FORWARD-LOOKING STATEMENTS

In this document, we make statements concerning our beliefs, plans, objectives, goals, strategies and future events or performance, which are forward looking statements and relate to trends and events that may affect our future financial position and operating results. Terms such as “will,” “may,” “could,” “would,” “plan,” “believe,” “expect,” “anticipate,” “intend,” “project,” “target,” and similar words or expressions, as well as statements in future tense, are intended to identify forward-looking statements. Forward-looking statements should not be read as a guarantee of future performance or results and will not necessarily be accurate indications of the times at or by which such performance or results will be achieved.

Forward-looking statements are based on information available at the time they are made and/or management’s good faith belief as of that time with respect to future events and are subject to risks and uncertainties and may differ materially from those expressed in or suggested by the forward-looking statements. These risks and uncertainties include factors detailed in the reports we file with the Securities and Exchange Commission, including those described under “Risk Factors” in our most recent Annual Report on Form 10-K and our Quarterly Reports on Form 10-Q. These forward-looking statements speak only as of the date of this communication. We expressly disclaim any obligation or undertaking to disseminate any updates or revisions to any forward-looking statement contained herein to reflect any change in our expectations with regard thereto or any change in events, conditions or circumstances on which any such statement is based.

American Axle & MFG Holdings Inc - Climate Change 2023

C0. Introduction

C0.1

(C0.1) Give a general description and introduction to your organization.

As a leading global Tier 1 automotive and mobility supplier, American Axle & Manufacturing Holdings, Inc (AAM) designs, engineers and manufactures Driveline and Metal Forming technologies to support electric, hybrid and internal combustion vehicles. Headquartered in Detroit with over 80 facilities in 18 countries, AAM is bringing the future faster for a safer and more sustainable tomorrow.

AAM has established a high-efficiency product portfolio that is designed to improve axle efficiency and fuel economy through innovative product design technologies. As our customers focus on reducing weight through the use of aluminium and other light-weighting alternatives, AAM is well positioned to offer innovative, industry leading solutions. Our portfolio includes high-efficiency axles, aluminum carriers and AWD applications. AAM's lightweight axle technology features an innovative design, which offers significant mass reduction and increased fuel economy and efficiency that is scalable across multiple applications without the loss of performance or power. Our Metal Forming segment represents the largest automotive forging operation in the world, and provides engine, transmission, driveline and safety-critical components for light, commercial and industrial vehicles. We have developed advanced forging and machining process technologies to manufacture lightweight, highly precise and power-dense products. Our forged axle tubes deliver significant weight and cost reductions as compared to the traditional welded axle tubes.

As a global company, AAM is guided by a set of cultural values and strategic principles. These values and principles stress teamwork, excellence, responsibility, continuous improvement, shareholder value creation, community involvement, diversity, and respect for the environment. At their core, they also serve as a guidepost for AAM's sustainability program.

We have a sustainability mission, which is " To deliver POWER and build a safer, greener and sustainable future for our Associates, customers, communities and the environment."

Our emissions-generating activities include industrial processes such as machining, welding, forging, heat treat, coating, and assembly of automotive products. We generate direct emissions through the use of fuels such as natural gas in our processes. We generate indirect emissions through the use of electricity from outside utilities. We also indirectly generate emissions throughout our supply chain, primarily through our metals suppliers, which mostly consist of steel, iron, and aluminium. As part of our continued focus on reducing greenhouse gas (GHG) emissions, during 2021 we committed to reaching net-zero emissions by 2040 and achieved Science Based Target initiative (SBTi) validation in 2022.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data and indicate whether you will be providing emissions data for past reporting years.

Reporting year

Start date
January 1 2022

End date
December 31 2022

Indicate if you are providing emissions data for past reporting years
Yes

Select the number of past reporting years you will be providing Scope 1 emissions data for
Not providing past emissions data for Scope 1

Select the number of past reporting years you will be providing Scope 2 emissions data for
Not providing past emissions data for Scope 2

Select the number of past reporting years you will be providing Scope 3 emissions data for
1 year

C0.3

(C0.3) Select the countries/areas in which you operate.

Brazil
China
Czechia
France
Germany
India
Japan
Luxembourg
Mexico
Poland
Republic of Korea
Romania
Spain
Sweden
Thailand
United Kingdom of Great Britain and Northern Ireland
United States of America

C0.4

(C0.4) Select the currency used for all financial information disclosed throughout your response.

USD

C0.5

(C0.5) Select the option that describes the reporting boundary for which climate-related impacts on your business are being reported. Note that this option should align with your chosen approach for consolidating your GHG inventory.

Operational control

C0.8

(C0.8) Does your organization have an ISIN code or another unique identifier (e.g., Ticker, CUSIP, etc.)?

Indicate whether you are able to provide a unique identifier for your organization	Provide your unique identifier
Yes, an ISIN code	US0240611030
Yes, a Ticker symbol	NYSE: AXL

C1. Governance

C1.1

(C1.1) Is there board-level oversight of climate-related issues within your organization?

Yes

C1.1a

(C1.1a) Identify the position(s) (do not include any names) of the individual(s) on the board with responsibility for climate-related issues.

Position of individual or committee	Responsibilities for climate-related issues
Chief Executive Officer (CEO)	AAM's CEO also serves as Chairman of the Board and plays a critical role in our Sustainability Program. The Chairman and CEO has the highest level of authority and responsibility to drive operational performance that is aligned with a business strategy that includes mitigating AAM's environmental impact and leading AAM to a more sustainable future. The Chairman and CEO assigned the President the responsibility to provide quarterly reports on AAM's Sustainability Program as a regular agenda item to the Board. The President's quarterly reports to the Board cover Sustainability Program highlights and achievements, including specific steps undertaken to meet program objectives, and a progress report on quarterly environmental priorities. For example, the President's report for the fourth quarter of 2022 referenced: AAM's completion of a sustainability materiality assessment by a third-party sustainability advisor to identify and prioritize sustainability topics and initiatives; a third-party consultant conducted a Climate Scenario Analysis to identify physical and reputational risks to AAM regarding climate change; a third-party consultant conducting a Life Cycle Analysis to understand the environmental impact of our product materials and manufacturing processes; and SBTi's validation of AAM's long-term climate goals. The President also presents science-based information prepared by internal subject-matter experts and by external consultants engaged by AAM to enhance understanding of climate-related issues facing the Company. As a result, climate-related issues have become fully integrated into the Board's deliberations, decision-making and oversight role, including allocation of capital for climate-related initiatives in the annual budget approval process.
Board-level committee	The Board plays a critical role in AAM's Sustainability Program through effective oversight and responsiveness to feedback from shareholders and other stakeholders. The Board is actively engaged in overseeing AAM's Sustainability Program and receives quarterly updates from the President. The Board has delegated responsibility for oversight of AAM's Sustainability Program to the Nominating/Corporate Governance Committee. According to its charter, this Committee is responsible for oversight of Company policies, strategies and performance related to sustainability matters and corporate social responsibility. It reviews sustainability matters with management at least annually and provides updates to the full Board. During 2022, this Committee was updated on: the 2022 sustainability materiality assessment that was completed by a third party to identify and prioritize sustainability topics and initiatives; a Climate Scenario Analysis was conducted by a third-party consultant to identify physical and reputational risks to AAM regarding climate change; a Life Cycle Analysis being conducted by a third-party consultant to understand the environmental impact of our product materials and manufacturing processes, AAM's achievement of SBTi validation of our long-term climate goals, and the advancement of AAM's Operating System Module - E4, which is designed to improve the environmental impact of our global engineering and manufacturing operations. The Committee also reviewed management's assessment of AAM's 2022 top sustainability initiatives. Active engagement of the Board and its standing committees in climate-related issues continues to be a top priority for the Company, its shareholders and other stakeholders.
Board-level committee	The Audit Committee oversees the Company's overall risk management program, which includes climate risk, and key aspects of the ethics and compliance program. This Committee's charter also assigns responsibility for oversight of compliance and regulatory matters associated with these risks.
Board-level committee	The Compensation Committee structures executive compensation programs to drive performance aligned with our business strategy, including advancements in our sustainability program, a key component of which is environmental sustainability goals and initiatives, including climate topics. For 2022, the Committee updated the executive compensation program for executive officers (C-suite officers) to create a standalone component allocated to ESG/sustainability performance. The Committee determined that 10% of the annual incentive award for executive officers would be directly linked to achievement of key ESG/sustainability objectives.
Board-level committee	The Technology Committee oversees product technology with a focus on advancements in electrification, lightweighting and other key product technologies that support our customers' efforts to reduce the environmental impact of the vehicle programs we support. These advances in electrification, lightweighting, etc., are key to our transition to a 1.5 C world.

C1.1b

(C1.1b) Provide further details on the board's oversight of climate-related issues.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Scope of board-level oversight	Please explain
Scheduled – all meetings	Reviewing and guiding annual budgets Overseeing major capital expenditures Overseeing acquisitions, mergers, and divestitures Reviewing and guiding strategy Overseeing the setting of corporate targets Monitoring progress towards corporate targets Reviewing and guiding the risk management process	<Not Applicable>	The Board plays a critical role in sustainability governance through effective and engaged oversight and is responsive to feedback from shareholders. Consistent with Board responsiveness with shareholder feedback, the Board holds senior leadership accountable for sustainability performance and reporting. The Board receives quarterly sustainability updates from AAM's President. Board committees oversee topics related to their areas of responsibility and provide regular updates to the Board. In addition, proactive and ongoing engagement with our shareholders occurred throughout the year. In 2022, we contacted more than 25 of our largest shareholders and discussed ESG and sustainability topics, corporate governance, and the link between ESG performance and incentive compensation. This outreach is in addition to the ongoing communication between our shareholders, our CEO, CFO and Investor Relations team on AAM's financial performance and strategic objectives. The Board considers this feedback in making decisions about sustainability program initiatives, goal-setting and capital allocation. These decisions are described throughout this questionnaire and in the Company's 2023 proxy statement published on March 23, 2023. The Board actively oversees AAM's progress in achieving environmental goals. The President updates the Board quarterly on AAM's Sustainability Program strategy, integration into the business plan, employee and community engagement, goal setting and progress against pre-established goals, and sustainability reporting. In 2022, the President updated the Board on: the 2022 sustainability materiality assessment that was completed by a third party to identify and prioritize sustainability topics and initiatives; a Climate Scenario Analysis conducted by a third-party consultant to identify physical and reputational risks to AAM regarding climate change; a Life Cycle Analysis being conducted by a third-party consultant to understand the environmental impact of our product materials and manufacturing processes; and AAM's achievement of SBTi validation of our long-term climate goals; and the advancement of AAM's Operating System Module - E4, which is designed to improve the environmental impact of our global engineering and manufacturing operations. The Board also received reports of shareholder interest in SASB, GRI and TCFD reporting as well as AAM's CDP scores. The Board received updates on the advancement of our supplier sustainability program to include SBTi validation of our suppliers, and the launch of our sustainable procurement strategy aimed at carbon footprint reduction in our supply chain and active collaboration with customers to align with their climate-related objectives. AAM's strategy for sustainable product development and long-term success is integrated into discussions and decision-making regarding strategic business plans, annual budgets, capital allocation and risk management.

C1.1d

(C1.1d) Does your organization have at least one board member with competence on climate-related issues?

	Board member(s) have competence on climate-related issues	Criteria used to assess competence of board member(s) on climate-related issues	Primary reason for no board-level competence on climate-related issues	Explain why your organization does not have at least one board member with competence on climate-related issues and any plans to address board-level competence in the future
Row 1	Yes	Our Board believes that the most effective oversight comes from a Board that represents a diverse range of experience and perspectives that provide the collective skills, qualifications and attributes necessary to provide sound governance. The Board's composition reflects a balance of knowledge, experience, skills and diversity. The collective knowledge and experience of the Board is intended to align with the business profile of AAM as a Tier 1 supplier in the automotive industry. The desired skills and qualifications of the Board have been in the areas that enhance the effectiveness of the Board as a whole. These skills and qualifications have evolved over time to adjust to significant changes in the industry and regulatory landscape. Top skills and qualifications shown in our 2023 proxy statement include: industry experience, CEO/COO experience, international business, strategic planning, innovation and technology, financial expertise, business development, legal/regulatory, risk management and human capital management. As AAM continues to advance its sustainability focus as a strategic objective, the Board's oversight of sustainability-related matters has increased significantly. For example, to ensure alignment of the Board's capabilities with a focus on AAM's DEI strategy and initiatives, directors were asked to identify their qualifications in the area of human capital management. Based on the Chairman & CEO's review of their responses, all directors were determined to possess relevant knowledge and experience in this area (as disclosed in AAM's 2023 proxy statement). In addition, directors were asked to identify their qualifications/experience in the area of climate risk assessment. A number of directors self-identified relevant knowledge and experience in this area based on a general description of this skill as appropriate for AAM's business/risk profile. Their responses reflect the expertise developed through experience in the industry, including leadership of global manufacturing operations, risk management and innovation and technology. Inherent in these areas are climate-related issues and challenges. Competence of the Board regarding climate-related issues is regularly enhanced through regular reports of management on AAM's Environmental Sustainability Program, which include technical materials prepared by internal and external subject-matter experts.	<Not Applicable>	<Not Applicable>

C1.2

(C1.2) Provide the highest management-level position(s) or committee(s) with responsibility for climate-related issues.

Position or committee
Chief Executive Officer (CEO)

Climate-related responsibilities of this position
Managing major capital and/or operational expenditures related to low-carbon products or services (including R&D)
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Reports to the board directly

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
The CEO plays a critical role in our Sustainability Program. The CEO has the highest management-level position with authority and responsibility to drive operational performance that is aligned with a business strategy that includes mitigating AAM's environmental impact and leading AAM to a more sustainable future.

Position or committee
President

Climate-related responsibilities of this position
Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
In 2022, the President served as the Sustainability Program Lead having responsibility for guiding and directing AAM's corporate sustainability initiatives.

