

COMPANY DISCLAIMER

THIS DOCUMENT CONTAINS PROPRIETARY INFORMATION AND IS BEING PROVIDED SOLELY FOR INFORMATION PURPOSES 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, EXCEPT WITH THE PRIOR WRITTEN CONSENT OF THE COMPANY. 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.



AMG AT A GLANCE

WHAT AMG DOES

- Expert global value chain manager in sourcing critical materials from complex locations, providing value-add processing, and serving Fortune 100 customers
- Produces market-leading vacuum furnaces for specialized alloying applications and provides heat treatment services

AMG CORE PRINCIPLES

- · Leading producer in all our markets
- Low-cost producer in all our markets
- Innovation driven
- Intensive risk management system and control structure

GLOBAL TRENDS DRIVING CRITICAL MATERIALS DEMAND

GLOBAL TRENDS

Need to contain CO₂ emissions; Industrial growth and increasing affluence need a technology counterbalance

DEMAND

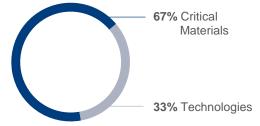
Material science-based solutions for energy efficiency (lighter, stronger, temperature resistant)

SUPPLY

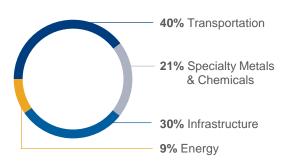
AMG sources, processes, and supplies the materials which are critical to our customer's endproduct performance

FY 2018 REVENUE OF ~\$1.3 BILLION

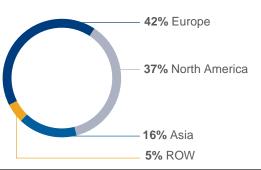
BY SEGMENT:



BY END MARKET:



BY REGION:



Market leading producer of specialty metals and vacuum furnace systems

AMG BUSINESS SEGMENTS



AMG CRITICAL MATERIALS

AMG's conversion, mining, and recycling businesses

36% Infrastructure

- Spent Catalyst Recycling (Vanadium)
- Superalloys (Chrome)
- Aluminum (Master Alloys)
 Brazil (Tantalum & Lithium)
 Antimony
 Graphite
 Silicon Metal
 2018 Revenue: \$873 million

22% Specialty Metals

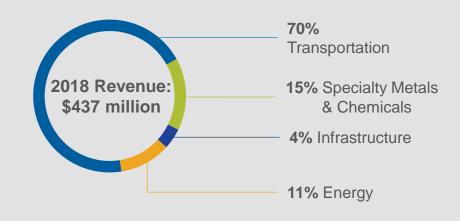
& Chemicals



AMG TECHNOLOGIES

AMG's titanium alloys, vacuum systems and services business

- Titanium Alloys & Coatings
- Furnaces
- · Heat treatment services



AMG IS A LEADER IN CO₂ REDUCTION

AMG: ENABLING TECHNOLOGIES

Products and processes saving CO₂ emissions during use:

- Aerospace Engine Fuel Efficiency
- Automotive Light-weighting

AMG: MITIGATING TECHNOLOGIES

Products and processes saving raw materials, energy and CO₂ emissions during manufacturing:

- Ferrovanadium Recycling
- Graphite Insulation Materials

Enabled CO ₂ Reduction - 2018					
Business Unit	Net CO ₂ Reduction (MT) * Technology / Product				
Engineering	43.5 million Thermal Barrier Coatings & Turboch Wheel Castings				
Titanium Alloys & Coatings	5.0 million	Titanium Aluminides			
Vanadium	1.2 million	Steel Alloying / Lightweighting			
Graphite	1.0 million	Graphite Insulation			

Total net CO₂ reduction (2018): 50.7 million MT

* Net of operating emissions

AMG STRATEGIC DEVELOPMENT TIMELINE

PORTFOLIO CREATION & INTEGRATION

Acquisition of family-run businesses benefiting from CO₂ reduction trends, 100+ years of existence, attractive valuation, high know-how, strong supply chain, and Fortune 100 customers

PRODUCT MIX OPTIMIZATION

Streamlined operations and improved operating performance by eliminating low-margin product lines

FOCUSED ON ORGANIC GROWTH

Properly positioned, financially and operationally, to pursue growth targets across portfolio



2013





2012

2014 to 2015

2016 to 2017

2018 to 2020

\$350M Adj. EBITDA in 5 years



COST REDUCTION

Cost-reduction and capex discipline in response to global economic slowdown



TARGETED W/C & DEBT LEVELS

Further reduction in both working capital and net debt, strengthening the balance sheet



