# LEADING THE CRITICAL MATERIALS REVOLUTION



AMG Advanced Metallurgical Group N.V. Investor Presentation March 9, 2017

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## AMG IS A CRITICAL MATERIALS COMPANY

#### GLOBAL TRENDS

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

#### DEMAND

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

#### SUPPLY: AMG

Sources, processes, and supplies the critical materials the market demands LEADER IN ADVANCED TECHNOLOGIES TO ADDRESS CO<sub>2</sub> REDUCTION

# CO<sub>2</sub> REDUCTION

A GLOBAL IMPERATIVE FOR THE 21ST CENTURY

#### AMG: MITIGATING TECHNOLOGIES

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

#### AMG: ENABLING TECHNOLOGIES

Products and Processes saving  $CO_2$  emissions during use (i.e., light-weighting and fuel efficiency in

the aerospace and automotive industries)

#### AMG HAS DEVELOPED INTO A LEADER IN ENABLING TECHNOLOGIES

#### Strong capital structure, free of net debt, positioned for growth

#### OPTIMIZED CAPITAL STRUCTURE

- Refinanced credit facility in 2016, providing a stable capital base and liquidity for strategic growth
- Deleveraged balance sheet

#### RETURN EXCESS CASH TO SHAREHOLDERS

- Initiated first dividend to shareholders in 2015
  - Reflecting AMG commitment to return value to shareholders

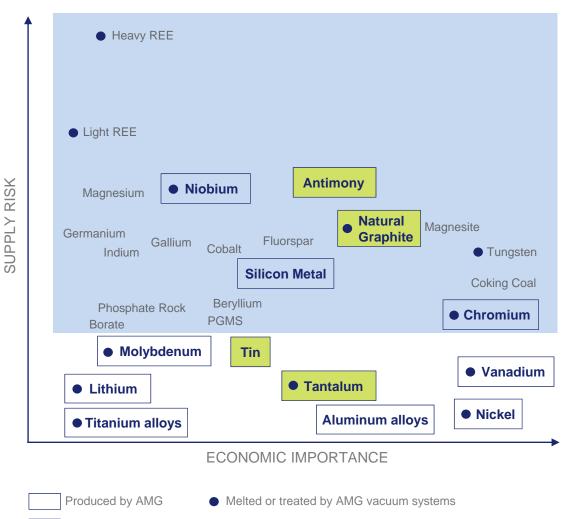
#### DISCIPLINED ORGANIC GROWTH & ACQUISITIONS

- Rigorous process to review strategic growth opportunities that is both selective and opportunistic
- Organic growth strategy is focused on areas of our portfolio that are marked by strong demand growth or supply limitations
- Financially and operationally capable of quickly assessing opportunities

#### Driving long term sustainable growth and shareholder value



#### **Critical Raw Materials**



- The EU identified 20 critical raw materials\* to the European economy in 2014, focusing on two determinants: economic importance and supply risk
- The US identified 30 critical materials\* which are vital to national defense, primarily through assessing supply risk
- AMG has a unique critical materials portfolio comprising:
- -5 EU critical raw materials
- -4 US critical raw materials
- Highly engineered Titanium Alloys for the aerospace industry
- High value added Aluminum Master Alloys
- Vanadium, Nickel and Molybdenum from recycled secondary raw materials

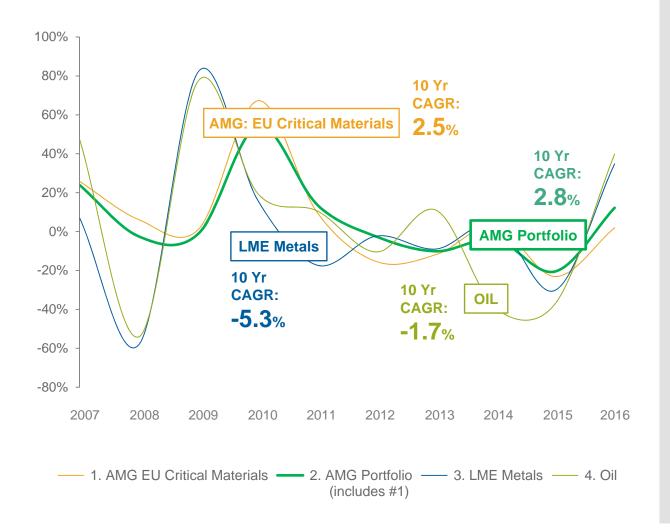
Critical raw materials identified by the US and produced by AMG

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EU Critical Raw Materials



#### **Critical Materials Price Trends**



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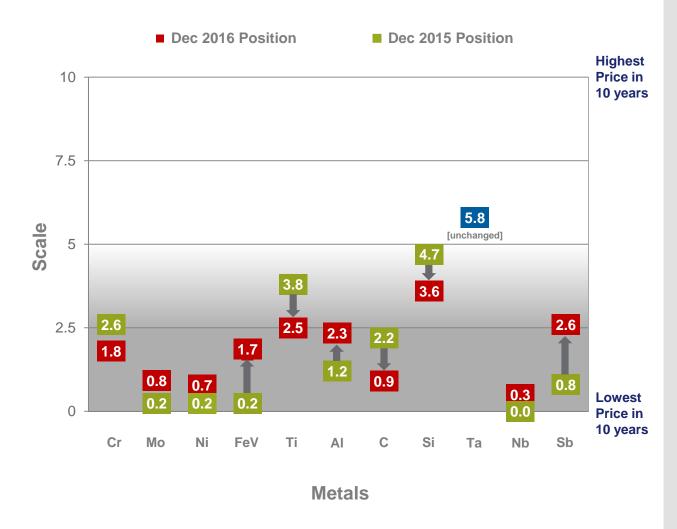
The cumulative average 10 year price appreciation of the AMG Portfolio was 8.1 percentage points higher than London Metal Exchange metals and 4.5 points higher than oil, while the AMG EU Critical Materials outperformed LME Metals and oil by 7.8 and 4.2 percentage points, respectively