Position or committee
Environment/ Sustainability manager

Climate-related responsibilities of this position
Conducting climate-related scenario analysis
Monitoring progress against climate-related corporate targets
Assessing climate-related risks and opportunities

Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Corporate Sustainability/CSR reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
AAM's sustainability manager is responsible for development and execution of key corporate strategies, oversight of target achievement for corporate commitments, and sustainability reporting. AAM's sustainability manager works with the Program Channel Champions, which include leaders and subject matter experts in the areas of Environment Health & Safety (EHS), Human Resources, Legal, Procurement, Supply Chain Management, Product Development, Corporate Finance, Investor Relations and Marketing & Communications. Coordination with channel champions happens at regular monthly working group meetings, as well as throughout various projects.

Position or committee
Other committee, please specify (Policy Committee)

Climate-related responsibilities of this position
Assessing climate-related risks and opportunities
Managing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
CEO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
Quarterly

Please explain
The corporate Policy Committee, led by the CEO, is the highest-level management committee and includes the President, VP & Chief Financial Officer, VP - Human Resources, VP & General Counsel and AAM's Driveline and Metal Forming Business Unit Presidents. This committee sets policy and oversees implementation of Sustainability initiatives, including environmental and climate-related programs. The Policy Committee meets at least quarterly and receives reports on climate-related matters as a standalone topic or as climate related issues that are integral to decision-making about Company-wide policy directives.

Position or committee
Risk committee

Climate-related responsibilities of this position
Assessing climate-related risks and opportunities

Coverage of responsibilities
<Not Applicable>

Reporting line
Finance - CFO reporting line

Frequency of reporting to the board on climate-related issues via this reporting line
Annually

Please explain
The formal risk management process begins with the Risk Management Working Group (RMWG) with the purpose of identifying, quantifying, and mitigating risks not related to day-to-day operations that could impair AAM's ability to accomplish business objectives. This cross-functional, executive-level group meets 6-8 times per year (or more as required) to study and identify the top ten risks to the business. These top ten priorities are then reviewed by the Policy Committee as well as the Board of Directors.

C1.3

(C1.3) Do you provide incentives for the management of climate-related issues, including the attainment of targets?

	Provide incentives for the management of climate-related issues	Comment
Row 1	Yes	The Compensation Committee designed AAM's annual incentive program for executive officers to include a strategic component that emphasizes the importance of the attainment of our priorities that support AAM as a premier global Tier 1 automotive supplier. For 2022, the committee created a standalone component to this program that is directly allocated to AAM's ESG/sustainability performance. The Committee determined that 10% of the annual incentive award for executive officers is directly linked to achievement of key ESG/sustainability objectives. Pay opportunities for executive officers under this program are measured, in part, by the Company's progress in the areas of ESG, including environmental goal attainment. In 2022, the Company added a sustainability element to the 2022 annual incentive program for salaried associates worldwide to further drive sustainability performance throughout the organization.

C1.3a

(C1.3a) Provide further details on the incentives provided for the management of climate-related issues (do not include the names of individuals).

Entitled to incentive
Corporate executive team

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Progress towards a climate-related target

Incentive plan(s) this incentive is linked to
Short-Term Incentive Plan

Further details of incentive(s)
For 2022, in response to shareholder feedback, the Compensation Committee created a standalone component to this program that is directly allocated to AAM's ESG/sustainability performance. The Committee determined that 10% of the annual incentive award for executive officers is directly linked to achievement of key ESG/sustainability objectives. The Committee recognized progress made on ESG objectives (including climate-related goals) in determining the amount of the 2022 annual bonus for the CEO and other Executive Officers. Participants in the AAM Executive Officer Incentive Compensation Program included the CEO, President, VP & CFO, VP-Human Resources, VP & General Counsel and the Driveline and Metal Forming Business Unit Presidents.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
Inclusion of the ESG/sustainability component in the annual incentive program directly aligns incentive pay with meaningful advancements in our sustainability program, including our climate commitments.

Entitled to incentive
Other, please specify (Salaried Associates eligible for the AAM Annual Incentive Program)

Type of incentive
Monetary reward

Incentive(s)
Bonus - % of salary

Performance indicator(s)
Progress towards a climate-related target

Incentive plan(s) this incentive is linked to
Short-Term Incentive Plan

Further details of incentive(s)
To further drive sustainability performance throughout the organization, in 2022 the Company added a sustainability element to the 2022 annual incentive program for salaried associates worldwide.

Explain how this incentive contributes to the implementation of your organization's climate commitments and/or climate transition plan
Inclusion of the sustainability component in the annual incentive program directly aligns incentive pay with meaningful advancements in our sustainability program, including our climate commitments.

C2. Risks and opportunities

C2.1

(C2.1) Does your organization have a process for identifying, assessing, and responding to climate-related risks and opportunities?
Yes

C2.1a

(C2.1a) How does your organization define short-, medium- and long-term time horizons?

	From (years)	To (years)	Comment
Short-term	0	2	Short-term is defined as the budget period from now through next year.
Medium-term	2	5	AAM develops long-range plans that cover from 2 years until 5 years into the future.
Long-term	5	10	AAM monitors trends over the long term beyond the 5-year planning horizon to identify issues that may impact us in the long term.

C2.1b

(C2.1b) How does your organization define substantive financial or strategic impact on your business?

AAM determines whether an issue constitutes substantive financial or strategic risk through our Enterprise Risk Management (ERM) Process. Potential risks are defined within the domains of Strategic, Operational, Financial and Compliance impacts and the level of risk is assessed. This is done to determine the immediacy of any required mitigation action. Subsequently, definition of risks and impacts could be quantitative or qualitative depending on the nature of the issue – the ERM process ensures that all aspects are considered so that risk thresholds can be considered for each of those issues independently. This approach avoids calculating one blanket quantitative dollar value that defines substantive impact. The combination of risk severity, quantitative or qualitative impact, and current risk management capabilities determines an appropriate mitigation strategy.

Strategic concerns consider circumstances such as: failure to replace core business, failure to attract and retain key talent, customer dependency and climate-related risks. Operational impacts may include cyber security risk, supply chain disruptions and pandemics. Financial considerations include fiscal crisis or severe financial downturns as well as significant increases in commodity costs. Compliance risks include an assessment of AAM's ability to comply with financial, environmental, or other regulated subjects within our own internal operating systems. Climate-related impacts is one of the top 10 list of risks to be evaluated through the ERM process, and has been since 2021. Specifically, high- and low-carbon scenarios are evaluated to determine climate, weather, or economic impacts that could affect our supply chain, our ability to deliver product, or our ability to achieve new carbon emission goals without significant financial impact.

C2.2

(C2.2) Describe your process(es) for identifying, assessing and responding to climate-related risks and opportunities.

Value chain stage(s) covered
Direct operations
Upstream
Downstream

Risk management process
Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment
More than once a year

Time horizon(s) covered
Short-term
Medium-term
Long-term

Description of process
AAM applies the Enterprise Risk Management (ERM) process to define substantive financial and strategic risks within our business, as well as upstream (suppliers) and downstream (customers) in our value chain. This framework also supports the Board's oversight of risk management (as disclosed in AAM's 2023 Proxy Statement) with a focus on the most significant risks facing the Company in the short-, medium-, and long-term. AAM's comprehensive risk management process is led by top management, structured and based on standards, executed in an environment of strong internal controls and rigorous compliance processes.

The AAM Board of Directors believes that effective internal controls and risk management processes are essential for achieving shareholder value. The Board's risk oversight process builds upon management's risk assessment and mitigation processes, which include an enterprise risk management program, regular internal management disclosure and compliance committee meetings. In addition, a global ethics and compliance program and comprehensive internal audit processes are included. The Board implements its risk oversight function both as a full Board and through delegation to Board committees, which regularly report to the Board.

The formal risk management process begins with the Risk Management Working Group (RMWG), the purpose of which is to identify, quantify, and mitigate risks not related to day-to-day operations that could impair AAM's ability to accomplish business objectives. This multi-disciplinary, executive-level group of experts meets 6-8 times per year (or more as required) to identify the top risks to the business, which are then reviewed by both the executive Policy Committee as well as the Audit Committee, as part of the Board of Directors. The group brings forth risks within their respective areas of expertise pertaining to strategic, operational, financial, or compliance risks. The RMWG determines whether an issue constitutes substantive financial or strategic risk through our Enterprise Risk Management (ERM) Process. The group defines the risks, identifies potential root causes, assesses exposure impact, assesses management capabilities, defines the basis for the management strategy going forward, and establishes a monitoring process. Potential risks are defined and are placed into three exposure risk categories: high risk, medium risk, or low risk. Within the risk evaluation process, time horizons are also established to determine if issues are short-term or long-term concerns. This is done to determine the immediacy of any required mitigation action. Subsequently, definition of risks and impacts could be quantitative or qualitative depending on the nature of the issue – the ERM process ensures that all aspects are considered so that risk thresholds can be considered for each of those issues independently. All determinations are made through a discussion and consensus process. This approach avoids calculating one blanket quantitative dollar value that defines substantive impact. AAM evaluates business and industry risks in four main categories: strategic, operational, financial, and compliance. Strategic concerns consider circumstances such as: failure to replace core business (downstream stage), failure to attract and retain key talent, political risk, customer dependency and climate-related risks. Operational impacts may include cybersecurity risk, supply chain disruptions (upstream stage) and pandemics. Financial considerations include fiscal crisis or severe financial downturns as well as significant increases in commodity costs (upstream stage). Compliance risks include an assessment of AAM's ability to comply with financial, environmental, or other regulated subjects within our own internal operating systems.

Climate-related risk is one of the top 10 list of risks to be evaluated through the ERM process, and has been since 2021. A Climate Scenario Analysis was conducted in 2022 with the help of a third-party consultant. Potential risks, opportunities, and mitigation actions were identified under both high and low carbon scenarios. These scenarios could impact areas such as AAM's supply chain resiliency, technological challenges, and operational costs. With proper mitigation strategies in place, we do not anticipate significant financial impact in the short- and long-term.

Mitigation of identified risks in direct operations are embedded throughout the Company in systems, policies and procedures and are managed at plant, business unit and enterprise levels, depending on the risk topic. The foundation of our internal systems is known as the AAM Operating System (AOS), which includes sub-systems in each of the functional areas of the business (e.g., our Q4 Quality Management System, S4 Safety System, SCM4 Global Supply Chain Management System). Each of these systems includes processes designed to identify, assess, and mitigate issues within that functional area.

In recognition of climate-related responsibilities and risk, our E4 System, a key part of the AAM Operating System, has been implemented with the goal of meeting our stated environmental, emissions and energy goals. This program has enhanced awareness and performance standards throughout the organization with responsibilities ranging from corporate to regional and plant levels. In 2022, the E4 System was updated to include Waste Systems and Water Systems assessments.

In addition to operating matters, AAM evaluates strategic risks related to climate-related regulations and business trends through our strategic and technology committees and other business practices.

As an example of how we address our downstream risk, we have responded to the trend toward vehicle electrification and continue to invest in R&D related to technology and product development to support future vehicle platforms and programs. In 2022, approximately 70% of our R&D spend was on sustainability-focused projects.

One example of how we address our upstream risk is through our Supplier Sustainability Program. The purpose of this program is to ensure that all members of our supply chain are striving to meet the same standards, targets, and risk mitigation processes as AAM. AAM's Supplier Sustainability Council includes a group of our top 20 suppliers (as measured by emissions contribution) that meets quarterly to collaborate on key climate-related issues. In 2022 we covered topics such as science-based targets and materiality assessments.

C2.2a

(C2.2a) Which risk types are considered in your organization's climate-related risk assessments?

