

CRITICAL MATERIALS VOOR EEN DUURZAME PLANEET

BELEGGERS PRESENTATIE | BEDRIJFSOVERZICHT 2023

AMG CRITICAL MATERIALS N.V.



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AMG: CRITICAL MATERIALS BEDRIJF

WERELDWIJDE TRENDS

CO₂ emissie reductie, circulaire economie, bevolkingsgroei, toename van de welvaart, en energie-efficiency

VRAAG

Innovative nieuwe producten die CO₂ reductie bevorderen, inclusief materialen met hogere energiedichtheid die beter bestand zijn tegen hogere temperaturen, en ook lichter en sterker dan concurrerende materialen

AANBOD

AMG wint, verbetert, zuivert en levert de kritische mineralen waar de markt om vraagt



AMG LEVERT CRITICAL MATERIALS EN AANVERWANTE PROCES TECHNOLOGIEËN OM EEN MINDER CO2 INTENSIEVE WERELD TE BEVORDEREN

EEN WERELDWIJDE
UITDAGING VOOR DE
21E EEUW

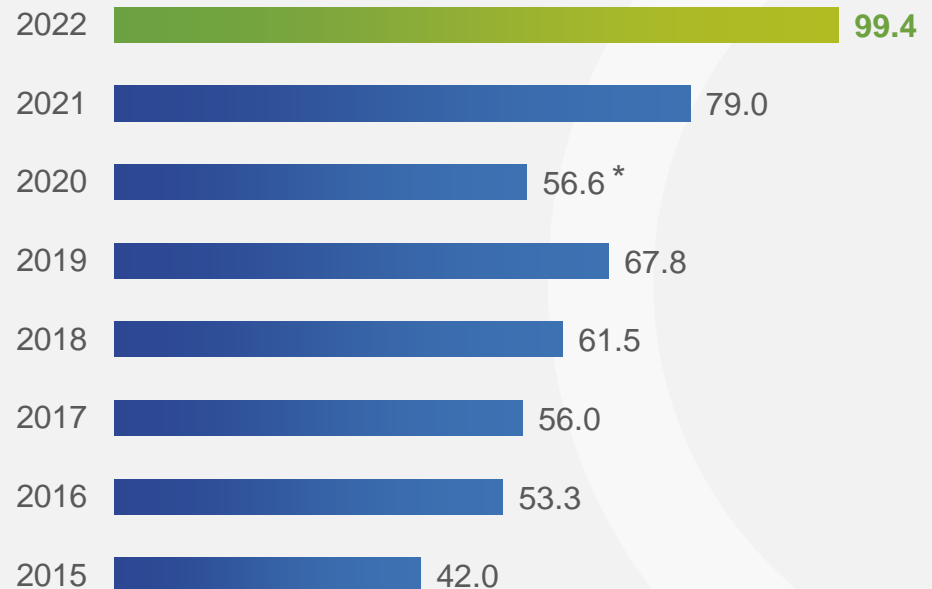
AMG: ENABLING TECHNOLOGIES

Producten en processen die CO₂-uitstoot tijdens het gebruik besparen (bijv. lichtgewicht en brandstofefficiëntie in de lucht-, ruimtevaart- en automobielandustrie)

AMG: MITIGATING TECHNOLOGIES

Producten en processen die grondstoffen, energie en CO₂-uitstoot tijdens de productie besparen. (bijv. recycling van ferrovanadium)

