



United Nations Global Compact

Communication on Progress Covering Calendar Year 2012

11th April 2013

To our Stakeholders:

I am pleased to confirm that once again this year AMG Advanced Metallurgical Group N.V. 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. Our commitment in this area began in 2009 with the publication of our Code of Business Conduct and was augmented in 2011 with 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. Schimmelbusch'.

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

The commitments made in these publications are monitored by a network of Compliance Officers under the oversight of the VP and General Counsel to the company, and continually by senior management across the subsidiary companies. Training is provided to support this group. In 2012 there were no reported incidents of breaches of the AMG Code of Business Conduct, and in particular none 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 sustains an expanding network of Code of Business Conduct Compliance Officers based in the countries and major sites where AMG companies are operating. Additionally, AMG has had a Whistle blowing policy in force since 2009 allowing employees to come forward on a confidential basis to report issues. The Whistleblowing policy can be accessed through the Governance section of the AMG website. In 2012 no reports of incidents have been filed through the Whistle blowing policy mechanism.

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 LA4 (Percentage of Employees Covered by Collective Bargaining Agreements) to monitor this principle. In our Annual Report covering Calendar Year 2012 we report:

“AMG respects the freedom of its individual employees and their rights to join, or to choose not to join, unions. Across the combined Divisions, including corporate staff, 1979 AMG employees (65%) were covered by collective bargaining agreements. For AMD, 78% of employees are covered by such arrangements, for GK, 77%, and for ESD, which includes a higher proportion of professional salaried staff, 35% were in collective bargaining units. There were no strikes or lockouts reported at any of AMG’s facilities in 2012.”

Additionally, we utilize indicator HR5 (Operations Identified in which the right to exercise freedom of association or collective bargaining may be at significant risk, and actions taken to support these rights). For calendar year 2012 we reported:

“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 as a result of political or business

factors. In 2012, it was found that no sites were at risk, with the exception of China, where the formation of unions remains severely restricted."

- 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.

- 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. 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 HR6 "Operations identified as having significant risk for incidents of child labor, and measure taken to contribute to the elimination of child labor". In its most recent annual report AMG reported that it has reviewed 33 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.

- 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. As a result of the international nature of our business, there is significant racial and national origin diversity in the company. At year-end 2012, the Advanced Materials Division (AMD) had a workforce of 1,537, the Engineering Systems Division (ESD) had 931 and Graphit Kropfmühl (GK) had 542 employees. For those facilities reporting here, including corporate staff (42), the total AMG workforce was 3,050. Geographically, these were located in Asia (271), Europe (1,804), North America (536) and South America (439). A further 291 directly supervised contract workers were employed at AMG sites. AMG assesses the diversity of its workforce in terms of gender and age. Although the multinational, and therefore multicultural, nature of the business means that ethnic diversity is significant, but because of the difficulty in defining minority employees in such an environment, the Company does not collect data on this aspect. Of the total employees, 16% are female; 21% are under 30 years of age, 52% between 30 and 50, and 27% over 50. The Management and

Supervisory Boards are currently all male, and all members are over 50 years of age.

However, AMG is working to improve the diversity of its Boards. On page 39 of our annual report we note:

"GENDER DIVERSITY

The Supervisory Board recognizes the importance of a diverse composition of the Supervisory Board and the Management Board in terms of gender. The Supervisory Board is pleased that Mrs. Ute Wolf is willing to become one of its members, so the first woman to be part of the Company's Supervisory Board. New Dutch legislation that entered into effect on January 1, 2013, requires the Company to pursue a policy of having at least 30% of the seats on the Supervisory Board and the Management Board be held by men and at least 30% of the seats be held by women. The Company will take this allocation of seats into account in connection with the following actions: (1) the appointment or nomination for the appointment of the Supervisory Board and the Management Board and (2) drafting the criteria for the size and composition of the Supervisory Board and the Management Board. At this moment, the Company does not fully comply with article 2:166 Dutch Civil Code, since, in the event the General Meeting of Shareholders will resolve to appoint Mrs. Ute Wolf and Professor Steve H. Hanke on May 3, 2013, only 12.5% of the Supervisory Board seats will be held by women. The Supervisory Board will continue to look for suitable female candidates for the Management Board and for the Supervisory Board; however, given the particular industries in which the Company is operating, suitable candidates with different gender are difficult to identify and select."

