

# ENABLING THE CIRCULAR ECONOMY

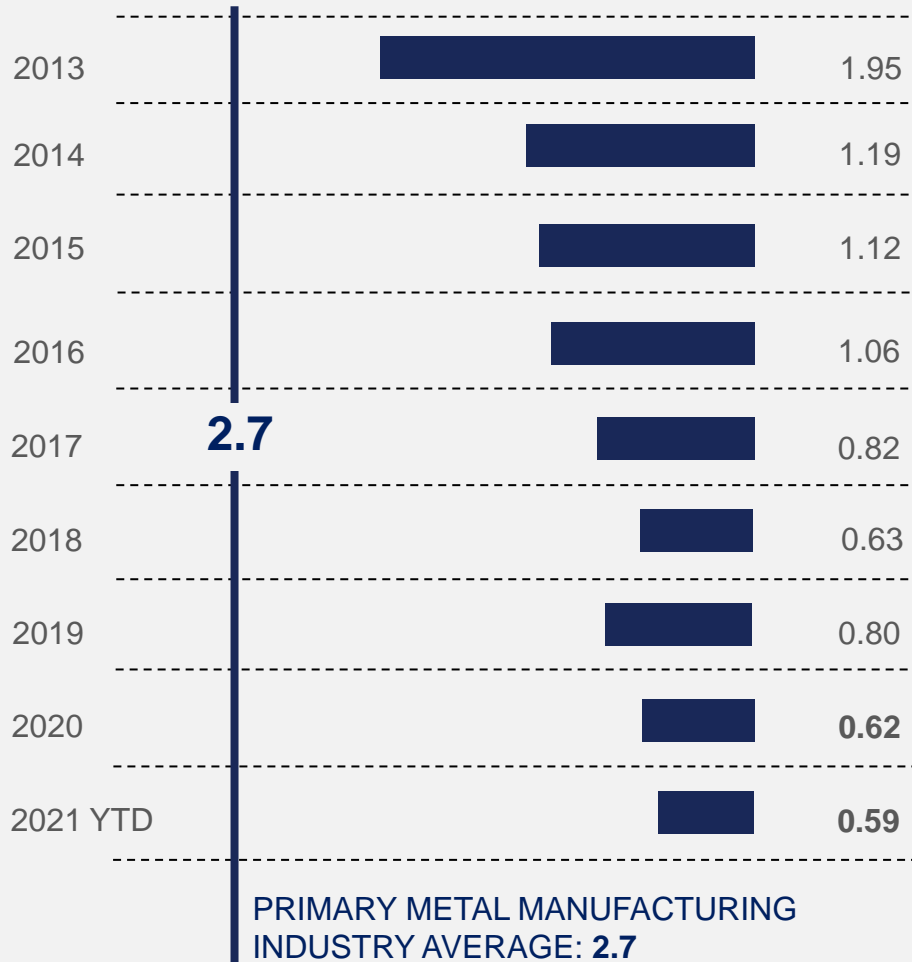
VIENNA FAMILY OFFICE IMPACT DAY | JUNE 17, 2021



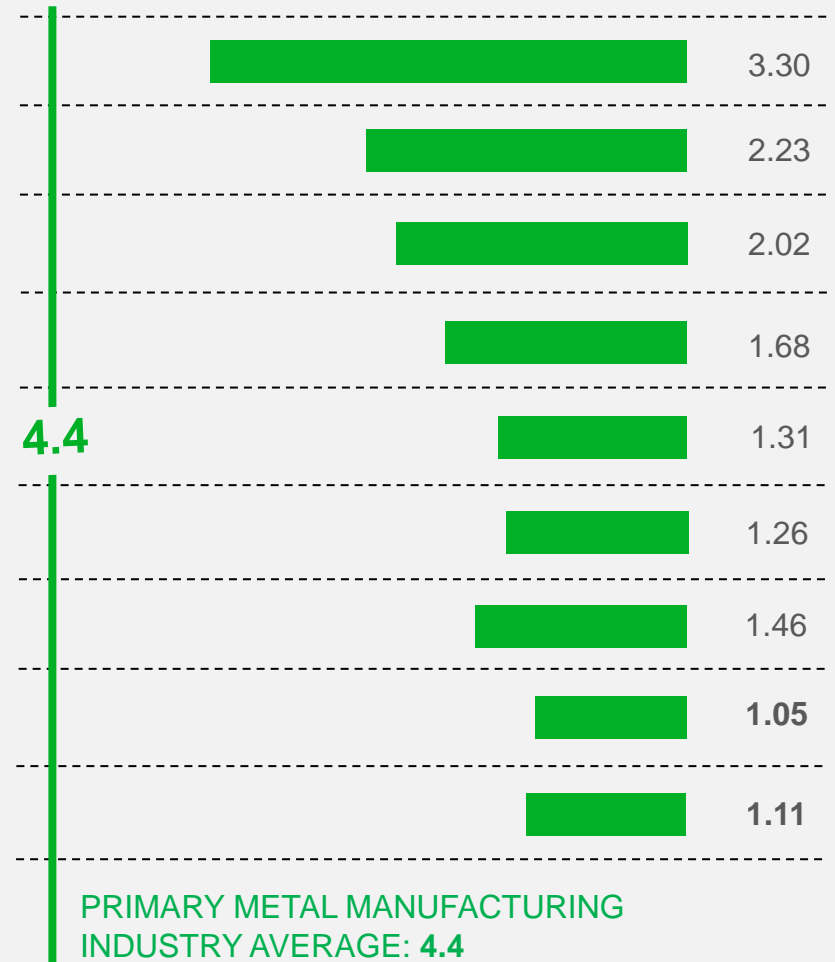
AMG ADVANCED  
METALLURGICAL GROUP N.V.

