



United Nations Global Compact

Communication on Progress Covering Calendar Year 2018

April 1, 2019

To our Stakeholders:

I am pleased to confirm that once again this year AMG Advanced Metallurgical Group N.V. ("AMG") reaffirms its support of the Ten Principles of the United Nations Global Compact ("UNGC") in the areas of Human Rights, Labor, Environment and Anti-Corruption. Our Code of Business Conduct and Policy on Human Rights, both of which are available on our website, set out our commitments to act ethically and uphold the ten UNGC principles in all of our business activities.

In this annual Communication on Progress, we describe our actions to continually improve the integration of the Global Compact and its principles into our business strategy, culture and daily operations. We also commit to share this information with our stakeholders using our primary channels of communication, primarily the AMG website www.amg-nv.com.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Heinz C. Schimmelbusch', written in a cursive style.

Dr. Heinz C. Schimmelbusch
Chairman of the Board and Chief Executive Officer

HUMAN RIGHTS

- Principle 1 - Businesses should support and respect the protection of internationally proclaimed human rights

AMG Advanced Metallurgical Group explicitly supports the United Nations' Universal Declaration of Human Rights and refers to this commitment in its annual report to Shareholders. Although always an integral part of AMG, our formal commitment in this area started in 2009 with the publication of our Code of Business Conduct.



AMG CODE OF BUSINESS CONDUCT



This was augmented in 2011 by the publication of our Policy on Human Rights. Both of these documents can be found in the Corporate Governance section of the AMG website, and the Human Rights Policy is shown below:



Policy on Human Rights

AMG Advanced Metallurgical Group N.V. is a global company operating in a global market. We rely on our employees to implement our ethical values to ensure our business is conducted in a way that values human rights. We formally support the United Nations Global Compact including its labor, environmental, anti-corruption and human rights aspects. With respect to human rights:

AMG supports and respects the protection of internationally proclaimed human rights and will work to make sure it is not complicit in human rights abuses.

The key principles of the AMG Policy on Human Rights are driven by internationally accepted norms and national laws and are:

- **Children and Young Workers.** AMG does not employ children or support the use of child labor. We will support the creation of educational programs for young people including apprenticeships combined with formal education.
- **Equality of Opportunity.** AMG has zero tolerance for any kind of discrimination or harassment. We embrace cultural differences in our workforce. We will attract, develop, promote and retain the best employees based solely on merit and ability.
- **Freedom of Engagement.** All AMG employees have chosen to work for the company and AMG does not engage in forced labor or compulsory hiring practices.
- **Compensation.** AMG will compensate its employees through wages and benefits to ensure it meets or exceeds legal minimums and is in full compliance with all applicable laws and will be competitive to retain employees.
- **Freedom of Association.** AMG upholds the freedom of association and the right to collective bargaining.
- **Relationships with Communities.** AMG respects the customs, values and cultures of the local communities in which we operate including communities indigenous to those areas, taking into account their concerns and needs.

Within our company our human rights principles are enacted through the provision of safe and healthy working conditions in a non-discriminatory environment. We will continuously support our human rights standards by living our values in our interactions with local and national governments, and the communities in which we operate and wherever possible endeavor to extend our values and principles to our suppliers and contractors.

These human rights principle are universal to AMG, applied in everything we do, and are implemented irrespective of the developed or developing status of the countries in which we operate. This policy provides additional details to those commitments made in our Code of Business Conduct and applies to all AMG Advanced Metallurgical Group N.V. wholly and majority owned facilities and shall be communicated annually to all employees.

A handwritten signature in blue ink, appearing to read 'Heinz C. Schirmmelbusch'.

Dr. Heinz C. Schirmmelbusch
Chairman of the Management Board and Chief Executive Officer

A review of this policy in 2018 determined it to still be adequate to articulate AMG's commitments and it remains relevant to the current business climate.

A network of Compliance Officers under the oversight of a Chief Compliance Officer and a core Compliance team monitors the commitments made in these publications. The core Compliance team meets typically twice per year to review Compliance and Ethical issues and is supported by an independent external consultant. This consultant has assisted in the development of policies, procedures and training programs and in responding to enquiries from stakeholder groups with interests in human rights issues. There is an ongoing program of employee surveys to gauge the

workforce's perceptions about AMG's commitments to ethical business practices and human rights and reviewing AMG's programs against the OECD guidelines for multinational enterprises. To date the results of these surveys has been positive.

In 2018 there were no reported incidents of breaches of the AMG Code of Business Conduct related to human rights abuses.

- Principle 2 - Make sure businesses are not complicit in human rights abuses

The aim of the presence of an AMG business unit in a community is to strengthen and be part of the community, fostering sound relationships and avoiding conflicts. We respect the dignity and rights of our employees, their families and the communities in which we operate and others who might be affected by our operations and actively involving ourselves and supporting those communities. AMG also contributes through philanthropic donations to support local community needs including to schools, colleges and hospitals with a focus on education in STEM subjects.