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) G3 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. These are reported annually to our stakeholders in the Company annual report. 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. 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 8 - Undertake initiatives to promote greater environmental responsibility

Several of the larger AMG manufacturing facilities either 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. AMG has also been a key player in the disassembly of the US and Russian nuclear arsenals under international treaties through the design of plants in the USA to convert weapons grade nuclear materials into materials for peaceful nuclear fuel generating applications with associated social and environmental benefits to society as a whole. 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

AMG's businesses continue to focus on environmentally friendly technologies. We have expanded our supply chain for lightweight aluminum and titanium alloying materials through the integration of AMG Aluminum, further strengthening our commitment to these technologies. We have also invested heavily in our plant in Cambridge, Ohio that produces the steel strengthening alloy ferrovanadium from byproducts of the oil refining and power generation industries, eliminating landfill. 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 applications of materials such as gamma TiAl and heat treatment of fast moving, high temperature parts. Similar applications have been seen in next generation aviation jet engines which contribute to the fuel efficiency of next generation aircraft. 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 discusses in detail the ethical conduct and business practices which AMG expects from all employees, covering area's 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. Specific training programs for staff, using web based training, and compliance officers, via face to face training, was carried out in 2012 in these areas.

ATTACHMENT

SUSTAINABLE DEVELOPMENT SECTION FROM

ANNUAL REPORT TO SHAREHOLDERS

Sustainable Development

NAME	LOCATION	COUNTRY	DIVISION
ALD FNAG	Hanau	Germany	ESD
ALD Hanau	Hanau	Germany	ESD
ALD IMP	Berlin	Germany	ESD
ALD Japan	Shinjuku-ku	Japan	ESD
ALD Singapore	Singapore	Singapore	ESD
ALD TT Mexico ³	Ramos Arizpe	Mexico	ESD
ALD TT USA ³	Michigan	USA	ESD
ALD UK	Guildford	UK	ESD
ALD USA	Connecticut	USA	ESD
ALD Vacuheat	Limbach	Germany	ESD
Alpoco	Minworth	UK	AMD
Alpoco ³	Anglesey	UK	AMD
AMG Aluminum Henderson ³	Kentucky	USA	AMD
AMG Aluminum Wenatchee ³	Washington	USA	AMD
AMG Aluminum Office	Pennsylvania	USA	AMD
AMG Headquarters	Amsterdam	Netherlands	AMD
AMG USA Headquarters	Pennsylvania	USA	AMD
AMG Vanadium ³	Ohio	USA	AMD
Bogala Graphite Lanka ³	Colombo	Sri Lanka	GK
CIF Mining ²	Nazareno	Brazil	AMD
Edelgraphit ³	Bonn	Germany	GK
GfE ³	Nürnberg	Germany	AMD
GfE Fremat	Brand-Erbisdorf	Germany	AMD
Graphit Kropfmühl ²	Kropfmühl	Germany	GK
Graphit Tyn	Tyn	Czech Republic	GK
LSM Brazil ³	São João del Rei	Brazil	AMD
LSM China	Jiaxing	China	AMD
LSM UK	Rotherham	UK	AMD
PCDL	Lucette	France	AMD
Qingdao Graphite	Qingdao	China	GK
RW Silicium ²	Pocking	Germany	GK
SICA ³	Chauny	France	AMD
TIV	Grenoble	France	ESD

1. The chart indicates which facilities were included in the scope of the sustainable development data. Only data from these facilities is included in this section, which may therefore show inconsistency with other sections of this Annual Report covering all facilities. Advanced Materials Division (AMD), Engineering Systems Division (ESD) and Graphit Kropfmühl (GK).

2. Externally audited data 2012.

3. Remote externally audited data 2012.

Report Boundaries

This section provides our sixth annual sustainability report. It builds upon the foundation laid by previous reports and evaluates AMG's social and environmental performance compared to previous years. The reporting boundaries have expanded from 2011 with recent acquisitions and changes in the percentage ownership of entities affecting the extent of the report. The total number of locations reporting in 2012 is 33. This includes mining and manufacturing operations and sales and administrative offices in 13 countries across four continents. The major changes include the addition of Graphit Kropfmühl (GK) sites and the AMG Aluminum North America (formerly KB Alloys) operations. The facilities included are detailed in the table on page 48. All of these are operational sites in which AMG has a 51% or greater stake holding. Several smaller sites that have only recently been acquired or are in development are currently excluded, but they are not considered material to the overall conclusions of the report. AMG will assess the boundaries of this report continually and on the basis of the corporate ownership structure. All locations report their performance at the end of the fourth quarter, and no forecast data is used.

