2023 ESG supplement

to the ASM Annual Report

Table of contents

This document presents the supplementary Environmental, Social, and Governance (ESG) information to the ASM 2023 Annual Report. It is designed to augment and provide additional context to the content within the main report. For a thorough understanding of ASM's ESG performance and strategies in 2023, this supplement should be read in conjunction with the principal document.

ESG data included in the Annual Report

Details on data definitions, reporting boundaries, restatements of historic figures, and the extent of coverage for the ESG indicators we have disclosed. This section aims to offer clarity and context to our ESG reporting metrics, to allow for comparable performance information.

Materiality assessment of ASM in 2023

As a crucial element of our annual reporting cycle, ASM engages in extensive input gathering from important stakeholder groups. These activities are integral to refining our materiality assessment, allowing us to pinpoint and prioritize the ESG topics of greatest significance. This supplement elaborates on the methodology and findings of this vital process.

Task Force on Climate-related Financial Disclosures (TCFD) Guidelines

Our 2023 Annual Report aligns with the TCFD recommendations, reflecting our commitment to transparent reporting on climate-related financial information. This supplement of the Annual Report provides a more detailed account to the TCFD guidelines, underscoring our dedication to high standards of environmental governance and transparency.

Supplementary information ESG reporting indicators

This section of the ESG supplement provides insight into the definitions of key performance indicators (KPIs), and the scope and boundaries of the relevant ESG reporting indicators included in ASM's 2023 annual report. These KPIs are grouped into five different areas: Environment, Ethics, Health & Safety, People, and Supply chain.

Environmental KPIs

The environmental KPI set consists of the listed KPIs below:

Total electricity consumption

Total electricity consumption expressed in megawatt hours (MWh);
Renewable Energy Attribute Certificates (EACs) purchased; and
MWh or units of renewable EACs purchased.

Percentage renewable electricity

Percentage of electricity consumed from renewable sources versus ASM's total electricity consumption.

Scope 1 and 2 (market-based and location-based) greenhouse gas (GHG) emission KPIs

Scope 1 and 2 concern the absolute Scope 1 and 2 GHG emissions in tonnes CO_2e.
Two calculation methods are applied:

- Market-based GHG Scope 1 and 2 emissions are calculated by accounting for the global qualified EAC purchases against purchased electricity.
- Location-based GHG Scope 1 and 2 emissions are calculated by converting the input data (utility and consumption) to tonnes CO_2e using local grid-emission factors.

Scope 1 and 2 (market-based) GHG emissions per revenue (emissions intensity)

Scope 1 and 2 (market-based) GHG emissions in tonnes CO_2e per million EUR revenue.

Scope 1 and 2 (market-based) GHG emissions per R&D spend (emissions intensity)

Scope 1 and 2 (market-based) GHG emissions in tonnes CO_2e per million € gross R&D spend.

Scope 3 emissions

Relevant GHG protocol Scope 3 categories that indicate indirect emissions from peripheral activities. GHG Scope 3 emissions are calculated by converting the relevant activity data (for example spend, distance) to tonnes CO_2e using emission factors. For the calculation methods used per category, please refer to the below table:

#	Scope 3 Category	Calculation method
1	Purchased goods and services	Spend-based and Average methods
2	Capital goods	Spend-based
3	Fuel & energy related	Fuel-based
4	Upstream Transportation & Distribution	Fuel-based and Distance-based methods
5	Waste	Waste type specific method
6	Business travel	Fuel-based method and Distance-based method
7	Commuting / WFH	Distance-based method
8	Leased facilities (upstream leased assets)	N/A
9	Downstream Transportation & Distribution	Fuel-based and Distance-based methods
10	Processing of sold products	N/A
11	Use of sold products	Process-based method
12	End-of-life treatment of sold products	Waste type specific method
13	Downstream leased assets	N/A
14	Franchises	N/A
15	Investments	Investment-specific method

Scope 3.11 use of sold products emissions are determined through the process-based method, which uses quantity-based data to evaluate the emissions associated with the use of our machines, such as the MWh of energy use over the machine's lifetime. The use cases are determined through independent product tests and internal expert opinion.
All the parameters used in our Scope 3.11 calculations are re-validated annually, to reflect the latest insights. The Scope 3 emissions data are always based on best currently available. As we plan to strengthen our model further with additional independently validated data, the figures presented in the Annual Report may be restated in the future.

Water Withdrawn Absolute

The total water acquired by ASM into our property boundaries in cubic meters (m^3).

Water withdrawn from water-stressed regions

The percentage of water withdrawn from high or extremely high water-stressed regions as per the most recent information from the World Resource Institute (WRI) Aqueduct analysis. This metric is defined by WRI as the ratio of total water withdrawals to the available renewable surface and groundwater supplies.

Water intake per revenue (water intensity)

Water withdrawal figure, which is the same as the water intake figure, divided by net revenue to obtain a water intensity figure.

