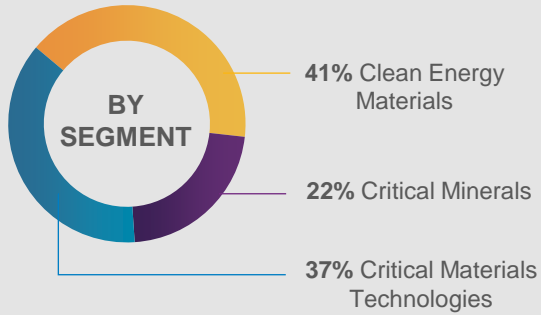
AMG'S ENABLED CO₂ EMISSION REDUCTIONS (Million MT)



* 2020 decrease due to the global pandemic significantly impacting volumes in our aerospace exposed businesses

AMG AT A GLANCE

FY 2022 REVENUE



AMG IS A GLOBAL SUPPLIER OF CRITICAL MATERIALS TO:



ENERGY



TRANSPORTATION



INFRASTRUCTURE



SPECIALTY METALS AND CHEMICALS

Market leading producer of critical materials and related process technologies

~3,400
Employees

~\$1.6 billion
Annual Revenues

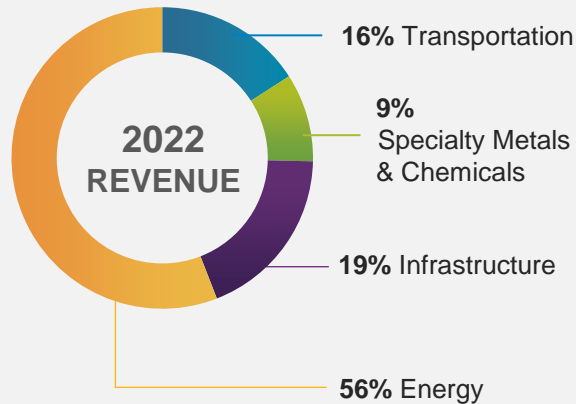
At the forefront of
CO₂ Reduction

AMG BUSINESS SEGMENTS

AMG CLEAN ENERGY MATERIALS

AMG's mining and recycling business

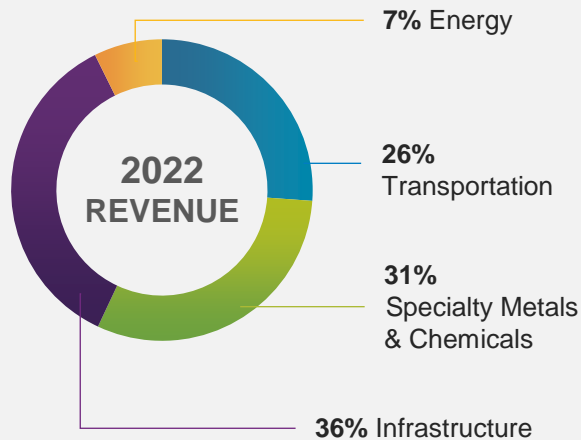
- Vanadium
- Mineração (Tantalum & Lithium)
- Aluminum (Master Alloys)



