# ENABLING AGREENER FUTURE



AMG ADVANCED METALLURGICAL GROUP N.V. HOULIHAN LOKEY PRESENTATION, May 17, 2018



### CAUTIONARY NOTE

THIS DOCUMENT IS STRICTLY CONFIDENTIAL AND IS BEING PROVIDED TO YOU SOLELY FOR YOUR INFORMATION BY AMG ADVANCED METALLURGICAL GROUP N.V. (THE "COMPANY") AND MAY NOT BE REPRODUCED IN ANY FORM OR FURTHER DISTRIBUTED TO ANY OTHER PERSON OR PUBLISHED, IN WHOLE OR IN PART, FOR ANY PURPOSE. FAILURE TO COMPLY WITH THIS RESTRICTION MAY CONSTITUTE A VIOLATION OF APPLICABLE SECURITIES LAWS.

This presentation does not constitute or form part of, and should not be construed as, an offer to sell or issue or the solicitation of an offer to buy or acquire securities of the Company or any of its subsidiaries nor should it or any part of it, nor the fact of its distribution, form the basis of, or be relied on in connection with, any contract or commitment whatsoever.

This presentation has been prepared by, and is the sole responsibility of, the Company. This document, any presentation made in conjunction herewith and any accompanying materials are for information only and are not a prospectus, offering circular or admission document. This presentation does not form a part of, and should not be construed as, an offer, invitation or solicitation to subscribe for or purchase, or dispose of any of the securities of the companies mentioned in this presentation. These materials do not constitute an offer of securities for sale in the United States or an invitation or an offer to the public or form of application to subscribe for securities. Neither this presentation nor anything contained herein shall form the basis of, or be relied on in connection with, any offer or commitment whatsoever. The information contained in this presentation has not been independently verified. No representation or warranty, express or implied, is made as to, and no reliance should be placed on, the fairness, accuracy or completeness of the information or the opinions contained herein. The Company and its advisors are under no obligation to update or keep current the information contained in this presentation. To the extent allowed by law, none of the Company or its affiliates, advisors or representatives accept any liability whatsoever (in negligence or otherwise) for any loss howsoever arising from any use of this presentation or its contents or otherwise arising in connection with the presentation.

Certain statements in this presentation constitute forward-looking statements, including statements regarding the Company's financial position, business strategy, plans and objectives of management for future operations. These statements, which contain the words "believe," "expect," "anticipate," "intends," "estimate," "forecast," "project," "will," "may," "should" and similar expressions, reflect the beliefs and expectations of the management board of directors of the Company and are subject to risks and uncertainties that may cause actual results to differ materially. These risks and uncertainties include, among other factors, the achievement of the anticipated levels of profitability, growth, cost and synergy of the Company's recent acquisitions, the timely development and acceptance of new products, the impact of competitive pricing, the ability to obtain necessary regulatory approvals, and the impact of general business and global economic conditions. These and other factors could adversely affect the outcome and financial effects of the plans and events described herein.

Neither the Company, nor any of its respective agents, employees or advisors intend or have any duty or obligation to supplement, amend, update or revise any of the forward-looking statements contained in this presentation.

The information and opinions contained in this document are provided as at the date of this presentation and are subject to change without notice.

This document has not been approved by any competent regulatory or supervisory authority.

#### 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 that the market demands

### AMG IS A CRITICAL MATERIALS COMPANY

### 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 AT A GLANCE





### HEALTH AND SAFETY: SUSTAINED IMPROVEMENT



### STRATEGIC HISTORY



### CURRENT STRATEGY



To increase long term value through industry leadership, operational expertise and efficient deployment of capital

#### STRATEGIC OBJECTIVE

Identifying long term trends and leveraging those trends through technological excellence and innovations in the indispensable areas of critical materials and vacuum technologies

#### PATHS TO GROWTH



Routine organic growth of existing business lines



Non-routine expansion of existing business lines



Transformational projects

### AMG CORE BUSINESS + $A + B + C \ge$ \$200M EBITDA (in 5 years or less)



### LITHIUM & TANTALUM BUILD OUT - MAY 2018 STATUS



Structured, sequenced approach to maximizing the value of our Mibra mine asset



### LITHIUM PROJECT PHASES



\*Phase II capex includes investments related to the expansion of existing tantalum operations in addition to the development and expansion of the existing mining infrastructure