Water intake per R&D spend (water intensity)

Water withdrawal figure, which is the same as the water intake figure, divided by gross R&D spend to obtain a water intensity figure.

Significant chemical spills or releases to the environment

Releases directly to the environment that are unanticipated and meeting a material threshold for reporting per the jurisdiction of release. The reported figure is the number of incidents.

Non-Hazardous solid waste recycle

Tonnes of non-hazardous solid waste produced in our R&D and manufacturing sites that are recycled.

Non-Hazardous solid waste landfill

Tonnes of non-hazardous solid waste produced in our R&D and manufacturing sites that are sent to landfill.

Non-Hazardous reuse - ASM diversion

Tonnes of waste to landfill avoided by ASM through using reusable crates.

Landfill Diversion Rate (ASM Operations)

Calculation by adding the total tonnes of non-hazardous solid waste recycled and the total tonnes non-hazardous reuse from ASM diversion. This resulting figure is divided by total non-hazardous solid waste. This KPI is presented as a percentage.
The total non-hazardous solid waste includes:

- non-hazardous solid waste recycled;
- total tonnes non-hazardous reuse - ASM diversion; and
- total tonnes non-hazardous solid waste landfill.

Landfill diversion (all product packaging reuse)

The sum of the KPI 'Non-Hazardous reuse - ASM diversion' and the tonnes of reused crates from customers.

Percentage packaging reuse to customers

Percentage of packaging reuse that stems from customers. This metric is calculated by obtaining the total reuse crating weights (in tonnes) utilized for ASM tools shipped to customers for the reporting period. This figure is divided by the total crating weight (both reused and single-use crates for all ASM tools shipped to customers for the reporting period (tonnes)

For environmental KPIs, estimations are at times made for the last period of the reporting year to accommodate timely reporting. This estimation is based on assumptions stemming from historic results combined with known factors that could influence the usage. For environmental data stemming from smaller locations, such as sales offices which are shared, estimates are made if source data is not available. These represent a non-material portion of our total global operations.

Ethics KPIs

The ethics KPI set exists of KPIs listed below:

Ethics training

Percentage of the total number of employees, as of the end of the reporting year, which completed the required ethics trainings. The scope of this KPI concerns the internal active, new college graduates, expat employees, and ASM's managed contractors worldwide.

Reported confidential concerns via SpeakUp!

Count of events reported via SpeakUp!, the globally available anonymous reporting channel to report ethical or whistleblower concerns. The scope of this KPI is ASM worldwide, including other stakeholders with a valid business interest (for example, suppliers, contractors, seconded personnel).

Reported concerns from other channels

Count of all filed reports via channels other than SpeakUp!, which are registered as 'reported concerns from other channels'. The scope of this KPI is ASM worldwide, including other stakeholders with a valid business interest (for example, suppliers, contractors, seconded personnel).

Code of Business Conduct (COBC) confirmed cases of non-compliance

Count of COBC confirmed cases of non-compliance. The scope of this KPI concerns ASM worldwide, including other stakeholders with a valid business interest (for example, suppliers, contractors, seconded personnel).

Health & Safety KPIs

The scope of the Health & Safety KPIs comprises all ASM employees as well as contracted workers who are under the direct supervision of ASM.

The health and safety KPI set exists of the KPIs listed below:

Number of recordable injuries

Total number of recordable injuries and illnesses. ASM uses the US OSHA definition of a recordable injury or illness:

- Any work-related fatality;
- Any work-related injury or illness that results in loss of consciousness, days away from work, restricted work, or transfer to another job;
- Any work-related injury or illness requiring medical treatment beyond first aid;
- Any work-related diagnosed case of cancer, chronic irreversible diseases, fractured or cracked bones or teeth, and punctured eardrums; and
- There are also special recording criteria for work-related cases involving: needlesticks and sharps injuries; medical removal; hearing loss; and tuberculosis.

Recordable injury rate

Number of qualifying recordable injuries and illnesses as compared to the average number of 100 FTE during the year. ASM uses the US OSHA definition of a recordable injury or illness. Please refer to the number of recordable injuries KPI for more information on the OSHA definition.

Total number of injuries and illnesses

Sum of the total number of recordable injuries and illnesses and total number of first-aid injuries and illnesses. ASM uses the US OSHA definition of a first-aid injury or illness, which is usually administered immediately after the injury occurs, often consisting of one-time, short-term treatment