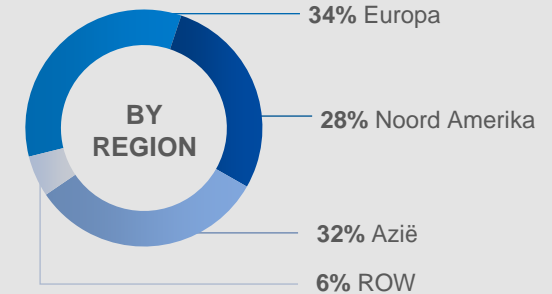
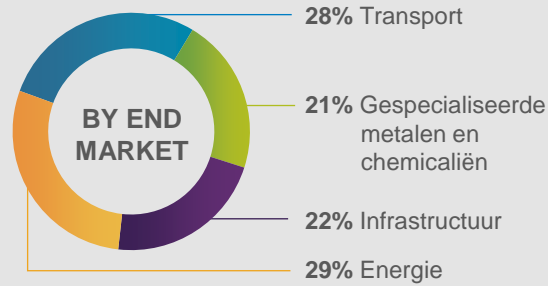
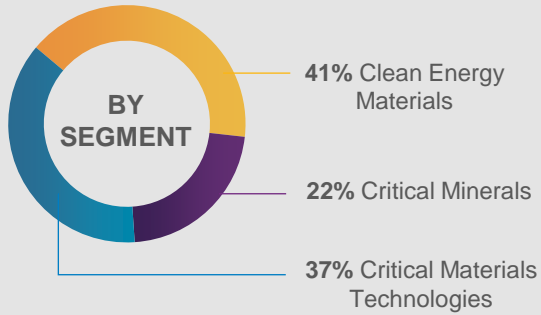
AMG'S ENABLED CO₂ EMISSION REDUCTIONS (Million MT)



* Daling in 2020 vanwege de impact van de globale pandemie op de volumes in lucht- en ruimtevaart tak van AMG

AMG AT A GLANCE

FY 2022 OMZET



AMG IS EEN WERELDWIJDE LEVERANCIER VAN CRITICAL MATERIALS NAAR:



ENERGIE



TRANSPORT



INFRASTRUCTUUR



GESPECIALISEERDE METALEN EN CHEMICALIEN

Marktleider van hoogwaardige speciale metalen en vacuüm-ovensystemen

~3,400 Medewerkers

~\$1.6 billion Jaarlijkse omzet

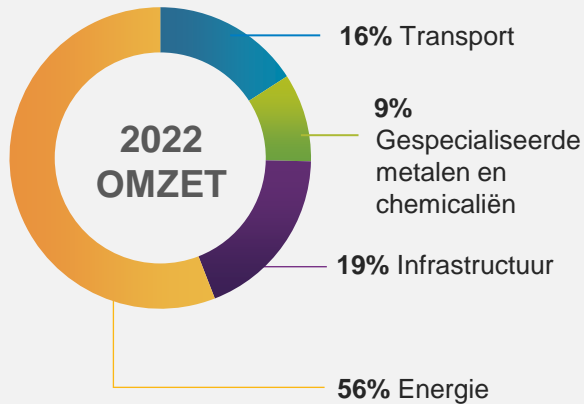
Voorloper in CO₂ Reductie

AMG BEDRIJFSONDERDELEN

AMG CLEAN ENERGY MATERIALS

AMG's mijnbouw en recycling

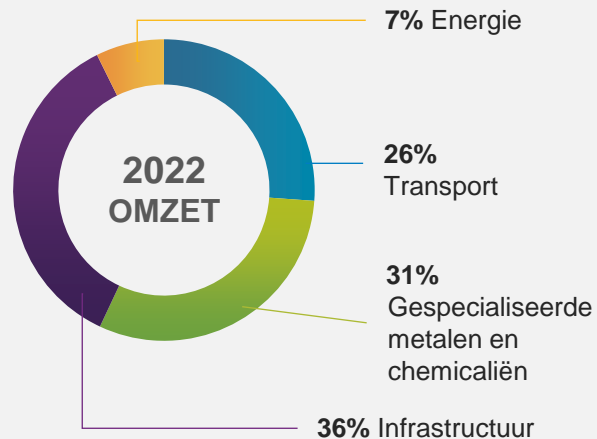
- Vanadium
- Mineração (Tantalum & Lithium)
- Aluminum (Master Alloys)



