



ENVIRONMENTAL, SOCIAL,
& GOVERNANCE REPORT
EXECUTIVE SUMMARY 2020

“AMG’s mission is to provide critical materials and related process technologies to advance a less carbon intensive world.”



MESSAGE FROM THE CEO

The purpose of this letter is not to cover all topics that are included in the comprehensive Environmental, Social, and Governance report that follows. I have taken the liberty of selecting a few highlights to discuss here.

AMG is deeply invested in the subject of Environmental, Social, and Governance (“ESG”), not by simply being compliant with regulations and best practices, but by what we do. AMG has been built to be a global leader in “critical” materials which are essential building blocks for containing and eventually reversing the growth of atmospheric CO₂ levels. Clean Energy Materials rely heavily on critical materials which AMG produces in a sustainable and responsible manner. Critical materials are vital to the transition to clean energy and energy saving strategies, which, due to the demand shift, makes them “critical”. The International Energy Agency estimates that the pathway to the net zero carbon target implies a growth of critical materials from less than 10 million tons today to over 40 million tons in 2050.

COVID-19

We made the important decision to maintain critical operations during this unprecedented crisis because of the vital role our company plays in sustaining global infrastructure. Keeping our operations running meant modifying how we work to keep our employees, contractors, and visitors safe during a pandemic.

AMG operations drew upon worldwide guidance to develop location-specific programs that included educating personnel to recognize signs and symptoms of COVID-19 infection, implementing self-quarantine protocols, establishing temperature checks at every entrance, elevating workplace hygiene and cleaning protocols, social distancing, and enacting global travel restrictions.

I am happy to report that AMG employees around the world successfully adapted to and overcame the threat and turmoil imposed by the COVID-19 pandemic, with no COVID-19 caused fatalities and limited required hospitalizations. However, one cannot ignore the impacts COVID-19 has had beyond the walls of our workplace and the devastation it has wrought around the world. AMG is committed to supporting the families of our employees and the communities where we do business as we all continue along the road to recovery.

Health & Safety

Delivering to the world critical materials which are manufactured responsibly and safely is our priority and a “conditio sine qua non” as regard to our values. We are proud to report that in 2020 we continued to strongly outperform industry standards, both in Lost Time and Total Incident Rates.

AMG 2020 Results

Lost Time Incident Rate	0.62
Total Incident Rate	1.05

Although a worthy accomplishment, our safety target is obvious: ZERO incidents. In 2020, we proved this an obtainable target with 23 of our 33 sites (70%) reporting zero lost time injuries. With over 3,000 employees working at 33 sites in 15 countries, these are remarkable results. Nobody in AMG questions the priority of working safely.

Each site is supported by a dedicated business-specific safety executive responsible for the development and deployment of site-specific environmental, health, safety, and sustainability (EH&SS) policies, procedures, and training to ensure every AMG employee is equipped with the knowledge and tools required to perform their jobs safely. With a direct line to the Vice President of EH&SS, who reports to the CEO, safety executives are further supported with access to additional resources and subject matter experts.

Diversity & Inclusion

At the end of 2020, the Management Board’s composition was 100 percent male and the Supervisory Board’s composition was 67 percent male and 33 percent female. Also, in 2020, we added a new metric to track: the percentage of Women in Management. Women held 21% of our management positions in 2020, which as a percentage exceeds the 19% total female population at AMG.

We are particularly encouraged by the progress we have made at one of our largest industrial sites, the global leader in catalyst recycling at the Ohio Vanadium production facility. At that facility, 41% of the managers are female.

We look forward to growing the number of women in leadership throughout AMG.

CO₂ Emissions & AMG Enabled Reduction

Years ago, we started to measure the CO₂ emission reduction impact AMG products have on the CO₂ footprint of customers. In 2019, six products (Thermal Barrier Coatings, Titanium Alloys, Turbocharger wheel castings, natural graphite doped insulation materials, Ferrovandium, and Aluminum alloys) went through a Life-Cycle Assessment (LCA) with the help of a qualified third party (ERM). We grouped these products in a virtual segment and named it Enabling CO₂ Reduction Portfolio, or **ECO₂RP**. In 2019, the six **ECO₂RP** product lines enabled a CO₂ reduction of 67.8 million tons.



The Enabling CO₂ Reduction Portfolio (“ECO₂RP”)

In 2020, two new products joined **ECO₂RP** through the LCA gate: glass coatings and certain heat treatment services. The total enabled CO₂ reduction in 2020 was 56.6 million, the decrease compared to 2019 primarily due to the aerospace downturn. In 2020 the **ECO₂RP** revenues added up to 23% of AMG’s total (compared to 8% in 2010); the **ECO₂RP** gross profit was 28% (up from 5% in 2010). Presently, seven **ECO₂RP** candidates are in the pipeline, which we call the **ECO₂RP** “Lobby,” undergoing LCA in various stages. Some of the candidates have substantial CO₂ reduction potential.