- Using a non-prescription medication at non-prescription strength (for medications available in both prescription and non-prescription form, a recommendation by a physician or other licensed health-care professional to use a non-prescription

medication at prescription strength is considered medical treatment for record-keeping purposes);
- Administering tetanus immunizations (other immunizations, for example Hepatitis B vaccine or rabies vaccine, are considered medical treatment); cleaning, flushing or soaking wounds on the surface of the skin
- Using wound coverings, for example, bandages, Band-Aids™, gauze pads, or using butterfly bandages (other wound-closing devices, for example, sutures, staples, are considered medical treatment);
- Using hot or cold therapy;
- Using any non-rigid means of support, for example elastic bandages, wraps, non-rigid back belts, (devices with rigid stays or other systems designed to immobilize parts of the body are considered medical treatment for recordkeeping purposes);
- Using temporary immobilization devices while transporting an accident victim (for example, splints, slings, neck collars, or back boards). Drilling of a fingernail or toenail to relieve pressure, or draining fluid from a blister;
- Using eye patches;
- Removing foreign bodies from the eye using only irrigation or a cotton swab;
- Removing splinters or foreign material from areas other than the eye by irrigation, tweezers, cotton swabs or other simple means;
- Using finger guards;
- Using massages (physical therapy or chiropractic treatment are considered medical treatment for recordkeeping purposes); or
- Drinking fluids for relief of heat stress.

Injury rate

The injury-rate KPI is calculated as the total number of injuries and illnesses as compared to the average number of 100 FTE during the year. The total number of injuries is the sum of those meeting the US OSHA definition of recordable injury and first-aid injuries. Please refer to the number of injuries and illnesses KPI for more information on the US OSHA definition of injuries.

Lost-time injury rate (LTIR)

The LTIR is calculated as the total number of lost time recordable-injury cases as compared to the average number of 100 FTE. If an injury case has lost time, that automatically makes it recordable. ASM uses the US OSHA definition of a recordable injury or illness. Please refer to the *number of recordable injuries* KPI for more information on the OSHA definition. An injury qualifies as a lost-time case if it resulted in time away from work, excluding the day of the injury.

Fatality rate

An employee death resulting from a work-related incident or exposure. The fatality rate KPI refers to the total number of fatal work injuries as compared to the total number of 100 FTE, which is counted as the average across the year.

People (HR) KPIs

The scope of the People KPIs concerns the internal active, new college graduates, and expat employees of ASM worldwide.

The People (HR) KPIs are the following:

CEO pay ratio

CEO remuneration divided by the average remuneration of all employees, calculated by dividing the total personnel costs (wages, short-term incentives, salaries, and share-based payments) minus the CEO's remuneration by the total number of employees (minus the CEO).

Gender pay ratio

Pay ratio (average wages) of employees (in headcount) on the last day of the reporting period by gender (in percentages).

Gender diversity

Total number of employees (in headcount) on the last day of the reporting period by gender (in percentages).

Voluntary attrition rate

Number of people who have left the company voluntarily in the reporting year divided by the number of employees at the end of the reporting year (in percentages).

Total attrition rate

Number of employees who have left the company involuntarily and voluntarily in the reporting year divided by the number of employees at the end of the reporting year (in percentages).

Employee age bracket statistics

Percentage of employees by age group on the last day of the reporting period.

Percentages of headcount by age in the following groups:

- Under 30 years old;
- 30-50 years old; and
- Over 50 years old

Employee engagement scores

Engagement scores from the ASM employee engagement global survey:

- Survey participation
- Average scores of 12 standardized categories to determine engagement

Supply chain KPIs

The supply-chain KPI set covers the following:

RBA Code of Conduct acknowledgement

Percentage of critical and/or strategic suppliers as determined by the ASM supply chain organization for the reporting year, which have acknowledged their commitment to the Responsible Business Alliance (RBA) Code of Conduct, or whose code of conduct is assessed to be acceptable as it covers similar principles as the RBA Code of Conduct. For the RBA Code of Conduct Acknowledgement KPI, the boundary concerns all critical and/or strategic suppliers of ASM.

RBA Code of Conduct SAQ

Percentage of critical and/or strategic RBA scorecard suppliers who completed a required supplier RBA self-assessment questionnaire (SAQ) and received a low- or medium-risk assessment result. The boundary of RBA Code of Conduct SAQ covers all critical and/or strategic suppliers of ASM that receive a performance scorecard.

Conflict minerals CMRT (Conflict minerals reporting template)

Percentage of critical and/or strategic suppliers that have submitted compliant CMRT responses to ASM each year. The CMRT survey cycle is a lagging reporting process and is based on the prior year sourcing activities, due to the data only becoming available by May each year. The boundary of the conflict minerals CMRT KPI consists of all critical and/or strategic suppliers from the prior calendar year.

Restatements of historic figures

The 2021 and 2022 figures of the following KPIs were restated: 1) Energy 2) Scope 1 + 2 GHG emissions 3) Water 4) Waste. The scope of these KPIs changed from previously five manufacturing and R&D hubs to encompass all operations, including (sales) offices, as well as acquisitions (including their historic data). No other KPIs were restated in 2023.