	Relevance & inclusion	Please explain
Current regulation	Relevant, always included	Our operations are subject to various federal, state, local and foreign laws and regulations governing, among other things, emissions to air, discharge to waters and the generation, handling, storage, transportation, treatment, and disposal of waste and other materials. We subscribe to an international regulatory monitoring platform that informs AAM of all local and regional regulations worldwide and allows us to track compliance to those regulations in each of the facilities we operate. We believe that our current and former operations and facilities have been, and are being, operated in compliance in all material respects with such laws and regulations, many of which include substantial fines and criminal sanctions for violations. The operation of our manufacturing facilities involves risks in these areas, however, with no assurance that we will prevent material costs or liabilities. For example, according to the EPA, with greenhouse gas emissions from transportation accounting for 28% of the total U.S. greenhouse gas emissions in 2021, any climate regulations are especially relevant to AAM. In Europe, we are subject to carbon taxes on our fuel consumption to support our processes and to heat our plants. Any regulations that require minimum fleet emissions standards of the OEMs (i.e., our customers) affect our operations as well, driving us towards supporting our customers' electric vehicle (EV) programs. We have made, and anticipate continuing to make, capital and other expenditures to comply with environmental requirements at our current and former facilities
Emerging regulation	Relevant, always included	Potentially significant expenditures could be required to comply with evolving environmental, health and safety laws, regulations or other pertinent requirements that may be adopted or imposed in the future by governmental authorities. Europe has formally approved a law to effectively ban the sale of new gas and diesel cars in the European Union after 2035, aiming to speed up the transition to electric vehicles and to combat climate change. Canada has recently unveiled a 2030 emissions reduction plan, including mandating 20% zero-emission light duty vehicle sales starting in 2026, scaling to 100% by 2035. Such emerging regulation affects vehicle manufacturer (also known as OEM or Original Equipment Manufacturer) and supplier planning and development in the short, medium, and long term. In response, we dedicated approximately 70% of our R&D/engineering budget in 2022 to sustainability-focused projects and will continue to devote our developmental spending commensurate to market needs. We subscribe to an international regulatory monitoring platform that informs AAM of all local and regional regulations worldwide and allows us to track compliance to those regulations in each of the facilities we operate.
Technology	Relevant, always included	Our results of operations and financial condition are impacted, in part, by our competitive advantage in developing, engineering, and manufacturing innovative products. Our market competitiveness may be significantly impacted by our ability to: anticipate changes in technology; successfully develop, engineer and bring to market new and innovative proprietary products; and successfully respond to evolving business models, including electric vehicle advances. If we are unable to maintain our competitive advantage through innovation, or if we do not sustain our ability to meet customer requirements relative to technology, there could be a material adverse effect on our results of operations and financial condition. As described above, the global landscape is rapidly changing in favor of electric vehicles (EVs) over internal combustion engine (ICE) vehicles. In 2022, we dedicated ~70% of our R&D/engineering budget on sustainability-focused projects, including electrification. EV products currently make up 40% of our $725 million gross new business backlog, and at any given time, we are bidding ~$1.5 billion in new business, of which two-thirds is for EV-related programs. If our engineering innovation does not manage to keep up with customer requirements, we risk losing significant business and becoming irrelevant in the market.
Legal	Relevant, always included	This risk type is currently most applicable in terms of exposure to lawsuits in relation to environmental compliance within our operations. We are subject to various federal, state, local and foreign environmental regulations, including those regulating air emissions, water discharge, waste management and environmental clean-up. AAM assesses the risk of material litigation related to climate change by reviewing threatened or asserted claims against us and monitoring market trends and developments in litigation and regulation. Based on this process, AAM has not identified material litigation risks related to climate change applicable to the company. We continue to evaluate the risk of potential climate-related litigation and will update disclosures in future filings if the risk and potential impact of such litigation is deemed to be material.
Market	Relevant, always included	The markets in which we compete are highly competitive. Our competitors include the in-house operations of certain vertically integrated OEMs, as well as many other domestic and foreign companies possessing the capability to produce some or all the products we supply. In addition to traditional competitors in the automotive sector, the trend towards advanced electronic integration and electrification has increased the level of new market entrants, including technology companies. Some of our competitors are affiliated with OEMs and others could have economic advantages as compared to our business, such as patents, existing underutilized capacity and lower wage and benefit costs. Technology, design, quality, delivery, and cost are the primary elements of competition in our markets. As a result of these competitive pressures and other industry trends, OEMs and suppliers are developing strategies to reduce costs. These strategies include supply base consolidation, OEM in-sourcing and global sourcing. Further, some traditional automotive industry participants are developing strategic partnerships with technology companies as each party seeks to leverage the existing customer relationships and technical knowledge of the partner and expedite the development and commercialization of new technology. Our business may be adversely affected by increased competition from suppliers benefiting from OEM affiliate relationships or financial and other resources that we do not possess. Our business may also be adversely affected if we do not sustain our ability to meet customer requirements relative to technology, design, quality, delivery, and cost. Some additional market risks have been discussed above in association with other risks.
Reputation	Relevant, always included	Our hard-earned reputation for excellence in our products, people and operations is integral to our long-term success. With our cultural values and strategic principles as a foundation, AAM associates are expected to act according to the highest standards, which is necessary to uphold AAM's reputation of integrity and excellence. With the awareness of manufacturing impacts on the climate and environment, there is a growing expectation for mitigating actions up and down the manufacturing value stream to align with the UN Sustainable Development Goals and with a 1.5-degree Celsius world. Alignment with these goals is not only driven by the public-at-large, but also by AAM's stakeholders, including investors and customers. Lack of alignment in our climate-related targets with any of these groups could cause a serious issue for our Company's reputation. A deterioration in perception could negatively impact AAM's ability to win new business, acquire access to financing, and attract new talent to the operations. In support of our stakeholder expectations, AAM has established policies and measurable targets that align us with industry-wide goals. In 2022, AAM was among the first Tier 1 automotive suppliers to have net-zero emissions targets validated by SBTi, demonstrating our ongoing drive toward leadership in environmental sustainability, and our commitment to improving ourselves and our supply base. Along with committing to achieve net-zero emissions by 2040, we committed to purchasing 100% renewable energy in the U.S. by 2025. We have also communicated our focus on the preservation of water supply and quality, as well as our target to be zero waste-to-landfill by 2035. Together, our long-term goals and annual results show our ambition to protect the environment at large. We are fully committed to being environmentally responsible for the well-being of the communities in which we operate. Over the past four years, we have submitted CDP Climate Change responses with improvement from an initial score of C to an A-.
Acute physical	Relevant, always included	Natural disasters or extreme weather conditions that occur as a result of global climate change could lead us, our customers or suppliers to experience significant disruptions in operations or availability of key components, which could lead to a material adverse impact on our results of operations and financial condition. Possible examples might include flooding due to stronger monsoons at our Asian plants, tornado strikes at our Midwest U.S. plants, or other catastrophic events striking our supply chain. Such potential events are considered within our risk assessment process. To define our acute physical risk and further evaluate AAM's preparedness, in 2022 we worked with an external consultant to model the significant climate and weather-related conditions that may most impact AAM. Heatwaves, winter storms and heavy precipitation were identified as potential disruptions to both AAM's operations and supplier operations. Specifically, an example is AAM's operations in Mexico. Mexico could be exposed to intense heatwaves, and AAM facilities require that temperatures be maintained to protect Associates as well as precision machines and tools that are temperature sensitive. Additionally, Mexico could be exposed to heavy precipitation that could lead to flooding, requiring additional preventative and regular maintenance to prevent flooding. In our supply chain, locations could be exposed to unusual winter storms and other acute events that could impact operating costs and increase supply chain disruptions. These potential acute-physical risks are considered in our Enterprise Risk Management process that guides our strategic planning and mitigation actions.
Chronic physical	Relevant, always included	Chronic environmental conditions that occur as a result of global climate change could lead us, our customers or suppliers to experience significant disruptions in operations or availability of key components. This could lead to a material adverse impact on our results of operations and financial condition. To define our chronic physical risk and further evaluate AAM's preparedness, in 2022, we worked with an external consultant to model the significant climate and weather-related conditions that may most impact AAM. The results of this Climate Scenario Analysis identified water stress, changing temperatures and rising sea levels as the three primary potential chronic physical risks. With many AAM manufacturing plants being in warm climate regions, an increase in average temperatures could result in higher energy costs. Similar to our response to acute physical risk, many of AAM's processes depend on constant temperatures being maintained within the plants. AAM operates in regions that experience water stress. Water stress has the potential to disrupt operations if sufficient water is unavailable for both manufacturing and associate health and safety. Capital costs could be incurred to mitigate these risks. Like many companies, AAM's supply chain relies on ports which are already under capacity in the U.S. If rising sea level impact ports, AAM's supply chain could be disrupted, causing delays and loss in productivity. All of these chronic physical risks are considered in our Enterprise Risk Management process that guides our strategic planning and mitigation actions.

C2.3

(C2.3) Have you identified any inherent climate-related risks with the potential to have a substantive financial or strategic impact on your business?

Yes

C2.3a

(C2.3a) Provide details of risks identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Risk 1

Where in the value chain does the risk driver occur?
Downstream

Risk type & Primary climate-related risk driver

Market	Changing customer behavior

Primary potential financial impact
Decreased revenues due to reduced demand for products and services

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
The trend toward advanced electronic integration and electrification of vehicles continues to expand, driven by a shift in focus by certain OEMs toward battery and hybrid electric vehicles, government regulations related to emissions, and consumer demand for greater vehicle performance, enhanced functionality, reduced environmental impact, and affordable convenience options. GM plans to eliminate tailpipe emissions from new U.S. light-duty vehicles by 2035. Electric vehicles are expected to account for half of Ford's sales by 2030. By 2030, all-electric vehicles are expected to make up more than half of the BMW Group's total deliveries. The European Union has approved a ban on the sale of gasoline and diesel cars from 2035 on, closing an entire continent and an entire market to the sale of internal combustion-powered vehicles as of that date. In addition to traditional competitors in the automotive sector (e.g., the in-house operations of many vertically integrated OEMs, other companies with the ability to produce some or all of the products we supply), this trend toward advanced electronic integration and electrification of vehicles has increased the level of new market entrants, including technology companies. Some of our competitors are affiliated with OEMs and others could have economic advantages compared with our business, such as scale of operations, patents, existing underutilized capacity, and lower wage and benefit costs. Technology, design, quality, delivery and cost are the primary elements of competition in our markets. As a result of these competitive pressures and other industry trends, OEMs and suppliers are developing strategies to reduce costs. These strategies include supply base consolidation, as well as in-sourcing, vertical integration and global sourcing by OEMs. Further, some traditional automotive industry participants are developing strategic partnerships with technology companies as each party seeks to leverage the existing customer relationship and technical knowledge of the partner, and expedite the development and commercialization of new technology. Our business may be adversely affected by increased competition from suppliers benefitting from OEM affiliate relationships or financial and other resources that we do not possess. Our business may also be adversely affected if we do not sustain our ability to meet customer requirements relative to technology, design, quality, delivery and cost.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Medium-high

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
EV products make up 40% of our $725M gross new business backlog, and at any given time, we are bidding ~$1.5 B in new business, two-thirds of which is EV-related.

Cost of response to risk

Description of response and explanation of cost calculation
The vehicle market is transitioning from ICE vehicles to electric vehicles. AAM has positively reacted to meet the expectations of our customer base to put appropriate resources and capital behind the development of eDrive systems (convert electricity into power in drive systems of electric vehicles) that serve the market and support the achievement of global emissions and sustainability goals. Working closely with customers, AAM is developing product strategies that consider technology relevance as well as short, medium and longer-term products for development that meet OEM expectations for technology, cost and performance, and for products that reduce emissions, improve fuel economy, and support vehicle electrification. This is expected to ramp up into the foreseeable future as the EV transition accelerates. AAM has developed next-generation electric drive units that target best-in-class improvements in mass efficiency, volumetric efficiency, power density, and reduction in power loss (vs. the industry benchmark). The power-dense and compact electronic drive units (EDUs) have the potential to improve an electric vehicle's range – further helping EVs create a carbon footprint advantage over ICE vehicles. This innovative technology is segment-agnostic, enabling our products to power EVs for a variety of market segments. Our next generation 3-in-1 EDU combines the motor, inverter and gearbox into the most power-dense system in the industry. The e-Beam axle for light-duty trucks uses our next-generation e-Drive systems. We developed unique cooling methods to allow the high-speed and power-dense e-Machine to deliver sustained peak power levels. AAM is working hard to stay on the leading edge of technology, support our customers on current electric vehicle programs, and secure new programs. Based on our competitive market benchmarking and feedback from OEMs, we expect high interest in our electric driveline systems from both existing and potential new customers. New business related to our electrification technologies represents a growing portion of our new business backlog as well as quoting and emerging new business opportunities. EV products make up 40% of our $725M gross new business backlog, and at any time, we are bidding ~$1.5 B in new business, two-thirds of which is EV-related. The cost of the response is represented by the CAPEX associated with our primary EV programs in our $725 million gross new business backlog.

Comment

Identifier
Risk 2

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Heat stress

Primary potential financial impact
Increased capital expenditures

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Increasing temperatures were identified as a chronic-physical risk, based on the regions where we operate. Heat stress has the potential for multiple impacts on our operations. Increased temperatures may affect the habitability of our facilities, a number of which are already located in regions of high temperature such as Mexico and India, unless they are modified to provide cooling capability, which would result in increased capital expenditures. In addition, increased temperatures may also affect product quality in terms of maintaining part tolerances. AAM has invested in temperature-controlled environments for all operations to protect precision machines and tools that are temperature sensitive.

Time horizon
Medium-term

Likelihood
Very likely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
Heat stress may have multiple impacts on our operations. Increased temperatures may affect the habitability of our facilities, some which are located in regions of high temperature such as Mexico and India, unless they are modified to provide cooling capability, which would entail increased capital expenditures. Increased temperatures may also affect product quality in terms of maintaining part tolerances. Core to our business is the forming and machining of cast iron, steel, and aluminum products. AAM has invested in temperature-controlled environments for all operations to protect precision machines and tools that are temperature sensitive. AAM has an embedded corporate Facilities Engineering group that evaluates every plant for proper air quality and suitable manufacturing environment on an annual basis. CAPEX budgets are then developed to address any actual or forecasted issues. Typical facility spending on these types of issues tend to range from 1-3% of individual facility revenue. Climate change requiring additional spending will negatively impact the economics and financial viability of each of those facilities. The AAM approach to mitigating this hazard would be to protect those personnel and specific operations affected by heat stress. Specific responses might include isolation of key processes with conditioning of that space, installation of large fans, airflow adjustments, building envelope improvements, and conditioning of entire facilities. Typically, systems to abate heat rise in a standard operational department cost between $400K and $750K to isolate and provide appropriate HVAC systems. Depending on the geographic location, size of facility, number of heat-sensitive processes and people, costs would be a multiple of those base numbers.
For our balance shaft products in Mexico, we constructed a climate-controlled environment to ensure that the required tight tolerances for the parts were maintained in view of the wide temperature swings in that environment, which will only be exacerbated by climate change.

Comment

Identifier
Risk 3

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Chronic physical	Water scarcity

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Water stress was identified as an area of physical chronic risk, as some of our facilities (including some of our highest production facilities, such as those located in Mexico) are located in regions that are in danger of water stress/scarcity in the medium-to-long term. Water availability has a dual role in our operations in terms of supporting both the habitability of our facilities as well as supporting our manufacturing processes. AAM has a diverse number of processes that use water as an integral part of coating and washing our products as well as cooling our facilities and process equipment. Specifically, we use water in our finished product paint process and in our component washing processes to remove particulates and residue in preparation for follow-on processes. In addition, water is the primary method of cooling our high-energy processes in our metal forming division (forging presses, etc.). Restrictions in water supply, or complete absence, could shut down processes and facilities that

depend on it. In addition, we may not be able to provide potable water for drinking, sanitation, and hygiene, thus forcing us to shut down our facilities. If we cannot operate our facilities to provide our products to our customers, they may not be able to produce their vehicles, thus reducing our revenues due to lack of sales. In addition to disrupting operations, incremental capital expenditures may be required to respond to / or mitigate these risks.

Time horizon
Long-term

Likelihood
More likely than not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
Water availability has a dual role in our operations in terms of supporting both the habitability of our facilities as well as supporting our manufacturing processes. AAM has a diverse number of processes that use water as an integral part of coating and washing our products as well as cooling our facilities and processes. Any cause of water stress, such as climate change, that affects the availability of water is a risk to our operations. In 2022, a water risk assessment was performed using the WRI Aqueduct Risk Atlas, resulting in ratings for each of our facilities for water risk ranging from Low to Extremely High. Currently, 12 of our facilities located in areas of water scarcity according to WRI models, defined as having a water risk of high and extremely high. This equates to ~20% of our facilities that are identified as being located in watersheds that are currently experiencing water stress, primarily in India and Mexico. We have taken steps to ensure safe water supply in those areas to include reduction of consumption, establishment of sufficient well capacity, and contracts to bring in water from other regions from bulk suppliers. We are tracking metrics meant to preserve the quality and integrity of our surrounding water supply. This includes ensuring that we have no incidents of contamination, spills or non-compliance to local regulations concerning water, and impose no burden on local water supplies that would result in any incidents of water scarcity either for our facilities or the communities in which we operate.