#### CRITICAL MATERIAL PRICES OUTPERFORM THE LME

Note: Compound annual growth rates are calculated over the period Dec '06 through Dec '16 using the equation ((Ending Value / Beginning Value) ^ (1 / # of years) - 1) where ending value is avg monthly price in Dec '16 and beginning value is avg monthly price in Dec '06; and where AMG EU Critical Materials include Sb, Cr, Graphite & Si; AMG Portfolio includes Sb, Cr, FeV, Li, Nb, Si, Sr, Graphite, Ta, Sn & Ti; and LME Metals include AI, Co, Cu, Pb, Mo, Ni, & Zn. Avg annual growth rates (plotted above) are calculated over the same period using the equation ((Ending Value / Beginning Value) -1) and considering the same metal categorizations where ending value is avg monthly price in Dec of the given year and beginning value is avg monthly price in Dec '06.



#### **Critical Materials Prices: 10 Year Perspective**



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- Metal prices are measured on a scale of 0 to 10, with 0 and 10 representing the minimum and maximum average quarterly prices occurring during the past 10 years
- The positions demonstrate the current price level of each metal with respect to their various historical price points over the past 10 years

AMG has significant potential upside within certain critical materials based on historical price ranges



#### **AMG Business Segments**

#### AMG CRITICAL MATERIALS

#### AMG'S CONVERSION, MINING, AND RECYCLING BUSINESSES

- LITHIUM (H1 2018)
- VANADIUM
- SUPERALLOYS
- TITANIUM ALLOYS & COATINGS
- ALUMINUM ALLOYS
- TANTALUM & NIOBIUM
- ANTIMONY
- GRAPHITE
- SILICON