Materiality assessment 2023

In 2023, ASM performed the annual update of its materiality assessment to reevaluate its ESG priorities. This is described in chapter 6 of the Annual Report. This year, a two-dimensional lens was applied through which ESG matters are evaluated in terms of relevance to the company and the company's relevance to the world. Through 'Impact Materiality', ASM's impact on people and the environment was considered, while 'Financial Materiality' explored how ASM's business is financially affected by ESG issues.

For our materiality assessment in 2023, we followed the steps below to come to our list of material topics to disclose:

- Analysis of the operating environment, value chain, and business context;
- Identification of long-list topics;
- Prioritization and validation of topics into a shortlist of topics; and
- Verification with ASM's board of directors

Analysis of the operating environment and business context

ASM's materiality assessment began with the preparation of an analysis of ASM's operating environment and business context. An overview of ASM's business, activities, value chain and stakeholders was prepared as context for determining the material topics, and the impacts, risks and opportunities. All of ASM's operations were considered in this. Also refer to ASM's value-creation model for a visual overview of ASM's operating environment. ASM's value chain consists of, among others, upstream suppliers, for example, mining companies, smelters, component producers, contract manufacturers, utilities providers, legal and consulting agencies, logistics companies, waste contractors and downstream customers (semiconductor manufacturers). ASM's stakeholders consist of, among others, customers, employees, industry consortia, investor communities, suppliers, communities, NGOs, nature and government and regulators. For more on our interactions with these stakeholders, see chapter 19 of the Annual Report.

Identification of long-list topics

ASM's ESG priorities were defined and identified through stakeholder priorities and peer- and industry research. An extensive list of ESG topics was drafted based on several internal and external sources including the upcoming Corporate Sustainability Reporting Directive, ESG benchmarks, peer and industry sources, as well as ASM's enterprise-risk management input.

Prioritization and validation of topics (preparing short-list)

The process of moving from an extensive list of topics to the short-list was informed by external stakeholder priorities and engagement as well as internal expert validation. For each stakeholder group, a specific engagement method (for example, desk research, surveys, and interviews) was chosen to best capture the nature of the relationship and to obtain the most relevant information. Impacts, risks, and opportunities were identified for each topic, and validated and scored during workshops with internal experts as part of the prioritization process. Both the impact materiality and financial materiality lens were applied in this validation process, as well as an analysis of the related time-horizons. Under impact materiality, the environmental and/or social effect of ASM's contribution to the topics was evaluated, considering the scale, scope, irremediability and likelihood of the impacts. Under financial materiality, the financial effect of risks and opportunities related to the topics was evaluated, considering magnitude and likelihood of the risks and opportunities. The scales applied for financial materiality were in line with ASM's Enterprise Risk Management approach. ASM's value chain was considered in the analysis of the impacts, risks and opportunities. The combined input led to the final list short-list of material topics, as shown in this section of the Annual Report.

Verification with board of directors

Finally, the short-list of material topics has been approved by ASM's Management Board and Executive Committee and has been validated by ASM's Sustainability Leadership Council and the Supervisory Board consecutively.

Results 2023

Following the process, the material topics are depicted in the table below. These topics form the ESG priorities of ASM and are disclosed on in more detail in ASM's annual report. The definitions, impacts, risks, and opportunities for these topics are provided in the overview below.

The description of the impacts, risks and opportunities are reflective of their effect on ASM (on ASM's operations and people, for example). The strategy, actions, initiatives, metrics, and progress regarding each topic are described in the associated relevant sections of the Annual Report 2023. Refer to the overview for the associated sections of the Annual Report for each material topic. Where applicable, the extent to which policies, actions, targets, and metrics are inclusive of the value chain, is described in the relevant sections of the annual report. Also see the section 'Supplementary information ESG reporting indicators' in this ESG supplement for the methodology and scope of relevant ESG KPIs, that have been provided with limited assurance by KPMG.

To ensure alignment with the Enterprise Risk Management approach, ASM's head of risk management participated in the materiality assessment. Examples of this alignment are the overlap between most material topics and the Top 20 risks, as well as the application of the Enterprise Risk Management scales in determining financial materiality. For more information, including a more detailed analysis of climate risk and our ability to attract talent, see section '13.2 Risk management' in the main body of the Annual Report.

Note that as of Annual Report 2023, the focus of the disclosures is on the identified material ESG priorities for ASM. Topics that were previously disclosed but not identified as material through the materiality assessment in 2023, may have been disclosed to a lesser extent in ASM's Annual Report. In similar vein, other ESG topics could become more important over time to report on in future disclosures.