AMG CRITICAL MINERALS

AMG's conversion and mining business

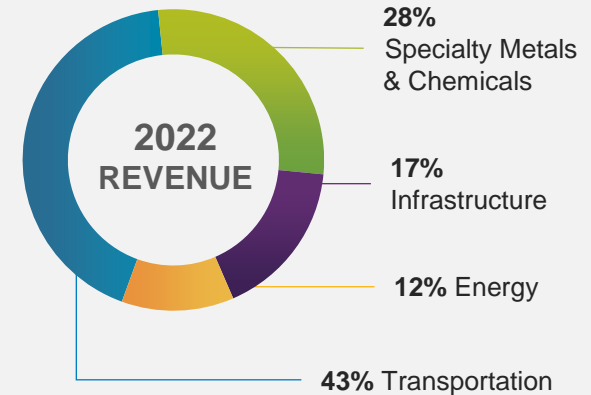
- Silicon Metal
- Graphite
- Antimony



AMG CRITICAL MATERIALS TECHNOLOGIES

AMG's titanium, vacuum systems and services business

- Titanium
- Furnaces
- Heat treatment services
- Chrome Metal



STRONG FUNDAMENTALS, ADAPTIVE TO GLOBAL DISRUPTION

OPTIMIZED CAPITAL STRUCTURE

- In November 2021, AMG entered into a new \$350 million 7-year senior secured term loan B facility (“term loan”) and a \$200 million 5-year senior secured revolving credit facility (“revolver”). The total facility amount of \$550 million replaced AMG’s prior credit facility and extended the term loan maturity from 2025 to 2028 and revolver maturity from 2023 to 2026.
- AMG Engineering entered into €140 million of long-term bilateral unsecured performance-based guarantee facility agreements in January 2022, which replace the existing ones.
- On July 11, 2019, the Company entered into a \$307 million 30-year term municipal bond which finances 100% of the ferrovanadium expansion in Zanesville, Ohio. The bond has a coupon rate of 5.0% and matures on July 1, 2049.

BUSINESS RESILIENCE

- Focus on operational efficiency
- Reduction of operating costs and capital expenditures
- Momentum on positive business gains, strong backlogs into early 2023

DISCIPLINED APPROACH TO GROWTH

- AMG Brazil’s spodumene production expansion will solidify AMG’s low-cost position
- AMG Lithium’s refinery, under construction in Germany, is Europe’s first lithium hydroxide refinery
- New vanadium spent catalyst recycling facility in Ohio is a clear manifestation of AMG’s industry leadership in the recycling of hazardous refinery waste globally

○ 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

EXPANSION OF EXISTING HIGH-GROWTH BUSINESSES

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

PROCESS INNOVATION & PRODUCT DEVELOPMENT

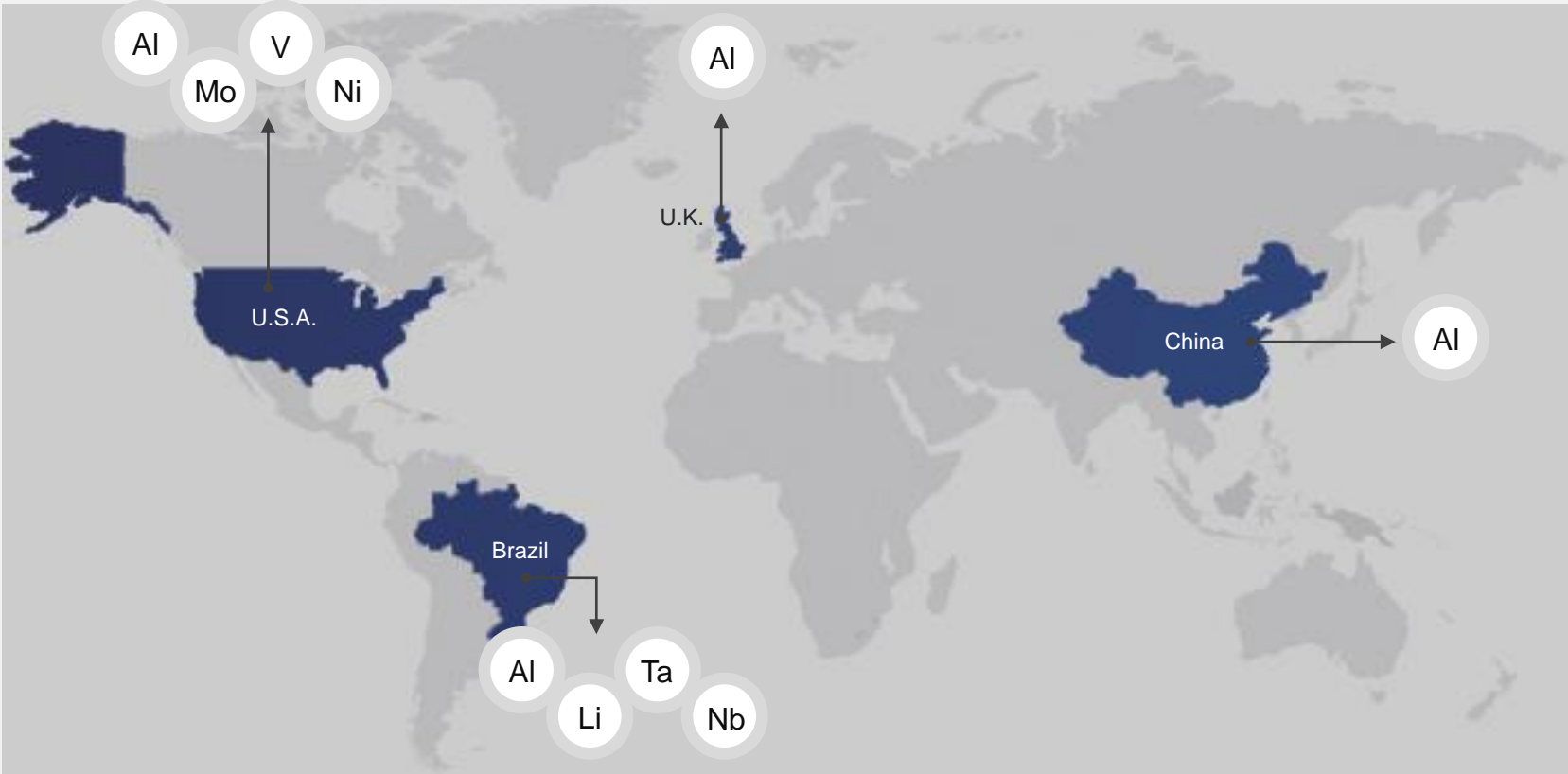
Continue to focus on process innovation and product development to improve the market position of AMG's businesses