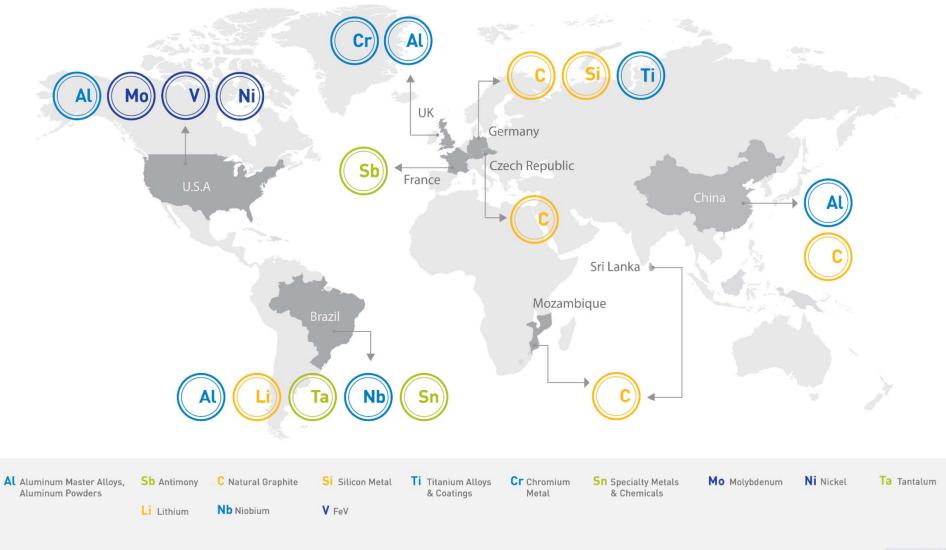
#### AMG ENGINEERING

#### AMG'S VACUUM SYSTEMS AND SERVICES BUSINESS

- ENGINEERING
- HEAT TREATMENT SERVICES

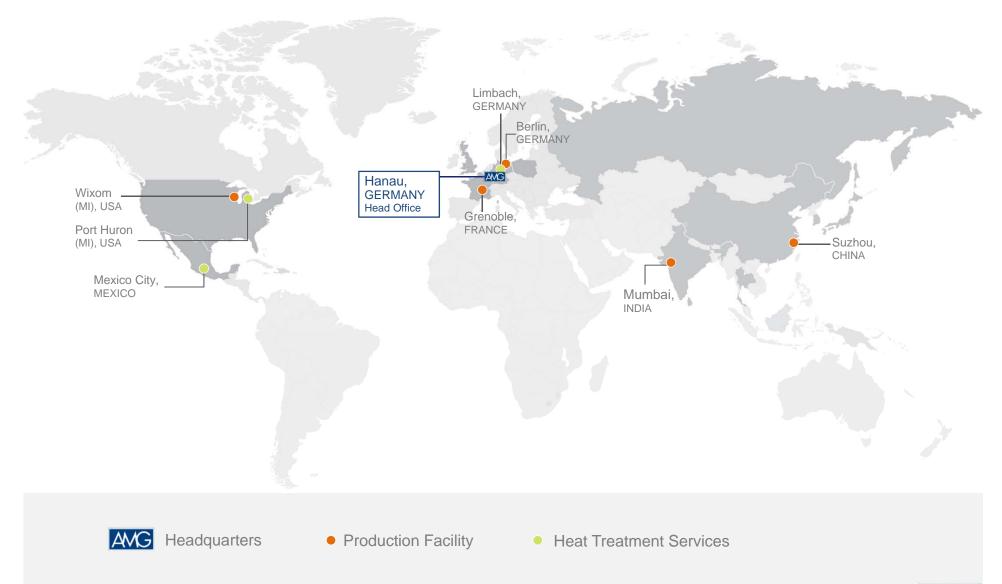


#### AMG Global Footprint – Critical Materials





### AMG Global Footprint – Engineering





#### Health and Safety Focus

#### LEADING SAFETY INDICATORS

- The number of safety improvement items reported in 2016 increased by 16% compared to full year 2015. These are essential in order to avoid potential injuries.
- Safety training hours increased 10% in 2016.
- Lost time incident rate was essentially unchanged while total incident rate and incident severity rate for 2016 are down 16% and 35% from 2015.
- The incidents that occurred in 2016 were typically less serious continuing a 5 year improvement trend in severity rate.



YEAR	LOST TIME INCIDENTS IN THE LAST 12 MONTHS	12 MONTH AVERAGE LOST TIME INCIDENT RATE	12 MONTH AVERAGE INCIDENT SEVERITY RATE	12 MONTH AVERAGE TOTAL INCIDENT RATE
2015	27	1.03	0.17	2.00
2016	28 🦊	1.04 🔶	0.11 🖊	1.68 🖊

RIGOROUS COMMITMENT TO SAFETY REFLECTED IN CONTINUALLY IMPROVING SAFETY RECORDS



# FINANCIAL HIGHLIGHTS



AMG Advanced Metallurgical Group N.V.

### FY 2016 at a Glance

AMOUNTS IN \$M (EXCEPT EARNINGS PER SHARE)	FY 2016	FY 2015	% CHANGE
REVENUE	\$971.1	\$977.1	(1%)
GROSS PROFIT	\$186.8	\$156.9	19%
GROSS MARGIN %	19.2%	16.1%	N/A
PROFIT BEFORE INCOME TAXES	\$49.7	\$28.6	74%
EBITDA	\$100.7	\$75.6	33%
EBITDA MARGIN %	10.4%	7.7%	N/A
NET DEBT (CASH)	\$7.3	(\$1.0)	N/A
RETURN ON CAPITAL EMPLOYED (ROCE)	18.8%	12.0%	57%
NET INCOME ATTRIBUTABLE TO SHAREHOLDERS	\$40.6	\$11.1	266%
EARNINGS PER SHARE	1.32	0.40	230%

- FY '16 EBITDA up 33% versus FY '15 due to improved profitability within AMG Engineering
- Annualized ROCE increased to 18.8% in 2016 versus 12.0% for 2015
- Earnings per share, on a fully diluted basis, increased by 230% to \$1.32 in 2016 from \$0.40 in 2015
- Net debt position of \$7.3 million

#### NET DEBT REDUCTION OF \$80.5 MILLION SINCE DECEMBER 2014



### **Financial Highlights**



**REVENUE** (IN MILLIONS OF US DOLLARS)

GROSS PROFIT \* (IN MILLIONS OF US DOLLARS)



EBITDA (IN MILLIONS OF US DOLLARS)



ORDER INTAKE (IN MILLIONS OF US DOLLARS)