Comment

Identifier
Risk 4

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Cyclone, hurricane, typhoon

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Increasing temperatures were identified as a potential acute-physical risk, based on the regions where we operate. A number of our facilities are located in regions that are susceptible to acute physical risks, such as cyclones (India, Southeast Asia), hurricanes (Mexico), or tornados (Midwest United States). These storms could be more frequent and of greater intensity as the effects of climate change increase. Some of these facilities in these locations are vital to our production capacity and would have significant impacts to our revenue streams if forced to shut down due to severe damage from any such storm.

Time horizon
Short-term

Likelihood
About as likely as not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
A number of our facilities are located in regions that are susceptible to cyclones (India, Southeast Asia), hurricanes (Mexico), or tornados (Midwest United States). Some of these facilities are vital to our production capacity and would have significant impacts to our revenue streams if forced to shut down due to severe damage from any such storm, which are likely to be more frequent and of greater intensity as the effects of climate change increase.
In 2022, we worked with an external consultant to model the significant climate and weather-related conditions that may most impact AAM. The goal was to understand these scenarios in detail relative to our manufacturing footprint and supply base. The information from the Climate Scenario Analysis is fed into our Enterprise Risk Management process to guide our strategic planning and mitigation actions. AAM Global Facilities team completes facility assessments where a corporate subject matter expert assesses the site utilizing a standardized company-wide assessment approach. As site needs are discovered, we complete studies where appropriate, manage capital plans accordingly, and implement projects. Additionally, AAM strives to effectively plan for emergency weather events. Where we cannot fully prevent the effects of catastrophic events, we can plan our processes to be rebalanced and distributed to other facilities, utilizing supplier and labor relationships we have in place to minimize the impact to our customers.

Comment

Identifier
Risk 5

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Reputation	Increased stakeholder concern or negative stakeholder feedback

Primary potential financial impact
Other, please specify (Impact to reputation)

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
With the awareness of manufacturing operations impacts on the climate and environment, there is a growing expectation for mitigating actions up and down the manufacturing value stream to align with UN goals and a 1.5 degree Celsius world. Alignment with these goals is not only driven by the public-at-large, but also by AAM's stakeholders, including investors and customers. Lack of alignment in our climate-related targets with any or all of these groups could cause a serious issue for our company's reputation. A deterioration in perception could negatively impact AAM's ability to win new business, acquire access to cost effective financing, and attract and retain talent to the operations.

Time horizon
Short-term

Likelihood
Unlikely

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
With the awareness of manufacturing operations impacts on the climate and environment, there is a growing expectation for mitigating actions up and down the manufacturing value stream to align with UN goals and a 1.5 degree Celsius world. Alignment with these goals is not only driven by the public-at-large, but also by AAM's stakeholders, including investors and customers. Lack of alignment in our climate-related targets with any of these groups could cause a serious issue for our company's reputation. A deterioration in perception could negatively impact AAM's ability to win new business, acquire access to cost-effective financing, and attract and retain talent to the operations.
In support of our stakeholder expectations, AAM has established policies and measurable targets that align us with industry-wide goals. In 2021 AAM performed extensive benchmarking and target analysis studies with the help of recognized experts. In our 2021 Sustainability Report we communicated those goals in terms of emissions, energy, and waste, including our commitments to be a net-zero carbon operation by the year 2040 and utilize 100% renewable energy globally by 2035. Also, our focus on the preservation of water supply and quality, as well as our target to be zero waste-to-landfill by 2035 show our ambition to protect the environment at large and align with our stakeholder expectations. AAM submitted to the SBTi and received validation of our GHG emissions targets in 2022. We continued to reinforce our stakeholder engagement in 2022 by partnering with an external consultant to perform a Materiality Assessment. The process included feedback from global external and internal stakeholders. The results of this assessment have allowed for further prioritization of material topics deemed relevant to stakeholders and the business. Along with the Materiality Assessment, we engaged our stakeholder groups during 2022 through a series of events and channels: ongoing supplier engagement through our quarterly Supplier Sustainability Council meetings; employee feedback through a Global Engagement Survey (with over 500,000 data points obtained); outreach to more than 25 of our largest shareholders (representing 72% of outstanding shares) led by our CFO and Investor Relations Director. At AAM, we are fully committed to understanding our stakeholder expectations and continuing our focus on environmental responsibility.

Comment

Identifier
Risk 6

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Heavy precipitation (rain, hail, snow/ice)

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Heavy precipitation was identified as an acute-physical risk, based on the regions where we operate. Regions, such as Mexico, are exposed to heavy and extreme precipitation. AAM's drainages and roofing must be regularly maintained to prevent plant flooding, and disruption to operations. Some of these facilities are vital to our production capacity and would significantly impact our revenue streams if operations were disrupted or forced to shut down due to severe flooding. This situation could be more frequent and of greater intensity as the effects of climate change increase.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Heavy precipitation was identified as an acute-physical risk, based on the regions where we operate. Regions, such as Mexico, are exposed to heavy and extreme precipitation. AAM's drainages and roofing must be regularly maintained to prevent plant flooding. Some of these facilities are vital to our production capacity and would have significant impacts to our revenue streams if operations were disrupted or forced to shut down due to severe flooding which could be more frequent and of greater intensity as the effects of climate change increase. This acute-physical risk is considered in our Enterprise Risk Management process that guides our strategic planning and mitigation actions.

Comment

Identifier
Risk 7

Where in the value chain does the risk driver occur?
Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Storm (including blizzards, dust, and sandstorms)

Primary potential financial impact
Decreased revenues due to reduced production capacity

Climate risk type mapped to traditional financial services industry risk classification
<Not Applicable>

Company-specific description
In 2022, AAM worked with an external consultant on a Climate Scenario Analysis to model the significant climate and weather-related conditions that may most impact AAM. Winter storms were identified as an acute-physical risk, based on the regions where we operate. As the effects of climate-change continue to intensify, unusual winter storms, such as the storms in Texas (in the U.S.) in 2021, may become more common. Storms such as these could impact suppliers' ability to meet AAM's demand schedule, as well as the gasoline supply into northern Mexico. Some of these facilities are vital to our production capacity and could have significant impacts to our revenue streams if there were significant disruptions to our operations.

Time horizon
Short-term

Likelihood
More likely than not

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The impact has not been quantified financially.

Cost of response to risk

Description of response and explanation of cost calculation
As the effects of climate-change continue to intensify, unusual winter storms, such as the storms in Texas (in the U.S.) in 2021, may become more common. Storms such as these could impact suppliers' ability to meet AAM's demand schedule, as well as the gasoline supply into northern Mexico. Some of these facilities are vital to our production capacity and could have significant impacts to our revenue streams if there were significant disruptions to our operations. A significant or prolonged shortage of critical components from any of our suppliers, particularly those who are sole sources, without an ability to procure the components from other sources could impact our ability to meet our production schedules for some of our key products and to ship such products to our customers in a timely fashion. This could adversely affect our sales, profitability and customer relations. Acute-physical risks are considered in our Enterprise Risk Management process that guides our strategic planning and mitigation actions.

Comment

C2.4

(C2.4) Have you identified any climate-related opportunities with the potential to have a substantive financial or strategic impact on your business?
Yes

C2.4a

(C2.4a) Provide details of opportunities identified with the potential to have a substantive financial or strategic impact on your business.

Identifier
Opp1

Where in the value chain does the opportunity occur?
Upstream

Opportunity type
Energy source

Primary climate-related opportunity driver
Use of lower-emission sources of energy

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
In order to reduce our long-term impact to the environment and to satisfy the sustainability-related requirements of our customers, AAM has established targets to increase our amount of renewable or carbon-free energy. This focus is in support of our near- and long-term climate goals and the significant increase our efficient use of energy. Making significant progress and achieving these targets will cement AAM's reputation as a company that values sustainability. This is likely to increase the likelihood of increasing revenues from customers with similar values. Procurement of lower-emission sources of energy, either renewable or carbon-free, will allow AAM to make significant progress toward the reduction of our Scope 2 emissions and our target of 100% renewable energy. Achievement of this opportunity keeps us eligible for new business, as many customers such as Volvo and BMW are emphasizing commitments to 100% renewable energy as a condition for new business. AAM has also made a commitment to be 100% renewable in the U.S. by the end of 2025, this aligns with the global ambitions of our customers.

Time horizon
Medium-term

Likelihood
Virtually certain

Magnitude of impact
Medium

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
The potential financial impact figure has not been quantified.

Cost to realize opportunity
3027000

Strategy to realize opportunity and explanation of cost calculation
Purchases of renewable energy are integral to our climate strategy and the achievement of our published corporate targets, as well as our performance relative to sales with OEMs with similar values of sustainability. AAM will increase its purchases of renewable energy and/or clean power incrementally until we reach our targets of 100% renewable energy in the U.S. by 2025 and worldwide by 2035. In 2022, we increased our percentage of clean power for our U.S. facilities to 46%, surpassing our plan of 40%. We expect to increase our percentage of clean power for our U.S. facilities to 43% in 2023, 57% in 2024, and 100% in 2025. AAM reviews energy contracts annually and is choosing energy sources leveraging renewable energy methods. This includes renegotiation of contracts based on criteria weighted toward energy suppliers that offer renewable energy credits to AAM as opposed to just assessing based on absolute cost. For example, in 2019 we began to partner with our energy suppliers to increase our use of carbon-free electricity in our manufacturing facilities. In 2022, we executed carbon-free electricity contracts for a total of 23 manufacturing facilities. We estimated an overall reduction of CO2 emissions by 159,246 tons of emissions in 2022 associated with electrical consumption. In 2021, we planned to spend $268k in 2022 for incremental premiums for renewable energy and in 2023 we plan to spend $555K, in 2024 we plan to spend $837K, and in 2025 we plan to spend $1,266K for the total of $3,027K shown above. Note, these costs are estimated and subject to major market fluctuations for renewable energy contracts (REC). This incremental spend each year is planned and calculated to keep pace with our year-over-year net carbon emissions goal aligned with the long-term target of Net Zero by 2040. In 2022, AAM actually spent $162K for incremental premiums for renewable energy. AAM is ahead of our glidepath for renewable energy, as many customers are emphasizing commitments to 100% renewable energy as a condition for new business. AAM recently studied solar panel installation. Although the current market has provided innovative ways to finance the capitalization of the actual system hardware which has improved the business case(s) for the use of this technology or other renewable technologies, the overall business case benefit/cost was not compelling enough at that time. AAM will continue to look for future opportunities as the market continues to evolve.

Comment

Identifier
Opp2

Where in the value chain does the opportunity occur?
Downstream

Opportunity type
Products and services

Primary climate-related opportunity driver
Development and/or expansion of low emission goods and services

Primary potential financial impact
Increased revenues resulting from increased demand for products and services

Company-specific description
The electrification of vehicles continues to expand, driven by the need to transition to a 1.5°C world. GM is planning to eliminate tailpipe emissions from new U.S. light-duty vehicles by 2035. Electric vehicles are expected to account for half of Ford's sales by 2030. Jaguar will be an all-electric luxury brand from 2025 forward. By 2030, all-electric vehicles are expected to make up more than half of the BMW Group's total deliveries. The European Union has approved a ban on the sale of gasoline and diesel cars from 2035 on, closing an entire continent and an entire market to the sale of internal combustion-powered vehicles as of that date. The market for products related to electric drive vehicles is expanding rapidly, and as a global leader in the design, engineering, validation, and manufacturing of driveline and drivetrain components and systems, AAM is uniquely positioned to take advantage of the changes in this market by developing low-emission products.

Time horizon
Short-term

Likelihood
Virtually certain

Magnitude of impact
High

Are you able to provide a potential financial impact figure?
No, we do not have this figure

Potential financial impact figure (currency)
<Not Applicable>

Potential financial impact figure – minimum (currency)
<Not Applicable>

Potential financial impact figure – maximum (currency)
<Not Applicable>

Explanation of financial impact figure
EV products make up 40% of our $725M gross new business backlog, and at any given time, we are bidding ~$1.5 B in new business, two-thirds of which is EV-related.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation
Vehicle electrification continues to expand, driven by the need to transition to a 1.5°C world, and many of our customers (and the entire EU) have set deadlines for moving to all EVs. Our strategy is to develop game-changing electric-drive platform and weight savings technologies with the capability of powering vehicles across multiple segments. R&D is essential for our next phase of growth and have continued to advance our commitment to the development of EV products, systems, and technologies. In 2022, ~70% of our R&D spend was on sustainability-focused projects. We continued to add EV-focused associates to our team and implemented internal training offerings around EV software, functional safety, and requirements management. We are adapting our driveline and metal forming business units to better serve our customers, partners, and stakeholders, and identifying growth opportunities for both business units within the EV space. AAM developed next-generation electric drive units (EDU) that offer best-in-class improvements in mass efficiency, volumetric efficiency, power density, and reduction in power loss. The power-dense and compact EDUs have the

potential to improve an electric vehicle's range. This innovative technology is segment-agnostic, enabling our products to power EVs for a variety of market segments. Our next generation 3-in-1 EDU combines the motor, inverter and gearbox into the most power-dense system in the industry. Our e-Beam axle for light-duty trucks uses next-generation e-Drive systems. AAM developed unique cooling methods to allow the high-speed and power-dense e-Machine to deliver sustained peak power levels. AAM is working hard to stay on the leading edge of technology, support our customers on current electric vehicle programs, and secure new programs globally.
Based on our competitive market benchmarking and feedback from OEMs, we expect significant interest in our electric driveline systems from both existing and potential new customers. New business related to our electrification technologies represents a growing portion of our new business backlog as well as quoting and emerging new business opportunities. EV products make up 40% of our $725M gross new business backlog, and at any given time, we are bidding ~$1.5 B in new business, two-thirds of which is EV-related.

Comment

C3. Business Strategy

C3.1

(C3.1) Does your organization's strategy include a climate transition plan that aligns with a 1.5°C world?