AMG sustains a network of Code of Business Conduct Compliance Officers covering all sites and based in countries and at major sites where AMG companies are operating to locally identify any potential human rights abuses. In instances where this needs to be done independently and confidentially, a Speak Up & Reporting Policy is in force allowing any employee to come forward and report issues. The Speak Up & Reporting Policy can be accessed through the Governance section of the AMG website. The Chief Compliance Officer and their team carefully review all Speak Up & Reporting Policy complaints.

AMG also has a Supplier Conduct Charter, shown below, which is part of a process to ensure the standards relating to Human Rights which AMG holds itself to, are expanded to our suppliers as well. This policy states that: "AMG's suppliers should support and respect the protection of internationally proclaimed human rights and ensure they are not complicit in human rights abuses." This Supplier Conduct Charter was reviewed during 2018 and remains adequate under AMG's current business climate.



Supplier Conduct Charter

AMG Advanced Metallurgical Group N.V. is a global company operating in a global market. Our supplier-customer relationships are essential in building economic value, but are also important in promoting social and environmental best practices

Essential elements of our supplier-customer relationship will include specifications, price, quality, service level and technology. AMG will also take into account environmental and social impact in assessing supplier quality and will preferentially deal with partners who are able to demonstrate commitment in the following areas, based upon the relevant principles of AMG's Code of Business Conduct:

- Human Rights
 - AMG's suppliers should:
 - Support and respect the protection of internationally proclaimed human rights and ensure they are not complicit in human rights abuses.
- Labor
 - AMG's suppliers should:
 - Uphold the freedom of association and the effective recognition of the right to collective bargaining; support the elimination of all forms of forced and compulsory labor; support the effective abolition of child labor; and support the elimination of discrimination in respect of employment and occupation.
 - Have programs in place to protect the health and safety of your staff, subcontractors and local residents, preferably through a documented safety management system.
- Environment
 - AMG's suppliers should:
 - Support a precautionary approach to environmental challenges and act to promote greater environmental responsibility.
 - Comply with all local environmental laws and regulations in the locations in which you operate and hold all required permits.
 - Have procedures in place to prevent environmental incidents and response plans to mitigate the effects should such an incident occur, preferably through a documented environmental management system
- Anti-Corruption
 - AMG's suppliers should:
 - Not tolerate corruption in any of its forms, including extortion and bribery.
 - Comply with laws and regulations in the locations in which they operate.
 - Uphold high standards of personal and business ethics.

AMG will engage with its suppliers in a respectful and ethical way, encompassing fairness and honesty and will select suppliers on the basis of specifications, price, quality, service level and technology, but also Human Rights, Labor, Environment and Anti-Corruption approach, as outlined in this charter.

AMG Suppliers are expected to respond promptly to inquiries from AMG procurement professionals with respect to compliance with these principles and accept that they may be required to perform self-assessment questionnaires.

LABOR

- Principle 3 - Businesses should uphold freedom of association & effective recognition of the right to collective bargaining

AMG respects the freedom of its individual employees to join, or choose not to join, legally authorized association or organizations. AMG continues to use the Global Reporting Initiative

(GRI) indicator 102-41 (Collective Bargaining Agreements) to monitor this principle. In our 2018 Annual Report we state:

"The rights and freedoms for individual employees to join, or choose not to join, unions, as described in Article 23 of the Universal Declaration of Human Rights, are fully respected by AMG. Once again in 2018, AMG had no strikes or lockouts.

Additionally, we utilize indicator 102-41 (Collective Bargaining Agreements). In the 2017 Annual Report we state:

"Protection of internationally proclaimed human rights is an area in which AMG is both highly aware and fully committed, and the Company strives to make sure it is not complicit in human rights abuses. Each AMG site is assessed during site visits and internal audits to identify if there is the possibility of freedom of association or collective bargaining being put at risk because of political or business factors. In 2017, it was found that no sites were at risk, with the exception of China, where the formation of unions remains restricted. Similarly, the Company has reviewed sites to ensure that they are not at risk for employing child labor or exposing young workers to hazards. No sites have been identified that pose a risk at this time. AMG also aims to ensure rights are protected in our supply chain through its Supplier Code of Conduct. Our policy on human rights is included in the Company Code of Business Conduct and Ethics and detailed in the Company's human rights policy; all are available on the AMG website.