Topic	Definition	Impacts	Risks and opportunities
Climate change adaptation (disclosed in section 11.1)	The process of adjustment to actual and expected climate change and its impacts.	N/A	Extreme weather events (for example floods, storms, heatwaves) could impact ASM's operations through physical damage to utilities and ASM's facilities.
Climate change (mitigation) (disclosed in section 11.1)	Measures to reduce the contribution to climate change. Climate change relates to changing weather patterns that become more extreme or volatile, driven by increased GHG emissions and rising global average temperatures.	ASM could contribute to climate change (resulting in harm to the environment and the living environment of people) by emitting greenhouse gas emissions through its operations and its value chain.	ASM could fail to meet its net zero targets in time if ASM continues to use non-renewable energy. This in turn could potentially lead to 1) ASM becoming a lagger in the climate transition. 2) ASM technology and IP becoming less preferred as alternatives with lower impact become available. 3) Noncompliance to future environmental laws and regulations that mandate decarbonization
Energy availability (disclosed in section 11.1)	The availability of grid capacity and energy for consumption (both from renewable and non-renewable sources).	Renewable energy availability by using the additional renewable energy capacity itself.	Access to energy for ASM's operations could become limited or restricted due to energy scarcity.
Equal pay at ASM (disclosed in section 10.1)	Non-discriminatory wages for employees performing work of equal value.	If ASM facilitates equal pay, this could create a fair and level playing field for individuals, thereby positively influencing the prospects of gender groups and general workers morale.	ASM could fail to provide its employees with equal pay for equal work (for example gender indifferent), thereby impacting workers' rights.
Diversity & gender equality at ASM (disclosed in section 10.1)	Representation and equal treatment of underrepresented groups in own workforce.	If ASM promotes and supports a diverse workforce (incl. gender equality), this could make ASM's working environment and culture more open to people from various backgrounds, thereby positively influencing employee morale and sense of connectedness to ASM.	ASM could fail to promote and establish a diverse workforce (incl. gender equality), thereby potentially missing out on opportunities to attract top talent and improve customer orientation and decision making.
Health & safety (disclosed in section 10.3)	The physical and mental well-being of employees as well as their personal security at work.	If ASM does not facilitate a healthy and safe work environment for its workforce, accidents and harm to personal health could occur, potentially leading to long-term unemployability, low employee morale and violation of workers' rights.	ASM could fail to provide its employees with a healthy and safe working environment, thereby potentially impacting workers' rights and exposing employees to dangerous situations.
Living wage at ASM (disclosed in section 21.1)	A wage that provides for the satisfaction of the needs of the worker and his / her family in light of national economic and social conditions.	If ASM provides employees with a living wage, this enables employees to provide a decent living for themselves and their families (living wage) and increases the quality of life.	ASM could fail to provide its employees with a living wage, potentially leading to financially constrained employees, which in turn could impact the company being the employer of choice for talent.
Training and skills development at ASM (disclosed in section 10.2)	Initiatives aimed at the maintenance and/or improvement of skills and knowledge of employees.	If ASM invests in training and skills development of the own workforce and fosters skilled and trained staff, this positively impacts long-term employability and employee morale.	If ASM provides its employees with appropriate training and skills development, this could lead to highly skilled, motivated, and dedicated employees.
Working hours at ASM (disclosed in section 21.1)	The amount of time spent by employees performing labor in service of its employer.	If ASM exceeds working-time agreements, workers could experience stress or burnout symptoms which could potentially compromise the health and well-being of the own workforce.	ASM could fail to establish and monitor acceptable working hours for its employees, thereby potentially violating workers' rights.
Involuntary labor at suppliers (disclosed in sections 12.4 and 21.2)	All work or service at suppliers which is demanded from any person under the threat of penalty and for which the person has not offered himself or herself voluntarily.	If ASM does not condemn involuntary labor in the supply chain, supplier workers could be working against their will, potentially causing an unsafe working environment and the health, well-being, and worker rights could be compromised.	Involuntary labor (including child labor) could occur in ASM's supply chain, potentially causing an unsafe working environment for workers and leaving the well-being and rights of workers compromised.

Topic	Definition	Impacts	Risks and opportunities
Health & safety at suppliers (disclosed in section 12.4)	The physical and mental well-being of employees at suppliers as well as their personal security at work.	If ASM does not stimulate a healthy and safe work environment for suppliers, accidents and harm to personal health could occur, potentially leading to for example long-term unemployability, low workers morale and violation of workers' rights.	Workers within ASM's supply chain could be exposed to an unhealthy and unsafe working environment, thereby potentially being violated in their workers' rights and exposed to dangerous situations, while product quality can be affected.
Working hours at suppliers (disclosed in section 21.2)	The amount of time spent by supplier employees performing labor in service of their employer.	The semiconductor industry deals with cyclicality. These changes in supply and demand could cause pressure on the working time of suppliers (incl. further down the chain, for example, 3TG suppliers). Overtime could result in workers experiencing stress or burnout symptoms which could potentially compromise the health and well-being.	Workers within ASM's supply chain could be subject to having to work unacceptable working hours, potentially causing a violation of their workers' rights and/or affecting product quality.
(Anti-)bribery and corruption (disclosed in section 13.5)	Exposure to 1) dishonest persuasion of someone to act in one's favor by giving them a gift of money, and 2) abuse of power for private gain, which can be initiated by individuals or organizations (for example, fraud, extortion, collusion, and money laundering).	If ASM engages in bribery and corruption, ASM could potentially discredit individuals or organizations (for example, financially, legally, or socio-economically).	If ASM engages in bribery and corruption, this could cause conflicts of interests and non-compliance, impacting its license to operate.
Corporate culture (disclosed in section 10.1)	Corporate culture expresses goals through values and beliefs. It guides organizational activities through shared assumptions and group norms such as values or a code of conduct.	If ASM's corporate culture stimulates desired corporate behavior, this could result in respectful and diligent behavior to people and the environment (thereby preventing for example unwanted financial, legal, socio-economic or environmental consequences for the involved parties).	ASM's corporate culture could allow or sustain undesired corporate behavior, resulting in unsatisfied and unmotivated personnel.