# SAFETY PERFORMANCE

## LOST TIME INCIDENT RATE



## TOTAL INCIDENT RATE



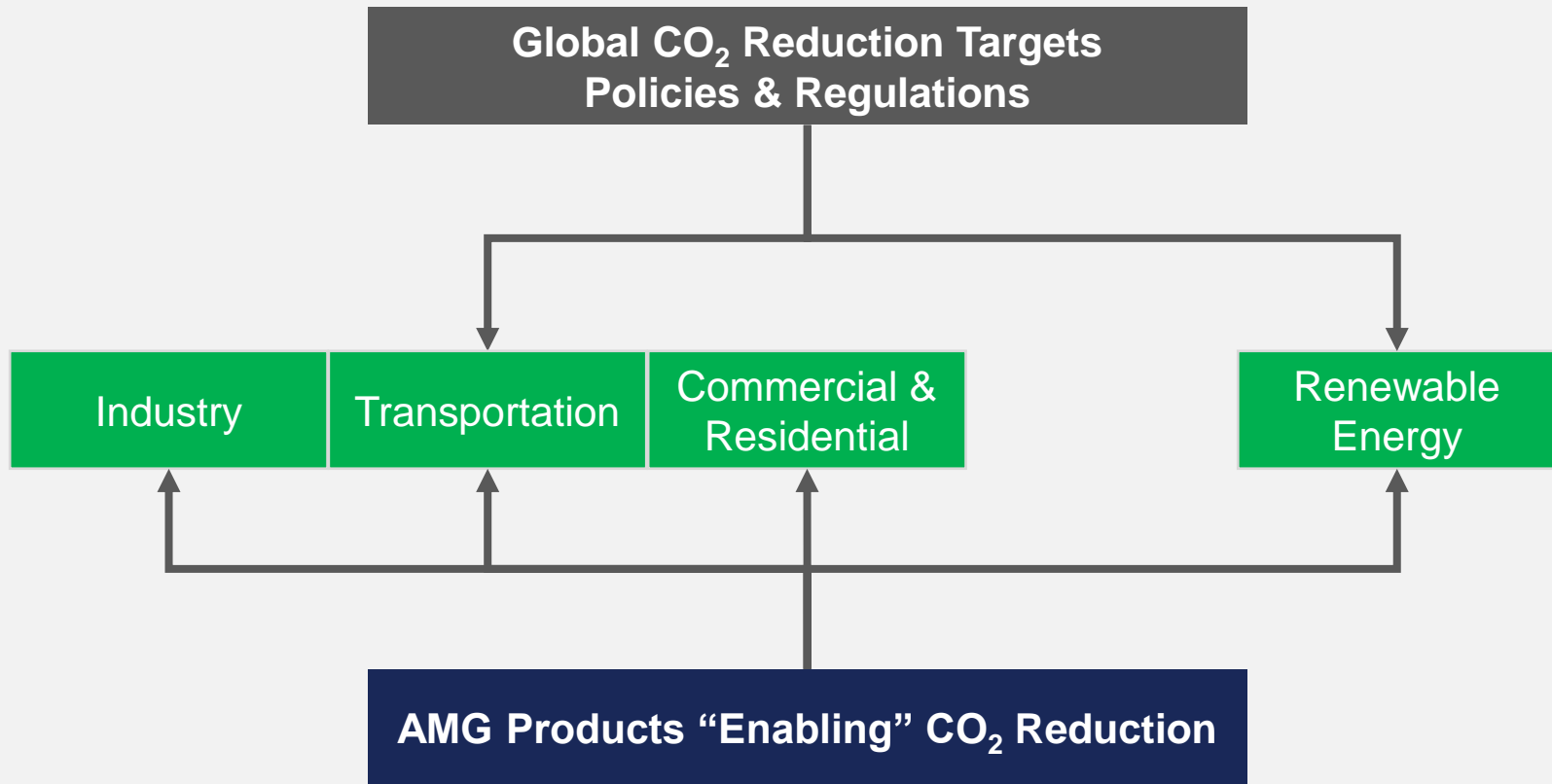
COVID-19

~ 3,100 EMPLOYEES

NO COVID FATALITIES

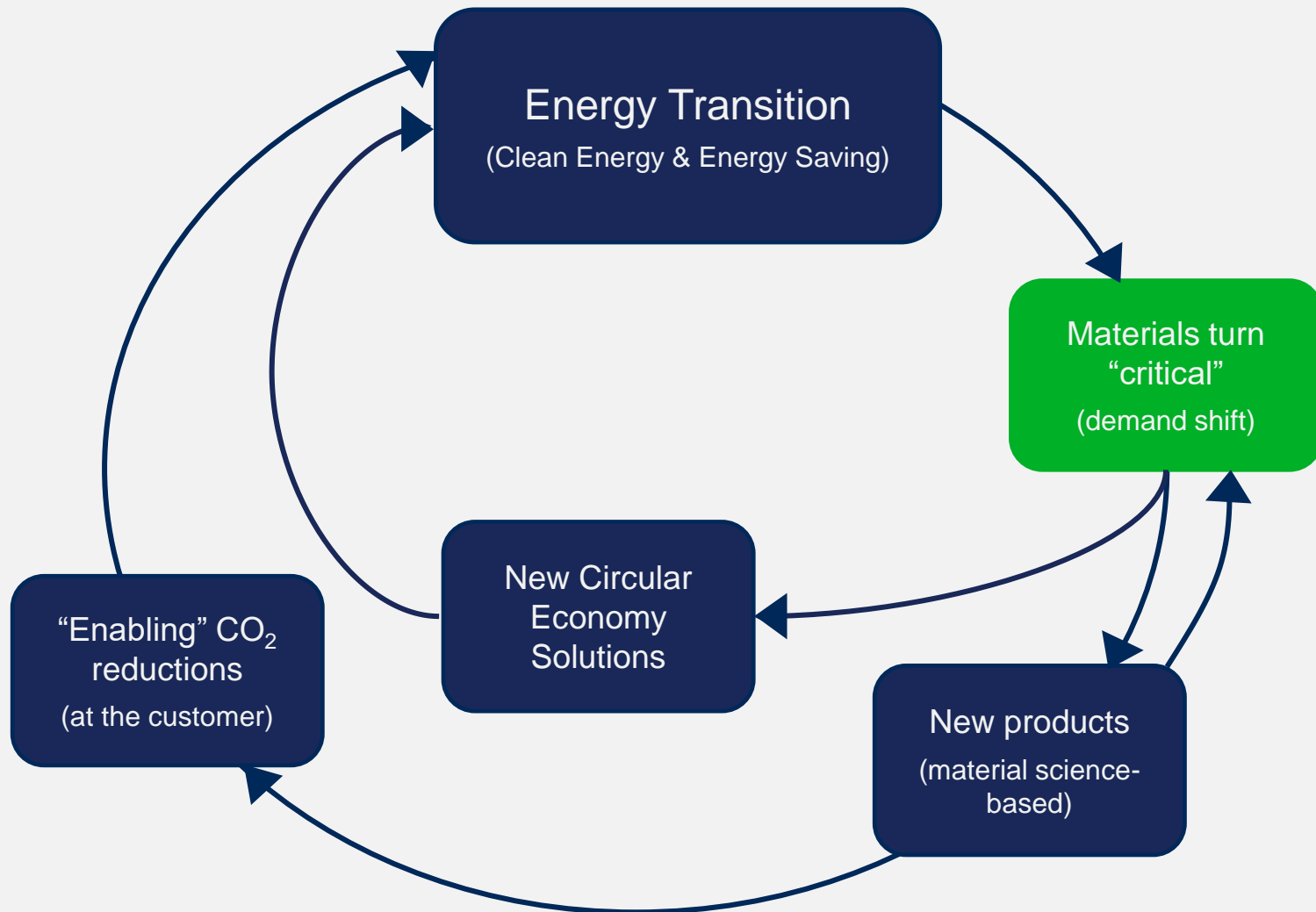
MAXIMUM OF 2 HOSPITALIZATIONS AT THE SAME TIME

# GLOBAL CO<sub>2</sub> REDUCTION FRAMEWORK



*Transforming Regulatory Pressure into Opportunities*

## AMG'S STRATEGIC DYNAMICS





# CO<sub>2</sub> REDUCTION ENABLING ACTIVITIES ARE AT THE CORE OF THE NEWEST EU TAXONOMY INITIATIVE

Regulation (EU) 2020/852 of the European Parliament and of the Council on the establishment of **a framework to facilitate sustainable investment** and amending Regulation (EU) 2019/2088.