Further, with the development and implementation of our Supplier Conduct Charter we begin to hold our suppliers to the same standard stating: *"AMG's suppliers should uphold the freedom of association and the effective recognition of the right to collective bargaining; support the elimination of all forms of forced and compulsory labor"*

- Principle 4 - The elimination of all forms of forced and compulsory labor

All AMG employees work for the company as a result of need or want. Nobody is forced to work for AMG and we prohibit the use of any forced labor, including slavery, servitude, or prison labor. This is reflected in the widespread presence of unionized labor across AMG. Currently most of the locations and environments AMG facilities are present in are stable and advanced democracies, assisting in ensuring human rights abuses of this type are not occurring. AMG has development projects which may expand the boundaries of the company into countries with more challenging environments and AMG recognizes this may bring an increased level of diligence. Again, our Supplier Conduct Charter adopted in 2014 introduces our commitment to this principal to our suppliers stating: *"AMG's suppliers should support the elimination of all forms of forced and compulsory labor."*

- Principle 5 - The effective abolition of child labor

As stated in our Human Rights Policy, AMG does not employ children and strongly rejects the use of child labor, and expects our suppliers to do the same through the requirements of our Supplier Conduct Charter. AMG does actively support the creation of educational programs for young people including apprenticeships combined with formal education, particularly in the areas

of science and engineering. In our annual report we utilize the Global Reporting Initiative indicator 408-1 "Operations identified as having significant risk for incidents of child labor". In its 2018 annual report AMG reported that it has reviewed 29 of its operating sites across the world to ensure that they are not at risk for employing child labor or exposing young workers to hazards. It was found that no sites posed a risk at this time. AMG is at the root of the supply chain for several of its products and is proud to be able to supply metals such as Tantalum and Tin, commodities historically fraught with human rights abuses, from mining operations with strong ethical practices and not utilizing child labor. In particular our Tantalum supply chain in Brazil is certified as Conflict Free by the Electronics Industry Citizenship Coalition (EICC).

- Principle 6 - Eliminate discrimination in respect of employment and occupation

AMG's Code of Business Conduct states that the Company views as unacceptable any form of harassment or unfair or unlawful discrimination based on race, age, gender, color, sexual orientation, disability or national origin, whether by employees, temporary employees, managers, customers, vendors or AMG companies' visitors.

The size of AMG's workforce has been relatively stable over the last year and at year-end 2018, AMG Critical Materials had 2,346 employees and AMG Engineering had 862. For the facilities covered by this report, the total AMG workforce was 3,208 (other facilities not yet covered in this section employ a further 121 people). Geographically, these were located in Asia (315), Europe (1,777), North America (434) and South America (682).

AMG assesses the diversity of its workforce in terms of gender and age, but not ethnicity. The multinational, and therefore multicultural, nature of AMG's business means that ethnic diversity is significant, but it is not possible to define minority employees in such an environment. Of the total employees, 19% are female; 18% are under 30 years of age, 54% are between 30 and 50, and 28% are over 50.

The Management Board is 100% male. The Supervisory Board is 80% male and 20% female. All Supervisory Board members are over 50 years of age.

AMG is continuing to work to improve the diversity of its Boards. On page 37 of our 2018 Annual Report we note:

"In 2017, the Management Board deployed measures to attract and maintain a diverse workforce at its units by, among other things, linking incentives for unit managers to meaningful results in diversity targets. AMG has also adopted a Diversity Policy in relation to the composition of its Management Board and Supervisory Board. AMG will continue to take its key diversity objectives, including maintaining a proper balance of nationalities and the gender allocation of seats, into account in connection with recruitment, retention of employees, and succession planning."

ENVIRONMENT

- Principle 7 - Businesses should support a precautionary approach to environmental challenges

All AMG facilities have a strong awareness and knowledge of their environmental impact and the company utilizes the Global Reporting Initiative (GRI) guidelines to measure and report environmental impacts in a number of areas including raw material use, energy consumption, greenhouse gas generation, water use and discharge and waste generation and disposal. Collection of this data is vital to help sites focus on improving efficiencies – including reducing energy use and concurrent greenhouse gas emissions, but also reducing solid and liquid wastes and reducing water consumption. AMG is transitioning to the latest GRI guidelines. These environmental impacts are reported annually to our stakeholders in the Company annual report. Additionally AMG reports its greenhouse gas emissions to the Carbon Disclosure Project (CDP).

Many of AMG's activities focus on technologies to address fossil fuel efficiencies and reduce greenhouse gas generation, where we believe a precautionary approach is vital given the potential adverse effects. Many of the technologies that AMG produces, which we refer to as "enabling technologies" contribute to significant reductions in greenhouse gas emissions in the transportation and buildings sectors. The contribution of those technologies is outlined in the CEO letter on page 9 and 10 of the 2018 Annual Report to Shareholders:

"We feel that our main stakeholder responsibility, after safety for our employees, is to the global community, and that the best way to measure this is in terms of our contribution to global CO2 reduction.

We know our CO2 emissions in 2018 were about 412 thousand metric tons. In 2014, we introduced a methodology to measure how certain AMG product offerings enable CO2 reduction when used by our customers. For example, the enabling of higher operating temperatures in jet engines through titanium aluminides and through ceramic coatings of turbine blades for jet engines increases fuel efficiency and therefore reduces CO2 emissions versus the next best solution. Or, as another example, the doping of insulation materials with natural graphite enables energy saving in buildings, leading to the reduction of CO2. These and other AMG solutions are embedded in materials science in the search for new materials which are lighter, stronger, more heat resistant, etc. Using this methodology, our total CO2 reduction impact enabled our customers to save 41 million cumulative metric tons of CO2 in 2018, as shown in the chart on the next page, offsetting a material impact to the global annual increase of atmospheric CO2. We have commissioned ERM, a leading sustainability consultant, to sharpen our in-house methodology for the measurement of "enabling" CO2 savings using our energy-saving materials and technologies. We look forward to the results which will be published in due course.