SPODUMENE I AND CAMBRIDGE II

Low-cost lithium and vanadium organic growth projects increasing scope and scale



CAMBRIDGE II PROJECT RENDERING



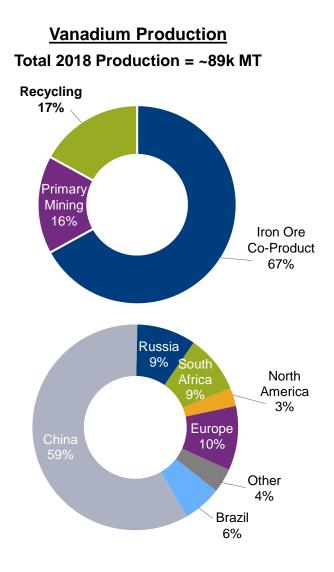
LOW RISK CAMBRIDGE II PROJECT INCREASES SCOPE AND SCALE

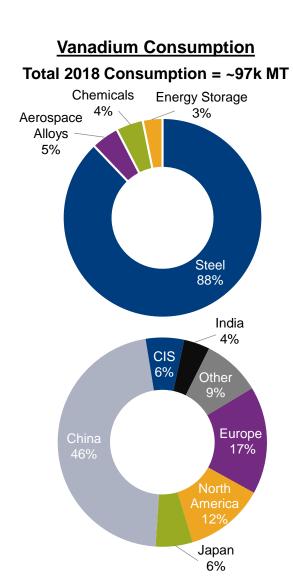
THE OPPORTUNITY	Double AMG's spent catalyst recycling capacity in order to take advantage of the closure of a competitor and service the North American refining industry	
SUPPLIER RATIONALE	 Refineries are better off recycling their resid catalysts with AMG than landfilling Zero residual liability associated with recycling (as opposed to landfilling) 	
TECHNOLOGY	 Technology risk is minimized, as AMG is replicating existing Cambridge I operations Significant technological barriers to entry 	
LOCATION	Near AMG's current Cambridge facility – taking advantage of personnel efficiencies such as shared oversight and management / control	
CAPITAL COST	Total project costs expected to be ~\$300 million	
PROFITABILITY	Spent catalyst processing fees have increased significantly	
TRACK RECORD	 AMG Vanadium installed a new roaster in 2013, increasing capacity by 60% AMG Brazil built and started up Spodumene I 	

EXISTING CAMBRIDGE, OHIO RECYCLING FACILITY: OPERATIONAL SINCE 1952



WHAT IS VANADIUM?





HOW IS VANADIUM PRODUCED?

- Vanadium is present in the Earth's crust and is produced either from processing iron ore or crude oil
- Vanadium coming from iron ore is either the result of steel coproduction, or primary mining
- Vanadium coming from crude oil is either extracted using catalyst or from processing the residue of burning/ gasification of heavy oil for power generation

WHAT IS VANADIUM USED FOR?

- The predominant use of vanadium is as a microalloy for the production of high strength steels (e.g. rebar) and tool steels
- In the aerospace sector, vanadium ensures low density, high strength and resiliency to high operating temperatures
- Vanadium redox flow batteries (VRFBs) require liquid vanadium electrolyte to store energy



AMG VANADIUM PRODUCTS

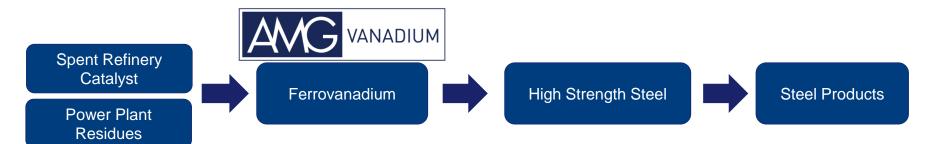
- The majority of profitability is associated with Ferrovanadium and Ferronickel-molybdenum
- The sale of Revan[™] and LimeAdd[™] allow AMG Vanadium to avoid landfilling costs

PRODUCTS		VALUE PROPOSITION	APPLICATIONS
	Ferovan [®] (Ferrovanadium)	 High strength low alloy (HSLA) steel used for construction, shipbuilding, pipeline, bridges, energy, automotive, etc. Rail steels, tool and die steels Rebar 	
	FeNiMoly® (Ferronickel- molybdenum)	Alloy addition for stainless steel and NiMo low-alloy steels	
	Revan™ (Calcium Aluminate)	Slag-conditioner for the steel industry	
	LimeAdd™ (Calcium Sulfate)	Solidification and stabilization of drilling waste	

99% of the hazardous waste that AMG Vanadium receives is converted into salable product

AMG SPENT CATALYST VALUE CHAIN – A "CRADLE-TO-GRAVE" SOLUTION

- AMG Vanadium processes spent catalyst in a roasting facility in order to remove the sulfur
- The roasted catalyst is then melted in an electric arc furnace (EAF) where the Ferronickel-molybdenum is extracted
- The molten material is passed to a second EAF furnace where the ferrovanadium is extracted
- The Ferrovanadium is sold to domestic steel producers









- Automotive
- Suspension Components
- Building Structures
- Bridges
- Vehicles & Transportation
- Oil & Gas
- Tubular Components
- Off Shore Platforms
- Ship Making
- Heavy Equipment
- Long-span Structures