Scope of This Report

AMG utilizes the Global Reporting Initiative (GRI) G3 aspects, taken from its Mining and Metals Sector Supplement. The GRI is a network-based organization that publishes the world's leading sustainability reporting framework. Additionally, AMG has applied GRI's principal of materiality to the report, which states: "Information in this report should cover issues and indicators that would substantively influence the decisions of stakeholders using this report."

AMG continues to apply these reporting principles and has utilized a standard reporting template, which sites use to report their data in order to ensure consistency in the interpretation of definitions of the key indicators. The report is independently verified by Conestoga-Rovers & Associates.

The environmental key performance data for the Advanced Materials, Engineering Systems and Graphit Kropfmühl Divisions are summarized in the table on page 56.

AMG Advanced Metallurgical Group N.V.
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Labor Practices and Decent Work Indicators

GRI INDICATORS LA1, LA4, LA6, LA7, LA10, LA13 AND MM4

At year-end 2012, the Advanced Materials Division (AMD) had a workforce of 1,537, the Engineering Systems Division (ESD) had 931 and Graphit Kropfmühl (GK) had 542 employees. For those facilities reporting here, including corporate staff (42), the total AMG workforce was 3,050 (facilities not yet covered in this section employ a further 225 people). Geographically, these were located in Asia (271), Europe (1,804), North America (536) and South America (439). A further 291 directly supervised contract workers were employed at AMG sites. AMG assesses the diversity of its workforce in terms of gender and age. The multinational, and therefore multicultural, nature of the business means that ethnic diversity is significant, but because of the difficulty in defining minority employees in such an environment, the Company does not collect data on this aspect. Of the total employees, 16% are female; 21% are under 30 years of age, 52% between 30 and 50, and 27% over 50. The Management and Supervisory Boards are currently all male, and all members are over 50 years of age.

AMG respects the freedom of its individual employees and their rights to join, or to choose not to join, unions. Across the combined Divisions, including corporate staff, 1979 AMG employees (65%) were covered by collective bargaining agreements. For AMD, 78% of employees are covered by such arrangements, for GK, 77%, and for ESD, which includes a higher proportion of professional salaried staff, 35% were in collective bargaining units. There were no strikes or lockouts reported at any of AMG's facilities in 2012.



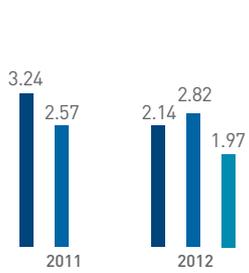
Manufacturing
Metallurgical
Solutions Safely

ZERO ACCIDENTS IS OUR GOAL

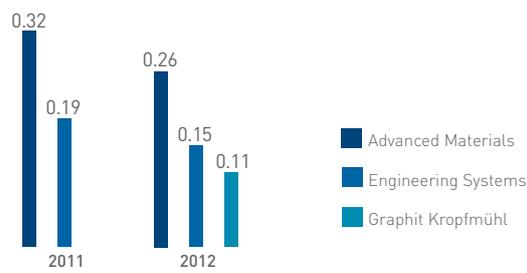
AMG is pleased to report that no fatal accidents occurred at any of our sites in 2012. Since our first Annual Report covering 2008, our safety performance has significantly improved. Our medium-term goal is zero lost-time incidents – we cannot accept that any incident is inevitable. In 2012, we saw our best safety performance yet, extending the improving trend. For AMG as a whole, the Lost Time Incident Rate¹ dropped from 3.0 in 2011 to 2.3. Similarly, the

1. Lost-time accident frequency rate equals the number of lost-time accidents multiplied by 200,000 divided by the total hours worked. Lost-time injury was defined using local regulations and ranged from minimum one lost day to three lost days.

Lost Time Incident Rate



Accident severity



incident severity² reduced from 0.27 to 0.20. Of the 33 sites included in this report, 14 achieved zero lost time incidents in 2012. No specific occupational diseases were reported in 2012. Details of the performance of the three segments are given in the table on page 56. The average absenteeism rate across AMG was 3.3%. The Company will continue to unerringly focus on our ultimate goal of zero harm to any of our employees. Seven sites are now OHSAS 18001 certified, while many others are working toward this goal. Programs to encourage near-miss reporting, expanding safety training and strengthening internal auditing have also been implemented.