Please allow me to mention that AMG has CO2 reduction written in its formation documents as critical materials are critical or have become critical primarily as a result of the search for material-science-based solutions to reduce CO2. We are fortunate because we do not have to dream up a green theory. We were an early mover in our focus on CO2 reduction."

- Principle 8 - Undertake initiatives to promote greater environmental responsibility

The principles outlined by AMG's CEO and founder referred to above eloquently describe AMG's broader approach to the environment. In terms of detailed environmental management at local sites, fourteen of the larger AMG manufacturing facilities now have ISO 14001 environmental management system certification in place. Formalized management systems are seen as a key

tool to maintaining focus on environmental responsibility. Additionally AMG has invested in projects including hydroelectric generation, solar generation and heat recovery systems. It is also promoting energy management initiatives to improve efficiencies, with several larger energy users, including the largest, holding ISO 50001 energy management certification. The relevant section from the Annual Report to Shareholders showing how AMG measures its environmental impact is reproduced at the end of this Communication on Progress (COP).

- Principle 9 - Encourage the development and diffusion of environmentally friendly technologies

As described above, AMG's businesses continue to focus on environmentally friendly technologies. In 2018 AMG continued its investment in the production of titanium aluminides used in the aerospace industry. Investments in the plant in Cambridge, Ohio that produces the steel strengthening alloy ferrovanadium from byproducts of the oil refining and power generation industries, eliminating landfill, has resulted in significant capacity increase, with minimal increase in carbon footprint. Further, this technology reduces energy in the manufacturing process and by strengthening steel, significantly reduces the tonnages required in end user applications. AMG is also actively supporting the automotive industry as it moves to more fuel efficient turbo charged, low displacement engines, through heat treatment of fast moving, high temperature parts such as turbo chargers and piston heads. Similar applications have been seen in next generation aviation jet engines which contribute to the fuel efficiency of next generation aircraft and where AMG's ceramic coating technologies further enable fuel efficiency savings. AMG continues to believe that nuclear power is required as part of the short and medium term solution to anthropogenic CO2 emissions and continue to supply products and engineering expertise to support this sector.

ANTI CORRUPTION

- Principle 10 - Businesses should work against corruption in all its forms, including extortion and bribery.

In 2009 AMG introduced (and published) its Code of Business Conduct to all of its staff which sets out guiding principles in its ethics and business conduct as adopted and approved by the Company's Management Board and Supervisory Board. The Code of Business Conduct was reviewed and updated in 2016, adding safety as a core value, and it discusses in detail the ethical conduct and business practices which AMG expects from all employees, covering areas like conflicts of interest, anti-bribery, insider dealing, policies on corporate entertainment and acceptance of gifts, and the integrity of our record keeping and reporting. AMG also has a stand-alone policy on Anti-bribery and Anti-corruption. This is available under the Corporate Governance section of the AMG-NV website. Training in these aspects is carried out on an ongoing basis.

AMG further promotes these values throughout the Company with multi lingual posters prominently displayed at operational sites to raise awareness of the Code of Business Conduct and various ethically based programs.

we act **safely**
 we aim to create **value**
 we **respect** people
 we act with **integrity**

AMG's Code of Business Conduct and its supporting policies set out AMG's guiding principles in its ethics and business conduct and applies to all directors, officers and employees of AMG and its group companies worldwide regardless of their position, nationality, gender, race or religion.

At work you may face situations where interpretation or further guidance is needed. When this happens consult the Code of Business Conduct and its supporting policies or discuss the situation with your manager. You can also discuss with your local Compliance Officer or contact AMG's Legal Department.

www.amg-nv.com



We welcome comments on our Code of Business Conduct and supporting policies.

Michael Witel, Chief Compliance Officer
 AMG Advanced Metallurgical Group N.V.
 Struwindijk 1063
 1077 XZ Amsterdam, the Netherlands
Compliance@amg-nv.com
 Tel: +31 20 71 671 80
 Fax: +31 20 71 671 11

Nous agissons en **sécurité**
 Notre but est de créer de la **valeur**
 Nous **respectons** chaque personne
 Nous agissons avec **intégrité**

A AMG nous sommes ambitieux, innovants et engagés à être leader dans le domaine des matériaux critiques et services d'ingénierie et à atteindre l'excellence dans tout ce que nous faisons. Nos valeurs fondamentales – sécurité, création de valeur, respect et intégrité – forment la base de cette déclaration et s'appliquent à la façon dont nous menons nos activités et à la façon dont nous traitons nos employés, partenaires en affaires et intervenants.