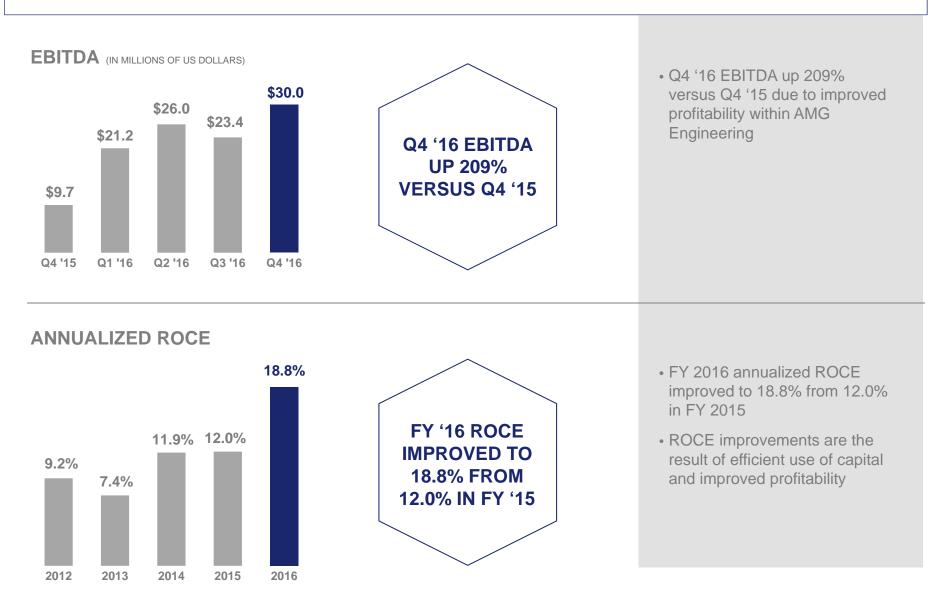


### 2016 Financial Objectives

FINANCIAL OBJECTIVE	DESCRIPTION	PROGRESS UPDATE
MAINTAIN CONSERVATIVE BALANCE SHEET	<ul> <li>Optimize capital structure for financial flexibility</li> </ul>	<ul> <li>Net debt of \$7.3 million</li> <li>Completed enlargement and extension of syndicated credit facility - from \$320 million to \$400 million with the maturity extended from May 2018 to July 2021</li> </ul>
PURSUE GROWTH OPPORTUNITIES	<ul> <li>Pursue organic opportunities in high-growth areas within the existing product portfolio</li> <li>Pursue opportunities for horizontal and vertical industry consolidation across AMG's critical materials portfolio</li> </ul>	<ul> <li>On July 20<sup>th</sup>, 2016, AMG's Supervisory Board approved the construction of a lithium concentrate (spodumene) plant at the Mibra mine in Brazil, with an initial annual production of 90,000 tons</li> <li>See lithium update on slide 30</li> </ul>
IMPROVE ROCE	<ul> <li>Increase ROCE through operational improvements and disciplined capital management</li> </ul>	<ul> <li>Annualized ROCE increased to 18.8% in 2016, as compared to 12.0% in 2015</li> </ul>
IMPROVE GROSS MARGIN	<ul> <li>Increase productivity through continuous cost and product mix optimization</li> </ul>	<ul> <li>AMG gross margin increased to 18.1% in Q4 2016 from 16.0% in Q4 2015</li> </ul>

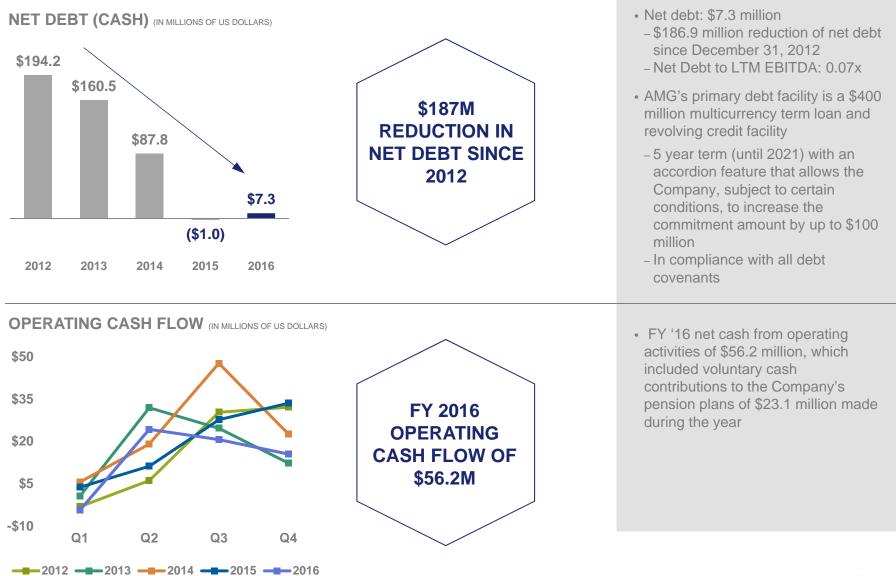


### Financial Data: ROCE & EBITDA



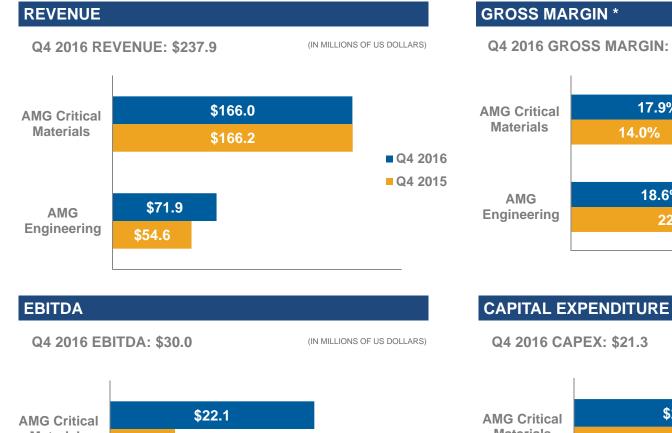


#### Financial Data: Net Debt & Net Cash from Operations

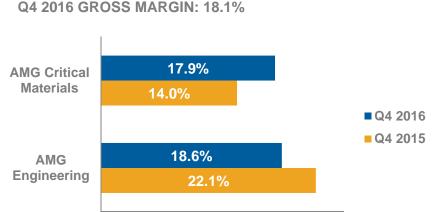




### Divisional Financial Highlights – Q4 2016 vs. Q4 2015



#### **GROSS MARGIN \***



#### Q4 2016 CAPEX: \$21.3 (IN MILLIONS OF US DOLLARS) \$20.2 **Materials Materials** \$10.0 \$7.0 Q4 2016 **Q4 2016** Q4 2015 Q4 2015 \$1.1 \$7.9 AMG AMG Engineering Engineering \$1.0 \$2.7