Formal health and safety committees with representatives from all levels of the organization are in place at every major production facility and most of the smaller facilities. These facility-level committees are encouraged to lead and be intimately involved in decisions regarding safety at their location. In 2012 85% of the AMG workforce was represented in these committees.

In 2010, AMG began reporting the hours we invest in our people to develop their skills. This is important to our safety, environmental and ethics programs, and is required if we are to maintain our technical competitive advantage. In 2012, AMG has continued to collect data on the three categories of employees initially selected —management; professional, technical, sales and administration; and production and maintenance. Training data on corporate employees is not fully available. In 2012, the training delivered was: Management (152 employees trained, averaging 30 hours per person), Professional, Technical, Sales and Administration (871 employees trained, averaging 21 hours) and Production and Maintenance (1,416 employees trained, averaging 29 hours). Across all the reporting sites, AMG employees received an average of 17 hours of training time in 2012 (approximately 1% of total hours worked). The categories of training tracked included technical and professional development, quality, anti-corruption policies, human rights policies and health and safety.

2. Accident severity is defined as the number of scheduled workdays lost as a result of disabling injuries per thousand worker-hours of exposure. In some locations, calendar days are counted by local regulators, and this data is used here if scheduled workdays data are unavailable.

Human Rights and Ethics

GRI INDICATORS HR3, HR5, HR6 AND SO3

AMG remains fully committed to the protection of internationally proclaimed human rights and works 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 as a result of political or business factors. In 2012, it was found that no sites were at risk, with the exception of China, where the formation of unions remains severely 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. It was again found that no sites posed a risk at this time. Our policy on human rights is included in the Company Code of Business Conduct and Ethics, which was revised and updated in 2012, and detailed in the company's human rights policy, both available on the AMG website.

In 2012, AMG continued its ongoing training in this area. Refresher human rights training was given to 9% of the workforce, focusing mainly on senior employees that may be called on to make important, ethically based decisions. 17% were given refresher training in ethical businesses practices, including some human rights-based materials. Compliance officers at the major sites monitor and implement the Code of Business Conduct and Ethics.

Resource Efficiency and Recycling

GRI INDICATORS EN1 AND EN2

The use of resources varies between AMG business units ranging from those that locally mine or purchase primary raw materials to produce metals, alloys and inorganic chemicals through those which produce metals and alloys from secondary, recycled resources to those which provide technology and engineering services. AMG resource usage data comprises raw materials, associated process materials, semi manufactured goods and parts and packaging, by weight.

The Engineering Systems Division provides predominantly furnace technology and engineering services. Production activities include furnace assembly operations and heat treatment services. ESD utilizes limited amounts of resources in these activities, mainly component parts for furnaces and heating and quenching fluids. Some steel and aluminum

components may have secondary content, but data is not available on this. These components are often complex and diverse, and are routinely measured in units rather than by mass. Therefore, unlike the chemicals and alloys business units, only limited data is available on resource mass. In 2012, ESD reported using 5,280 metric tons of resources, all of which were classified as primary.

The Advanced Materials Division uses a much more diverse range of resources ranging from mined pegmatite ores for tantalum production through power plant wastes and spent refinery catalysts for the production of vanadium alloys. AMD also uses recycled iron, steel, aluminum and titanium in processes when possible. Across AMD, excluding the mine site in Nazareno, Brazil, 168,000 metric tons of resources were used in 2012, of which 22,000 metric tons (13%) were secondary or recycled materials. The Nazareno, Brazil mine used a further 686,000 metric tons of non-renewable resources.

GHG uses non-renewable resources including graphite rich ores, for the manufacture of natural graphite, and quartz, in its silicon metal operations. In 2012, GK reported resource use of 214,000 metric tons, 99% of which was non renewable. Silicon metal production activities accounted for 84% of all resources used by GK.

Energy Consumption

GRI INDICATORS EN3 AND EN4

Energy remains a major area of focus for AMG for both environmental and economic reasons. In particular, high-temperature metallurgical processes and mining operations utilized in AMD and GK are energy intensive. The two most significant energy carriers are electricity and natural gas although other fuels and energy sources are captured in the data discussed here.³

The reported energy usage for AMD is larger in 2012 compared to previous years primarily as a result of the increased number of reporting facilities in 2012, rising from 1,098 terajoules (TJ) in 2011 to 1,219 TJ in 2012. The newly included AMG Aluminum facilities in North America account for 152 TJ, while energy usage for the remaining facilities was marginally lower. Direct energy usage was 743 TJ and indirect 476 TJ.