www.amg-nv.com



Michael Witel, Chief Compliance Officer
 AMG Advanced Metallurgical Group N.V.
 Struwindijk 1063
 1077 XZ Amsterdam, the Netherlands
Compliance@amg-nv.com
 Tel: +31 20 71 671 80
 Fax: +31 20 71 671 11

ATTACHMENT 1

SUSTAINABLE DEVELOPMENT SECTION FROM THE 2018 ANNUAL REPORT TO SHAREHOLDERS

SUSTAINABLE DEVELOPMENT

This section provides our eleventh annual sustainability report, which evaluates AMG's social and environmental performance.

| SITE NAME ¹ | LOCATION | COUNTRY | DIVISION |
|---|------------------|----------------|------------------------|
| AMG Headquarters ² | Amsterdam | Netherlands | AMG Corporate |
| AMG USA Headquarters ² | Pennsylvania | USA | AMG Corporate |
| ALD USA ² | Connecticut | USA | AMG Engineering |
| ALD France | Grenoble | France | AMG Engineering |
| ALD Vacuum Technologies ² | Hanau | Germany | AMG Engineering |
| ALD Vacuheat | Limbach | Germany | AMG Engineering |
| ALD TT USA | Michigan | USA | AMG Engineering |
| ALD Dynatech | Mumbai | India | AMG Engineering |
| ALD TT Mexico | Ramos Arizpe | Mexico | AMG Engineering |
| ALD Japan ² | Shinjuku-ku | Japan | AMG Engineering |
| ALD C&K ² | Suzho | China | AMG Engineering |
| AMG Antimony | Chauny | France | AMG Critical Materials |
| Bogala Graphite Lanka | Colombo | Sri Lanka | AMG Critical Materials |
| AMG Graphite | Kropfmühl | Germany | AMG Critical Materials |
| AMG Antimony | Lucette | France | AMG Critical Materials |
| AMG Mineração | Nazareno | Brazil | AMG Critical Materials |
| AMG Silicon | Pocking | Germany | AMG Critical Materials |
| AMG Graphite | Qingdao | China | AMG Critical Materials |
| AMG Graphite Tyn | Tyn | Czech Republic | AMG Critical Materials |
| AMG Alpoco | Anglesey | UK | AMG Critical Materials |
| AMG Titanium Alloys and Coatings ² | Brand Erbsdorf | Germany | AMG Critical Materials |
| AMG Aluminum | Jiaxing | China | AMG Critical Materials |
| AMG Aluminum | Kentucky | USA | AMG Critical Materials |
| AMG Alpoco | Minworth | UK | AMG Critical Materials |
| AMG Titanium Alloys and Coatings | Nürnberg | Germany | AMG Critical Materials |
| AMG Vanadium | Ohio | USA | AMG Critical Materials |
| AMG Superalloys and AMG Aluminum | Rotherham | UK | AMG Critical Materials |
| AMG Superalloys | São João del Rei | Brazil | AMG Critical Materials |
| AMG Aluminum | Washington | USA | AMG Critical Materials |

¹ The chart indicates which facilities were included in the scope of the sustainable development data. Only data from these facilities are included in this section, which may therefore show inconsistency with other section of this annual report covering all facilities.

² Minor or office facilities with estimated data

The reporting boundaries have not changed significantly since 2017. The 29 locations reporting in 2018 (in which AMG has a 51% or greater stockholding) are detailed in the table on the previous page. AMG will continue to assess the boundaries of this report based on the corporate ownership structure on an ongoing basis.

AMG reporting locations include mining, manufacturing, sales, and administrative offices in 12 countries across four continents. This report covers the same two segments as described in 2017: AMG Critical Materials and AMG Engineering.

All locations report their performance at the end of the fourth quarter and no forecast data is used. However, sales and administrative offices and some smaller engineering sites (typically with less than 10 employees or with environmental impacts <1% in all aspects) have been determined to be non-material to the report, and therefore estimated data has been used for these sites in 2018. The sites utilizing estimated data are indicated in the table on page 34.

For the 2018 reporting year, AMG engaged ERM as its sustainability consultant. ERM assisted AMG in executing a materiality assessment and refining its data collection process. AMG anticipates engaging ERM as its primary sustainability consultant for the 2019 reporting year.

AMG's refined data collection process in 2018 represented a shift in methodology that in some cases made reliable comparison to data from former years difficult. For example, in 2018 AMG applied conversion factors that represent local power grids for Scope 2 emissions. In that respect, 2018 will be a baseline year for some of AMG's data using the more reliable methodology.

SCOPE OF THIS REPORT

AMG utilizes the Global Reporting Initiative (GRI) as a basis for this report and includes those aspects which are material to its business units. The report covers aspects that are material based on the following two dimensions:

- The significance of the organization's economic, environmental, and social impacts;
- Their substantive influence on the assessments and decisions of stakeholders.³

In order to ensure consistency in the interpretation of definitions of the key indicators, AMG utilizes a standard template which sites use to report their data. The environmental key performance data for both segments are summarized in the table on page 39.