The International Energy Agency concludes that a very high percentage of the global CO₂ reduction targets will have to come from technologies not yet proven. The **ECO₂RP** Lobby is growing relentlessly, only held back by human and financial resources within a conservative risk management framework.

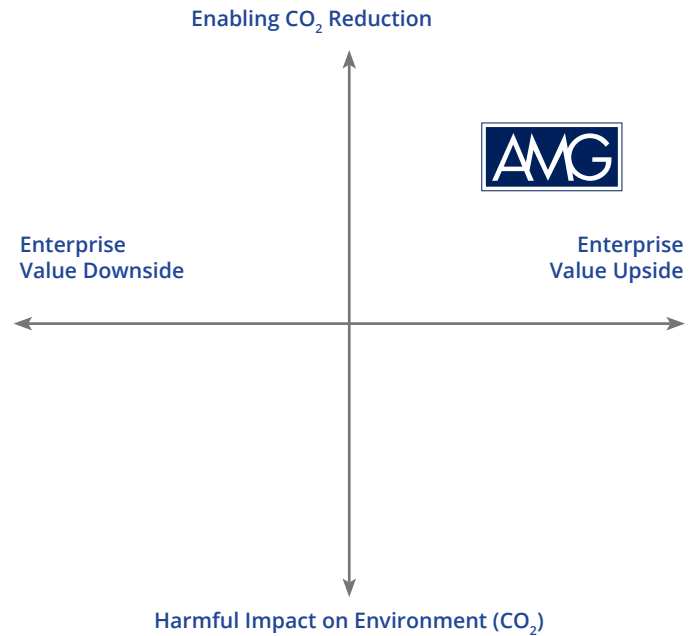
Changing Regulatory Universe

Over the years, the ability to enable our customers to reduce CO₂ emissions has become the strategic cornerstone of AMG. We constantly search for additional product innovations that are “carbon negative” and meet our profitability criteria. Carbon negative equals the direct carbon footprint of the product adjusted for enabled CO₂ reduction (verified by third-party LCAs).

The EU Taxonomy Regulation has embraced the concept of enabling activities. It states the following: “An economic activity shall qualify as contributing substantially to one or more of the environmental objectives set out in Article 9 by enabling other activities to make a substantial contribution.” In addition, the first environmental objective in Article 9 is climate change mitigation and the fourth objective is the transition to a circular economy, which aligns with our ongoing priorities to reduce CO₂ emissions.

The conclusion is that the EU taxonomy fully embraces the concept of counting enabled CO₂ reduction in the same way as the reduction of direct CO₂ emissions. We believe that will have profound consequences for CO₂ reduction (subject to, of course, impeccable third-party LCA verification).

Double Materiality



Let me close with a thought about double materiality —the idea that companies should identify and assess both financially material topics that influence enterprise value, as well as those that are material based on their outward impact on the economy, environment and people. For example, the figure above shows AMG’s position with respect to climate’s potential impact on enterprise value and its impact on climate. AMG’s impact on the climate measured by way of CO₂ reduction is significant, and we are creating enterprise value through our R&D investments and innovative CO₂-reducing products. We believe that if the double materiality approach is widely accepted, it will have profound consequences for both business and society.

Dr. Heinz C. Schimmelbusch
Chief Executive Officer



SUSTAINABILITY AT AMG

AMG endorses and supports the definition of corporate social responsibility as set by the World Business Council for Sustainable Development: "...being the continuing commitment by business to behave ethically and contribute to economic development while improving the quality of life of the workforce and their families as well as of the local community and society at large." For AMG and its affiliated companies, this definition translates into three main sustainable development objectives that the Company has formulated in connection with its financial objectives, technological capabilities, and its leading position in the global metallurgical industry. These objectives are to:

- Provide safe working conditions for our employees and be responsible stewards of the environment;
- Meet or exceed regulatory standards and engage in ethical business practices; and
- Be a valued member of the local economy, community, and society by contributing to solutions to address some of the fundamental environmental and social challenges facing society today.

Our material sustainability topics are in the categories of environmental, social, governance, and products.