AMG CRITICAL MINERALS

AMG's conversie en mijnbouw

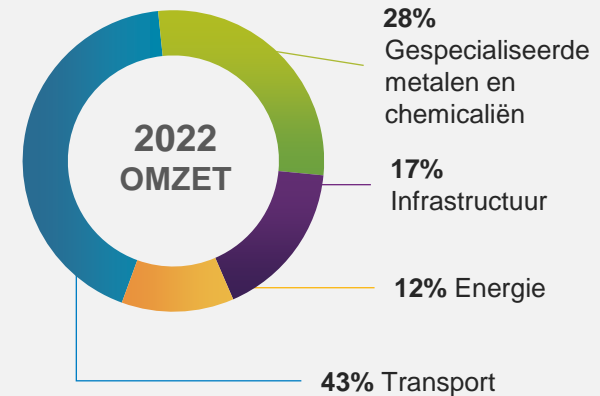
- Silicon Metal
- Graphite
- Antimony



AMG CRITICAL MATERIALS TECHNOLOGIES

AMG's titaniumlegeringen, vacuümsystemen en -diensten

- Titanium
- Furnaces
- Heat treatment services
- Chrome Metal



STERKE FUNDAMENTEN, FLEXIBELE STRUCTUUR BIJ WERELDWIJDE DISRUPTIE

OPTIMIZED CAPITAL STRUCTURE

- In November 2021 sloot AMG een nieuwe senior secured term loan B facility ('term loan') af voor 7 jaar leningen van \$350 million en een \$200 million 5-year senior secured revolving krediet faciliteit ("revolver"). De totale faciliteit van \$550 million vervangt AMG's vorige krediet faciliteit en verlengt de looptijd van 2025 naar 2028 en de revolver maturity van 2023 naar 2026.
- AMG Engineering ging een €140 miljoen long-term bilateral unsecured performance-based guarantee facility agreements aan in Januari 2022, als vervanging van de vorige.
- Op 11 juli 2019 sloot de onderneming een 30 jarige municipal bond af van \$307 million die 100% financiers van de ferrovanadium uitbreiding in Zanesville, Ohio. De obligatie draagt een coupon rente van 5.0% en loopt af op 1 juli 2049.

BUSINESS RESILIENCE

- Focus op operationele efficiëntie
- Reductie van bedrijfskosten en investeringen in kapitaalgoederen
- Sterk bedrijfsmomentum, goed gevuld orderboek begin 2023

DISCIPLINED APPROACH TO GROWTH

- Uitbreiding van AMG's Braziliaanse spodumeenproductie versterkt de lage kostenpositie van AMG
- De raffinaderij van AMG Lithium, in aanbouw in Duitsland, is de eerste lithiumhydroxideraffinaderij in Europa
- De nieuwe recyclinginstallatie voor gebruikte vanadiumkatalysatoren in Ohio is een duidelijke uiting van AMG's leiderschap op het gebied van recycling van gevaarlijk raffinaderijafval wereldwijd

○ De fundamentele positionering van onze activiteiten is rebuust, en **AMG blijft gefocust op gedisciplineerde en duurzame groei**

STRATEGIE

AMG's strategie is om haar critical materials activiteiten uit te bouwen door middel van consolidatie in de industrie, procesinnovatie en productontwikkeling