Row 1

Climate transition plan
Yes, we have a climate transition plan which aligns with a 1.5°C world

Publicly available climate transition plan
Yes

Mechanism by which feedback is collected from shareholders on your climate transition plan
We have a different feedback mechanism in place

Description of feedback mechanism
AAM conducts annual outreach to investors as part of an ongoing and proactive engagement program with its shareholders to discuss, among other things, corporate governance and sustainability, which obviously includes climate change. Results of these interactions are communicated to our Board of Directors for consideration. In addition, our Investor Relations staff reaches out on an ad hoc basis to ESG analysts to discuss key drivers in ESG investing, which are likely to include climate issues.

Frequency of feedback collection
More frequently than annually

Attach any relevant documents which detail your climate transition plan (optional)

Explain why your organization does not have a climate transition plan that aligns with a 1.5°C world and any plans to develop one in the future
<Not Applicable>

Explain why climate-related risks and opportunities have not influenced your strategy
<Not Applicable>

C3.2

(C3.2) Does your organization use climate-related scenario analysis to inform its strategy?

	Use of climate-related scenario analysis to inform strategy	Primary reason why your organization does not use climate-related scenario analysis to inform its strategy	Explain why your organization does not use climate-related scenario analysis to inform its strategy and any plans to use it in the future
Row 1	Yes, qualitative	<Not Applicable>	<Not Applicable>

C3.2a

(C3.2a) Provide details of your organization's use of climate-related scenario analysis.

Climate-related scenario	Scenario analysis coverage	Temperature alignment of scenario	Parameters, assumptions, analytical choices
Physical climate scenarios: Customized publicly available physical scenario	Company-wide	1.6ºC – 2ºC	The Climate Scenario Analysis was developed in partnership with an international climate consultancy. The process leveraged public trends and data sources, including scenarios developed by international research and policy groups, recommended by the TCFD, and widely used for the purpose of Climate Scenario Analysis. This physical risk scenario (i.e., "A High Carbon World") referenced IPCC RCP 8.5, Climate Impact Explorer, IEA STEPS and EIA Reference Case. The consultancy also used an internal climate modeling tool, using regional climate models from various sources to assess future changes in climate indicators with higher resolution and better quality of results. The qualitative analysis involved identifying climate-related forces that impact the business based on stakeholder interviews and a peer analysis (4 competitors, 2 suppliers, 2 customers). This feedback and the physical risk scenario were used to determine potential material risks and opportunities that could impact AAM now and in the future. Parameters built into the scenario included: short-duration extreme weather events; long-term weather pattern changes; technology and other risks associated with transition from combustion engines to electric motors; perceptions towards ESG issues from stakeholders (regulators, investors, etc.); risks associated with exposure to energy and carbon prices, as well as low carbon transition. This physical risk scenario is characterized by an economy that largely fails to decarbonize with global emissions doubling by 2050. It also involves emissions driving up mean air temperatures 2°C above late 20th century levels by 2050, exacerbating drought and extreme weather events such as heatwaves and heavy precipitation. In addition, there is limited climate-related policy and regulation, slow decarbonization of power generation, and consistent albeit slow electrification of transportation. While governments delay progress, other stakeholders such as investors and climate scientists increase their corporate demands for climate action and disclosure. In this scenario, AAM should be most concerned about physical risks –to facilities, equipment, and labor productivity–due to extreme events and changing weather patterns.
Transition scenarios: Customized publicly available transition scenario	Company-wide	1.5ºC	The Climate Scenario Analysis was developed in partnership with an international climate consultancy. The process leveraged public trends and data sources, including scenarios developed by international research and policy groups, recommended by the TCFD, and widely used for the purpose of Climate Scenario Analysis. This transition risk scenario (i.e., "A Low Carbon World") referenced International Energy Agency's Announced Policies and Net-Zero Emissions, IPCC's RCP 2.6, EnerData's EnerBase and EnerGreen. The qualitative analysis involved identifying climate-related forces that impact the business based on stakeholder interviews and a peer analysis (4 competitors, 2 suppliers, 2 customers). This feedback and the transition risk scenario were used to determine potential material risks and opportunities that could impact AAM now and in the future. Parameters built into the scenario included: short-duration extreme weather events; long-term weather pattern changes; technology and other risks associated with transition from combustion engines to electric motors; perceptions towards ESG issues from stakeholders (regulators, investors, etc.); risks associated with exposure to energy and carbon prices, as well as low carbon transition. This transition scenario is characterized by an economy that reaches net-zero by 2050 - led by the decarbonization in the power generation and transportation sectors. Emissions drive up mean air temperatures 1°C above late 20th century levels by 2050, exacerbating drought and extreme weather events, but less than in the "High Carbon World" scenario. Ambitious policy drives investment, but carbon prices increase sharply in advanced economies. There is also more investment in low-carbon goods and services and, notably, a complete transition to light and heavy-duty electric vehicles. In this scenario, AAM should be most concerned about transition risks and opportunities resulting from increased stakeholder pressures, rapid electrification, and carbon pricing.

C3.2b

(C3.2b) Provide details of the focal questions your organization seeks to address by using climate-related scenario analysis, and summarize the results with respect to these questions.

Row 1

Focal questions

AAM's focal questions for its Climate Scenario Analysis in 2022 were: 1) what are the climate-related risks and opportunities that could impact the organization; 2) what is the extent of the impact(s); 3) what could AAM do to mitigate the risks and capitalize on the opportunities.

In line with TCFD recommendations, the third-party consultant described two climate scenarios that AAM may find itself operating in. The two scenarios were relevant to AAM based on physical climate and transition trends.

Results of the climate-related scenario analysis with respect to the focal questions

The Climate Scenario Analysis results included identifying climate-related risks and opportunities, along with their potential impacts and potential strategic responses. For four notable risks and opportunities – 3 physical and 1 transition – the consultancy performed an impact assessment to evaluate the physical, financial, and/or business impacts on AAM.
Physical Risks:
Changing Temperature: In a high carbon world, many of AAM's facilities –particularly in India, Thailand, Brazil, and Northern Mexico –could experience a significant increase in cooling demand resulting in increased operating costs. Improved energy efficiency and on-site renewable energy generation can mitigate these costs. AAM continues to invest in renewable energy in support of our goal of achieving 100% renewable energy in the U.S. by 2025, and globally by 2035.
Heatwaves: In a high carbon world, there could be significantly greater numbers of days with extreme heat at many of AAM's facilities –particularly in Thailand, India, Northern Mexico, and the Mid-western U.S. This could lead to equipment failure and reduced labor productivity, resulting in increased operational and maintenance challenges unless proactive measures are in place. The AAM Global Facilities team completes facility assessments where a corporate subject matter expert assesses the site utilizing a standardized company-wide assessment approach. As site needs are discovered, we complete studies where appropriate, manage capital plans accordingly, and implement projects. For heatwaves specifically, AAM has completed and continues to initiate ventilation studies to determine how operational improvements can decrease potential risk of overheating within a facility. AAM completed ventilation projects in 2022, and has additional projects planned for the next 1-3 years.
Extreme Precipitation: In a high carbon world, most AAM facilities could experience both a greater frequency and intensity of extreme precipitation –particularly the Northeast U.S., Northern Europe, and Northwestern India. This can potentially increase maintenance costs and pose operational challenges. As described above, AAM Global Facilities team completes facility assessments. Extreme precipitation is one contributing factor that led to the launch of a major roof construction project at our largest Mexico complex in 2022; extreme precipitation will be considered in the development of additional roofing projects company-wide in the next 1-3 years.
Transition Risk:
Carbon Pricing: In a low carbon world, AAM can face substantially increased operational costs in the mid- to long-term due to increasing carbon prices. This can be mitigated by reducing company emissions, investing in low-carbon solutions, and passing through excess carbon costs to customers. As part of the E4 operating system, continuous improvement projects are evaluated throughout the year. Similar to the other risks above, capital plans are managed accordingly.

C3.3

(C3.3) Describe where and how climate-related risks and opportunities have influenced your strategy.

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Influenced by the climate crisis and identified as a significant climate-related opportunity, it is clear that the automotive industry is trending towards electrification. We have been working towards this future for more than a decade and continue to accelerate our focus on products and technologies that support the automotive industry's transition to zero-emissions propulsion technology over the foreseeable future. We are implementing a multi-faceted approach and engaging at all levels of the company to ensure we continue to provide the high quality and compelling value that our customers have come to expect from AAM. Our goal is to develop game-changing electric-drive platform and weight savings technologies with the capability of powering vehicles across multiple segments. From high-speed motors spinning over 20,000 RPM and generating well over 200kWs of power, future generations of our platform technology are targeted to achieve class-leading performance and weight attributes. We are well on our way to achieving greater than double-digit improvement in volumetric efficiency, power density, mass efficiency and power loss versus our internal benchmarks. Furthermore, the compactness and power density of our electric drivetrain is providing platform architecture flexibility that is revolutionizing transportation. Our 3-in-1 electric propulsion system integrates our proprietary electric motor, gearbox, and inverter technologies into a single, efficient package, providing OEMs with tremendous design flexibility, including improving ground clearance, increasing battery capacity, and expanding floor space for delivery and mass mobility applications. We are also focused on adapting our driveline and metal forming business units to better serve our customers, partners, and stakeholders, and identifying growth opportunities for both business units within the EV space. This transition to electrification of vehicles is underway and is expected to continue into the indefinite future as the OEMs continue their transition from internal combustion vehicles to electrified vehicles.
Supply chain and/or value chain	Yes	We select our suppliers based on total value (including price, delivery, and quality), considering their production capacities and financial condition, and we expect that they will be able to support our needs. Adverse financial conditions, including bankruptcies of our suppliers, reduced levels of production, natural disasters or other problems may result in shortages or delays in their supply of components to us or even in the financial collapse of one or more such suppliers. If we were to experience a significant or prolonged shortage of critical components from any of our suppliers, particularly those who are sole sources, and were unable to procure the components from other sources, we would be unable to meet our production schedules for some of our key products and to ship such products to our customers in a timely fashion, which would adversely affect our sales, profitability and customer relations. Adverse economic conditions, natural disasters and other factors can similarly lead to financial distress or production problems for other suppliers to our customers which can create disruptions to our production levels. In 2022, we submitted our GHG inventory to SBTi for validation. We were compelled to re-evaluate our methodology for Scope 3 which resulted in an additional sub-category, reducing the contribution of our supplier's emissions in the Scope 3 category from 79% to 54%. Additionally, our overall Scope 3 Emissions account for ~90% of our emissions in 2022, an increase from 86% originally calculated and reported. As part of our sustainable procurement strategy launched in 2022, AAM ensures that all members of our supply chain are striving to meet the same standards, targets, and risk mitigation processes as AAM. This includes goal engagement with all our suppliers as well as specific collaborative programs with our largest suppliers (by emissions) to develop methods for carbon footprint reduction. AAM's Supplier Sustainability council meets quarterly to collaborate on key climate-related issues. In 2022 we covered topics such as science-based targets and materiality assessments. By 2027, we are striving for 67% of our suppliers (by emissions) to establish ambitious climate targets and be validated through the SBTi or equivalent. Their work to meet those targets will help us achieve our goals for Scope 3 reductions.
Investment in R&D	Yes	We believe R&D is essential for our next phase of growth and have continued to advance our commitment to the development of EV products, systems, and technologies. We have increased our product development budget for 2022, continue to add EV-focused Associates to our team and are implementing internal training offerings around EV software, functional safety, ASPICE, and requirements management. Following the 2021 announcement of funding from the U.S. Department of Energy, AAM has developed a low cost, high performance, 3-in-1 electric drive unit suitable for commercial, battery-electric vehicles. We have also announced investments with Autotech Ventures and the EnerTech GSMF in 2022 and 2023 respectively. These investments are focused on technology related to new mobility trends including electrification, clean energy, shared mobility, and autonomy. The transition to electrification of vehicles has accelerated with AAM's OEM customers and the main focus of our future development efforts is the electrification of the driveline to support the adoption of battery-electric, hybrid, and fuel-cell electric vehicles.
Operations	Yes	AAM's internal carbon reduction and energy efficiency goals are supported by plant-specific continuous improvement projects (CIPs) such as compressed air leak reduction, exhaust air heat recovery, fuel usage reduction, etc. In addition to our focus on operational excellence, efficiency, and effectiveness, our goals are increasingly being driven by climate factors. We began in 2019 with environmental-related goals targeting 2024, achieving those goals ahead of schedule. We then developed new goals that stretch to 2040 for GHG emissions and renewable energy, and 2035 for waste management. In 2021, we established our E4 System, a key part of the AAM Operating System, to focus on the energy and environmental sustainability program, which emphasizes building a culture of sustainability within the company at all levels and identifies and implements CIPs across our facilities. In 2022, AAM generated and tracked more than 200 CIPs leading to overall electrical, gas, and water consumption efficiency gains in our plants. In 2022, we also expanded the E4 program to include specific assessments for water and waste in each of our facilities. We have systems in place to monitor energy consumption (fuel and electricity) and water withdrawal, which are being constantly improved with the goal of having real-time, accurate data upon which strategies and individual projects can be based.

C3.4

(C3.4) Describe where and how climate-related risks and opportunities have influenced your financial planning.