AMG conducts materiality assessments to advance its sustainability program by identifying environmental, social, governance, and product-related impacts, risks, and opportunities that are most critical to AMG's business and stakeholders. AMG's list of material issues was developed primarily through two exercises: desktop research including peer benchmarking and stakeholder interviews. Internal stakeholders vetted the list of sustainability topics developed from the desktop research for relevance and significance, given their understanding of corporate risk formed through the company-wide risk assessment process. The list of sustainability topics was narrowed down to a priority list of material sustainability topics for AMG. The results of these materiality assessments informed the content of this report, including specific topics and metrics to track and disclose.



ENVIRONMENT

AMG is committed to achieving the highest standards of safety and environmental conduct at all its manufacturing facilities, as well as producing materials that help its customers minimize adverse environmental impact. Protecting the environment is directly linked to our focus on sustainable development.

AMG protects the environment in two specific ways. The first involves serving the green economy by acting as a key link in the supply chain of the advanced materials, recycling, and nuclear industries. Each of these sectors plays a vital role in addressing the ongoing challenges of climate change and waste and pollution reduction. The second involves AMG's commitment to measuring and minimizing the environmental footprint associated with its own manufacturing operations. Managing our impact on the environment is of the utmost importance at AMG. As a company with low risk tolerance, we manage environmental impacts closely so that they do not develop into significant environmental risks. AMG strives for year-over-year reduction of our emissions and resource consumption. Currently, AMG collects and audits environmental data from all locations once per year. The details of the Company's management approach for material Environmental topics can be found under [Environment](#) in our 2020 Sustainability Report.



SOCIAL

AMG stakeholders and the communities where we operate remain central to our business. Within our company, our human rights principles are sustained through the provision of safe and healthy working conditions in a non-discriminatory environment. We continuously support these principles by living our values in our interactions with local and national governments and the communities in which we operate. Whenever possible, we endeavor to extend our values and principles to our suppliers and contractors. Diversity and inclusion, human rights, and safety are the primary focuses of AMG's approach to maintaining a sustainable business for our people. We invest in our people to develop their skills and provide training in critical areas like technical and professional development, quality, anti-corruption, human rights, and health and safety.

AMG respects the rights and freedoms for individual employees to freely make choices about their career as described in Article 23 of the Universal Declaration of Human Rights. Encompassing these efforts is AMG's commitment to achieving the highest standards of safety and environmental conduct at all of its manufacturing facilities and producing materials that help its customers to minimize adverse environmental impact. The details of the Company's management approach for material Social topics can be found under [Social](#) in our 2020 Sustainability Report.



GOVERNANCE

At AMG, we understand the importance of maintaining proper business ethics, regulatory compliance and risk management. The Company endorses good corporate governance, with a focus on independence, accountability and transparency. AMG aims to be as open and transparent as possible about its structure, financial reporting, internal controls, tax reporting and procedures. Headquartered in the Netherlands, AMG also governs in accordance with best practices outlined in the Dutch Corporate Governance Code. Our robust approach to ethics, compliance, and risk management across our various business units serves as a strong foundation for a sustainable business. The details of the Company's management approach for material Governance topics can be found under [Governance](#) in our 2020 Sustainability Report.



PRODUCTS

AMG is a global critical materials company at the forefront of CO₂ reduction trends. AMG produces highly engineered specialty metals and mineral products and provides vacuum furnace systems and services to the transportation, infrastructure, energy, and specialty metals and chemicals end markets. AMG continues to meet the growing global demand for innovative new products that are lighter, stronger and resistant to higher temperatures. Through a focus on AMG's material product topics: customer environmental impacts, product innovation, and product quality & safety, we develop innovative, high quality products to help our customers meet their performance and CO₂ reduction goals. The details of the Company's management approach for material Products topics can be found under [Products](#) in our 2020 Sustainability Report.