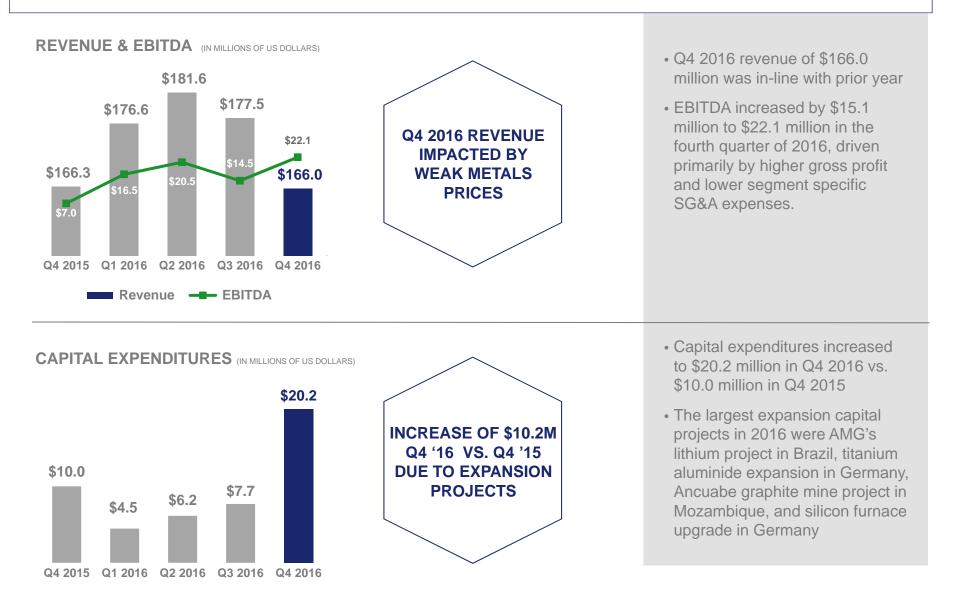
#### **Working Capital Reduction**

WORKING CAPITAL DAYS REDUCED BY 81% SINCE Q3'10





### **AMG Critical Materials**





#### AMG Critical Materials – Quarterly Revenue Drivers

Key Product	Q4 '16 Rev (\$M)	Q4 '15 Rev (\$M)	Volume	Price	Currency
FeV & FeNiMo	\$21.7	\$16.9			$\Leftrightarrow$
Al Master Alloys & Powders	\$38.0	\$43.5	$\Leftrightarrow$	÷	<b>⇔</b>
Chromium Metal	\$20.7	\$16.8		₽	$\Leftrightarrow$
Tantalum & Niobium	\$16.2	\$18.7	₽	$\Leftrightarrow$	$\Leftrightarrow$
Titanium Alloys & Coatings	\$22.2	\$21.2	•	$\Leftrightarrow$	<b>⇔</b>
Antimony	\$18.6	\$17.1	$\Leftrightarrow$		+
Graphite	\$13.2	\$13.2	$\Leftrightarrow$	$\Leftrightarrow$	$\Leftrightarrow$
Silicon Metal	\$15.4	\$19.1	+	+	$\Leftrightarrow$

- AMG Critical Materials Q4 2016 revenue of \$166.0 million was in-line with prior year
- Strong sales volumes in AMG Vanadium, AMG Titanium Alloys & Coatings, AMG Antimony and AMG Superalloys resulted in higher revenue in Q4 2016 versus the same period in the prior year
- Improving ferrovanadium prices also impacted Q4 2016 revenue and gross profit in AMG Vanadium
- AMG Silicon Q4 2016 revenue declined versus the prior year due to the scheduled furnace upgrade in the fourth quarter 2016
- AMG Aluminum revenue declined due to price effects
- AMG Brazil revenue declined due to timing of delivery to customers