	Financial planning elements that have been influenced	Description of influence
Row 1	Capital allocation	Our strategy to meet a 1.5 Celsius world and to abate our risks and capitalize on our climate-related opportunities has influenced our allocation of planned capital spend in the areas of product development, facilities infrastructure, process equipment (new or converted), and consideration of onsite energy generation. Justification for capital allocation must be met by our existing financial models in terms of return on investment and other threshold criteria such as net present value. AAM is considering carbon pricing but is not committed to capital approvals using that pricing as a factor. First and foremost, market influence for cleaner mobility platforms inside the auto industry has driven significant capital allocation to our electric drive products at AAM. A majority of research and development spending for products was allocated in 2022 to the development of these products in order to meet the market risk and /or opportunity of a product conversion form internal combustion engine component platforms to eDrive systems. In addition, capital equipment cannot be purchased until an environmental checklist has been completed by the technical buyer. This checklist ensures the compliance and efficiency of equipment internal components in line with energy goals and environmental protection concerns. See the discussions of Risk1 (product markets) and its converse Opp2 (product markets) in C2.3a and 2.4a, respectively. Furthermore, the recognition of energy conversion and expectation for more renewable sources has driven allocation of funding for standard and connected utility metering at all of our facilities. This ensures that incoming electricity, gas, and water consumption can be tracked in real time and any issues in consumption are reacted to in real time. The accurate and timely metering of these utilities is foundational for understanding and curtailing our energy use in line with our efficiency goals that correspond with a 1.5 degree Celsius world. Another example comes from our Zell, Germany facility, where we enhanced the efficiency of the gas boilers, reducing natural gas consumption and approximately 500,000 kWh of energy savings. See the discussions of Risk2 (heat stress), Risk3 (water scarcity), and Risk4 (storms) in C2.3a. Our target of net-zero carbon emissions by 2040 was validated by SBTi in 2022. Recognizing the risk our energy consumption contributes to CO2 emissions, we have also adopted year-over-year energy efficiency targets and allocated capital toward projects that help hit those efficiency targets. This allocation has supported many realized and forthcoming projects. AAM is evaluating opportunities for both new and current assets for conversion from gas to renewable energy. For example, our primary direction for all new washers will be electrically heated, instead of gas. In addition, we recently upgraded current preheat operation, prewash and post-wash to electric heating in one of our U.S. facilities. As we move forward, we are continuing to study and evaluate our current furnaces for efficiency opportunities. AAM recently studied solar panel installation. Although the current market has provided innovative ways to finance the capitalization of the actual system hardware which has improved the business case(s) for the use of this technology or other renewable technologies, the overall business case was still too high. AAM will continue to look for future opportunities as the market continues to evolve. See the discussion of Opp1 (renewable energy) in C2.4a.

C3.5

(C3.5) In your organization's financial accounting, do you identify spending/revenue that is aligned with your organization's climate transition?

	Identification of spending/revenue that is aligned with your organization's climate transition	Indicate the level at which you identify the alignment of your spending/revenue with a sustainable finance taxonomy
Row 1	Yes, we identify alignment with our climate transition plan	<Not Applicable>

C3.5a

(C3.5a) Quantify the percentage share of your spending/revenue that is aligned with your organization's climate transition.

Financial Metric
CAPEX

Type of alignment being reported for this financial metric
Alignment with our climate transition plan

Taxonomy under which information is being reported
<Not Applicable>

Objective under which alignment is being reported
<Not Applicable>

Amount of selected financial metric that is aligned in the reporting year (unit currency as selected in C0.4)

Percentage share of selected financial metric aligned in the reporting year (%)
3

Percentage share of selected financial metric planned to align in 2025 (%)
3

Percentage share of selected financial metric planned to align in 2030 (%)
3

Describe the methodology used to identify spending/revenue that is aligned
AAM currently accounts for spending on environmental sustainability-related topics inside of our sustainability cost centers, P&L expense budgets, and capital-allocated budgets. The subject of environmental sustainability has driven the requirement for a dedicated organization and activity under a dedicated corporate cost center which includes budget for sustainability leadership, engineers, program expenses to include consultant services, and travel. In addition, plants are assigned expense budget lines to pay for utility premiums associated with renewable energy purchases in line with our goals of being 100% renewable in the U.S. by 2025. Third, environmental or energy related projects are categorized in the Facilities and Continuous Improvement Project lines of our corporate capital plan. These include plant-generated ideas such as more efficient technologies, power metering devices, and any hardware associated with environmental compliance. For example, our Zell Manufacturing Facility in Germany operates a power intense manufacturing process in a very cost sensitive region, driving our local leadership to be focused on innovative solutions to reduce energy consumption. One of their successes in 2022 was the implementation of heat recovery systems that lowered electrical costs. The project scope includes recovering heat generated in the manufacturing process and diverting it to other areas of the plant that were typically heated through the consumption of natural gas. The concept of recovering and diverting process generated heat is projected to save nearly $400,000 in utility costs.

C4. Targets and performance

C4.1

(C4.1) Did you have an emissions target that was active in the reporting year?
Absolute target

C4.1a

(C4.1a) Provide details of your absolute emissions target(s) and progress made against those targets.

Target reference number
Abs 1

Is this a science-based target?
Yes, and this target has been approved by the Science Based Targets initiative

Target ambition
1.5°C aligned

Year target was set
2021

Target coverage
Company-wide

Scope(s)
Scope 1
Scope 2

Scope 2 accounting method
Location-based

Scope 3 category(ies)
<Not Applicable>

Base year
2020

Base year Scope 1 emissions covered by target (metric tons CO2e)
80963

Base year Scope 2 emissions covered by target (metric tons CO2e)
418534

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
<Not Applicable>

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
499497

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
100

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
100

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)

<Not Applicable>

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
<Not Applicable>

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
100

Target year
2030

Targeted reduction from base year (%)
45

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]
274723.35

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
85979

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
330290

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
416269

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
37.0274718589123

Target status in reporting year
Underway

Please explain target coverage and identify any exclusions
The target(s) cover all scope 1 and 2 emissions in AAM's GHG inventory, developed in line with the GHG Protocol Corporate Standard

Plan for achieving target, and progress made to the end of the reporting year
AAM recognizes that achieving net zero carbon emissions cannot be achieved solely by efficiency gains and continuous improvement projects. To achieve the magnitude of the emissions reductions required, a partnership with our energy suppliers and participation in carbon markets is critical. Our goal is to maximize the utilization of carbon free and renewable energy within the acceptable framework of our business and market offerings to substantially reduce our emission levels. As a result, 11 AAM facilities purchased carbon-free electricity, 5 facilities purchased renewable energy and 3 purchased REC in 2022, resulting in an aggregate CO2 reduction of nearly 159,246 metric tons. Going forward, AAM will rationalize more purchases commensurate to meeting our scienced-based targets. Additionally, we will increase purchases in the United States to be 100% renewable by the end of 2025. Our plan is to reach, 43% in 2023, 57% in 2024, and 100% in 2025 through upgraded energy contracts and market purchases of renewable energy contracts.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

Target reference number
Abs 2

Is this a science-based target?
Yes, and this target has been approved by the Science Based Targets initiative

Target ambition
1.5°C aligned

Year target was set
2021

Target coverage
Company-wide

Scope(s)
Scope 3

Scope 2 accounting method
<Not Applicable>

Scope 3 category(ies)
Category 1: Purchased goods and services
Category 2: Capital goods

Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2)
Category 4: Upstream transportation and distribution
Category 5: Waste generated in operations
Category 6: Business travel
Category 7: Employee commuting
Category 9: Downstream transportation and distribution
Category 11: Use of sold products
Category 12: End-of-life treatment of sold products
Category 15: Investments

Base year
2020

Base year Scope 1 emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 2 emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target (metric tons CO2e)
2334766

Base year Scope 3, Category 2: Capital goods emissions covered by target (metric tons CO2e)
224199

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target (metric tons CO2e)
113974

Base year Scope 3, Category 4: Upstream transportation and distribution emissions covered by target (metric tons CO2e)
104109

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target (metric tons CO2e)
4067

Base year Scope 3, Category 6: Business travel emissions covered by target (metric tons CO2e)
4314

Base year Scope 3, Category 7: Employee commuting emissions covered by target (metric tons CO2e)
27340

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target (metric tons CO2e)
89003

Base year Scope 3, Category 10: Processing of sold products emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target (metric tons CO2e)
1254796

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target (metric tons CO2e)
57421

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target (metric tons CO2e)
41892

Base year Scope 3, Other (upstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target (metric tons CO2e)
4255881

Total base year emissions covered by target in all selected Scopes (metric tons CO2e)
4255881

Base year Scope 1 emissions covered by target as % of total base year emissions in Scope 1
<Not Applicable>

Base year Scope 2 emissions covered by target as % of total base year emissions in Scope 2
<Not Applicable>

Base year Scope 3, Category 1: Purchased goods and services emissions covered by target as % of total base year emissions in Scope 3, Category 1: Purchased goods and services (metric tons CO2e)
100

Base year Scope 3, Category 2: Capital goods emissions covered by target as % of total base year emissions in Scope 3, Category 2: Capital goods (metric tons CO2e)
100

Base year Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions covered by target as % of total base year emissions in Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
100

Base year Scope 3, Category 4: Upstream transportation and distribution covered by target as % of total base year emissions in Scope 3, Category 4: Upstream transportation and distribution (metric tons CO2e)
100

Base year Scope 3, Category 5: Waste generated in operations emissions covered by target as % of total base year emissions in Scope 3, Category 5: Waste generated in operations (metric tons CO2e)
100

Base year Scope 3, Category 6: Business travel emissions covered by target as % of total base year emissions in Scope 3, Category 6: Business travel (metric tons CO2e)
100

Base year Scope 3, Category 7: Employee commuting covered by target as % of total base year emissions in Scope 3, Category 7: Employee commuting (metric tons CO2e)
100

Base year Scope 3, Category 8: Upstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 8: Upstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 9: Downstream transportation and distribution emissions covered by target as % of total base year emissions in Scope 3, Category 9: Downstream transportation and distribution (metric tons CO2e)
100

Base year Scope 3, Category 10: Processing of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 10: Processing of sold products (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 11: Use of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 11: Use of sold products (metric tons CO2e)
100

Base year Scope 3, Category 12: End-of-life treatment of sold products emissions covered by target as % of total base year emissions in Scope 3, Category 12: End-of-life treatment of sold products (metric tons CO2e)
100

Base year Scope 3, Category 13: Downstream leased assets emissions covered by target as % of total base year emissions in Scope 3, Category 13: Downstream leased assets (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 14: Franchises emissions covered by target as % of total base year emissions in Scope 3, Category 14: Franchises (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Category 15: Investments emissions covered by target as % of total base year emissions in Scope 3, Category 15: Investments (metric tons CO2e)
100

Base year Scope 3, Other (upstream) emissions covered by target as % of total base year emissions in Scope 3, Other (upstream) (metric tons CO2e)
<Not Applicable>

Base year Scope 3, Other (downstream) emissions covered by target as % of total base year emissions in Scope 3, Other (downstream) (metric tons CO2e)
<Not Applicable>

Base year total Scope 3 emissions covered by target as % of total base year emissions in Scope 3 (in all Scope 3 categories)
100

Base year emissions covered by target in all selected Scopes as % of total base year emissions in all selected Scopes
100

Target year
2030

Targeted reduction from base year (%)
25

Total emissions in target year covered by target in all selected Scopes (metric tons CO2e) [auto-calculated]
3191910.75

Scope 1 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 2 emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 1: Purchased goods and services emissions in reporting year covered by target (metric tons CO2e)
2159950

Scope 3, Category 2: Capital goods emissions in reporting year covered by target (metric tons CO2e)
38643

Scope 3, Category 3: Fuel-and-energy-related activities (not included in Scopes 1 or 2) emissions in reporting year covered by target (metric tons CO2e)
115378

Scope 3, Category 4: Upstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
137087

Scope 3, Category 5: Waste generated in operations emissions in reporting year covered by target (metric tons CO2e)
4518

Scope 3, Category 6: Business travel emissions in reporting year covered by target (metric tons CO2e)
3252

Scope 3, Category 7: Employee commuting emissions in reporting year covered by target (metric tons CO2e)
21002

Scope 3, Category 8: Upstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 9: Downstream transportation and distribution emissions in reporting year covered by target (metric tons CO2e)
104425

Scope 3, Category 10: Processing of sold products emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 11: Use of sold products emissions in reporting year covered by target (metric tons CO2e)
1328396

Scope 3, Category 12: End-of-life treatment of sold products emissions in reporting year covered by target (metric tons CO2e)
51608

Scope 3, Category 13: Downstream leased assets emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 14: Franchises emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Category 15: Investments emissions in reporting year covered by target (metric tons CO2e)
24790

Scope 3, Other (upstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Scope 3, Other (downstream) emissions in reporting year covered by target (metric tons CO2e)
<Not Applicable>

Total Scope 3 emissions in reporting year covered by target (metric tons CO2e)
3989049

Total emissions in reporting year covered by target in all selected scopes (metric tons CO2e)
3989049

Does this target cover any land-related emissions?
No, it does not cover any land-related emissions (e.g. non-FLAG SBT)

% of target achieved relative to base year [auto-calculated]
25.0788967078732

Target status in reporting year
Revised

Please explain target coverage and identify any exclusions
The target is company-wide with no exceptions in accordance with the selected categories. Categories are consistent with inventory covered by approved science-based targets. Data quality is variable and will be improved over the coming years as data collection methods improve (e.g., moving from spend-based data to actual supplier data for Category 1). Procedures are being developed to improve this data collection. This target is considered revised due to Category 11 being added during our SBTi validation process. Category 11 was added retroactively into our base year, and will be reported on moving forward. The addition of Category 11 did not change the 25% reduction of the target.

Plan for achieving target, and progress made to the end of the reporting year
The target is part of an overall commitment to net-zero by 2040, in line with the SBTi. Net zero is defined as a minimum of 90% reduction, with the remainder covered by carbon offsets. Significant efforts, such as improved data gathering and the establishment of a Supplier Sustainability Council was launched in 2022 to engage more deeply with our suppliers in the reduction of Scope 3 emissions, which are mostly attributed to our suppliers and in particular our aluminum and steel suppliers. Additionally, the supply chain organization focused on improvement of the quality of the data for the two transportation and distribution categories.

List the emissions reduction initiatives which contributed most to achieving this target
<Not Applicable>

C4.2

(C4.2) Did you have any other climate-related targets that were active in the reporting year?
Target(s) to increase low-carbon energy consumption or production
Net-zero target(s)

C4.2a

(C4.2a) Provide details of your target(s) to increase low-carbon energy consumption or production.

Target reference number
Low 1

Year target was set
2021

Target coverage
Country/area/region

Target type: energy carrier
Electricity

Target type: activity
Consumption

Target type: energy source
Low-carbon energy source(s)

Base year
2021

Consumption or production of selected energy carrier in base year (MWh)
467114

% share of low-carbon or renewable energy in base year
36

Target year
2025

% share of low-carbon or renewable energy in target year
100

% share of low-carbon or renewable energy in reporting year
46

% of target achieved relative to base year [auto-calculated]
15.625

Target status in reporting year
Underway

Is this target part of an emissions target?
Implicitly, it is part of an emissions target, in that achievement of this target is required to achieve our emissions targets.