Additional information on several material topics

Topic	Definition	Impact risks	Financial risks	Metrics and targets
Climate change mitigation (disclosed in section 11.1)	Measures to reduce the contribution to climate change. Climate change relates to changing weather patterns which become more extreme or volatile through increased greenhouse gas emissions and rising global average temperatures.	Negative: ASM could contribute to climate change (resulting in harm to the environment itself and the living environment of people) by emitting greenhouse gas emissions through its operations and its value chain.	1) Lower turnover due to reputational risk 2) Stranded IP and assets 3) Legal costs or fines 4) Increased cost of capital	Metric: Scope 1,2 and 3 GHG emissions. Targets: Net zero-emissions across all scopes by 2035 Scope 1 and 2 GHG emissions: -50.4% by 2032, and - 90% by 2035 Scope 3 GHG emissions: -58.2% per EUR of value added (gross profit) by 2032, -97% by 2035**[1]
Training and skills development (disclosed in section 10.2)	Initiatives aimed at the maintenance and/or improvement of skills and knowledge of employees.	Positive: If ASM invests in training and skills development of its own workforce, and fosters skilled and trained staff, this positively impacts long-term employability and employee morale.	1) Lower employee costs 2) Top-line growth due to higher efficiency and productivity of skilled and motivated personnel	Metrics: Technical training hours of ASM employees Percentage of employees with performance management completion

Societal impacts

In this paragraph, more information is provided on the societal impacts by monetizing externalities on two material topics for ASM. A summary overview, including an elaboration on the financial risks, is provided in the table above and additional information per topic is provided below.

Climate-change mitigation

ASM could negatively contribute to climate change through GHG emissions in its own operations, which is referred to as Scope 1 and 2 emissions. Emissions in its value chain could also occur, which is referred to as Scope 3 emissions. The latter category occurs, for example, at suppliers that provide inputs for ASM's products as well as at customers, who emit GHG emissions by using our products.

Climate change not only harms the environment itself but could also negatively impact the living environment of individuals and society. The United States Environmental Protection Agency (EPA) has developed a metric to calculate the societal cost of carbon (SC-CO_2). The SC-CO_2 metric is the yearly monetary value of the net harm to society that occurs through the emission of tonnes of CO_2 emissions into the atmosphere. The SC-CO_2 considers the value of both negative and positive future climate change impacts. This comprises changes in net agricultural productivity, human health effects, property damage from increased flood risk, changes in the frequency and severity of natural disasters, disruption of energy systems, risk of conflict, environmental migration, and the value of ecosystem services. For 2023, the SC-CO_2 was set at $204 per tonne CO_2 (EPA, November 2023).

[1] Allowing for emissions neutralization of remaining emissions above the long-term targets to achieve net zero through high-confidence carbon-removal mechanisms.

ASM emits CO_2e emissions as part of its own operations. CO_2e emissions refers to CO_2 equivalent emissions which considers the global warming potential of other relevant greenhouse gases as well. To calculate the externalities of these CO_2e emissions, ASM applied the SC-CO_2 metric to its total scope 1 and 2 market based CO_2e emissions, leading to a societal cost of € 1,611,000 EUR[2] in 2023.

Training and skills development

ASM can generate positive impact by providing training and investing in skills development of its employees. While this could directly impact the quality and efficiency of ASM's own operations by the improved performance of the employee, it also has a potential ripple effect into other areas. ASM colleagues, value-chain partners, and personal acquaintances of the employee can benefit from a spill-over effect through the newly acquired skills and knowledge. This can benefit both the individuals as well as the respective employers. Additionally, for the employee in question, it could their enhance marketability and a future wage, which in turn can create a better livelihood and more opportunities for the employee and their family. This translates into the creation of societal value. The compounding effects of investing in training and skills development can eventually impact broader society, which is described by Venniker (2000) in the study on societal effects of corporate training. Here, a multiplier is used to our investment in corporate training, resulting in ASM's societal value creation of € 1,806,000 EUR in 2023.