UITBREIDING VAN BESTAANDE SNELGROEIENDE BUSINESS UNITS

Focus op snelgroeiende gebieden binnen het bestaande productportfolio

PROCESINNOVATIE & PRODUCTONTWIKKELING

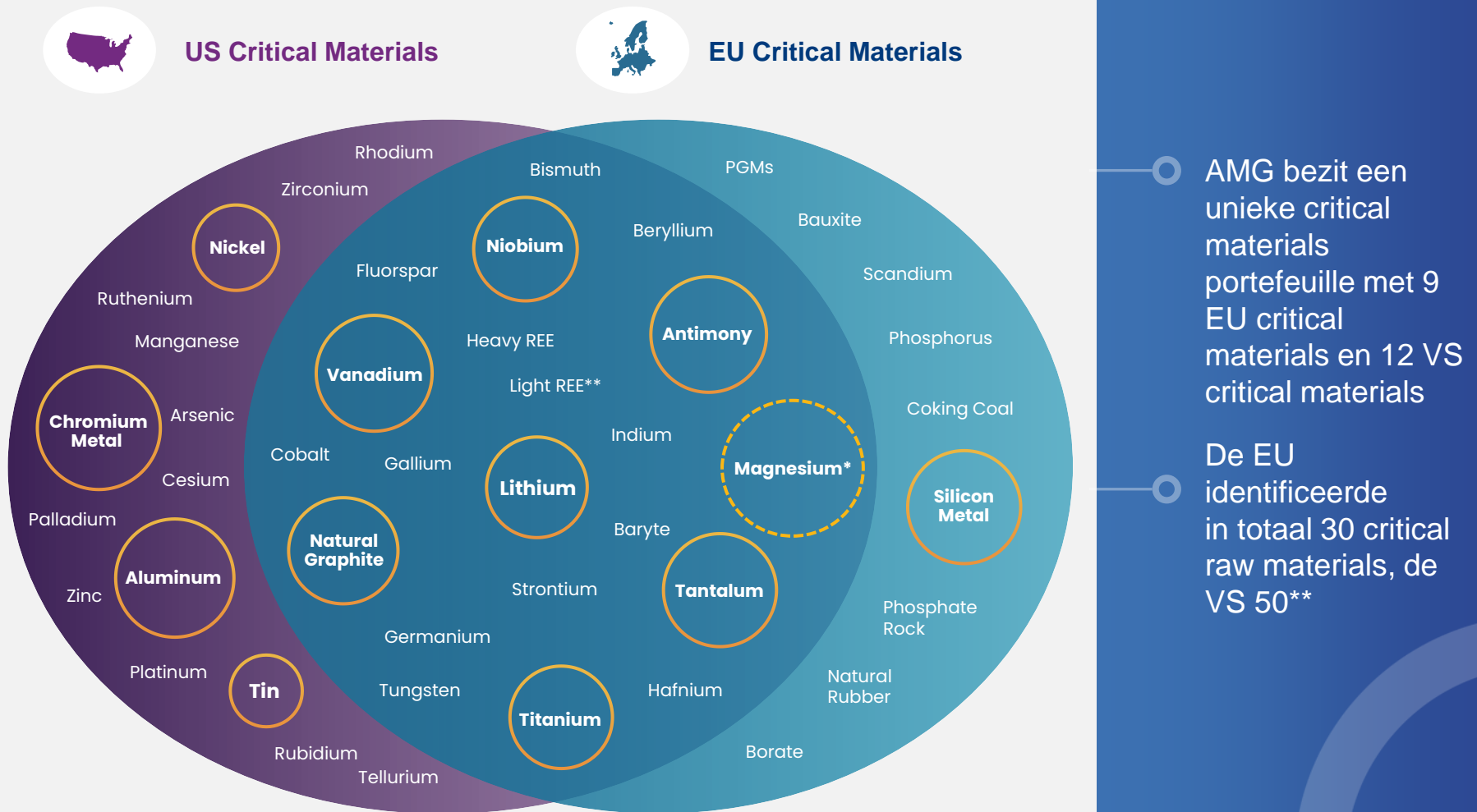
Focus op procesinnovatie en productontwikkeling om de marktpositie van AMG's bedrijven te verbeteren

INDUSTRIE CONSOLIDATIE

Focus op horizontale en verticale consolidatie van de industrie in de critical materials-portefeuille van AMG

—○ AMG's belangrijkste strategische doelstelling is het bereiken van **leidende sector posities tegen lage productiekosten**