MEMBERSHIPS AND ASSOCIATIONS

United Nations Global Compact

AMG commits its support to the principles of the United Nations Global Compact. The Global Compact, which is overseen by the United Nations, is a strategic policy initiative for businesses that are committed to aligning their operations

LOST TIME INCIDENT RATE



TOTAL INCIDENT RATE



AIR EMISSIONS CO₂E ('000 MT)



AMG Critical Materials

AMG Engineering

DIVERSITY AND INCLUSION- MANAGEMENT EMPLOYEES (%)



Female

Male

³ GRI, GRI Standards, GRI 101: Foundation 2016, 2016, p.18.

and strategies with ten universally accepted principles in the areas of human rights, labor, the environment, and anti-corruption. In 2009, the AMG Management Board approved its commitment to the Global Compact and the intent of AMG to support the ten principles of the Global Compact. AMG will reaffirm its support and submit its sixth Communication on Progress in April 2019.

Extractive Industries Transparency Initiative

AMG continues its support of the Extractive Industries Transparency Initiative (EITI), a global initiative to improve governance in resource-rich countries through the verification and full publication of Company payments and government revenues from oil, gas, and mining. EITI works to build multi-stakeholder partnerships in developing countries to increase the accountability of governments. Over 30 countries have now committed to the EITI principles and criteria. As of today, AMG has one extractive operation in one EITI-implementing country: Mozambique.

Further information on AMG Sustainable Development and our commitments to these organizations, including our United Nations Global Compact Communication on Progress, can be found on the AMG website (sustainability.amg-nv.com).

ENVIRONMENT

Air Emissions

GRI STANDARDS 305-1 AND 305-2

AMG facilities emit and report upon both direct ("Scope 1") and indirect ("Scope 2") greenhouse gas ("GHG"). Electricity used for the generation of heat for metallurgical processing is the most significant source of GHG emissions for AMG. Electricity use gives rise to Scope 2 GHG emissions of carbon dioxide equivalent (CO₂e), which are dependent on the nature of its generation. Emissions have been calculated using local emission factors.

Scope 1 GHG emissions result primarily from the combustion of carbon-containing materials as part of the metallurgical process such as using coke as a reductant, but also for the generation of heat, such as burning natural gas in a boiler. Other GHGs occurring from processes other than combustion are minimal for AMG business units.

AMG Critical Materials' GHG emissions (Scope 1 and Scope 2) in 2018 were 356,410 mt of CO₂e. 78% of these emissions are attributed to indirect sources (electricity). Emissions are dominated by the silicon metal production activities which account for 207,695 mt of CO₂e. This activity also dominates AMG's overall GHG emissions, accounting for half of total group emissions.

AMG Engineering GHG emissions (Scope 1 and Scope 2) in 2018 were 56,089 mt of CO₂e. 99% of these emissions are indirect and associated with electricity usage.

Normalized to a revenue basis, AMG Critical Materials emitted 356,410 mt CO₂e, with revenue of \$1,050.5 million, equivalent to 339 mt CO₂e per million USD revenue. AMG Engineering generated 56,089 mt CO₂e and \$259.8 million in revenue, or 217 mt CO₂e per million USD revenue. This wide range reflects the diversity of AMG but also guides focus on reduction opportunities.

Total AMG GHG emissions were 412,499 mt CO₂e in 2018 with revenue of \$1,310.3 million, resulting in a GHG intensity of 315 mt CO₂e per million USD revenue.

GRI STANDARDS 305-6 AND 305-7

Emissions of ozone-depleting substances remain *de minimis* for AMG. AMG Engineering also has *de minimis* air emissions for other pollutants resulting from only small sources such as heating and hot water boilers. AMG Critical Materials' production facilities do have some other air emissions, including SO_x (618 mt), NO_x (198 mt) and particulate materials (105 mt). Data is only available for regulated sources where measurements have been made.

Energy

GRI STANDARDS 302-1 AND 302-2

High-temperature metallurgical processes and mining operations utilized in AMG Critical Materials are energy intensive and improving energy efficiency is an operational priority at AMG that results in both environmental and economic benefit. The two most significant energy carriers are electricity and natural gas.⁴

The reported electricity use of AMG in 2018 was 2,740 terajoules (TJ), of which direct energy use was 72 TJ and indirect was 2,595 TJ.

Across AMG, the split between renewable and non-renewable indirect energy sources is difficult to determine because utilities do not generally publish this information. However, AMG does generate its own renewable energy. In 2018, AMG's hydroelectric generating facility near São João del Rei, Brazil generated 71.77 TJ and AMG Vanadium's solar power system generated 0.65 TJ.

The reported fuel use of AMG in 2018 was 25,880 cubic meters, of which 99% is natural gas.

Resource Efficiency

GRI STANDARDS 301-1 AND 301-2

Resource use varies between AMG business units. Examples include local mining, primary raw material purchase, secondary metal and alloy production from recycled resources, and engineering services.

