

2016 EHS REPORTING CRITERIA

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A. OVERVIEW

This Reporting Criteria document supports the preparation and reporting of the following Key Performance Indicators ('KPIs') in the Environment, Health and Safety ('EHS') Report and the Annual Report ('the Reports') prepared by Morgan Advanced Materials plc ('Morgan'):

Environmental performance indicators:

1. CO₂e* emissions and CO₂e intensity (Tonnes and Tonnes/£m revenue**)
2. Energy and energy intensity (GWh and MWh/£m revenue**)
3. Waste and waste intensity~ (Tonnes and Tonnes/£m revenue**)
4. Recycling rate (Tonnes and % of total waste recycled)
5. Water use and water intensity# (million m³ and m³/£m revenue**)

* CO₂e Carbon Dioxide Equivalent i.e. the amount of Scope 1 and Scope 2 Carbon Dioxide and the amount of non-CO₂ Greenhouse Gas with the equivalent global warming potential due to the use of fossil fuels, including country-specific electricity.

** Constant currency basis/ updated to reflect changes in reporting methodology.

~ Hazardous and non-hazardous waste, including recycled material.

Water from all sources, including process, irrigation and sanitary use.

Health and safety performance indicators:

1. Lost time accident frequency (Number of lost time accidents and rate per 100,000 hours worked)
2. Health and safety-related lost time (Number of working days lost and % of total working time)
3. Lost time per lost time accident (Working days lost per lost time accident)

It is the responsibility of the management of Morgan to ensure that appropriate procedures are in place to ensure the reported data is prepared in line with this Reporting Criteria document.

All data, unless otherwise stated, are prepared for Morgan's full financial year as defined in the Annual Report (hereafter 'Full year') This is on a 100% basis for all operations where Morgan owns 50% or more of the relevant business ("financial control"). No data is included in the Reports where Morgan owns less than 50% of a business. The health and safety and environmental data are prepared in line with these reporting criteria and no distinction is made between owned and leased assets.

Acquisitions and divestments are included and terminated respectively from the date of contractual completion of the transaction, unless stated otherwise. New or closed sites are treated in the same way. Should appropriate reporting processes not exist at an acquired business, data is reported as soon as practicable, with the sales figures for intensity calculations adjusted accordingly. Any exceptions are noted in this document and in the EHS Report as appropriate.

The measuring and reporting of EHS data involves a degree of estimation and the use of assumptions. Improvements in reporting and changes in emissions and other factors may require historic data to be

restated to improve comparability. All notified site level restatements are included and where possible meaningful comparisons between annual performance indicators are made available in the Reports.

B. SCOPE OF REPORTING

Morgan is managed through a Divisional structure comprising:

- i Thermal Products
- ii Carbon and Technical Ceramics
- iii Composites and Defence Systems

For the data included in this Reporting Criteria document, the scope comprises these three Divisions which together comprise Morgan Advanced Materials.

Details of the organisational reporting boundaries are summarised below and explained further in the individual data sections of this Reporting Criteria.

B.1 Scope of data reporting

The scope of the data reporting is presented below. In overview:

B.1.1 Environmental performance information

Environmental performance information comprises the reported data from Morgan's production sites. Data from non-production sites (typically distribution, sales and marketing, research and development, design and other office locations) is also included where this is available on a consistent basis for all years covered by the Reports.

The environmental performance indicators exclude:

- i Environmental data from leased offices and other non-production sites where the use of energy and other utilities is not controlled by Morgan (typically when their cost is included in the rental charges) and/or where specific information on the utilities and services is not available.
- ii The Group disposed of its interest in the NP Aerospace joint venture in Amman, Jordan in September 2012. The environmental data for this site is excluded as the reports were not of the required standard. It is estimated that the environmental impact of this site represented less than 0.1% of the Group total. The revenue (see below) for this site is excluded from the calculation of the intensity indicators to help ensure that appropriate comparisons are available.

Energy, CO₂e, waste and water related environmental performance indicators are presented as 'intensities'. These are calculated as the ratio of environmental impact to third party revenue at constant foreign exchange rates with the KPIs for all years stated at actual rates for the most recent Full year. Prior years are restated at the same constant rates such that a change in an environmental performance indicator represents a 'real' change in performance.

Recycling performance is presented as the percentage of total waste which is recycled as measured by weight.

B.1.2 Revenue

Revenue is the sum of third party revenue from all sites covered by the Reports for each reported year. Revenue for all years is stated at the average exchange rates for the most recently reported Full year. Exchange rates and recognition of revenue are treated in accordance with Note 1 of the latest Morgan Advanced Materials Annual Report.