For each environmental objective, the Taxonomy Regulation (TR) recognizes two distinct types of substantial contribution that can be considered Taxonomy-aligned:

“Economic activities that make a substantial contribution based on their own performance”












<AND>

## Article 16 - **Enabling** Activities

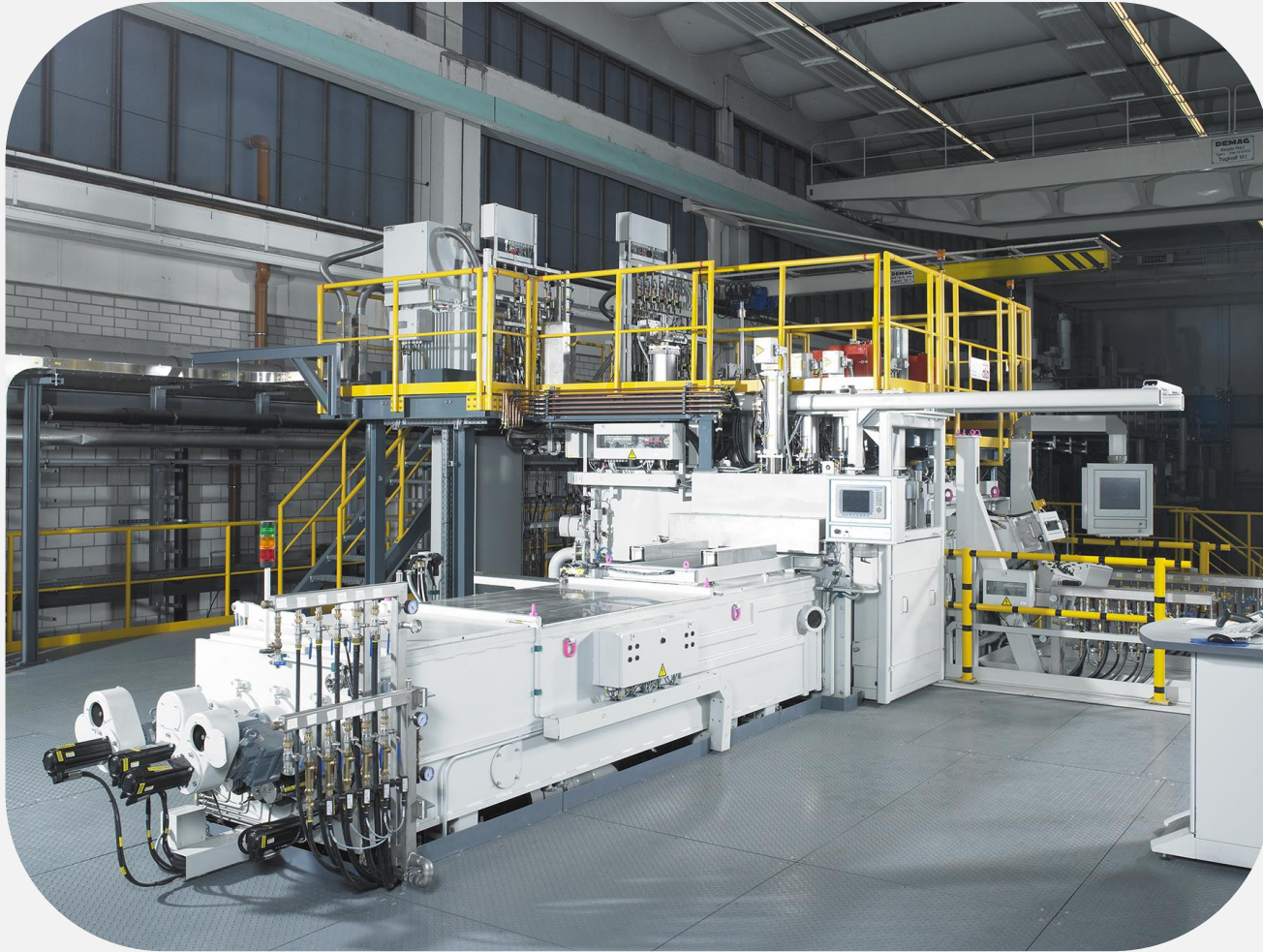
“An economic activity shall qualify as contributing substantially to one or more of the environmental objectives set out in Article 9 by directly **enabling** other activities to make a substantial contribution to one or more of those objectives, provided that such activity:

- a) does not lead to a lock-in of assets that undermine long-term environmental goals, considering the economic lifetime of those assets; and
- b) has a substantial positive environmental impact, on the basis of life-cycle considerations.”

# AMG REPORTING SEGMENTS

CLEAN ENERGY MATERIALS			CRITICAL MINERALS			CRITICAL MATERIALS TECHNOLOGIES		
BUSINESS UNITS								
Lithium (Li) Tantalum (Ta) Vanadium (V, Al, Ni, Mo)			Silicon (Si) Antimony (Sb) Graphite (C)			Titanium Alloys (Ti, Al) Engineering Superalloys (Cr, V)		
PRIMARY MARKETS								
								
Energy Storage	Recycling	Infrastructure	Specialty Metals & Chemicals	Energy Storage	Infrastructure	Transportation	Renewable Energy	Recycling
AMG KEY HIGHLIGHTS								
EBITDA (\$M)			Revenue (\$M)			Market Cap. (\$M)		
• 2018: 217.1			• 2018: 1,310.3			• 12/31/18: 983		
• 2019: 121.4			• 2019: 1,188.6			• 12/31/19: 696		
• 2020: 66.8			• 2020: 937.1			• 12/31/20: 849		
• 2021 guidance: 120+						• 6/1/21: 1,174		
						ECO <sub>2</sub> RP CO <sub>2</sub> Reduced (MT)		
						• 2018: 50.8M		
						• 2019: 67.8M		
						• 2020: 56.6M		