### OPERATING COSTS FOR SPODUMENE PRODUCTION



## At current market prices, AMG's lithium concentrate projects (Spodumene I & II) would generate annual incremental EBITDA of ~\$130M at \$1,000/mt



### AMG-VANADIUM: OHIO EXPANSION

#### Summary

- \$35M investment to expand total spent catalyst roasting capacity by 9,000 ST in Cambridge, Ohio facility
- 30% increase in roasting capacity to gold-standard recycling process 99% of solids produced throughout process are saleable material
- Well aligned with attractive vanadium market dynamics

#### **Strategic Rationale**

Cement marketleading position in North America Customers are looking for additional recycling capacity; expansion enables AMG-V to take on additional spent catalyst

Sourcing simplification and inventory reduction Allows AMG-V to run 100% on roasted catalyst, simplifying sourcing process and significantly reducing inventory

#### Timeline

#### 2018

- Basic engineering
- Environmental approval
- Detailed engineering and construction

#### 2019

- Construction
- Commissioning (Q4)

#### 2020

Ramp-up and operation

### AMG VANADIUM: GOING GLOBAL



Partnership between two market leaders to develop a sustainable 'cradle-to-grave' solution for catalyst supply and reclamation



### VANADIUM: INVENTORY VS FE-V PRICE



Slight under-supply position is forecasted to continue for the next several years, driving down global inventories to near-record lows



### VANADIUM DEMAND: CHINESE REBAR





### FERROVANADIUM: 5-YEAR PRICE TREND



### FINANCIAL HIGHLIGHTS



**GROSS PROFIT** (IN MILLIONS OF US DOLLARS)



▲ 34% YoY

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



**ORDER INTAKE** (IN MILLIONS OF US DOLLARS)





AVG 17

### FINANCIAL DATA: ROCE & EBITDA

#### **EBITDA** (IN MILLIONS OF US DOLLARS)



Q1 '18 EBITDA UP 35% VERSUS Q1 '17

- Q1 '18 EBITDA up 35% versus Q1 '17 due to improved profitability within AMG Critical Materials
- Q1 2018 annualized ROCE improved to 28.4% from 25.5% in Q1 2017
- ROCE improvements are the result of efficient use of capital and improved profitability

#### Annualized ROCE



Q1 '18 ROCE IMPROVED TO 28.4% FROM 25.5% IN Q1 '17



### FINANCIAL DATA: NET DEBT & NET CASH FROM OPERATIONS

#### NET DEBT (CASH) (IN MILLIONS OF US DOLLARS)



#### \$185M REDUCTION IN NET DEBT SINCE 2012

#### **OPERATING CASH FLOW** (IN MILLIONS OF US DOLLARS)



#### Q1 2018 OPERATING CASH FLOW OF \$24.8M

- Net debt: \$9.4 million
  - \$184.8 million reduction of net debt since December 31, 2012
- AMG's primary debt facility is a \$650 million multicurrency term loan and revolving credit facility
  - \$350 million 7-year senior secured term loan B facility, a \$200 million 5-year senior secured revolving credit facility, and a \$100 million 5-year letter of credit facility to support AMG Engineering
  - In compliance with all debt covenants
- AMG generated cash from operating activities of \$24.8 million during Q1 2018, \$7.0 million higher than in Q1 2017



### AMG CRITICAL MATERIALS

#### **REVENUE & EBITDA** (IN MILLIONS OF US DOLLARS)



#### Q1 2018 EBITDA INCREASED BY \$11.4M OVER Q1 2017

CAPITAL EXPENDITURES (IN MILLIONS OF US DOLLARS)



INCREASE OF \$12.5M IN Q1 '18 VS. Q1 '17 DUE TO LITHIUM PROJECT

- Q1 2018 revenue of \$248.4 million was 28% higher than Q1 2017
- EBITDA increased by \$11.4 million over Q1 2017 to \$37.1 million in Q1 2018, driven primarily by higher vanadium and silicon metal prices, improved product mix and strong sales volumes
- Capital expenditures increased to \$22.0 million in Q1 2018 vs. \$9.5 million in Q1 2017
- The largest expansion capital project was AMG's lithium project in Brazil