ENVIRONMENTAL, SOCIAL, & GOVERNANCE PERFORMANCE DASHBOARD 2019–2020

ENVIRONMENT ¹								
GRI INDICATOR	DESCRIPTION	UNITS	AMG CRITICAL MATERIALS		AMG TECHNOLOGIES		AMG GROUP	
			2019	2020	2019	2020	2019	2020
302-1	Direct Energy Consumption	TJ	32	37	0	0	32	37
302-2	Indirect Energy Consumption	TJ	2,421	2,416	196	158	2,617	2,574
303-4	Wastewater Discharge	Cubic Meters	2,888,047	2,878,456	100,618	79,596	2,988,665	2,958,052
303-4	Metals Discharged ²	mt	1	1	.29	.09	1.29	1.09
303-5	Water Consumption	Thousand Cubic Meters	11,384	10,573	117	96	11,501	10,669
305-1 305-2	CO ₂ Equivalent Emissions (Scope 1 & 2)	mt	507,602	436,639	32,560	23,842	540,162	460,481
305-7	Particulates Discharged to Air	mt	105	75	0	3	105	78
305-7	SOx Emissions	mt	618	407	0	0	618	407
305-7	NOx Emissions	mt	198	56	10	314	208	370
306-3	Hazardous Waste (Including Recycled)	mt	2,763	1,914	1,524	1,685	4,287	3,599
306-3	Non-Hazardous Waste (Including Recycled)	mt	31,023	25,130	9,192	4,110	40,215	29,240
306-4	Percent of Waste Recycled	%	46	41	95	97	58	51
306-5	Waste Disposed to Landfill	mt	18,117	15,832	533	171	18,650	16,003
307-1	Spills	L	0	0	0	0	0	0
307-1	Environmental Fines	Thousand USD	0	47	0	0	0	47
AMG Metric	Number of ISO 14001 Certified Facilities	Total	8	8	4	4	12	12
AMG Metric	Number of ISO 50001 Certified Facilities	Total	2	2	4	5	6	7
GOVERNANCE								
GRI INDICATOR	DESCRIPTION	UNITS	AMG CRITICAL MATERIALS		AMG TECHNOLOGIES		AMG GROUP	
			2019	2020	2019	2020	2019	2020
205-2	Hours of Anti-Corruption Training	Hours	1,477	897	411	358	1,888	1,255
412-2	Hours of Human Rights Training	Hours	752	447	172	162	924	609
419-1	Fines for Non-Compliance with Laws and Regulations	Thousand USD	4	12	0	0	4	12
AMG Metric	Hours Invested in Risk Management Meetings	Hours	120	239	32	89	152	328



PRODUCTS

GRI INDICATOR	DESCRIPTION	UNITS	AMG CRITICAL MATERIALS		AMG TECHNOLOGIES		AMG GROUP	
			2019	2020	2019	2020	2019	2020
AMG Metric	Number of ISO 9001 Certified Facilities	Total	16	16	7	8	23	24
AMG Metric	Revenue from ECO₂RP products ³	%	-	-	-	-	-	23
AMG Metric	CO ₂ Emissions Avoided	mt	12,676,433	10,503,937	55,095,684	46,047,126	67,772,117	56,551,063

SOCIAL

GRI INDICATOR	DESCRIPTION	UNITS	AMG CRITICAL MATERIALS		AMG TECHNOLOGIES		AMG GROUP	
			2019	2020	2019	2020	2019	2020
102-8	Workforce	Total	1,851	1,753	1,394	1,311	3,245	3,064
403-2	Total Incident Rates	Rate	1.82	0.98	0.92	1.22	1.46	1.05
403-2	Lost Time Incident Rates	Rate	0.86	0.49	0.73	0.89	0.80	0.62
405-1	Gender Diversity	% Male	77	86	82	75	79	81
405-1	Gender Diversity	% Female	23	14	18	25	21	19
405-1	Age Diversity	% Under 30	21	20	15	12	18	16
405-1	Age Diversity	% 30 to 50	55	59	50	51	53	56
405-1	Age Diversity	% Over 50	24	21	35	37	29	28
405-1	Women in Management ⁴	%	-	22	-	18	-	21
AMG Metric	Number of OHSAS 18001 Certified Facilities	Total	9	3	2	1	11	4
AMG Metric	Number of ISO 45001 Certified Facilities	Total	8	8	4	4	12	12
AMG Metric	Sites Where AMG Encourages Local Hiring Practices	%	100	100	100	100	100	100
AMG Metric	Volunteer Hours	Hours	1,516	1,173	0	0	1,516	1,173

¹ In general, the environmental metrics cover all manufacturing operations. However, for wastewater (e.g., metals discharged) and air emissions (excluding GHG) the metrics only cover sites with wastewater or air permits.

² Restated data for 2019. In 2019, AMG TAC had some issues with our waste water treatment plant which resulted in the release of more Vanadium and Molybdenum than usual.

³ New metric in 2020, only reporting for AMG Group.

⁴ New metric in 2020.

RELEVANT AMG POLICIES

- [AMG Code of Business Conduct](#)
- [AMG Corporate Environmental, Health, Safety and Sustainability Policy](#)
- [AMG Policy on Anti-Bribery, Anti-Corruption, and Conflicts of Interest](#)
- [AMG Policy on Antitrust Compliance & Competition Guidelines](#)
- [AMG Policy on Compliance with Sanctions and Export Control Regulations](#)
- [AMG Policy on Human Rights](#)
- [AMG Supplier Conduct Charter](#)
- [Diversity Policy](#)
- [Modern Slavery Act Statement](#)
- [Insider Dealing Regulations](#)
- [Speak Up & Reporting Policy](#)