Due to the diverse nature of the products and services manufactured and sold by Morgan, revenue is used as the most representative measure of output to calculate Group-wide environmental performance intensities. Other measures of output such as weight or volume are not consistently used or applied across the Group.

B.1.3 Health and safety performance indicators

Health and safety performance indicators comprise the data reported to Morgan by its production and non-production sites.

The health and safety data comprises the accident, lost time and working hours data for Morgan's Total Labour Resource where 'Total Labour Resource' is defined as follows:

Morgan's Total Labour Resource comprises the people working for Morgan, including full and part time employees, temporary employees and 'Agency/Contract labour' (e.g. those employed to perform a function which may also be carried out by an employee). Contractors (i.e. third parties employed to perform non-core functions (e.g. building maintenance)) are excluded.

Health and Safety performance indicators are presented as the Lost time accident frequency, Health and safety-related lost time and the Lost time per lost time accident.

C. REPORTING SPECIFICS AND METHODOLOGY

C.1 Environmental performance information

C.1.1 CO₂e intensity (Tonnes / £m revenue)

CO₂e intensity is calculated as follows:

The Scope 1 and Scope 2 CO₂e emissions due to energy use (tonnes) / Revenue at constant exchange rates (£m)

CO₂e emissions data comprise the emissions occurring as a result of:

- a. The electricity generated by others and used by Morgan.
- b. The combustion of the fossil fuel sources of energy referred to in C.1.2 below.

The Group's methodology for calculating CO₂e emissions is based on the Greenhouse Gas Protocol with emission factors for standard grid electricity by country and year from the International Energy Agency together with other factors as published by the UK Department of Environment, Food and Rural Affairs. Electricity generated from renewables and supplied to Morgan on a specific renewables tariff is considered to cause zero emissions. All other electricity use is considered to cause emissions at the average national standard grid-rate. These are reported as CO₂ as CO₂e factors are not consistently available for electricity use in all the countries in which the Group operates. The average grid-rate for the specific year for the country in which the Morgan site is located is used to calculate the emissions where this information is available. Otherwise the rate for the latest year for which the average grid-rate for the relevant country is available is used.

The Scope 2 CO₂e emissions due to the generation of steam supplied by third parties to two of the Group's sites in China and one in Germany are not included in the reports as information on the relevant emissions factors is not available. These emissions are estimated to account for less than 0.5% of the Group's energy-related CO₂e emissions.

Revenue is as stated in section B.1.2

See also 'Scope of data reporting', above.

C.1.2 Energy intensity (MWh / £m revenue)

Energy intensity is calculated as follows:

Total energy use (MWh) / Revenue at constant exchange rates (£m)

Total energy use comprises the reported electricity and energy from other sources purchased and used by Morgan. The energy is used for production activities, space heating/cooling, lighting, offices and for various other purposes. Fuel for road-based transport is not included, nor is steam supplied by third parties to two sites in China and one in Germany, primarily for space heating purposes, as information on its use is not consistently available. Imported steam is estimated to account for less than 0.5% of the Group's energy use. One of the two sites in China ceased production activities during 2013.

Energy sources comprise:

- Electricity
- Natural gas
- Liquid petroleum gas (LPG)/Propane
- Fuel oil
- Coal
- Steam
- Biomass

Oils, biomass and other potential fuels are not included where their primary purpose is non-energy related (e.g. use as a lubricant, filler, binder, etc.).

The energy data are compiled directly from meter readings, supplier invoices, delivery notes and similar sources. Un-metered commodities are consistently reported as supplied or as consumed according to the information available at site level.

Energy from all sources is reported as, or converted to, kWh units where appropriate, prior to reporting to Morgan. Where specific conversion factors are provided by suppliers these are used to convert from litres of LPG, litres of fuel oil and tonnes of coal, etc. to kWh units. Where specific conversion factors are not available, standard factors published by the UK Government's Department for Environment Food and Rural Affairs are used on a consistent basis.

Revenue is as stated in section B.1.2

See also 'Scope of data reporting' above.

C.1.3 Waste intensity (Tonnes / £m revenue)

Waste intensity is calculated as follows:

Total waste (tonnes) / Revenue at constant exchange rates (£m)

Total waste includes the reported production and non-production-related hazardous and non-hazardous solid, sludge and liquid materials (excluding wastewater) taken off site for disposal, treatment, reprocessing, recycling or reuse by others. This includes scrap machinery and other equipment which is disposed of as waste. Wastes disposed of via methods with energy recovery or other resource recovery are included in total waste but not as recycled material, for example: landfill with gas recovery, composting and incineration with energy recovery. Waste materials do not include by-products or scrap from a Morgan production process which are re-used in a production process either on the same production site or another Morgan site.