Furnace technology and engineering services provided by AMG Engineering results in this segment utilizing limited resources. Resources used are mainly complex component parts for furnaces which are routinely measured in units rather than by mass. Unlike the chemicals and alloys business units, this means only limited data are available on resource mass.

AMG Critical Materials uses a much more diverse range of resources including mined ores for tantalum, lithium and graphite production, power plant wastes and spent refinery catalysts to produce vanadium alloys, and metal salts for aluminum alloy production. The segment uses recycled iron, steel, aluminum, and titanium in processes when possible.

⁴ Indirect energy consumption does not include the energy consumed by electricity producers to generate the electricity or transmission losses.

Wastewater

GRI STANDARDS 306-1 AND 306-3

AMG facilities record the volumes of aqueous effluents including process water and non-sanitary sewer discharges to local water courses. Clean water (typically freshwater used for cooling purposes) is included in the figures given below. Chemical analysis of the effluent is utilized to determine the total mass of primary constituents of the water emissions.

In 2018, 2,366,000 cubic meters of water were disposed to water courses by AMG compared to 1,984,000 cubic meters in 2017. Of the total amount, 61% was discharged at the Mineracao, Brazil mine site and 17% was discharged at the Kropfmuhl, Germany mine site.

After mining activities, most of AMG's water is used for cooling purposes and therefore produces clean water discharges. Some wet chemical processes generate aqueous waste streams, including cooling water used by the silicon metal furnaces and mine water from dewatering pumps. In several locations, mine water is utilized for process water before final discharge.

In 2018, there were no significant spills (defined as one which would affect the Company's financial statements because of the ensuing liability or is recorded as a spill) at any AMG site.

SOCIAL

HEALTH AND SAFETY

AMG is pleased to report that no fatal incidents occurred at its operations in 2018. AMG's medium-term aspirational goal is to become a zero lost time incidents workplace—we cannot accept that any incident is inevitable. Since 2008, there has been year-over-year safety improvement across AMG. For AMG, the total Lost Time Incident Rate⁵ improved 29% from 0.82 in 2017 to 0.58 in 2018. Of the 29 locations included in this report, 20 achieved zero lost-time incidents in 2018. The total incident rate⁶ improved 6% from 1.31 in 2017 to 1.23 in 2018. Formal safety management systems continue to be important to achieving zero harm to employees and 15 of AMG's larger sites are OHSAS 18001 certified.

Diversity and Inclusion

GRI STANDARDS 102-8, 102-41, 403-1, 403-2, AND 404-1

The size of AMG's workforce has been relatively stable over the last year and at year-end 2018 AMG Critical Materials had 2,346 employees and AMG Engineering had 862. For the facilities covered by this report, the total AMG workforce was 3,208 (other facilities not yet covered in this section employ a further 121 people). Geographically, these employees were located in Asia (315), Europe (1,777), North America (434) and South America (682).

AMG assesses the diversity of its workforce in terms of gender and age, but not ethnicity. The multinational, and therefore multicultural, nature of AMG's business means that ethnic diversity is significant, but it is not possible to define minority employees in such an environment.

In 2017, the Management Board deployed measures to attract and maintain a diverse workforce at its units by, among other things, linking incentives for unit managers to meaningful results in diversity targets. AMG has also adopted a Diversity Policy in relation to the composition of its Management Board and Supervisory Board. AMG will continue to take its key diversity objectives, including maintaining a proper balance of nationalities and the gender allocation of seats, into account in connection with recruitment, retention of employees, and succession planning.

Of the total employees, 19% are female; 81% are male; 18% are under 30 years of age, 54% are between thirty and fifty, and 28% are over fifty. Of management employees, 30% are female and 70% are male. The Management Board's composition is 100% male. The Supervisory Board's composition is 83% male and 17% female as of the end of 2018.

The rights and freedoms for individual employees to join, or choose not to join, unions, as described in Article 23 of the Universal Declaration of Human Rights, are fully respected by AMG. Once again in 2018, AMG facilities had no strikes or lockouts.

GOVERNANCE

Business Ethics

GRI STANDARDS 205-2, 407-1, 408-1, AND 412-2

Protection of internationally proclaimed human rights is an area in which AMG is both highly aware and fully committed. The Company strives to make sure it is not complicit in human rights abuses. Each AMG site is assessed during site visits and with internal audits to identify if there is the possibility of freedom of association or collective bargaining being put at risk because of political or business factors. In 2018, it was found that no sites were at risk, with the exception of China, where the formation of unions remains restricted. Similarly, the Company has reviewed sites to ensure that they are not at risk for employing child labor or exposing young workers to hazards. No sites have been identified that pose a risk at this time. AMG also aims to ensure rights are protected in our supply chain through its Supplier Code of Conduct. Our policy on human rights is included in the AMG Code of Business Conduct and Ethics and detailed in the Company's human rights policy; all are available on the AMG website.

⁵ Lost time incident frequency rate equals the number of lost time incidents multiplied by 200,000 divided by the total hours worked. Lost time injury was defined using local regulations.