CRITICAL RAW MATERIALS: AMG'S POSITIE



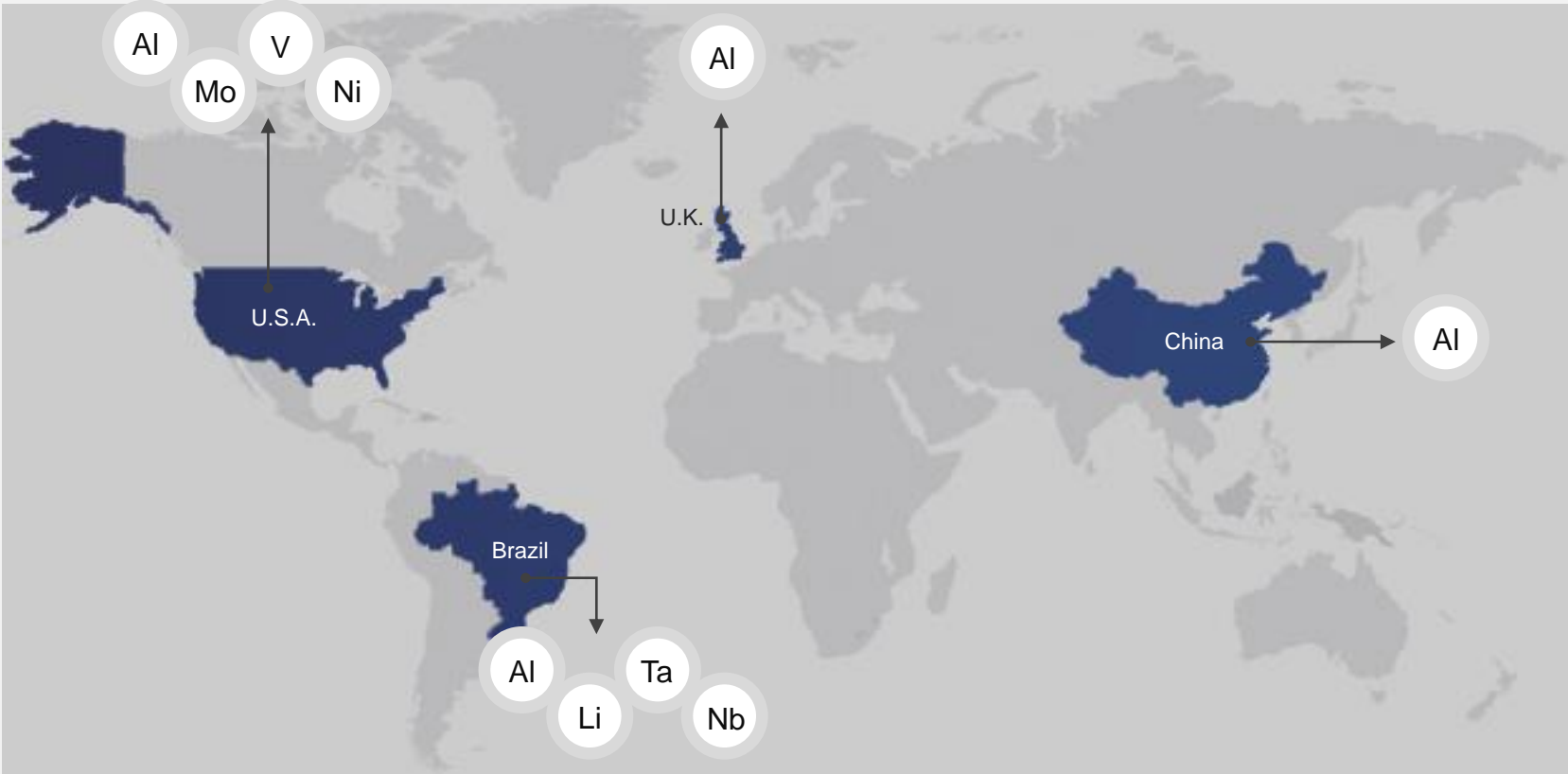
AMG bezit een unieke critical materials portefeuille met 9 EU critical materials en 12 VS critical materials

De EU identificeerde in totaal 30 critical raw materials, de VS 50**

Bronnen: De EU-lijst van kritieke grondstoffen voor 2020, gepubliceerd in september 2020; en de Amerikaanse lijst van kritieke materialen volgens de kennisgeving van februari 2022 van de minister van Binnenlandse Zaken, handelend via de directeur van de U.S. Geological Survey