INDUSTRY CONSOLIDATION

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

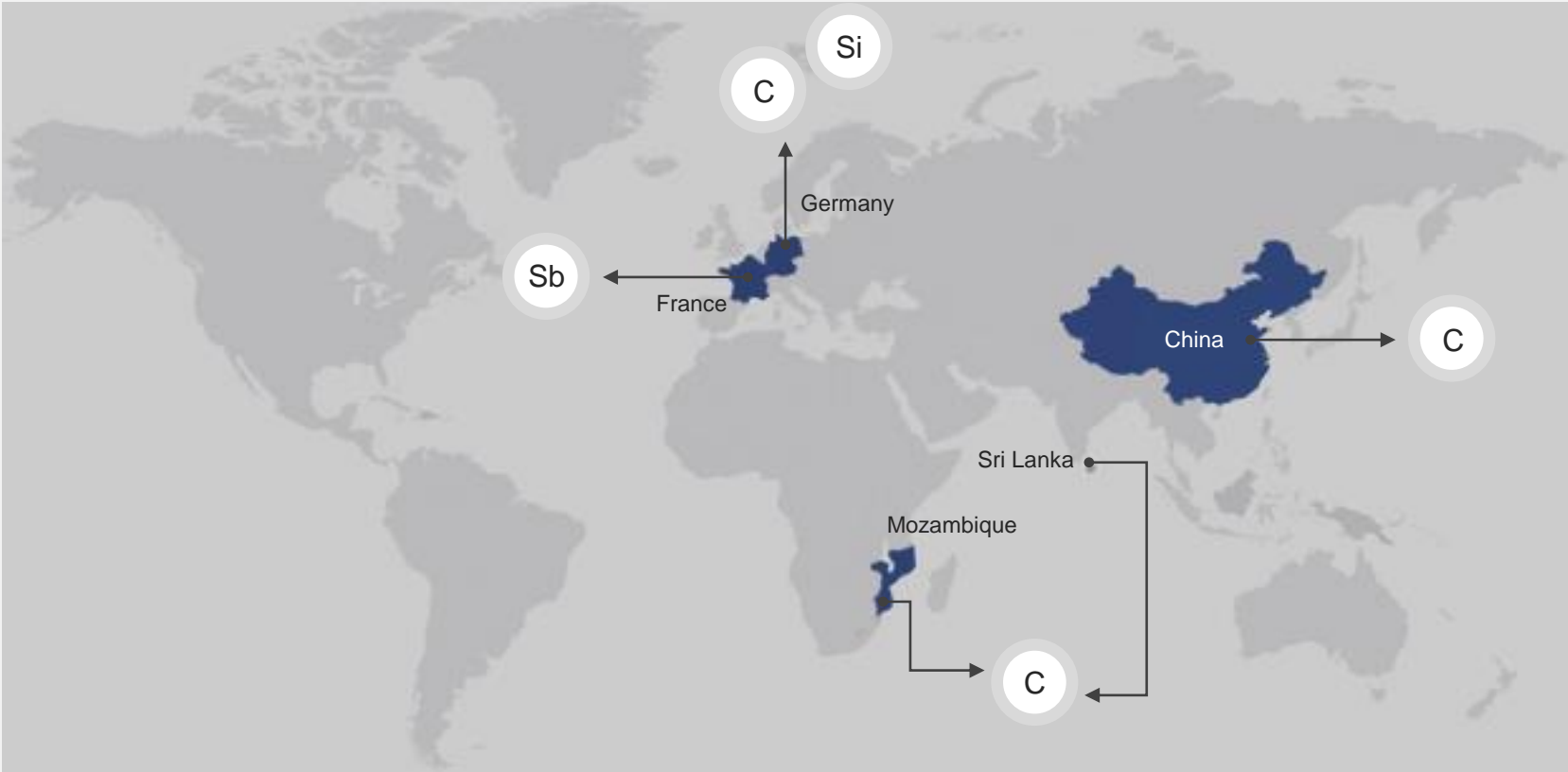
—○ AMG's overriding strategic objective is to **achieve industry leadership** while being the **low-cost producer**