The energy usage for GK, reported here for the first time, was 1,813 TJ, split between direct (54 TJ) and indirect (1,759 TJ). The largest user, accounting for 92% of this usage was the silicon metal production in Germany – an inherently energy intensive process.

The energy used by lower energy heat treatment processes typically used by ESD remains low in comparison. In 2012, increased demand for products and services (particularly heat-treatment services in Germany, Mexico and the United States) again led to a small increase in power usage. The Division used a total of 231 TJ (2011, 218 TJ). Indirect energy, in the form of electricity, accounted for 209 TJ in 2012 while direct energy use, primarily natural gas was 22 TJ.

Across AMG, the split between renewable and non-renewable indirect energy sources is difficult to determine since utilities do not generally publish this information (with some exceptions; e.g. CEMIG in Brazil now produces this data). However, AMG does generate its own renewable energy. In 2012, AMG's upgraded hydroelectric generating facility near São João del Rei, Brazil operated for the full year with its upgraded infrastructure and generated a record 50,000 GJ (13,900 MWh). This supplied AMG's local requirements at its São João del Rei, Brazil plant and provided a surplus that was fed back into the power grid. Additionally, AMG Vanadium's recently installed solar power system generated 954 GJ (265 MWh) in 2012 and is estimated to have eliminated over 190 tons of CO₂ compared to traditional fossil fuels.

Water Consumption

GRI INDICATOR EN8

Water is essential to many manufacturing processes and is used by AMG companies primarily for non-contact, evaporative or single-pass cooling purposes, although a small number of AMG facilities do use wet chemical processes for the production of metal oxides and other chemicals. In addition, mining operations can utilize water from mine dewatering or e.g. for ore processing. Water utilized for cooling, process and sanitary usage is reported by AMG facilities.

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

Greenhouse Gas Emissions (thousands of metric tons CO₂e)



Reported water use for AMD rose to 641,000 cubic meters in 2012 because of the inclusion of the AMG Aluminum sites. ESD was similar to previous years at 66,000 cubic meters.

GK, reporting for the first time, has its largest water use at the mine sites in Germany and Sri Lanka, and the silicon metal production plant, also in Germany. Overall water use for this Division was 1.2 million cubic meters.

The mine in Nazareno, Brazil, included in AMD, saw higher water usage in 2012 (7.1 million cubic meters) as a result of challenges with water recycling at the production plants and increases in production. Full data are given in the table on page 56.

Biodiversity

GRI INDICATOR EN11

Of the 33 locations reporting for 2012, four reported land areas on or adjacent to their property, which had high biodiversity value, sensitive habitats or were protected. These areas are: river frontage in Hanau, Germany, native forest in São João del Rei, Brazil, river frontage and setback areas in Nazareno, Brazil and wetlands in Ohio. AMG remains very aware of the need to be responsible stewards of these important areas.

Climate Change

GRI INDICATOR EN16

AMG facilities utilize processes that are associated with both direct and indirect greenhouse gas (GHG) emissions, and both types are reported here. Electricity used for the generation of heat for metallurgical processing has been, and remains, the most significant source of GHG emissions for AMG. This electricity use gives rise to indirect GHG emissions of CO₂ equivalent (CO₂e), which are dependent on the nature of its generation. Whenever possible, emissions have been calculated using up-to-date emission factors available from the electricity supplier, the local environmental agency or the GHG protocol. Indirect emissions are defined as those emissions generated by sources outside of AMG's control, but where AMG ultimately uses the energy. Direct GHG emissions result primarily from the combustion of carbon-containing materials often 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, such as hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride, are minimal for the AMG business units, but are included if relevant.

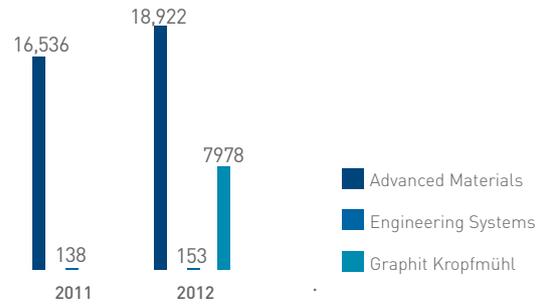
The expansion of the boundaries of this report in 2012 gave increases in the reported energy usage, and the preponderance of fossil fuels for energy generation in turn gives rise to increased absolute CO₂e emissions. Despite this, AMD's GHG emissions rose only marginally from 114,000 metric tons of CO₂e in 2011, to 117,000 metric tons in 2012, or an approximately 2% increase. Of these emissions, 57% are attributed to indirect sources and 43% to direct sources.