# TURBINE BLADE COATER

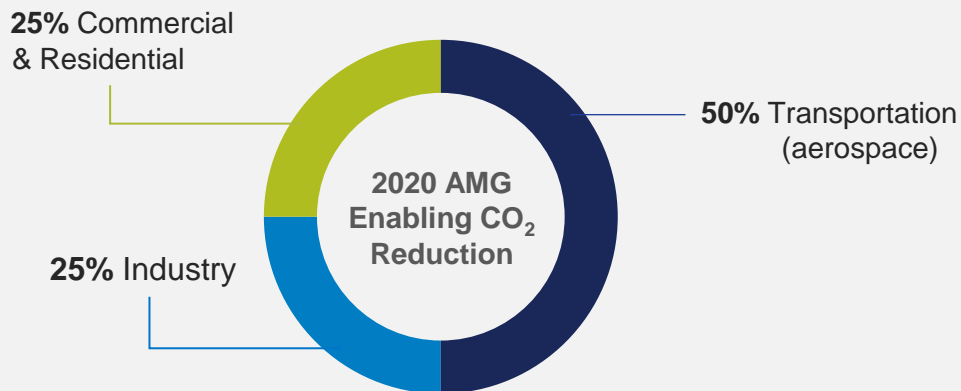
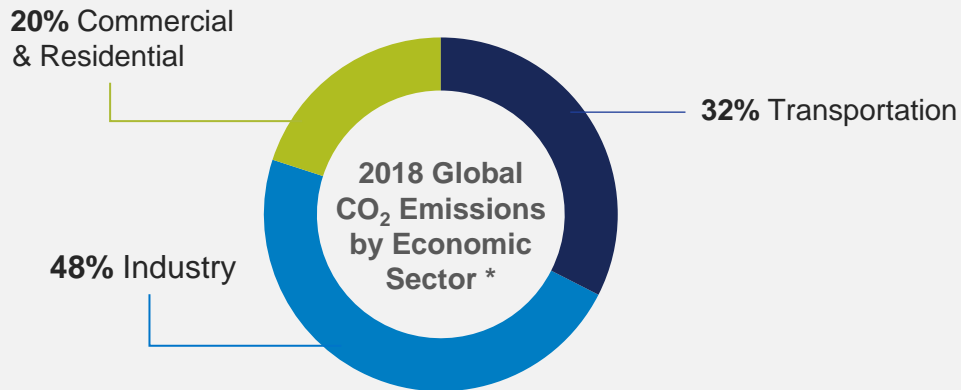