AMG GLOBAL FOOTPRINT: CLEAN ENERGY MATERIALS



- Al Aluminum Master Alloys, Aluminum Powders
- Mo Molybdenum
- V FeV
- Ni Nickel
- Nb Niobium
- Li Lithium
- Ta Tantalum

AMG GLOBAL FOOTPRINT: CRITICAL MINERALS

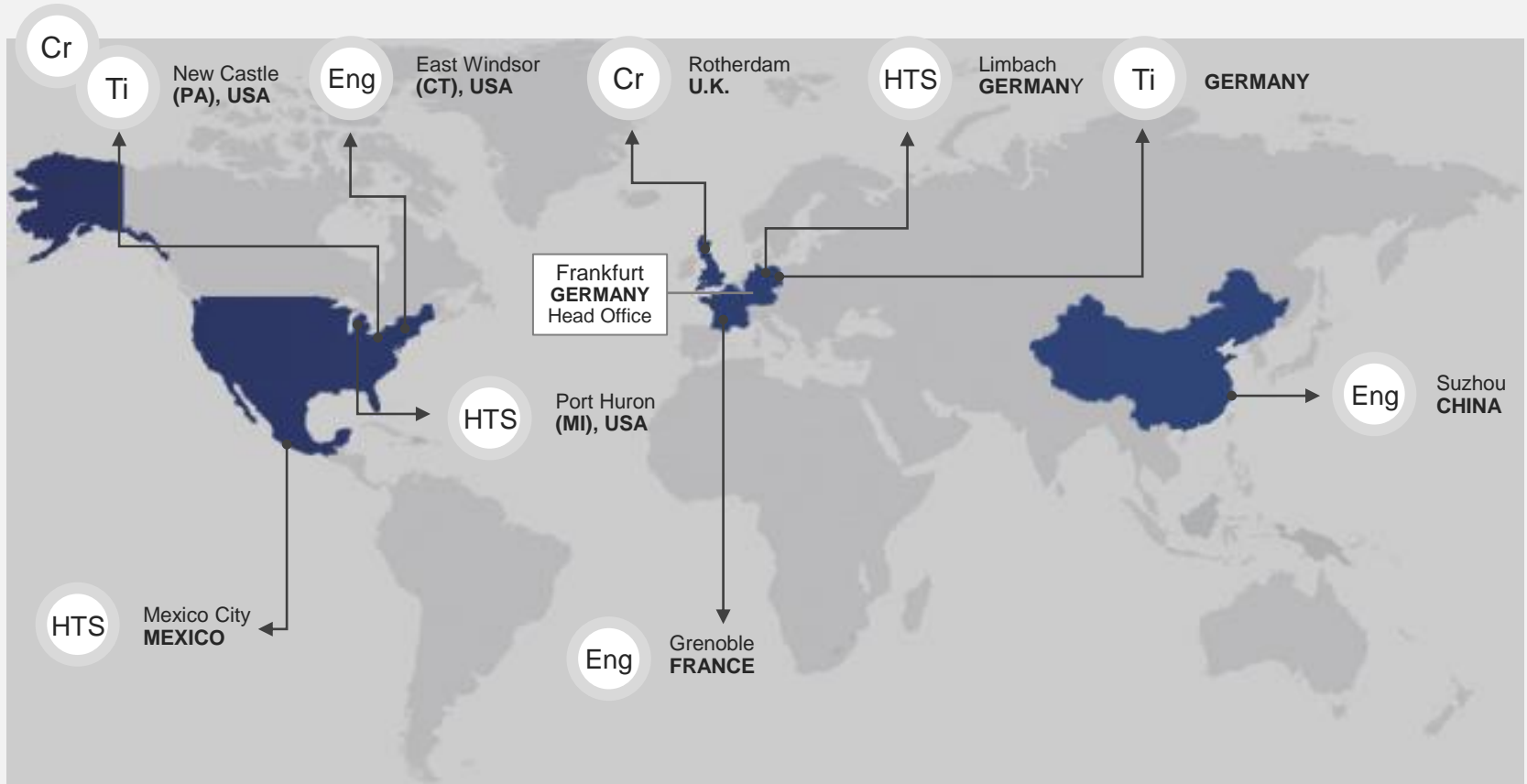


Sb Antimony

C Natural Graphite

Si Silicon Metal

AMG GLOBAL FOOTPRINT: CRITICAL MATERIALS TECHNOLOGIES



Ti Titanium

Eng Engineering

HTS Heat Treatment Services

Cr Chromium Metal


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 2021 by the United States Bureau of Labor Statistics reports that the Primary Metal Manufacturing industry's total recordable case rate was **4.1** and the lost time rate was **1.2**.

YEAR	LOST TIME INCIDENTS IN THE LAST 12 MONTHS	12 MONTH AVERAGE LOST TIME INCIDENT RATE	12 MONTH AVERAGE TOTAL INCIDENT RATE
2021	11	0.39	1.08
2022	12 	0.46 	0.95 













AMG outperformed the NAICS 331 benchmark by 77% for recordable rate and by 62% for lost time rate.

















CLEAN ENERGY MATERIALS – MARKET TRENDS

CRITICAL MINERALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