Is this target part of an overarching initiative?
Science Based Targets initiative

Please explain target coverage and identify any exclusions
In alignment with OEM priority targets, we are targeting 100% renewable energy for our U.S. facilities in 2025, and globally by 2035.

Plan for achieving target, and progress made to the end of the reporting year
AAM recognizes that achieving net zero carbon emissions cannot be achieved solely by efficiency gains and continuous improvement projects. To achieve the magnitude of the emissions reductions required, a partnership with our energy suppliers and participation in carbon markets is critical. Our goal is to maximize the utilization of carbon free and renewable energy within the acceptable framework of our business and market offerings to substantially reduce our emission levels. In 2022, we executed carbon-free electricity contracts for a total of 23 manufacturing facilities. We estimated an overall reduction of CO2 emissions by 159,246 tons of emissions in 2022 associated with electrical consumption. Going forward, AAM will rationalize more purchases commensurate to meeting our science-based targets. Additionally, we will increase purchases in the U.S. to be 100% renewable by the end of 2025. Our plan is to reach 43% in 2023, 57% in 2024, and 100% in 2025 through upgraded energy contracts and market purchases of renewable energy contracts.

List the actions which contributed most to achieving this target
<Not Applicable>

C4.2c

(C4.2c) Provide details of your net-zero target(s).

Target reference number
NZ1

Target coverage
Company-wide

Absolute/intensity emission target(s) linked to this net-zero target
Abs1
Abs2

Target year for achieving net zero
2040

Is this a science-based target?
Yes, and this target has been approved by the Science Based Targets initiative

Please explain target coverage and identify any exclusions
The target is company-wide with no exclusions. Data quality is variable and data may change in the future as data collection gets more refined.

Do you intend to neutralize any unabated emissions with permanent carbon removals at the target year?
Yes

Planned milestones and/or near-term investments for neutralization at target year
There are no current plans for the neutralization of the residual emissions that remain in the inventory after emissions have been reduced to the maximum extent possible.

Planned actions to mitigate emissions beyond your value chain (optional)

C4.3

(C4.3) Did you have emissions reduction initiatives that were active within the reporting year? Note that this can include those in the planning and/or implementation phases.
Yes

C4.3a

(C4.3a) Identify the total number of initiatives at each stage of development, and for those in the implementation stages, the estimated CO2e savings.

	Number of initiatives	Total estimated annual CO2e savings in metric tonnes CO2e (only for rows marked *)
Under investigation	0	0
To be implemented*	0	0
Implementation commenced*	0	0
Implemented*	133	14464
Not to be implemented	0	0

C4.3b

(C4.3b) Provide details on the initiatives implemented in the reporting year in the table below.

Initiative category & Initiative type

Energy efficiency in buildings	Other, please specify (Lighting, HVAC, etc.)

Estimated annual CO2e savings (metric tonnes CO2e)
920

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
36100

Investment required (unit currency – as specified in C0.4)
25677

Payback period
<1 year

Estimated lifetime of the initiative
6-10 years

Comment
We were able to implement energy efficiency projects such as HVAC optimization, installing LED lights, improving building management systems, and other measures. The number of projects reported in 4.3a and the associated CO2 savings only represent those projects for which we have full data sets (CO2 savings, cost savings, etc.) Many more projects were actually implemented in 2022.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization

Estimated annual CO2e savings (metric tonnes CO2e)
13544

Scope(s) or Scope 3 category(ies) where emissions savings occur
Scope 1
Scope 2 (location-based)
Scope 2 (market-based)

Voluntary/Mandatory
Voluntary

Annual monetary savings (unit currency – as specified in C0.4)
438235

Investment required (unit currency – as specified in C0.4)
131066

Payback period
<1 year

Estimated lifetime of the initiative
11-15 years

Comment
In 2022, we implemented over 100 energy improvements in our processes from new more-efficient equipment, variable speed drives on motors, process controls, bath temperature controls, shutdown controls, and other energy conservation measures. The number of projects reported in 4.3a and the associated CO2 savings only represent those projects for which we have full data sets (CO2 savings, cost savings, etc.) Many more projects were actually implemented in 2022.

C4.3c

(C4.3c) What methods do you use to drive investment in emissions reduction activities?

Method	Comment
Internal finance mechanisms	AAM uses a common business case model for the justification of all capital projects to include criteria for sufficient payback. Budget allocations are made categorically and those monies are applied for internally based on organizational priorities and financial viability. Emission reduction activities are categorized as Facilities and Energy Continuous Improvement Projects inside of the corporate capital tracking mechanism. Investments are driven from a top-down and bottom-up approach. Plants are encouraged to develop environmental and energy efficiency projects while the corporate facilities technical team studies and incorporates new technologies as they develop and become available on the market. AAM has not incorporated carbon pricing into any financial models to date. Methods and incentives are driven by tracking of overall emissions and energy metrics, tying them to overall operational performance grades and compensation, and then allowing the individual operational organizations determine the most effective energy efficiency projects to employ.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products?
Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products.

Level of aggregation
Group of products or services

Taxonomy used to classify product(s) or service(s) as low-carbon
The EU Taxonomy for environmentally sustainable economic activities

Type of product(s) or service(s)

Road	Other, please specify (Electric drive units for hybrid and electric vehicles)

Description of product(s) or service(s)
Our core business focuses on developing products that continuously improve fuel efficiency and lower carbon emissions over prior models. Our intense focus on electrification is enabling vehicle manufacturers to speed the adoption of electrified vehicles to meet regulatory and customer needs for reducing global carbon emissions. Key examples include: 1) the Jaguar Ipace electric drive units, 2) AMG P3 hybrid electrified rear axle, 3) GM Colorado/Canyon high-efficiency rear axle. The AAM product portfolio includes items such as electric drive units (EDU), e-Beam axles, gearboxes, sub-assemblies and components to support a variety of zero-emission propulsion technologies. Our goal is to develop game-changing electric-drive platform and weight savings technologies with the capability of powering vehicles across multiple segments. From high-speed motors spinning over 20,000 RPM and generating well over 200kWs of power, future generations of our platform technology are targeted to achieve class-leading performance and weight attributes. In 2022, we won multiple awards for our products and their ability to not only meet our customers' requirements but also focus on a more environmentally responsible solution. For example, one award was related to our ability to provide components to support vehicles with significantly faster acceleration and reducing emissions compared to the prior-year combustion-engine powertrain.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)
No

Methodology used to calculate avoided emissions
<Not Applicable>

Life cycle stage(s) covered for the low-carbon product(s) or services(s)
<Not Applicable>

Functional unit used
<Not Applicable>

Reference product/service or baseline scenario used
<Not Applicable>

Life cycle stage(s) covered for the reference product/service or baseline scenario
<Not Applicable>

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario
<Not Applicable>

Explain your calculation of avoided emissions, including any assumptions
<Not Applicable>

Revenue generated from low-carbon product(s) or service(s) as % of total revenue in the reporting year

C5. Emissions methodology

C5.1

(C5.1) Is this your first year of reporting emissions data to CDP?
No

C5.1a

(C5.1a) Has your organization undergone any structural changes in the reporting year, or are any previous structural changes being accounted for in this disclosure of emissions data?

Row 1

Has there been a structural change?
Yes, an acquisition

Name of organization(s) acquired, divested from, or merged with
Certain Tekfor legal entities were acquired.

Details of structural change(s), including completion dates
Certain Tekfor legal entities were acquired by AAM's affiliates and its plants were added to the appropriate AAM business units beginning on June 1, 2022. Although acquired on June 1, 2022, AAM continues to fully integrate the former Tekfor facilities in adopting all of our sustainability policies and practices. For this reason, emissions from the former Tekfor plants are not included in this response, while we validate the data for these new facilities. We will officially start reporting emissions from the legacy Tekfor facilities in the response prepared in 2024 for the calendar year 2023.

C5.1b

(C5.1b) Has your emissions accounting methodology, boundary, and/or reporting year definition changed in the reporting year?

	Change(s) in methodology, boundary, and/or reporting year definition?	Details of methodology, boundary, and/or reporting year definition change(s)
Row 1	Yes, a change in boundary	Scope 3 has been revised due to Category 11 being added during our SBTi validation process. Category 11 was added retroactively into our base year, and will be reported on moving forward. Additionally, the Tekfor Group acquisition occurred in 2022 and became effective on June 1, 2022. To obtain a full calendar year of quality data, we have to wait until the end of calendar year 2023, to incorporate . Given the integration process and how we could potentially re-baseline in 2023, we would ensure that it would not impact our science-based targets. The base year emissions recalculation policy is consistent with the Greenhouse Gas Protocol. Any changes due to acquisitions or thresholds will be recalculated when the data becomes available. Any other changes above 5% of the total should cause the baseline to be recalculated.

C5.1c

(C5.1c) Have your organization's base year emissions and past years' emissions been recalculated as a result of any changes or errors reported in C5.1a and/or C5.1b?

	Base year recalculation	Scope(s) recalculated	Base year emissions recalculation policy, including significance threshold	Past years' recalculation
Row 1	Yes	Scope 3	The base year emissions recalculation policy is consistent with the Greenhouse Gas Protocol. Any changes due to acquisitions or thresholds will be recalculated when the data becomes available. Any other changes above 5% of the total should cause the baseline to be recalculated. Adding Category 11 caused significant changes to the Scope 3 distribution.	Yes

C5.2

(C5.2) Provide your base year and base year emissions.

Scope 1

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
80963

Comment
A portion of the emissions is expressed in metric tons CO2 rather than CO2e due to the availability of emission factors in those terms. Data sources included stationary combustion sources. Activity data includes consumption of natural gas from all known sources at production plants. Emissions were quantified using fuel-based approach for all known sources with consumption data.

Scope 2 (location-based)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
418534

Comment
All emissions are expressed in metric tons CO2 due to the availability of emission factors in those terms. Activity data comprised the consumption of electricity (kWh) at production locations. Emissions were calculated using supplier-based emission factors where available. Country-specific electricity emissions factors from the IEA 2020 database were used to calculate emissions. In the United States, state-level emission factors from the EPA were used.

Scope 2 (market-based)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
381972

Comment
We did not report a market-based Scope 2 for 2020. However, in association with the establishment of new corporate environmental goals, 2020 was defined as the new base year and calculations were completed to establish a more accurate and complete set of emissions data, including Scopes 1, 2 (both location- and market-based), and 3. See the explanation for the Scope 2 (location-based) data for methodology. Where clean power (including nuclear energy) or renewable energy were purchased from utility suppliers, appropriate emission factors were used to calculate market-based emissions.

Scope 3 category 1: Purchased goods and services

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
2334766

Comment
This category includes all upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by the reporting company in the reporting year. Products include both goods (tangible products) and services (intangible products). Data were based on AAM's direct spend with material suppliers and operational expenses (indirect spend). Activity data included direct spend with suppliers for steel, aluminum, forgings, etc., and indirect spend on supplies for plant operations, including MRO, facility services, administrative spend, furniture, water consumption, etc. The methodology was a spend-based methodology, multiplying spend by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods). We used an environmentally-extended input-output (EEIO) database that leverages U.S. economic data.

Scope 3 category 2: Capital goods

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
224199

Comment
This category includes all upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company in the reporting year. Emissions from the use of capital goods by the reporting company are accounted for in either scope 1 (e.g., for fuel use) or scope 2 (e.g., for electricity use), rather than in scope 3. Data were based on AAM's spend on capital goods. Activity data included spend on capital goods, including metal forming machinery, material handling equipment, heat treatment, welding, etc. The methodology was a spend-based methodology, multiplying spend by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods). We used an environmentally extended input-output (EEIO) database that leverages U.S. economic data.

Scope 3 category 3: Fuel-and-energy-related activities (not included in Scope 1 or 2)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
113974

Comment
This category includes emissions related to the production of fuels and energy purchased and consumed by the reporting company in the reporting year that are not included in scope 1 or scope 2. Data sources included fuel and electricity delivery emissions and associated grid losses, and activity data were comprised of primary data from utility meters and invoices. The methodology calculated emissions associated with the upstream extraction, refining and transportation of fuels for electricity generation prior to the point of combustion. Emissions factors from DEFRA and IEA were used in the calculation.

Scope 3 category 4: Upstream transportation and distribution

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
104109

Comment
This category includes emissions related to services purchased, including inbound and outbound logistics, and transportation and distribution between a company's suppliers and its own operations and among its own facilities. Data sources include inbound and outbound freight of materials shipped to and out of AAM facilities that was paid for by AAM. Activity data include logistics from AAM's North American facilities, including weight of materials, distance travelled, and mode of transportation, spend on transportation and distribution from facilities outside of North America and % spend breakdown by mode of transportation. For North America facilities, a distance-based calculation was used to quantify emissions using weight, distance between shipper/receiver, and mode of transportation. For locations using spend data, an environmentally-extended input-output (EEIO) database is used in the quantification of emissions associated with each transportation mode.

Scope 3 category 5: Waste generated in operations

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
4067

Comment
This category covers emissions from third-party disposal and treatment of waste generated in the reporting company's owned or controlled operations in the reporting year. Data sources include waste reports, including an inventory breakdown of waste type generated (metals, recycling, landfill, hazardous, water & liquids) at the site level. Activity data include the weight of waste generated in operations from AAM's metal forming and driveline business units. Emissions factors from DEFRA are used to calculate emissions associated with the different treatment methods of solid and liquid waste. Each waste type was mapped to the appropriate DEFRA emissions factor for a given disposal pathway (recycle, landfill, combustion).

Scope 3 category 6: Business travel

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
4314

Comment
This category includes emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties, such as aircraft, trains, buses, and passenger cars. Data sources include travel reports for air, chartered jets, hotel, rail, and rental car for the reporting year. Activity data include air: distance between airports, class seat; hotels: number of hotel nights stayed broken down by country; rail: distance between departure/arrival, class seat; and rental car: size of vehicle, number of rental days, estimated miles travelled. Distance-based calculation was used to quantify emissions from air, rail, and rental cars, using DEFRA emission factors. Emissions from hotel night stays was calculated using DEFRA emission factors and country in which business travel stay took place.