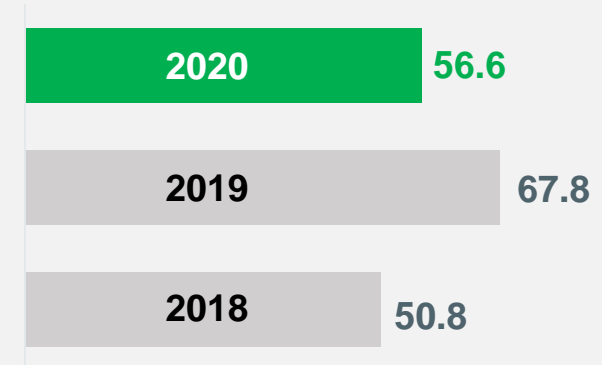
## GRAPHITE: INSULATION FOR BUILDINGS



# CO<sub>2</sub> EMISSIONS AND AMG ENABLED REDUCTION



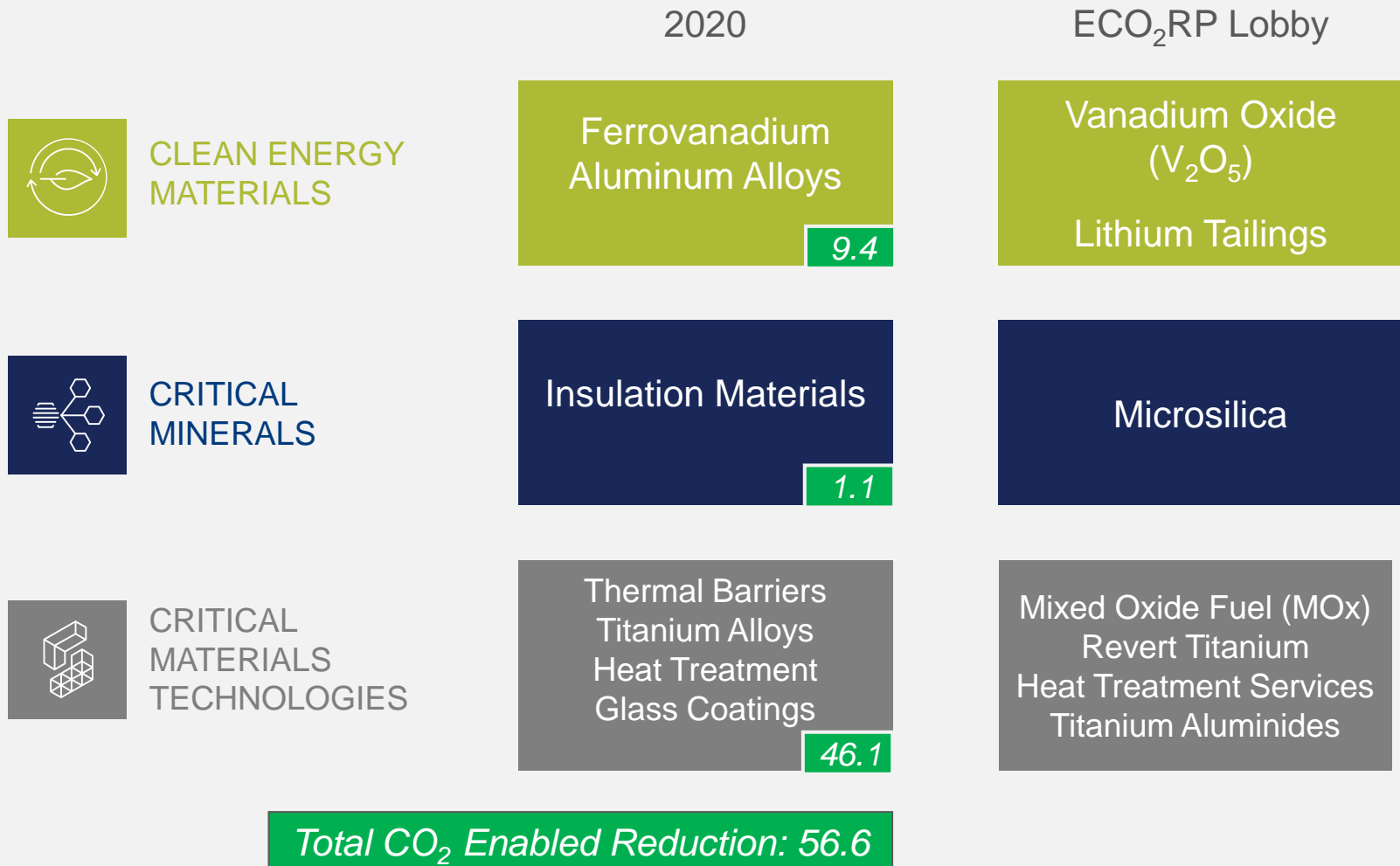
## AMG'S enabled CO<sub>2</sub> emission reductions (Million MT)



CO<sub>2</sub> reduction enabled by AMG's products based on the LCAs of 2018-2020

\* 2018 CO<sub>2</sub> Emissions by Economic Sector from <http://fmshooter.com/what-an-actual-green-new-deal-to-reduce-emissions-would-look-like/global-co2-emissions-by-source/>

# ENABLING CO<sub>2</sub> REDUCTION PORTFOLIO (ECO<sub>2</sub>RP)



## AMG VANADIUM: ENVIRONMENTAL EXCELLENCE



Marathon Galveston Bay refinery



AMG Zanesville facility



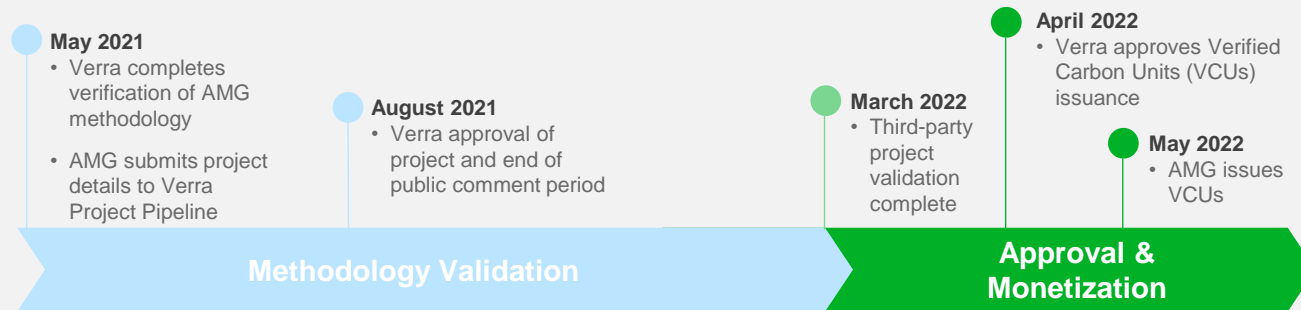
- “In 2019 MPC delivered 5,300 metric tons of spent catalyst to AMG. AMG extracted the vanadium and other valuable metals. This reclamation process produces **41,500 less metric tons of CO<sub>2</sub>e emissions** than traditional steel manufacturing”<sup>1)</sup>
- AMG Vanadium was among a small group of suppliers to receive special recognition for extraordinary performance in the area of environmental stewardship.