AMG VANADIUM FERROVANADIUM FERRONICKEL- MOLYBDENUM	INFRASTRUCTURE	INFRASTRUCTURE GROWTH VANADIUM REDOX FLOW BATTERIES	GLENCORE
AMG BRAZIL TANTALUM & NIOBIUM	MICRO CAPACITORS, SUPERALLOYS	COMMUNICATIONS & ELECTRONICS FUEL EFFICIENCY	 ATI H.C. Starck   TANiOBIS <small>inspiring metal evolution</small>
AMG LITHIUM LITHIUM CONCENTRATE (SPODUMENE)	BATTERIES	RENEWABLE ENERGY COMMUNICATIONS & ELECTRONICS	 GENERAL LITHIUM
AMG ALUMINUM ALUMINUM MASTER ALLOYS ALUMINUM POWDERS	AEROSPACE, AUTOMOTIVE	FUEL EFFICIENCY	 Constellium   RioTinto
 ENERGY	 TRANSPORTATION	 INFRASTRUCTURE	 SPEC. METALS AND CHEM.

CRITICAL MINERALS – MARKET TRENDS

CRITICAL MINERALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
<p>AMG GRAPHITE NATURAL GRAPHITE</p>	<p>EXPANDED POLYSTYRENE (EPS), BATTERY ANODES</p>	<p>ENERGY SAVING ENERGY STORAGE</p>	 
<p>AMG ANTIMONY ANTIMONY TRIOXIDE ANTIMONY MASTERBATCHES ANTIMONY PASTES</p>	<p>FLAME RETARDANTS</p>	<p>PLASTICS</p>	 
<p>AMG SILICON SILICON METAL</p>	<p>ALUMINUM ALLOYS, SOLAR</p>	<p>FUEL EFFICIENCY CLEAN ENERGY</p>	 
 ENERGY	 TRANSPORTATION	 INFRASTRUCTURE	 SPEC. METALS AND CHEM.