### AMG CRITICAL MATERIALS – QUARTERLY REVENUE DRIVERS

KEY PRODUCT	<b>Q1 '18 REV</b> (\$M)	<b>Q1 '17 REV</b> (\$M)	VOLUME	PRICE
FeV & FeNiMo	\$55.2	\$27.0		
Al Master Alloys & Powders	\$51.1	\$43.4		
Chromium Metal	\$26.0	\$21.3		
Tantalum & Niobium	\$13.0	\$19.6		▼
Titanium Alloys & Coatings	\$30.1	\$22.5		
Antimony	\$28.2	\$25.4	▼	
Graphite	\$20.1	\$14.9		
Silicon Metal	\$24.7	\$20.5	▼	

- AMG Critical Materials revenue in the first quarter increased by \$53.8 million, or 28%, to \$248.4 million
- This was driven by improved vanadium, silicon, aluminum, antimony, graphite and titanium prices, and higher sales volumes of vanadium, aluminum, chrome, graphite, tantalum and titanium products
- Lower tantalum sales prices were partially offset by higher sales volumes



### CRITICAL MATERIALS PRICES: HISTORICAL PRICING

Mar 2017 Position Mar 2018 Position **Highest** 10 Price 8.6 8.7 7.9 7.7 7.5 6.8 6.6 Scale 5.4 5.1 5 3.6 3.7 3.2 3.2 3.1 2.8 [unchanged] 3.0 2.5 1.9 1.4 0.7 0.5 Lowest 0 0.0 Price Cr Ti С Si Та Sb Mo Ni FeV ΑΙ Li. Nb

Note: Metal Positions are measured on a scale of 0 to 10, with 0 being the minimum price and 10 being the maximum price. They are calculated using the formula [(Dec '05 ending value – min. monthly avg) / (max. monthly avg – min. monthly avg) \*10] where maximum and minimum monthly averages are measured over the period 31 Dec '05 through 31 Mar '18; graphite prices are per Benchmark Minerals, showing five year historical data.

**Metals** 

 Metal prices are measured on a scale of 0 to 10, with 0 and 10 representing the minimum and maximum average quarterly prices occurring since the end of 2005

 The positions demonstrate the current price level of each metal with respect to their various historical price points since the end of 2005

AMG's relevant prices have started to move out of the bottom quartiles



### AMG ENGINEERING

#### **REVENUE & EBITDA** (IN MILLIONS OF US DOLLARS)



#### **ORDER INTAKE** (IN MILLIONS OF US DOLLARS)



#### BOOK TO BILL RATIO OF 1.74X IN Q1 2018

**REVENUE DECLINED** 

BY 5% VS. Q1 2017

DUF TO TIMING

**FFFFCTS** 

- EBITDA increased by \$0.1 million in Q1 2018 versus Q1 2017
- Revenue in the quarter was adversely impacted by timing effects, namely early stage engineering work underway on a number of large orders received in recent months
- Order backlog of \$255.8 million as of March 31, 2018, a 24% increase compared to December 31, 2017
- Signed \$104.8 million in new orders during Q1 2018, a 1.74x book to bill ratio



### AEROSPACE: DRIVING GROWTH IN THE CORE BUSINESS





Forecasted Production Levels of Commercial Aircraft



Underlying fundamentals point to continued growth in this critical end market

### WORKING CAPITAL REDUCTION



### 2018 OUTLOOK & LITHIUM PROJECT UPDATE

#### OUTLOOK

We believe we can achieve our goals earlier than previously expected and can commit to turning the present EBITDA level into \$200 million, or more, in the fiscal year ending December 31, 2020, or earlier.

As demonstrated in the first quarter of 2018, AMG expects full year 2018 EBITDA to improve considerably compared to the prior year.

AMG's management team is focused on delivering our highly accretive lithium project and executing our long term lithium strategy. In addition, we will continue to pursue other acquisition opportunities and organic growth projects in order to generate long term value for our shareholders.

#### LITHIUM PROJECT UPDATE

Project is progressing in-line with expectations – commissioning has commenced as of May 15, 2018.

**Phase I - Lithium Concentrate Plant 1:** our first lithium concentrate plant has now commenced start-up and will reach full name-plate operating capacity of 90,000 tons per annum of lithium concentrate in the fourth quarter of 2018.

**Phase II - Lithium Concentrate Plant 2:** work on our second lithium concentrate plant is also well underway and we expect to complete detailed engineering and commence construction in the third quarter of 2018. Furthermore, we expect to begin production by the end of 2019.

**Phase III - Lithium Carbonate:** we are preparing a definitive concept to move downstream into the production of lithium chemicals, to capture the incremental value associated with this part of the value chain. We look forward to providing further updates in due course.

Management's priority in 2018 is to execute on our highly accretive lithium project