⁶ Total incident frequency rate equals the number of incidents (including all medically treated injuries) multiplied for 200,000 divided by the total hours worked.



The AMG Values and the AMG Code of Business Conduct

We act Safely

We aim to create Value

We respect People

We act with Integrity

These are AMG's Values and they enable AMG's ambition of being a leader in the field of critical materials and engineering services. These values apply to how AMG conducts its operations and how it deals with its employees, business partners, and stakeholders. The AMG Code of Business Conduct and the Speak Up and Reporting Policy, which reference the AMG Values, are prominently displayed in the local language at each place where the AMG companies carry out their operations and where AMG staff are employed.

In 2019, AMG will deploy its online general ethics training for all employees who are not involved in manual labor activities. A general ethics training program for employees who are involved in manual labour activities was rolled out again in 2018 (after its first deployment in 2015). In 2018, AMG also completed its online general antitrust and competition law principles training for designated staff. The general ethics training, anti-bribery training, and general antitrust and competition law trainings are repeated in three-year cycles.

A network of compliance officers located at all major sites oversees deployment of AMG's ethics training programs and distribution of information concerning AMG's Values and Code of Business Conduct. In February 2019, AMG's Chief Compliance Officer reported to the Management Board and the Supervisory Board about applicable compliance and incident trends at AMG during the year 2018.

During 2018, the number of complaints received under AMG's Speak Up and Reporting policy was well below the available benchmark as published by NAVEX Global (2017 Ethics & Compliance Hotline & Incident Management Benchmark report). No incidents or complaints have been reported to AMG or any public authorities in 2018 to date which would implicate AMG or any of its staff in any bribery scheme involving public officials or agencies.

Compliance

GRI STANDARDS 307-1

No AMG facility received any significant fine or equivalent penalty for non-compliance with environmental laws in 2018.

PRODUCTS

Product Quality and Safety

GRI STANDARD 64-DMA

AMG continues its progress regarding its responsibilities under the REACH regulations in Europe and is continuing to prepare for its 2018 registrations for products with volumes greater than 1 mt. European operations are working with Consortia in developing the health, safety and environmental data required for these registrations and have taken on the role as lead registrant in several cases. Industry groups continue to focus on developing health and safety knowledge of their products as the

SOCIAL AND ENVIRONMENTAL KEY PERFORMANCE INDICATORS AND GRI CONTENT INDEX

SELECTED SOCIAL AND ENVIRONMENTAL KEY PERFORMANCE INDICATORS*

| GRI INDICATOR | DESCRIPTION | UNITS | AMG CRITICAL MATERIALS | AMG ENGINEERING | AMG GROUP |
|------------------|--|-------------------|---------------------------|--------------------|--------------|
| | | | 2018 | 2018 | 2018 |
| 102-8 | Total workforce | Total | 2,346 | 862 | 3,208 |
| 403-2 | Lost Time Accident Rates | Rate | 0.55 | 0.14 | 0.58 |
| 403-2 | Total Incident Rates | Rate | 1.37 | 0.86 | 1.23 |
| 302-1 | Direct Electricity Consumption | TJ | 37 | 0 | 37 |
| 302-2 | Indirect Electricity Consumption | TJ | 2,485 | 146 | 2,631 |
| 303-1 | Water consumption | '000 cubic meters | 7,785 | 52 | 7,837 |
| 305-1 | CO ₂ equivalent emissions | mt | 356,410 | 56,089 | 412,499 |
| 305-7 | SO _x emissions | mt | 618 | 0 | 618 |
| 305-7 | NO _x emissions | mt | 183 | 15 | 198 |
| 305-7 | Particulates discharged to air | mt | 105 | 0 | 105 |
| 306-1 | Metals discharged | mt | 11 | 0 | 11 |
| 306-2 | Hazardous waste (including recycled) | mt | 1,740 | 36 | 1,776 |
| 306-2 | Non-hazardous waste (including recycled) | mt | 36,570 | 458 | 37,028 |
| 306-2 | Percent of waste recycled | % | 25 | 43 | 25 |
| 306-2 | Waste disposed to landfill | mt | 28,671 | 272 | 28,943 |
| 306-3 | Spills | L | 0 | 0 | 0 |
| 307-1 | Environmental Fines | '000 USD | 0 | 0 | 0 |
| 205-1 | Fines for non-compliance with laws | '000 USD | 17 | 0 | 17 |

*2018 is a baseline year and therefore no comparison data is provided. The 2019 reporting year will compare data to 2018.

regulatory framework grows and expands across the world. AMG units are involved in, among others, the Vanadium International Technical Committee and the International Antimony Association.

RESPONSIBILITIES

AMG's environmental, health, safety and social performance reporting has been prepared by the management of AMG who are responsible for the collection and presentation of the information.

AMG Advanced Metallurgical Group N.V.

sustainability.amg-nv.com

Contact: global.sustainability@amg-nv.com