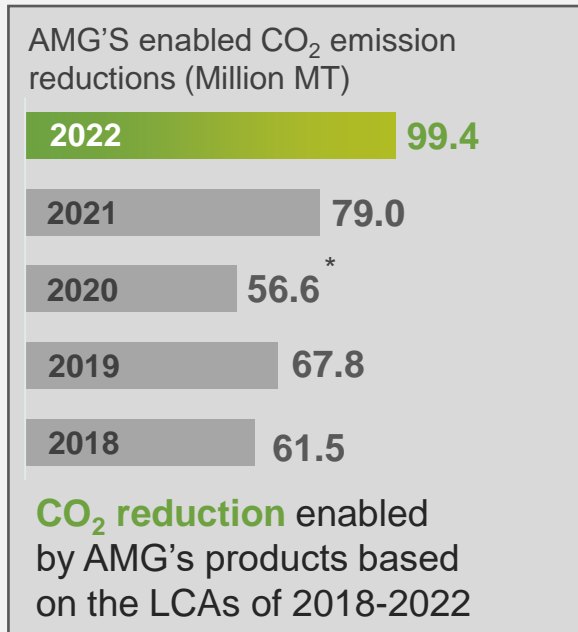
CRITICAL MATERIALS TECHNOLOGIES – MARKET TRENDS





CRITICAL MINERALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
AMG TITANIUM TITANIUM ALLOYS	AEROSPACE	FUEL EFFICIENCY ENERGY SAVING	 
AMG ENGINEERING CAPITAL GOODS (VACUUM FURNACES)	AEROSPACE, AUTOMOTIVE	FUEL EFFICIENCY ELECTRONICS	   
AMG ENGINEERING VACUUM HEAT TREATMENT SERVICES	AEROSPACE, AUTOMOTIVE	FUEL EFFICIENCY	  
AMG CHROME CHROMIUM METAL	AEROSPACE, DISTRIBUTED ENERGY, FUEL CELLS	FUEL EFFICIENCY	  
 ENERGY	 TRANSPORTATION	 INFRASTRUCTURE	 SPEC. METALS AND CHEM.

ECO₂RP IS THE PORTFOLIO OF AMG'S PRODUCTS ENABLING CO₂ REDUCTION

Strict selection criteria

Products are accepted in **ECO₂RP** only when the **enabled CO₂ reduction** effect has been established by an LCA performed by a leading third-party expert



71.77	1	Thermal barrier coatings, enabling fuel savings through higher operating temperatures in aircraft engines	
1.96	2	Aluminum alloys, enabling reduced fuel consumption by light weighting	
6.43	3	Light weighting leading to fuel savings	
2.86	4	Ferrovandium, alloy for rebar steel, reducing quantity required for construction, and mitigation from recycling	
1.28	5	Graphite, as insulation in buildings, enabling lower domestic heating requirements	
0.06	6	Turbocharger wheel casting, turbochargers in vehicle engines enable engine downsizing fuel efficiency	
0.02	7	Glass coating, enabling lower cooling requirements	
8.78	8	Automotive transmission heat treatment, enabling vehicle fuel savings	
6.03	9	Titanium aluminides, enabling fuel savings and use of hotter temperatures	
0.24	10	Nickel based super alloys, recycling production scrap instead of primary mining	
0.03	11	Vanadium Pentoxide (V ₂ O ₅)	
0.01	12	Microsilica	

*2020 decrease due to the global pandemic significantly impacting volumes in our aerospace exposed businesses



FINANCIAL HIGHLIGHTS



FY 2022 AT A GLANCE

AMOUNTS IN \$M (EXCEPT EARNINGS PER SHARE)	FY 2022	FY 2021	% CHANGE
Revenue	\$1,642.8	\$1,204.7	36%
Gross Profit	\$409.5	\$208.2	97%
Gross Margin %	24.9%	17.3%	44%
Profit before Income Taxes	\$274.9	\$22.5	1,122%
EBITDA	\$342.6	\$136.7	151%
EBITDA Margin %	20.9%	11.3%	85%
Net Debt	\$329.9	\$284.5	16%
Return On Capital Employed (ROCE)	30.8%	11.9%	159%
Net Income Attributable to Shareholders	\$187.6	\$13.8	1,259%
Diluted Earnings per Share	\$5.73	\$0.44	1,202%

- AMG's results have trended positively since Q2 2020
- AMG management believes that this positive trend will continue and expects EBITDA for 2023 to exceed \$400 million

CONSOLIDATED BALANCE SHEET

AS OF <i>IN MILLIONS OF US DOLLARS</i>	DECEMBER 31, 2022	DECEMBER 31, 2021
Fixed assets	\$797.6	\$693.6
Goodwill and intangibles	41.4	44.7
Other non-current assets	108.2	91.3
Restricted cash	6.9	93.4
Inventories	277.3	218.3
Receivables	162.5	145.4
Other current assets	132.7	75.1
Cash	346.0	337.9
TOTAL ASSETS	1,872.6	1,699.7
TOTAL EQUITY	517.8	294.2
Long-term debt	661.3	675.4
Long-term lease liabilities	44.2	45.7
Employee benefits	117.2	162.6
Other long-term liabilities	74.9	55.4
Current debt	21.6	40.4
Current lease liabilities	4.7	4.9
Accounts payable and accruals	310.0	333.5
Advance payments	51.1	35.1
Other current liabilities	69.8	52.5
TOTAL LIABILITIES	1,354.8	1,405.5
TOTAL EQUITY AND LIABILITIES	1,872.6	1,699.7