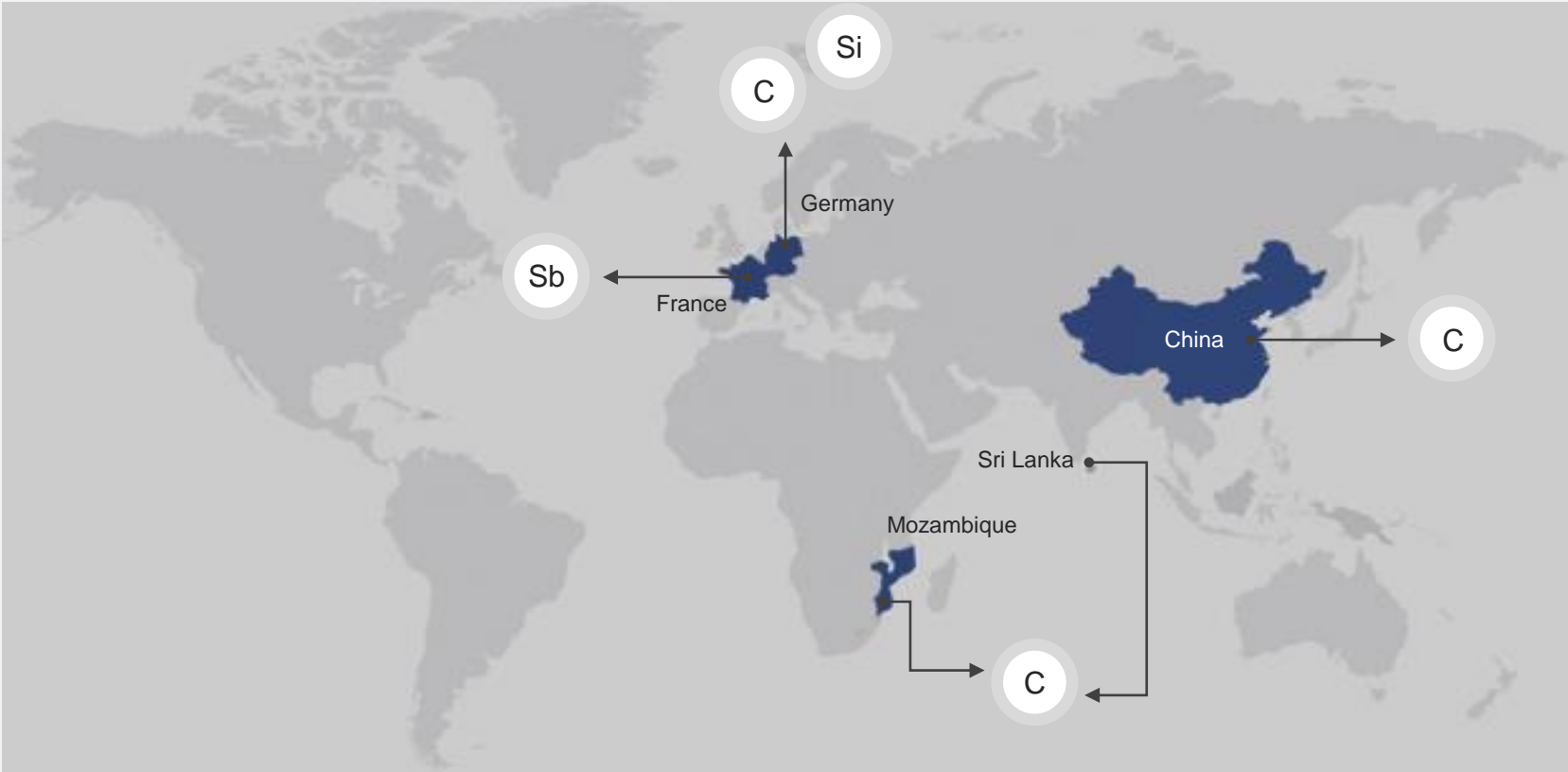
*AMG bezit technologiepatenten voor de productie van Magnesium producten ** De Amerikaanse lijst bevat de zeldzame aardelementen behalve Promethium