[2] A currency converter has been applied using the average exchange rate from Dollar to Euro of January 1st, 2023, and December 31st, 2023. US-Dollar to Euro Conversion | USD to EUR Exchange Rate Calculator | Markets Insider (businessinsider.com)

Task force Climate related Financial Disclosures (TCFD)

This is our third disclosure aligning with the Task Force on Climate-related Financial Disclosures (TCFD), reflecting progress made across the company in 2023. This summary includes how ASM improved its risk and opportunity assessment related to climate change in 2023. It is structured across the four TCFD recommendations: governance, strategy, risk management, metrics, and targets.

Governance

Board-level oversight

The Management Board (MB) has final responsibility and approval of our sustainability/ ESG and environmental strategy, including climate-related matters and disclosures. The Chief Financial Officer (CFO) is the current Management Board (MB) member responsible for climate-related issues.

Board-level committees with climate-related responsibilities include the Audit Committee, which is responsible for overseeing public sustainability disclosures. The Audit Committee charter oversees the company's sustainability reporting and manages how ESG commitments impact the company's financial statements.

The company strategy is reviewed by the MB during regular business review meetings, at which sustainability matters are regularly scheduled. The Vice President of Sustainability chairs the Sustainability Leadership Council (SLC) and regularly updates the SLC's activities to the MB. In addition, the sustainability department prepares quarterly reports on ESG-relevant KPIs and shares these with the MB. Subsequently, progress/updates on the company's strategic objective of 'Accelerate Sustainability' are brought up at least twice per year in Supervisory Board meetings that the MB attends.

The MB and SB utilize governance mechanisms to consider climate-related issues within strategic business decisions on an ongoing basis. This includes a review of the annual financial budget and approval of spending aligned with our 2035 net-zero goal. They also oversee the setting of corporate targets, as well as monitoring progress against goals and targets.

Management-level

Key members of the Sustainability Leadership Council (SLC), which comprises senior leaders within the organization, typically one or two levels below the MB, oversee climate-related issues. The SLC is tasked with collaboratively defining and aligning sustainability strategies, coordinating implementation resourcing and efforts, and communicating regularly to lead an efficient, cohesive effort. Individual members of the committee are tasked with specific sustainability management. The SLC convenes at least once a month, and the Vice President of Sustainability receives updates from Council members on their management of assigned climate-related issues. The Directors of Sustainability ESG, Global Environment & Climate, and Global EHS regularly report on progress in climate-related issues to the Vice President of Sustainability, each with specific climate-related responsibilities and objectives. The Vice President of Sustainability reports directly to the CFO.

Strategy

In 2023, ASM performed an update to its initial assessment of climate-related risks and opportunities in alignment with TCFD recommendations from 2022. ASM worked with a dedicated climate consultancy to update its extensive list of climate-related risks and opportunities with additional topics that could impact our business, operations, and value chain. This included a review of physical risks in new geographies that had not been previously considered, including strategic operations and critical supplier locations, and a review of existing physical risks due to the availability of new climate data. Furthermore, ASM reviewed new transition risks and opportunities relating to ASM's Net Zero by 2035 target. Among the list of additional risks and opportunities reviewed, a shortlist was selected for qualitative climate

scenario analysis based on their potential impact on the business and high-level expert review of the potential change in climate indicators, as well as the availability of relevant climate data.

Climate-scenario analysis

ASM used the following key concepts for the scenario analysis in alignment with the TCFD. Physical risks are linked to the impact of acute risks (for example, the increased severity of hurricanes/ droughts) and chronic risks (longer-term shifts in climate patterns, for example a sustained increase in temperatures). Transition risks and opportunities linked to the impact of a transition to a low-carbon economy (for example, carbon-pricing schemes and future policy requirements on the energy efficiency of buildings). An analysis of transition risks (policy and legal, technology, market, and reputation) and opportunities (resource efficiency, energy source, products/services, and resilience) as defined by the TCFD was performed for this report.

Two climate scenarios were considered in this analysis: one for physical risks aligned to 4°C or higher warming reflecting the 'high-impact scenario', and one for transition risks and opportunities aligned to below 2°C warming, reflecting the 'rapid-transition' scenario. Three different time-horizons were evaluated for climate-related risks and opportunities: short-term (1-5 years up to 2025), medium-term (5-15 years up to 2030), and long-term (15-30 years up to 2050).

Physical risks

The first analysis in 2022 of physical risks considered ASM's operations and value chain focused on the following geographies, covering ASM's largest operational sites: United States (Phoenix, Arizona), the Netherlands, Belgium, Finland, Singapore, Korea, Japan, and Taiwan. In 2023, the updated qualitative climate-scenario analysis of physical risks assessed the following new geographies from ASM's operations and value chain, including major supplier locations for the following climate hazards:

- Italy: Heat waves, extreme temperatures, heavy precipitation, flooding, and water scarcity/drought;
- Malaysia: Heat waves, extreme temperatures, heavy precipitation, and flooding;
- United States (Central region): Water scarcity/drought;
- United States (Great Lakes region): Water scarcity/drought; and
- United States (Northeast region): Heat waves, extreme temperatures, water scarcity/ drought, and windstorms/tropical cyclones.