CONSOLIDATED INCOME STATEMENT

FOR THE YEAR ENDED <i>IN MILLIONS OF US DOLLARS</i>	DECEMBER 31, 2022	DECEMBER 31, 2021
Revenue	\$1,642.8	\$1,204.7
Cost of sales	(1,233.3)	(996.5)
Gross profit	409.5	208.2
Selling, general & administrative	(148.0)	(139.6)
Environmental expense	(0.1)	(11.9)
Other income, net	45.7	0.4
Operating profit	307.1	57.1
Net finance costs	(30.9)	(33.6)
Share of loss of associates	(1.3)	(1.0)
Profit before income tax	274.9	22.5
Income tax expense	(84.1)	(8.7)
Profit for the year	190.8	13.8
Shareholders of the Company	187.6	13.8
Non-controlling interest	3.2	–
ADJUSTED EBITDA	342.6	136.7

CONSOLIDATED STATEMENT OF CASH FLOWS

FOR THE YEAR ENDED <i>IN MILLIONS OF US DOLLARS</i>	DECEMBER 31, 2022	DECEMBER 31, 2021
EBITDA	\$342.6	\$136.7
Change in working capital and deferred revenue	(123.3)	22.7
Other operating cash flow	13.4	(36.8)
Cash generated from operating activities	232.7	122.6
Finance costs paid, net	(23.3)	(21.9)
Income tax paid	(41.8)	(9.9)
Net cash from operating activities	167.6	90.8
Capital expenditures	(191.2)	(178.0)
Use of restricted cash	86.5	115.5
Other investing activities	1.6	(0.5)
Net cash used in investing activities	(103.1)	(63.0)
Net cash (used in) from financing activities	(49.3)	111.1
Net increase in cash and equivalents	15.2	138.9
Cash and equivalents at January 1	337.8	207.4
Effect of exchange rate fluctuations on cash held	(7.0)	(8.4)
CASH AND EQUIVALENTS AT DECEMBER 31	346.0	337.9

PROFIT TO EBITDA RECONCILIATION

FOR THE YEAR ENDED (000's USD)	DECEMBER 31, 2022	DECEMBER 31, 2021
Profit for the period	\$190,771	\$13,779
Income tax expense	84,097	8,707
Net finance cost	30,941	33,602
Equity-settled share-based payment transactions	5,552	10,206
Restructuring expense	582	522
Net contract settlements ⁽¹⁾	(45,436)	–
Inventory cost adjustment	1,589	1,164
Asset impairment expense (reversal) ⁽¹⁾	10,597	(711)
Environmental provision	133	11,941
Strategic project expense ⁽²⁾	17,070	12,157
Share of loss of associates	1,250	1,053
Others	105	571
EBIT	297,251	92,991
Depreciation and amortization	45,299	43,685
EBITDA	342,550	136,676

(1) Associated with the silicon metal shutdown, AMG recorded income from the sale of an existing supply contract which positively impacted operating profit for the year. This income was offset by a settlement with a major customer and an impairment of existing assets.

(2) The Company is in the initial development and ramp-up phases for several strategic expansion projects, including the joint venture with Shell, Hybrid Lithium Vanadium Redox Flow Battery System, and the lithium expansion in Germany, which incurred project expenses during the year but are not yet operational. AMG is adjusting EBITDA for these exceptional charges.



LITHIUM LAB



LITHIUM HYDROXIDE - BITTERFELD, GERMANY



LIVA BATTERY



LI PROCESSING, AMG BRAZIL



TITANIUM



PLUTONIUM



TANTALUM, NIOBIUM, AND HAFNIUM



VANADIUM, MOLYBDENUM AND NICKEL - CAMBRIDGE, OHIO



VANADIUM, MOLYBDENUM AND NICKEL - ZANESVILLE, OHIO



LITHIUM TAILINGS



ENGINEERING - HANAU, GERMANY



MELTSHOP - ZANESVILLE, OHIO



V₂O₅

This announcement appears as a matter of record.



AMG's LAW:

“Everything that can be recycled will be recycled.”

AMG Critical Materials N.V.
amg-nv.com