# VERIFIED CARBON STANDARD METHODOLOGY DEVELOPMENT

- AMG is in the final stages of publishing a Verified Carbon Standard (VCS) methodology, which would allow certified AMG projects to turn their greenhouse gas emission reductions into tradeable carbon credits
- AMG is working in conjunction with Verra, a global leader in the development of standards and frameworks, for achieving sustainable development targets
  - To date, Verra has worked with over 1,600 registered projects in over 82 countries, generating more than 450 million carbon credits

## Methodology Development Timeline





# SHELL & AMG RECYCLING (SAR) PROJECTS

**SHELL & AMG RECYCLING**  
VALUE THROUGH SUSTAINABILITY



**SAR – SAGIA Signing Ceremony, November 2019**

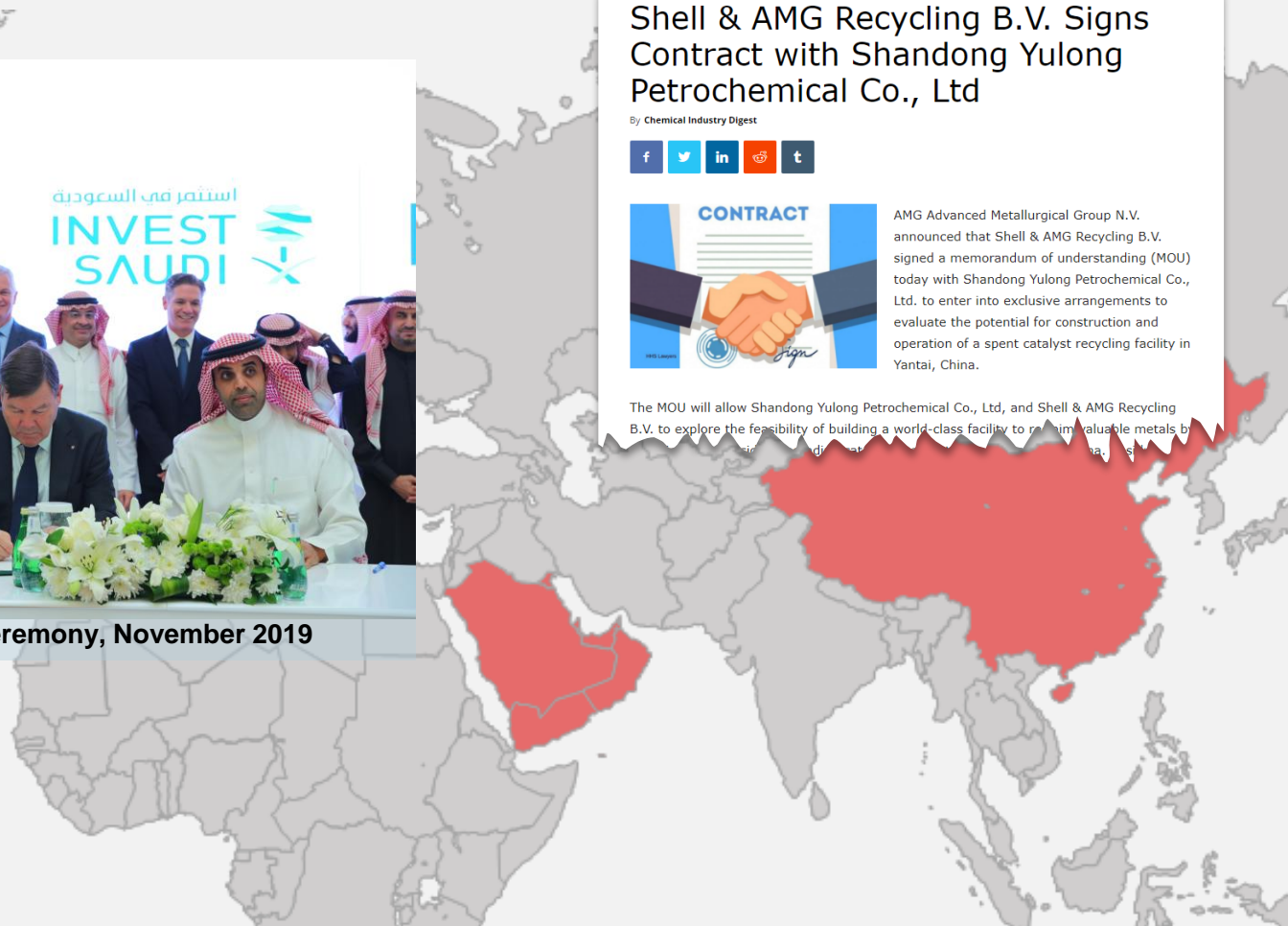
## Shell & AMG Recycling B.V. Signs Contract with Shandong Yulong Petrochemical Co., Ltd

By Chemical Industry Digest



AMG Advanced Metallurgical Group N.V. announced that Shell & AMG Recycling B.V. signed a memorandum of understanding (MOU) today with Shandong Yulong Petrochemical Co., Ltd. to enter into exclusive arrangements to evaluate the potential for construction and operation of a spent catalyst recycling facility in Yantai, China.