AMG WERELDWIJDE FOOTPRINT: CLEAN ENERGY MATERIALS



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

AMG WERELDWIJDE FOOTPRINT: CRITICAL MINERALS

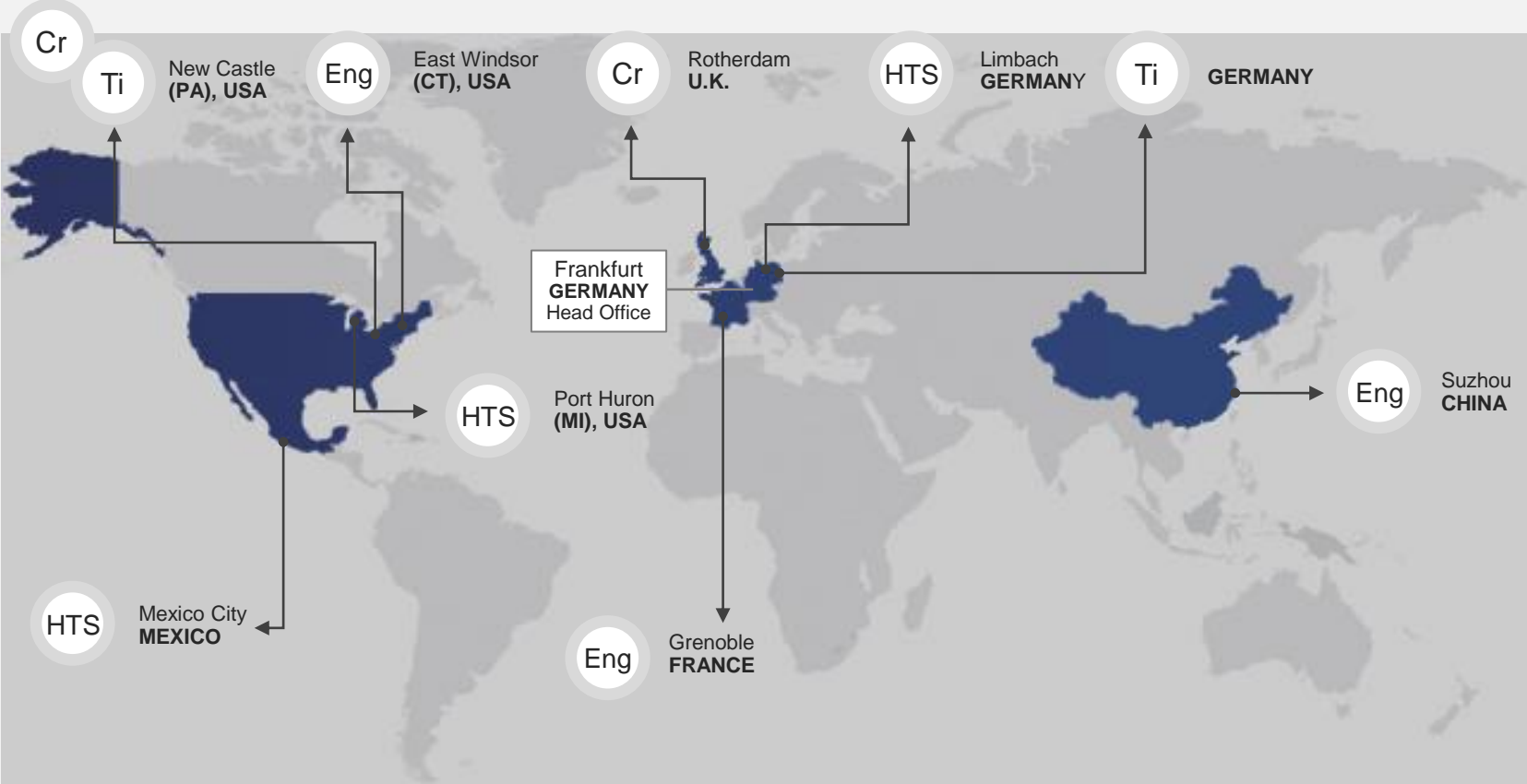


Sb Antimony

C Natural Graphite

Si Silicon Metal

AMG WERELDWIJDE FOOTPRINT: CRITICAL MATERIALS TECHNOLOGIES



Ti Titanium

Eng Engineering

HTS Heat Treatment Services

Cr Chromium Metal


FOCUS OP HEALTH & SAFETY



Safety Indicatoren

AMG vergelijkt zichzelf met de gemiddelde industriescore voor bedrijven die tot de Primary Metal Manufacturing (NAICS 331) index behoren.












De meest recent beschikbare data, verstrekt door de United States Bureau of Labor Statistics in 2021, rapporteert dat de Primary Metal Manufacturing industrie haar totaal gerapporteerde incident ratio (safety incidents leidend tot werkverlet) was **4.10** en de lost time rate was **1.20**.

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 de NAICS 331 benchmark met 77% voor gerapporteerde incident ratio van 62% voor lost time rate.