ESD's GHG emissions in 2012 were 38,000 metric tons, an increase from 2011 (32,100 metric tons). This increase was, in the same way as the increased electricity usage that generates the emissions, related to the increased throughput at ESD's heat treatment plants in Limbach Germany, Port Huron, Michigan and Ramos Arizpe, Mexico plus the addition of the TIV facility in the scope. Ninety-five percent of these emissions are indirect and associated with electricity usage.

GK's GHG emissions, reported here for the first time, are dominated by the silicon metal production activities. Of the 324,000 metric tons of CO₂e emissions in 2012, 307,000 metric tons are attributable to silicon metal manufacture (approximately 5 kg CO₂e per kg silicon metal produced). This activity also dominates AMG's overall GHG emissions, accounting for 61% of total group emissions.

AMG provides a complex mix of products and services, and it has become clear that year-on-year comparisons are difficult as product mix varies. Once again in 2012, GHG intensity has been defined on the basis of revenue rather than, for example, metric tons of product. Normalized to a revenue basis, AMD emitted 117,000 metric tons, with revenue of \$791.3 million, equivalent to 148 metric tons CO₂e per million \$ revenue. For ESD (38,000 metric tons CO₂e, \$273.8 million) the figure was 138 metric tons CO₂e per million \$ revenue, while GK is the most carbon-intensive division with 328,000 metric tons of CO₂e and \$150.5 million in revenue, equivalent to 2152 metric tons CO₂e per million \$ revenue. This wide range reflects the diversity of AMG but also guides focus on reduction opportunities.

Total landfill waste disposal (metric tons)



Emissions to Air

GRI INDICATORS EN19 AND EN20

The emissions of ozone-depleting substances remain de minimis for all of the divisions. Additionally, the nature of ESD's business means that it has minimal air emissions for other pollutants, resulting from only small sources such as heating and hot water boilers; these are again considered de minimis for the purposes of this report.

The manufacturing facilities of AMD do have some other air emissions, including SO_x (606 metric tons), NO_x (127 metric tons) and particulate materials (46 metric tons). Data is only available for regulated sources where measurements have been made. For GK the largest emissions come from the silicon metal production activities and include SO_x (335 metric tons), NO_x (683 metric tons), and particulates (9 metric tons).

Emissions to Water and Spills

GRI INDICATORS EN21 AND EN23

AMG facilities continue to maintain records of the volume of aqueous effluents, including process water and non-sanitary sewer releases, discharged to local water courses. Clean water (typically freshwater used for cooling purposes that has not been affected in the process) 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 2012, the total water disposed to water courses by AMD, excluding the Brazil mine, totaled 390,000 cubic meters compared to 131,000 cubic meters in 2011. This increase is attributed to the inclusion of cooling water used by the North American Aluminum alloy facilities in this report for the first time.

Although most of AMD's water is used for cooling purposes and therefore produces clean water discharges, some of the wet chemical processes generate aqueous waste streams. For the five production sites reporting industrial process water disposal, the major constituents were metals (1,083 kg), fluoride (1,693 kg), sulfate (1,056 metric tons) and total suspended solids (15 metric tons). Additionally, the 5.6 million cubic meters of water discharged to surface water from the mine site in Brazil contains suspended solids, although accurate data is not yet available.

ESD also utilizes minimal water for non-contact, closed-cycle cooling purposes, and the discharges are therefore clean water and not considered material to this report. The only significant water discharge of this type takes place at the ALD TT USA site in Michigan (32,000 cubic meters in 2012). GK discharged 883,000 cubic meters in 2012. Primarily, this included 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. Constituents from processing included sulfate (214 metric tons), fluoride (3,356 kg) and suspended solids (4,252 kg).

In 2012, there were no significant spills (defined by GRI as one which would affect the Company's financial statement as a result of the ensuing liability or is recorded as a spill) of tailings or other process materials at any AMG site.

Waste Disposal

GRI INDICATOR EN 22

Detailed information was collected in 2012 for waste streams generated by AMG subsidiary companies, along with documentation of their recycle or disposal method. AMG continues to minimize waste streams by avoiding generation, increasing reuse and recycling and minimizing landfill disposal. Landfill is a last resort. Wastes as defined here encompass materials not purposefully produced for sale and with no commercial value.