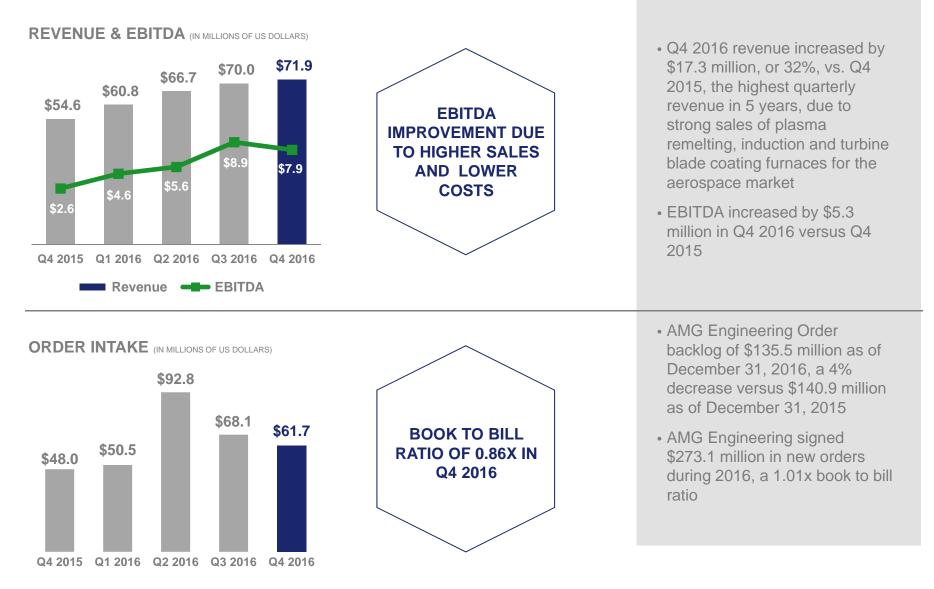


### Critical Materials – Average Quarterly Prices

MATERIALS	Q3 2015	Q4 2015	Q1 2016	Q2 2016	Q3 2016	Q4 2016	Q4 '16 VS. Q4 '15 % CHANGE
FERROVANADIUM (\$/LB)	\$8.90	\$6.79	\$6.59	\$10.03	\$9.99	\$10.65	57%
MOLYBDENUM (\$/LB)	\$5.83	\$4.85	\$5.33	\$7.42	\$7.01	\$6.63	37%
NICKEL (\$/MT)	\$10,557	\$9,434	\$8,496	\$8,819	\$10,262	\$10,685	13%
ALUMINUM (\$/MT)	\$1,591	\$1,495	\$1,515	\$1,571	\$1,620	\$1,710	14%
CHROME (\$/LB)	\$4.41	\$4.09	\$3.92	\$3.76	\$3.67	\$3.65	(11%)
TANTALUM (\$/LB)	\$74	\$59	\$60	\$62	\$60	\$56	(5%)
NIOBIUM OXIDE (\$/KG)	\$28	\$25	\$25	\$27	\$28	\$26	4%
TI SPONGE (\$/KG)	\$9.40	\$9.05	\$8.69	\$8.25	\$8.15	\$8.15	(10%)
ANTIMONY (\$/MT)	\$6,888	\$5,588	\$5,359	\$6,252	\$7,271	\$7,482	34%
GRAPHITE (\$/MT)	\$750	\$750	\$725	\$585	\$585	\$585	(22%)
SILICON METAL (€/MT)	€2,273	€2,054	€1,869	€1,684	€1,648	€1,733	(16%)



### AMG Engineering





# STRATEGY & OUTLOOK

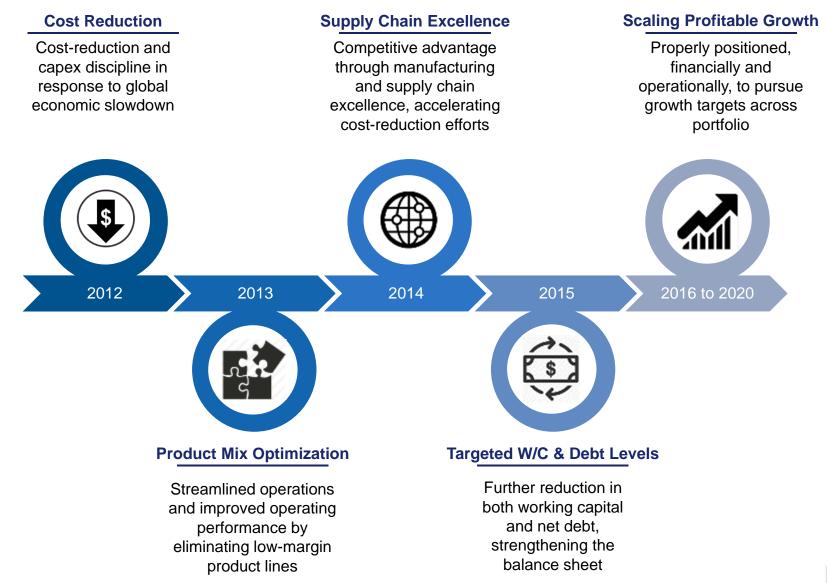


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#### AMG: Ready for Growth





### 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



### 2017 Outlook & Lithium Project Update

OUTLOOK	AMG is well positioned to maintain full year 2016 levels of profitability in 2017, subject to a high degree of global uncertainty.
	In addition to delivering our highly accretive lithium project and executing our long term, transformational lithium strategy, AMG will continue to pursue other acquisition opportunities and organic growth projects in order to generate long term value for our shareholders.
LITHIUM PROJECT UPDATE	<b>Overview:</b> Project is progressing in-line with expectations - production expected to commence mid-2018.
	<b>Mibra Resource:</b> In Q2 2017, AMG will finalize and publish an updated resource statement for the Mibra mine.
	<b>Spodumene Expansion:</b> Target to increase annual lithium concentrate production capacity up to 180,000 tons by the end of 2019.
	<b>Marketing efforts:</b> On March 3, 2017, AMG announced that it had signed a multi- year contract to supply 90,000 tons per year of lithium concentrate with deliveries commencing in the second half of 2018. Sales prices are partially indexed to the published market price of lithium carbonate, subject to a contractual minimum threshold. The sales price (CIF China), determined with reference to the current published lithium carbonate market price, would exceed \$800 per ton lithium concentrate.

#### Management's priority in 2017 is to execute our transformational lithium project

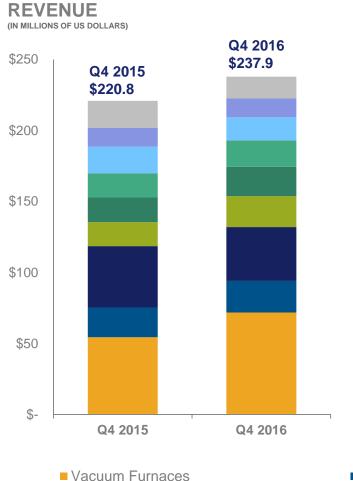


# KEY PRODUCTS & END MARKETS

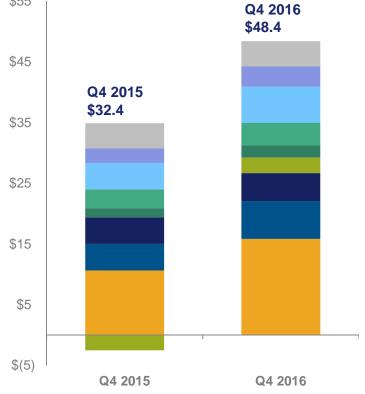


AMG Advanced Metallurgical Group N.V.