AMG Vanadium is the largest processor of spent catalyst in North America

SPENT CATALYST CONTRACT STRUCTURE



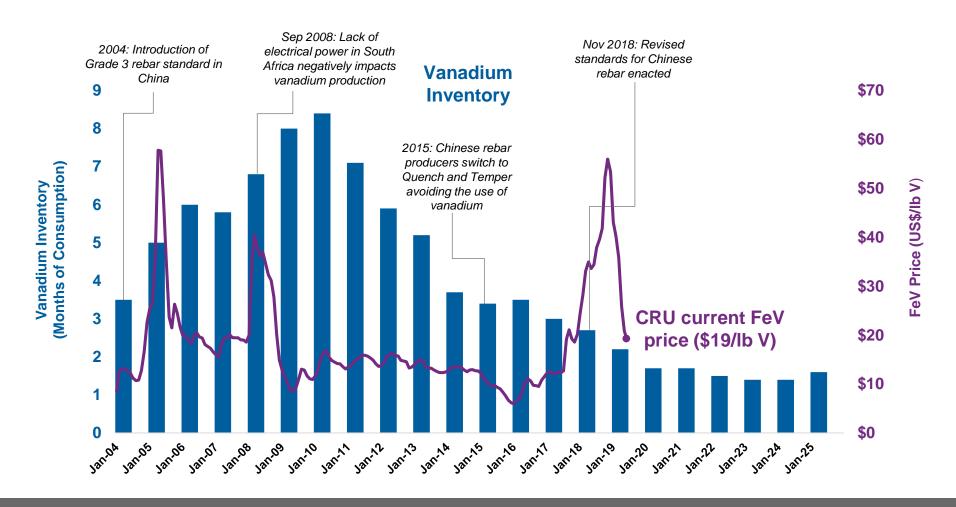
- Because of the income the refineries receive from the sale of finished products, utilizing AMG is the cheapest and most environmentally-sound way to dispose of their hazardous spent catalyst waste
- The tipping fee AMG Vanadium receives makes its operation significantly lower cost than primary mining
- AMG Vanadium and Cambridge II are profitable at all ferrovanadium prices

AMG Vanadium business model ensures long-term profitability

VANADIUM MARKET DYNAMICS – SUPPLY AND DEMAND DRIVERS

Demand		Supply				
STEEL	CHINESE REBAR STANDARD	CHINA	FACILITY CLOSURES	BARRIERS TO ENTRY		
 Steel production accounted for 88% of vanadium consumption in 2017 Use of vanadium in steel continues to rise with market share of high strength steel Modernization of developing countries will only further increase the demand for high strength steel 	• The Grade 3 rebar standard in China went into effect in late 2018 and compliance will necessitate the use of an additional 20,000 MT of vanadium in 2021, compared to 2018	 Beginning in 2017, China banned imports of vanadium slag, reducing Chinese feedstocks by 3,000 MT Chinese environmental regulators have refused to issue permits for stone coal operations, eliminating further potential vanadium production of ~3,000 MT A gradual shift away from blast furnaces (BOF) to electric arc furnaces (EAF) as the Chinese domestic scrap supply grows has also reduced vanadium production 	 During 2015/16, South African producers Evraz Highveld and Vanchem were liquidated, reducing global production by 11,000 MT (~13%) China forced the closure of several high-cost, low-quality domestic iron ore mines resulting in increased imports of non vanadium-containing iron ore Gulf Chemical, a large spent catalyst processor in North America, declared bankruptcy and shut operations in 2016 	 There are no new vanadium projects under construction. Once undertaken, new projects typically require 3-5 years to have an impact on supply Financing for greenfield projects is challenging due to significant capex (\$300M+) and a lack of understanding of vanadium by capital markets Mining projects contain significant downside pricing risk while recycling operations (e.g., AMG-V) rely on complex technology 		

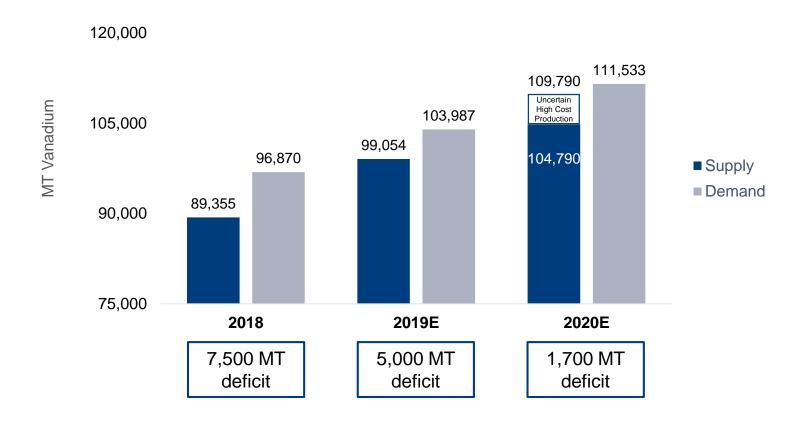
VANADIUM: INVENTORY VS. FEV PRICE



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



PROJECTED VANADIUM SUPPLY DEFICIT



Ongoing market deficit expected for the next several years, continuing drawdown in global inventories

AMG