Wastes which result from construction and other maintenance / remediation works performed by third party contractors are not included in the scope of reporting where the contractor is responsible for the disposal of the waste.

Waste data is compiled through a variety of means including: invoices and payments received, weighbridge logs, collection tickets and consignment notes. Where records of the weight of waste are not available, estimated data may be prepared based on available information such as the volume and density of waste removed from site.

Waste data is reported as metric tonnes. Conversions from other units of measure (e.g. US short tons) are made by individual sites prior to reporting to Morgan Group.

Revenue is as stated in section B.1.2.

See also 'Scope of data reporting', above.

C.1.4 Recycling (% of total waste recycled)

The recycling rate is calculated as follows:

Total recycling (tonnes) / Total waste (tonnes) x 100%.

Total recycling comprises the hazardous and non-hazardous waste taken off site to be recycled, reclaimed or recovered by others. As noted above it excludes scrap materials and by-products from a Morgan production-process which are re-used by Morgan.

The weight of recycled waste and the weight of total waste are reported on the basis described under Waste intensity above.

See also 'Scope of data reporting', above.

C.1.5 Water intensity (m³ / £m revenue)

Water intensity is calculated as follows:

Total water use (m³) / Revenue at constant exchange rates (£m)

Total water use includes all water used for potable, sanitary, irrigation and process purposes from both on-site extraction and from local authority and similar sources.

Water volumes are obtained from meter readings and from supplier invoices. Where appropriate, for example for water extracted from boreholes, pressure-flow calculations are used to estimate the volume of water used.

Water data is reported as cubic meters (m³). Conversions from other units of measure (e.g. CCF and US gallons) are made by individual sites prior to reporting to Morgan.

Revenue is as stated in section B.1.2.

See also 'Scope of data reporting', above.

C.2 Health and safety performance information

C.2.1 Lost time accident frequency (lost time accidents / 100,000 hours worked)

Lost time accident frequency is calculated as follows:

The total number of lost time accidents / total hours worked by the Morgan Total Labour Resource x 100,000.

An accident is an unplanned event, or sequence of events, arising out of work activities at any location which is reported to Morgan and which results in the non-fatal injury or work-related illness of a member of the Morgan Total Labour Resource (as defined in B.1.3 above).

A Lost time accident is an accident which causes a member of the Morgan Total Labour Resource to be unable to work on the next scheduled working day or shift after the day or shift during which the accident occurred (see below for further explanation of lost time).

Lost time accidents include both acute injuries and instances of work related ill-health (including illness or injury resulting from a cumulative exposure to work-place conditions). Lost time accidents exclude accidents which do not result in lost time but do result in restricted working or a temporary job transfer.

Lost time accidents occurring whilst travelling in the course of work are included. Accidents occurring whilst traveling to and from work, suicide, self-inflicted injuries and injuries involving contractors are excluded.

Total hours worked is a measure of exposure time and includes standard and overtime hours worked by the Morgan Total Labour Resource as recorded and reported by each site according to clock-on / clock-off information where available, information from supplier invoices to cover contract labour hours and estimates based on average hours per day where necessary, for example to account for non-hourly paid workers.

As a measure of exposure time, hours worked includes overtime and excludes public holidays and any type of paid time off work. (i.e. excludes vacation, personal paid time, time off for sickness, jury duty, bereavement, lost time injuries etc.).

C.2.2 Health and safety-related lost time (% of total working time)

Health and safety related lost time is calculated as follows:

Lost working time due to health and safety / Total working time x 100%.

Lost working time due to health and safety comprises all reported absence from work attributed to a work-related accident or to work-related ill health which causes a member of Morgan's Total Labour Resource to be unable to work on the next scheduled working day or shift after the day or shift on which the injury occurred.

Time lost on the day of the accident and days or shifts where the involved person was not scheduled to work (e.g. vacation, week-ends, public holidays, etc.) is excluded. As stated above, restricted work cases where temporary job transfers occur are not reported as lost time.

Time lost due to accidents which occurred in previous reporting periods is included.

Lost working time is reported as days and an average 8 hour working day is assumed to determine the percentage of working time which is lost.

C.2.3 Lost time per lost time accident (Days lost per lost time accident)

Lost time per Lost time accident is calculated as:

Lost working time due to health and safety / Total number of Lost time accidents.

Lost working time due to health and safety is as defined above and where appropriate includes lost time due to accidents which occurred in previous reporting periods.

The total number of Lost time accidents is as defined above and includes only the accidents which occurred in the current reporting period.