The total landfill or incineration disposal for AMD was 18,922 metric tons, an increase of 14% over 2011 (16,536 metric tons). This increase is primarily related to the remediation projects, partially offset by ongoing and increasing recycling efforts. Of these materials 73% (13,835 metric tons) were non-hazardous, with the remaining 5,087 metric tons disposed to licensed hazardous waste landfills.

The waste produced by ESD is much different in composition, and much smaller in volume. Just 153 metric tons were disposed to landfill in 2012, composed mainly of general waste, contaminated oils and metals that could not readily be recycled. The total amount disposed by this Division was comparable to 2011 (138 metric tons).

GK disposed of 7,978 metric tons of waste in 2012, of which just 19.4 metric tons were hazardous waste. The mine site in Sri Lanka and the silicon metal manufacturing site in Germany together generated 80% of this waste.



Overall, the Company disposed of 27,053 metric tons of waste to landfill or incineration in 2012, of which 7% was hazardous waste. A further 9,735 metric tons of waste materials were recycled.

Significant Fines for Non-Compliance with Environmental and Other Laws

GRI INDICATOR EN28

No Division received any significant fine or equivalent penalty for non-compliance with environmental laws in 2012.

GRI Indicator S08

In 2012 ESD and GK did not receive any fines. Within AMD, the mine in Nazareno, Brazil, was fined \$60,000 relating to labor issues in 2011. The LSM Brazil facility did receive fines but these dated back to labor issues from 2006.

Product Responsibility

GRI INDICATOR MM 11

AMG continues its progress regarding its responsibilities under the REACH regulations in Europe, and is prepared for the next series of registrations in 2013 for products with volumes greater than 100 metric tons. European subsidiary companies are involved with Consortia 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 regulatory framework grows and expands across the world. AMG subsidiary companies are involved in, among others, the Aluminum Association, the Vanadium International Technical Committee and the International Antimony Association.

GRI Contents

This section provides an overview of how AMG's Annual Report correlates with the GRI G3 guidelines for the voluntary reporting of sustainable development indices. The table below serves as a reference guide to the sections of the report where information about each item can be found. The GRI G3 guidelines facilitate measurement of economic, environmental and social dimensions of company performance. Third-party verification has been conducted relative to determining consistency with the GRI reporting principles. For brevity, only the most pertinent and not all data is included in this report. A detailed GRI content index can be found under the sustainable development section of the AMG website (www.amg-nv.com).

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, like AMG, are committed to aligning their operations 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 second Communication on Progress in April 2013.

Extractive Industries Transparency Initiative

AMG continues its support of the Extractive Industries Transparency Initiative (EITI, www.eiti.org), 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 in order to increase the accountability of governments. Over 30 countries have now committed to the EITI principles and criteria, although, as of today, AMG does not have any extractive operations in an EITI-implementing country.

Global Reporting Initiative

AMG supports the GRI, and is an Organizational Stakeholder (OS). GRI is a network based organization that has pioneered the development of the world's most widely used sustainability reporting framework and is committed to its continuous improvement and application worldwide. In order to ensure the highest degree of technical quality, credibility, and relevance, the reporting framework is developed through a consensus-seeking process with participants drawn globally from business, civil society, labor and professional institutions.

This framework sets out the principles and indicators that organizations can use to measure and report their economic, environmental, and social performance. The cornerstone of the framework is the Sustainability Reporting Guidelines. AMG utilizes the third version of the Guidelines — known as the G3 Guidelines — which were published in 2006. Other components of the framework include Sector Supplements (unique indicators for industry sectors) and National Annexes (unique country level information). AMG has utilized the Metals

and Mining Sector Supplement, 2010 as a guide in preparing this report. GRI is currently developing a fourth-generation of guidelines, G4. As OSs in the GRI Program, AMG is monitoring the development of this revision and will contribute as appropriate. OSs put their name to the GRI mission, products and processes, and promote broadening participation around sustainability and transparency. The OSs provide a key basis for legitimacy to GRI and reinforce its common commitment as a network to change.

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 (www.amg-nv.com).