### **Key Products**



GROSS PROFIT \* (IN MILLIONS OF US DOLLARS) \$55



Ti Master Alloys & Coatings

- Chromium Metal
- Graphite

Al Master Alloys & Powders

Antimony

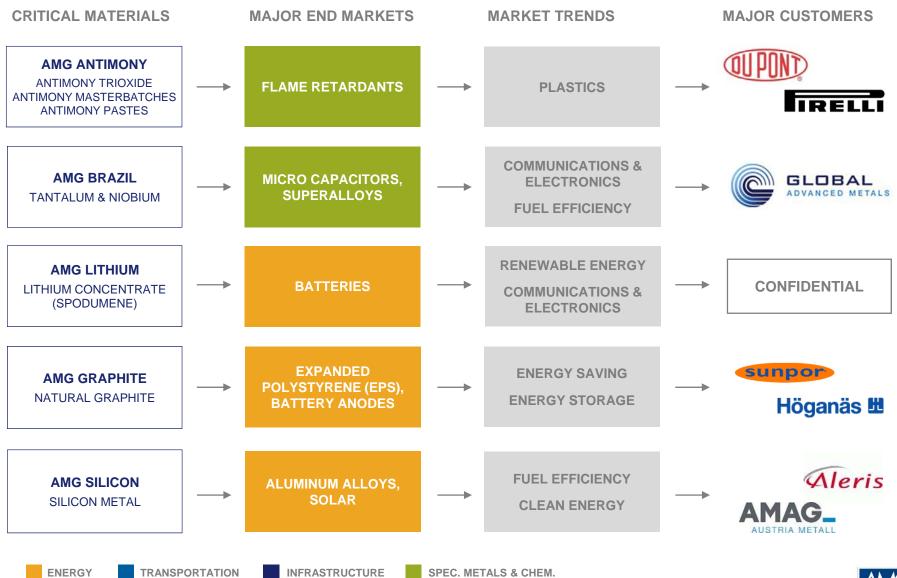
Si Metal

Vanadium & FeNiMo

Tantalum & Niobium

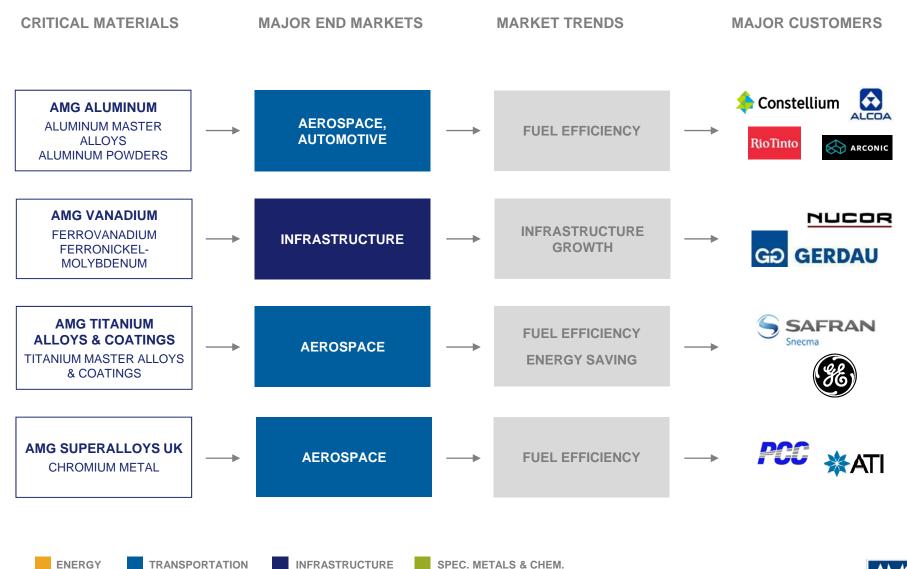


### **Critical Materials – Market Trends**



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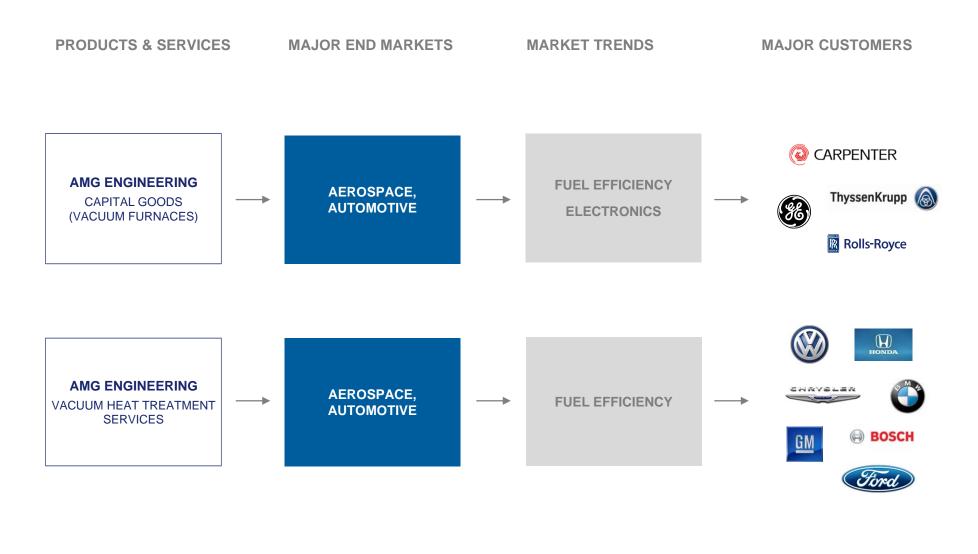
### **Critical Materials – Market Trends**



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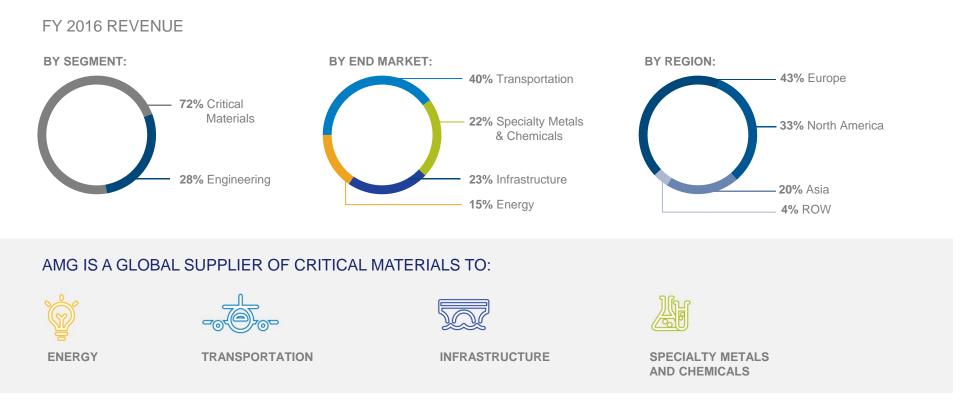
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### Engineering – Market Trends





### AMG at a Glance



### MARKET LEADING PRODUCER OF HIGHLY ENGINEERED SPECIALTY METALS AND VACUUM FURNACE SYSTEMS





# APPENDIX



AMG Advanced Metallurgical Group N.V.

### **Consolidated Balance Sheet**

AS AT IN MILLIONS OF US DOLLARS	DECEMBER 31, 2016 UNAUDITED	DECEMBER 31, 2015
Fixed assets	226.1	215.8
Goodwill and intangibles	33.2	28.9
Other non-current assets	91.7	70.2
Inventories	143.6	126.4
Receivables	129.2	124.3
Other current assets	35.8	29.3
Cash	160.7	127.8
TOTAL ASSETS	820.3	722.7
TOTAL EQUITY	197.8	153.6
Long term debt	151.0	112.2
Employee benefits	141.6	137.9
Other long term liabilities	49.9	69.8
Current debt	18.4	14.5
Accounts payable	133.3	108.0
Advance payments	29.4	44.2
Accruals	56.1	42.9
Other current liabilities	42.9	39.6
TOTAL LIABILITIES	622.5	569.1