In addition, the following existing geographies were reassessed due to the availability of updated climate hazard data for windstorms/tropical cyclones: Japan, Republic of Korea, and Taiwan.

Early planning and actions by ASM to mitigate the above climate risks include the following:

- Heat waves/extreme temperatures: Focusing on building our green building program, incorporating designs that minimize heat island effects, maximize shading, maximize energy efficiency especially on high-performing HVAC equipment, and promote electrical system resiliency.
- Heavy precipitation/flooding: Sites planned with appropriate water-management measures incorporated, for example, structures placement, water retention/detention, rain gardens and bioswales, and hydrologic modeling to ensure management and accommodation of higher-volume storm events
- Water scarcity/drought: Site use of recycle/reclaim waters generated either onsite or offsite, reducing the need for freshwater withdrawals. Building water efficiency into site designs as part of green building program, facilities management,and energy efficiency measures.
- Windstorms/tropical cyclones: Robust site design for structures and equipment as part of green buildings program. Business continuity/contingency planning in coordination with local emergency planning groups and value chain partners.

Transition risks and opportunities

The scenario analysis for transition risks assessed the potential impact of increased stakeholder scrutiny of progress in meeting decarbonization goals. In addition to transition opportunities related to the potential of renewable-energy sourcing and the potential for increased revenue from low-carbon products and services.

Business resilience

The findings of the in-depth assessment in different scenarios, both for physical and transition risks and opportunities, are being integrated into the business strategy via our Climate Transition Plan, allowing for mitigation and/or adaptation actions that increase business resilience.

Risk management

In 2022, ASM defined a formal annual process to identify, assess, prioritize, and integrate climate-related risks and opportunities (R&Os) into ASM's enterprise risk management processes called the Climate Adaptation and Risk Opportunity Assessment (CAROA) process. The CAROA process consists of four main steps:

1. **Identification and monitoring:** The purpose is to review previously identified climate-related R&Os in the Climate Risk and Opportunity long list based on internal and external triggers. This includes identifying whether new climate-related R&Os need to be added to the long list and assessed further, and/ or determining whether existing climate-related R&O topics need to be assessed further.
2. **Assessment:** This step involves conducting climate scenario analyses to understand which climate-related risks and opportunities could be material to the business; prioritize climate-related risks and opportunities for further in-depth climate scenario analysis and business-impact assessment to quantify their potential impact for ASM's business strategy and financial planning.
3. **Prioritization:** Based on the previous step, the climate-related risks and opportunities identified as having the highest potential impact – in terms of substantive financial or strategic impact on ASM business based on materiality threshold – will be added to ASM's risk universe as part of the annual risk-management process led by the corporate risk-management team.
4. **Action planning and execution:** This step involves planning and taking appropriate actions to mitigate/manage material risks and opportunities. In addition, to reviewing business processes and controls to ensure that activities are performed and acknowledged.

The CAROA process uses the risk terminology introduced by the TCFD and presented in the Strategy section to identify, assess, prioritize, and manage climate-related risks.

Metrics and targets

In 2023, ASM's emissions-reduction targets were validated by the Science-Based Targets Initiative (SBTi) in alignment with the Paris Agreement, which includes our near- and long-term net-zero science-based emissions reduction targets. These targets are outlined in section 11.1 of the Annual Report.

In addition, ASM developed its first climate-transition plan, which outlines its progress against decarbonization targets to date, and its key strategies for transforming its business to meet our Net Zero by 2035 target and build resilience to climate-related risks and opportunities.

Sustainability-related issues including climate change are integrated into our remuneration targets through our Short-Term Incentive (STI) Plan. This STI program provides variable target bonuses based on employee-grade level and level of responsibility. Annual KPIs are set for our six corporate priorities, including 'Accelerate sustainability'. As part of the STI plan, the Management Board has sustainability related KPIs that are updated annually. Notably, for 2023, we have specifically incorporated a science-based target pathway (in line with our 2035 SBTi validated net-zero goal) as one of the performance targets within the STI program.

ASM's progress toward our targets – calculated through annual GHG footprint, and measures year-over-year emissions changes against our SBTi-approved emission-reduction pathways – is covered in section 11.1 of the Annual Report.

Next steps

We aim to continue to assess and identify any climate risks and opportunities in the future and continuously update our climate-related disclosures in line with the evolution of both our business and climate science. Our aim is to incorporate the findings from our scenario analyses, if or as applicable, into our long-term strategy, enterprise risk-management processes, and risk- mitigation planning. We strive to improve and refine our CAROA process as we did in 2023, seeking to gain a complete picture of all climate-related risks in our operations and value chain, and integrating those findings into our climate transition plan and overall company risk management process and strategy.

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