Environmental, Health, Safety and Social Reporting Statement of Assurance

SCOPE, OBJECTIVES AND RESPONSIBILITIES

AMG's environmental, health, safety and social performance reporting has been prepared by the management of AMG who were responsible for the collection and presentation of the information. Conestoga-Rovers & Associates (CRA) was retained by AMG to conduct an independent review and assurance of the information and data reported in the Sustainable Development section of this report. The objective of the assurance process was to check the materiality of the issues included in the report and the completeness of reporting. Any claims relating to financial information contained within the report are excluded from the scope of this assurance process. CRA's responsibility in performing our assurance activities is to the management of AMG only and in accordance with the terms of reference agreed with them. CRA does not accept or assume any responsibility for any other purpose or to any other person or organization. Any reliance that any third party may place on the report is entirely at its own risk.

APPROACH AND LIMITATIONS

CRA's assurance engagement has been planned and performed in accordance with AMG's internal guidance and definitions for the reported indices. The assurance approach was developed to be consistent with the GRI G3 Guidelines and international standards for assurance appointments. AMG and CRA determined a modified approach to assurance in 2012 based on a review of selected facilities. Audits were conducted for 14 facilities identified by AMG, representing 40% of the total number of facilities within the various divisions. CRA carried out onsite audits at three facilities: LSM Brasil Volta Grande mine (CIF), Graphit Kropfmühl/Wedel, and RW Silicium GmbH. Remote audits utilizing telephone and web-based methods were carried out for 11 facilities (see table page 48). Stakeholder engagement was not within the scope of the assurance activities.

Conclusions/Recommendations

On the basis of the method and scope of work undertaken, and the information provided to CRA by AMG, the process undertaken by AMG provides a balanced representation of the issues concerning AMG's sustainability performance and is an appropriate presentation of AMG's environmental, safety, health and social performance in 2012. In our opinion, the processes for collecting and reporting sustainability-related data that AMG introduced in 2007 continue to be enhanced through better communication and awareness, and more consistent application of the environmental indices. Some challenges remain related to ensuring consistency in the approach related to various performance metrics and providing consistent and complete data in an efficient manner. It is recommended that AMG continue to focus on these challenges to improve reporting, but they do not materially affect the conclusions presented herein.

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Social and Environmental Key Performance Indicators and GRI Content Index

SELECTED SOCIAL AND ENVIRONMENTAL KEY PERFORMANCE INDICATORS*

GRI INDICATOR	DESCRIPTION		ADVANCED MATERIALS		ENGINEERING SYSTEMS		GRAPHIT KROPFMÜHL		AMG
			2011	2012	2011	2012	2011	2012	2012
LA1	Total workforce		1,369	1,537	820	851	NA	542	3,052
LA4	% of employees covered by collective bargaining agreements	%	81	78	37	35	NA	77	67
LA7	Accident rates	Total	3.2	2.1	2.6	2.8	NA	2.0	2.3
LA7	Accident severity rate	Total	0.32	0.26	0.19	0.15	NA	0.11	0.20
LA10	Average hours of training per year per person	Hours	32	24	15	17	NA	12	20
EN2	% recycled raw materials (excluding mine)	%	26	13	0	0	NA	0.1	2.1
EN3	Direct energy consumption	TJ	652	743	22	22	NA	53	819
EN4	Indirect energy consumption	TJ	446	476	196	209	NA	1,759	2,444
EN8	Water consumption (manufacturing)	Cubic meters	371,000	641,000	65,000	66,000	NA	1,200,000 (all)	1,902,000
EN8	Water consumption (mining)	Cubic meters	4,746,000	7,122,000	NA	NA	NA	Included above	7,122,000
EN16	CO ₂ equivalent emissions	mt	114,000	117,000	32,000	38,000	NA	324,000	479,300
EN20	SO _x emissions	mt	626	606	0	0	NA	683	942
EN20	NO _x emissions	mt	111	127	0	0	NA	335	810
EN20	Particulates discharged to air	mt	17	46	0	0	NA	55	55
EN21	Metals discharged	kg	1,682	1,083	0	0	NA	0	1,083
EN22	Hazardous waste (including recycled) to water	mt	3,830	5,950	308	355	NA	20	6,325
EN22	Non-hazardous waste (including recycled)	mt	16,229	16,353	803	755	NA	13,399	30,507
EN22	Percent of waste recycled	%	20	20	62	55	NA	40	26
EN22	Waste disposed to landfill	mt	16,536	18,922	138	153	NA	7,978	27,053
EN23	Spills	L	0	0	0	0	NA	0	0
EN28	Environmental fines	\$	0	0	0	0	NA	0	0
SO8	Fines for non compliance with laws	\$	0	60,000	0	0	NA	0	60,000

* For a full list see pages 48-54.

GRI CONTENT INDEX

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