TOTAL EQUITY AND LIABILITIES	820.3	722.7



### **Consolidated Income Statement**

FOR THE TWELVE MONTHS ENDED IN MILLIONS OF US DOLLARS	DECEMBER 31, 2016 UNAUDITED	DECEMBER 31, 2015 UNAUDITED
Revenue	971.1	977.1
Cost of sales *	784.3	820.3
Gross profit	186.8	156.9
Selling, general & administrative	130.8	122.3
Environmental	1.9	(0.8)
Other income, net	(5.7)	(0.9)
Operating profit	59.9	36.2
Net finance costs	12.0	8.2
Share of profit of associates	1.8	0.6
Profit before income taxes	49.7	28.6
Income tax expense	8.1	18.7
Profit for the period	41.6	9.9
Shareholders of the Company	40.6	11.1
Non-controlling interest	1.0	(1.2)
ADJUSTED EBITDA	100.7	75.6



### **Consolidated Statement of Cash Flows**

FOR THE YEAR ENDED IN MILLIONS OF US DOLLARS	DECEMBER 31, 2016 UNAUDITED	DECEMBER 31, 2015 UNAUDITED
EBITDA	100.7	75.6
Change in working capital and deferred revenue	(7.7)	21.6
Finance costs paid, net	(6.7)	(11.4)
Other operating cash flow	(23.5)	(3.8)
Cash generated from operating activities	62.8	82.0
Income tax paid	(6.6)	(5.7)
Net cash from operating activities	56.2	76.3
Capital expenditures	(44.1)	(23.3)
Other investing activities	2.0	2.8
Net cash used in investing activities	(42.1)	(20.5)
Net cash from (used in) financing activities	23.3	(29.1)
Net increase in cash and equivalents	37.4	26.7
Cash and equivalents at January 1	127.8	108.0
Effect of exchange rate fluctuations on cash held	(4.4)	(6.9)
CASH AND EQUIVALENTS AT DECEMBER 31	160.7	127.8