CLEAN ENERGY MATERIALS – MARKET TRENDS

CRITICAL MINERALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
AMG VANADIUM FERROVANADIUM FERRONICKEL- MOLYBDENUM	INFRASTRUCTUUR	INFRASTRUCTUUR GROEI VANADIUM REDOX FLOW BATTERIJEN	GLENCORE
AMG BRAZIL TANTALUM & NIOBIUM	MICRO CAPACITORS, SUPERALLOYS	COMMUNICATIE & ELECTRONICA BRANDSTOF-EFFICIENTIE	 ATI H.C. Starck   TANiOBIS inspiring metal evolution
AMG LITHIUM LITHIUM CONCENTRATE (SPODUMENE)	BATTERIJEN	DUURZAME ENERGIE COMMUNICATIONS & ELECTRONICS	
AMG ALUMINUM ALUMINUM MASTER ALLOYS ALUMINUM POWDERS	LUCHT-, RUIMTEVAART- EN AUTOMOTIVE	BRANDSTOF-EFFICIENTIE	 Constellium  
 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 BESPARING ENERGY OPSLAG</p>	<p> </p>
<p>AMG ANTIMONY ANTIMONY TRIOXIDE ANTIMONY MASTERBATCHES ANTIMONY PASTES</p>	<p>BRANDAFWERELD MATERIAL</p>	<p>PLASTICS</p>	<p> </p>
<p>AMG SILICON SILICON METAL</p>	<p>ALUMINUM ALLOYS, SOLAR</p>	<p>FBRANDSTOF-EFFICIENTIE DUURZAME ENERGY</p>	<p> </p>
<p> ENERGY</p>	<p> TRANSPORTATION</p>	<p> INFRASTRUCTURE</p>	<p> SPEC. METALS AND CHEM.</p>

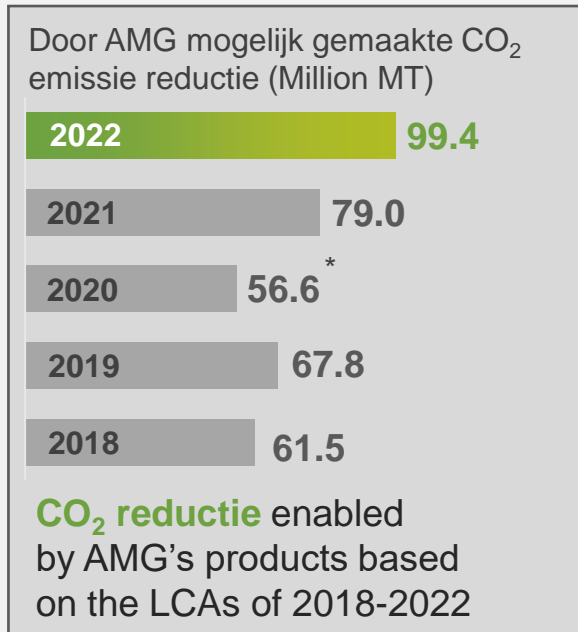
CRITICAL MATERIALS TECHNOLOGIES – MARKET TRENDS





CRITICAL MINERALS	MAJOR END MARKETS	MARKET TRENDS	MAJOR CUSTOMERS
AMG TITANIUM TITANIUM ALLOYS	LUCHT- EN RUIMTEVAART	BRANDSTOF-EFFICIËNTIE ENERGIE BESPARING	 
AMG ENGINEERING CAPITAL GOODS (VACUUM FURNACES)	LUCHT- EN RUIMTEVAART, AUTOMOTIVE	BRANDSTOF-EFFICIËNTIE ELECTRONICS	 Rolls-Royce  CARPENTER ThyssenKrupp  
AMG ENGINEERING VACUUM HEAT TREATMENT SERVICES	LUCHT- EN RUIMTEVAART, AUTOMOTIVE	BRANDSTOF-EFFICIËNTIE	  
AMG CHROME CHROMIUM METAL	LUCHT- EN RUIMTEVAART, DISTRIBUTED ENERGY, BRANDSTOFCELLEN	BRANDSTOF-EFFICIËNTIE	  Bloomenergy
 ENERGY	 TRANSPORTATION	 INFRASTRUCTURE	 SPEC. METALS AND CHEM.

ECO₂RP IS DE PORTEFEUILLE VAN AMG PRODUCTEN DIE CO₂ REDUCTIE MOGELIJK MAAKT

Strikte selectie criteria

Producten alleen geaccepteerd als **ECO2RP** wanneer het **CO2 reductie** effect geverifieerd is door een leidende LCA 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 daling door de wereldwijde pandemie die significante impact had op de volumes in de luchtvaartindustrie



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 resultaten tenderen positief sinds het 2e kwartaal van 2020
- Het management van AMG management verwacht dat de positieve trend zich voortzet zodat de EBITDA in 2023 boven de \$400 miljoen uitkomt

CONSOLIDEERDE BALANS

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

GECONSOLIDEERDE WINST- EN VERLIESREKENING

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

GECONSOLIDEERD KASSTROOMOVERZICHT

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

NETTOWINST NAAR EBITDA RECONCILIATIE

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.
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