The MOU will allow Shandong Yulong Petrochemical Co., Ltd. and Shell & AMG Recycling B.V. to explore the feasibility of building a world-class facility to reclaim valuable metals from spent catalysts.



## AMG LITHIUM: THE ORIGIN OF THE VALUE CHAIN



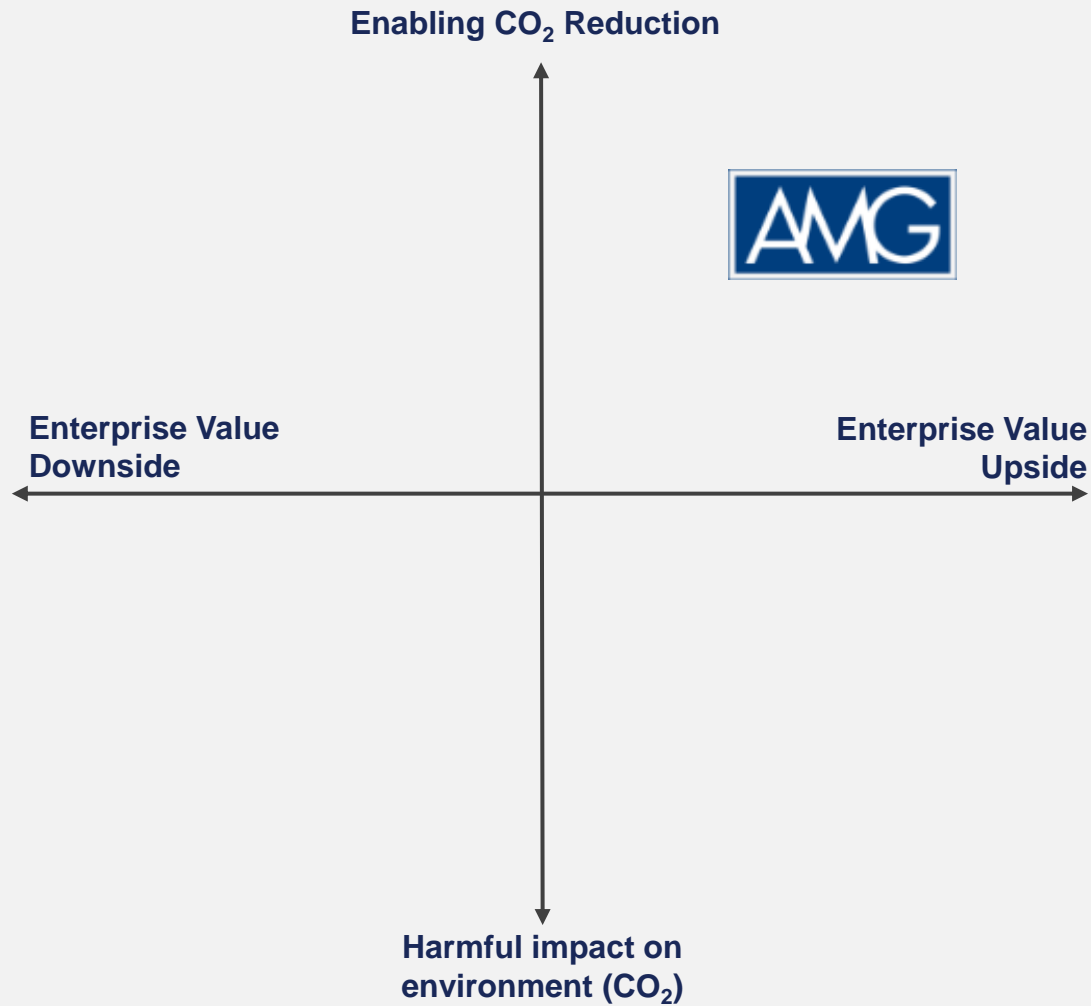


# AMG LITHIUM: THE END OF THE VALUE CHAIN





## DOUBLE MATERIALITY IN REVERSE



VANADIUM, MOLYBDENUM AND NICKEL—CAMBRIDGE, OHIO



VANADIUM, MOLYBDENUM AND NICKEL—ZANESVILLE, OHIO



$V_2O_5$



LI PROCESSING, AMG BRAZIL



TANTALUM, NIOBIUM, AND HAFNIUM



PLUTONIUM

This announcement appears as a matter of record.



AMG's LAW:

"Everything that  
can be recycled  
will be recycled."

AMG ADVANCED METALLURGICAL GROUP N.V.  
[amg-nv.com](http://amg-nv.com)



NIOBIUM



LITHIUM TAILINGS



TITANIUM



CHROMIUM