Scope 3 category 7: Employee commuting

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
27340

Comment
This category covers transportation of employees between their homes and their worksites (in vehicles not owned or operated by the reporting company). Data sources include the company workforce report, including FTE count from each AAM site. Activity data include employee transport to AAM's corporate offices, metal forming, and driveline manufacturing sites. A third-party employee commuting model was used to estimate the commuting activities of AAM's FTE. Emissions were calculated using DEFRA emissions factors per mode and distance travelled, using the assumption that all of AAM's employees travel by car to commute into their worksites.

Scope 3 category 8: Upstream leased assets

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
Many of our corporate offices and manufacturing locations operate in facilities that are leased from other entities. However, we include emissions from those facilities within our Scope 1 and Scope 2 emissions totals, and thus consider emissions relevant to our Scope 1 and 2 inventories, but not relevant to Scope 3. This more accurately correlates our emissions scopes with our operations.

Scope 3 category 9: Downstream transportation and distribution

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
89003

Comment
This category covers emissions from transportation and distribution of sold products in vehicles and facilities not owned or controlled by the reporting company. Data sources include outbound freight of products shipped from AAM's facilities that were paid for by AAM's customers. Activity data include total units and weight shipped out of AAM's facilities, estimated percentage of products shipped by transportation mode (air, sea, rail, truck), and estimated distance travelled using average distance (by mode). A distance-based approach was used to calculate emissions from downstream transportation and distribution. Weight of products shipped was multiplied by estimated distance and percentage by mode of transportation. DEFRA emission factors were used to calculate emissions per mode of transportation.

Scope 3 category 10: Processing of sold products

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
AAM products are not processed in any sense other than assembly into an OEM finished product.

Scope 3 category 11: Use of sold products

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
1254796

Comment
Products sold by AAM are purchased by automotive OEMs, which incorporate our products into their vehicles. This category has been revised due to Category 11 being added during our SBTi validation process. Category 11 was added retroactively into our base year, and will be reported on moving forward.

Scope 3 category 12: End of life treatment of sold products

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
57241

Comment
This category covers emissions waste disposal and treatment of products sold by the company at the end of their life. This category includes the total expected end-of-life emissions from all products sold in the reporting year. Data sources include total units sold by AAM in the reporting year and weight of products. Activity data include total units and weight shipped out of AAM's facilities, type of packaging used for shipment of AAM products, secondary research on end-of-life treatment of vehicle components (e.g., percent recycled, landfilled, etc.), and secondary research on packaging lifetime, disposal and treatment. Assumptions on product and packaging materials and packaging ratios were based on best estimates. The rates for recycling, landfill, and combustion were estimated based on EPA averages and industry analysis of vehicle manufacturing. Each material type (paper, metals, etc.) was mapped to the appropriate DEFRA emissions factor for a given disposal pathway (recycle, landfill, combustion).

Scope 3 category 13: Downstream leased assets

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
AAM does not own any facilities that are leased to other entities.

Scope 3 category 14: Franchises

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
AAM has no franchises.

Scope 3 category 15: Investments

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)
41892

Comment
This category covers emissions associated with the company's investments in the reporting year, not already included in scope 1 or scope 2. Joint ventures are outside of AAM's operational control boundary but still deemed relevant.

Scope 3: Other (upstream)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
AAM has no other upstream emission sources.

Scope 3: Other (downstream)

Base year start
January 1 2020

Base year end
December 31 2020

Base year emissions (metric tons CO2e)

Comment
AAM has no other downstream emission sources.

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.
Defra Environmental Reporting Guidelines: Including streamlined energy and carbon reporting guidance, 2019
IEA CO2 Emissions from Fuel Combustion
The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)
The Greenhouse Gas Protocol: Scope 2 Guidance
The Greenhouse Gas Protocol: Corporate Value Chain (Scope 3) Standard
Other, please specify (USEPA Greenhouse Gases Equivalencies Calculator - Calculations and References, DESNZ emission factors)

C6. Emissions data

C6.1

(C6.1) What were your organization's gross global Scope 1 emissions in metric tons CO2e?

Reporting year

Gross global Scope 1 emissions (metric tons CO2e)
85979

Start date
January 1 2022

End date
December 31 2022

Comment
These emissions are exclusively contributed to the use of natural gas.

C6.2

(C6.2) Describe your organization's approach to reporting Scope 2 emissions.

Row 1

Scope 2, location-based
We are reporting a Scope 2, location-based figure

Scope 2, market-based
We are reporting a Scope 2, market-based figure

Comment
We currently purchase either clean power (including nuclear), renewable energy for a number of our facilities or REC. For these cases, we are able to report reduced emissions as an element of a location-based figure. The CO2e factor is obtained from national averages provided by utilities.

C6.3

(C6.3) What were your organization's gross global Scope 2 emissions in metric tons CO2e?

Reporting year

Scope 2, location-based
330290

Scope 2, market-based (if applicable)
489536

Start date
January 1 2022

End date
December 31 2022

Comment
CO2e factor is used when available from invoices, otherwise a national CO2 factor is used.

C6.4

(C6.4) Are there any sources (e.g. facilities, specific GHGs, activities, geographies, etc.) of Scope 1, Scope 2 or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure?
Yes

C6.4a

(C6.4a) Provide details of the sources of Scope 1, Scope 2, or Scope 3 emissions that are within your selected reporting boundary which are not included in your disclosure.

Source of excluded emissions
Fuels for transportation and material handling equipment, process use of CO2, refrigerants from building and process cooling systems

Scope(s) or Scope 3 category(ies)
Scope 1

Relevance of Scope 1 emissions from this source
Emissions are relevant but not yet calculated

Relevance of location-based Scope 2 emissions from this source
<Not Applicable>

Relevance of market-based Scope 2 emissions from this source
<Not Applicable>

Relevance of Scope 3 emissions from this source
<Not Applicable>

Date of completion of acquisition or merger
<Not Applicable>

Estimated percentage of total Scope 1+2 emissions this excluded source represents

Estimated percentage of total Scope 3 emissions this excluded source represents
<Not Applicable>

Explain why this source is excluded
AAM has begun establishing a process through which facilities will report this data, but the system is not fully in place and the summary calculations have therefore not been completed.

Explain how you estimated the percentage of emissions this excluded source represents

C6.5

(C6.5) Account for your organization's gross global Scope 3 emissions, disclosing and explaining any exclusions.

Purchased goods and services

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
2159950

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category includes all upstream (i.e., cradle-to-gate) emissions from the production of products purchased or acquired by the reporting company in the reporting year. Products include both goods (tangible products) and services (intangible products). Data were based on AAM's direct spend with material suppliers and operational expenses (indirect spend). Activity data included direct spend with suppliers for steel, aluminum, forgings, etc., and indirect spend on supplies for plant operations, including MRO, facility services, administrative spend, furniture, water consumption, etc. A spend-based methodology, multiplying spend by relevant secondary (e.g., industry average) emission factors (kgCO2e/$) was used. The emission factors were from the Comprehensive Environmental Data Archive (CEDA) database, an environmentally extended input-output (EEIO) database that leverages North American economic data.

Capital goods

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
38643

Emissions calculation methodology
Spend-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category includes all upstream (i.e., cradle-to-gate) emissions from the production of capital goods purchased or acquired by the reporting company in the reporting year. Emissions from the use of capital goods by the reporting company are accounted for in either scope 1 (e.g., for fuel use) or scope 2 (e.g., for electricity use), rather than in scope 3. Data were based on AAM's spend on capital goods. Activity data included spend on capital goods, including metal forming machinery, material handling equipment, heat treatment, welding, etc. The methodology was a spend-based methodology, multiplying spend by relevant secondary (e.g., industry average) emission factors (e.g., average emissions per monetary value of goods) and using CEDA emission factors.

Fuel-and-energy-related activities (not included in Scope 1 or 2)

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
115378

Emissions calculation methodology
Average data method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category includes emissions related to the production of fuels and energy purchased and consumed by the reporting company in the reporting year that are not included in Scope 1 or Scope 2. Data sources included fuel and electricity delivery emissions and associated grid losses, and activity data were comprised of primary data from utility meters and invoices. The methodology calculated emissions associated with the upstream extraction, refining and transportation of fuels for electricity generation prior to the point of combustion. Consumption-based emissions factors (kgCO2e/kWh) from DESNZ (for natural gas) and the IEA (for electricity) were used to calculate emissions.

Upstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
137087

Emissions calculation methodology
Spend-based method
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category includes emissions related to services purchased, including inbound and outbound logistics, and transportation and distribution between a company's suppliers and its own operations and among its own facilities. Data sources include inbound and outbound freight of materials shipped to and out of AAM facilities that was paid for by AAM. Activity data include logistics from AAM's North American facilities, including weight of materials, distance travelled, and mode of transportation, spend on transportation and distribution from facilities outside of North America and % spend breakdown by mode of transportation. For North American facilities, a weight and distance-based calculation (kgCO2e/tonne-km) was used to quantify emissions using weight, distance between shipper/receiver, and mode of transportation. For other facilities, a spend-based methodology, using CEDA emission factors, was applied to the transactions associated with each transportation mode.

Waste generated in operations

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
4518

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category covers emissions from third-party disposal and treatment of waste generated in the reporting company's owned or controlled operations in the reporting year. Data sources include waste reports, including an inventory breakdown of waste type generated (metals, recycling, landfill, hazardous, water & liquids) at the site level. Activity data include the weight of waste generated in operations from all AAM manufacturing operations. A weight-based methodology, using DESNZ emission factors (kgCO2e/tonne), was used to calculate emissions associated with the different waste treatment methods. Each waste type was mapped to the appropriate emissions factor for a given disposal pathway (recycling, landfill, combustion).

Business travel

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
3252

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category includes emissions from the transportation of employees for business-related activities in vehicles owned or operated by third parties, such as aircraft, trains, buses, and passenger cars. Data sources include travel reports for air, chartered jets, hotel, rail, and rental car for the reporting year. Activity data include air: distance between airports, class seat; hotels: number of hotel night stays broken down by country; rail: distance between departure/arrival, class seat; and rental car: size of vehicle, number of rental days, estimated miles travelled. A distance-based methodology was used to calculate emissions from air, rail and rental cars, using DESNZ emission factors (kgCO2e/km). For hotel stays, country-level DESNZ emission factors (kgCO2e/night) were applied.

Employee commuting

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
21002

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category covers transportation of employees between their homes and their worksites (in vehicles not owned or operated by the reporting company). Data sources include the company workforce report, including FTE count from each AAM site. Activity data include employee transport to AAM's corporate offices, metal forming, and driveline manufacturing sites. A third-party employee commuting model was used to estimate the commuting activities of AAM's FTEs. Emissions were calculated using research-based country-level assumptions regarding commuting distances and travel modes, using the assumption that all of AAM's employees travel by car to commute into their worksites.

Upstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Many of our corporate offices and manufacturing locations operate in facilities that are leased from other entities. However, we include emissions from those facilities within our Scope 1 and Scope 2 emissions totals, and thus consider submissions relevant to our Scope 1 and 2 inventories, but not relevant to Scope 3. This more accurately correlates our emissions scopes with our operations.

Downstream transportation and distribution

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
104425

Emissions calculation methodology
Distance-based method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category covers emissions from transportation and distribution of sold products in vehicles and facilities not owned or controlled by the reporting company. Data sources include outbound freight of products shipped from AAM's facilities that were paid for by AAM's customers. Activity data include total units and weight shipped out of AAM's facilities, estimated percentage of products shipped by transportation mode (air, sea, rail, truck), and estimated distance travelled using average distance (by mode). A weight and distance-based approach was used to calculate emissions, using DESNZ emission factors (kgCO2e/tonne-km). The weight of products shipped was multiplied by estimated distance and share of travel by mode of transportation (per insight provided by AAM staff on outbound shipments).

Processing of sold products

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
Products sold by AAM to the OEMs represent finished, not intermediate, products. Our products do not require processing by third parties, other than assembly into their vehicles prior to sale to their customers. This category is therefore not applicable and we consider that "use of sold products" to not be relevant to our GHG inventory.

Use of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
1328396

Emissions calculation methodology
Other, please specify (Combination of proportional weight basis, average mileage and emissions basis)

Percentage of emissions calculated using data obtained from suppliers or value chain partners

Please explain
This category covers emissions attributable to AAM products installed in customer vehicles as they are being operated by the end user. Specific major products for specific vehicles were identified. Emissions for those specific vehicles were calculated based on EPA average mpg and average emission factors to calculate vehicle emissions, which were then multiplied by the relative weight ratio of the AAM product to the vehicle. Category emissions were calculated by extrapolating from the identified product emissions using the ratio of sales associated with those specific products to the sales for that business unit for the year.

End of life treatment of sold products

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
51608

Emissions calculation methodology
Waste-type-specific method

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
This category covers emissions waste disposal and treatment of products sold by the company at the end of their life. This category includes the total expected end-of-life emissions from all products sold in the reporting year. Data sources include total units sold by AAM in the reporting year and weight of products. Activity data include total units and weight shipped out of AAM's facilities, type of packaging used for shipment of AAM products, secondary research on end-of-life treatment of vehicle components (e.g., percent recycled, landfilled, etc.), and secondary research on packaging lifetime, disposal and treatment. Assumptions on product and packaging materials and packaging ratios were based on best estimates. The rates for recycling, landfill, and combustion were estimated based on EPA averages and industry analysis of vehicle manufacturing. Each material type (paper, metals, etc.) was mapped to the appropriate DESNZ emissions factor for a given disposal pathway (recycle, landfill, combustion).

Downstream leased assets

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
AAM does not own any facilities that are leased to other entities.

Franchises

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
AAM has no franchises.

Investments

Evaluation status
Relevant, calculated

Emissions in reporting year (metric tons CO2e)
24790

Emissions calculation methodology
Other, please specify (Calculated based on ownership share and joint venture revenue)

Percentage of emissions calculated using data obtained from suppliers or value chain partners
0

Please explain
AAM has several joint ventures, but none over which we have operational control, which has been defined as the system boundary. However, per GHG Protocol guidelines, emissions from these investments are supposed to be reported as a percentage of the ownership share, despite the control status. Emissions were calculated by multiplying the emissions factor by the share of revenue attributable to AAM. The emissions factors were selected from the CEDA database for the automobile manufacturing category.

Other (upstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
AAM has no other upstream emission sources.

Other (downstream)

Evaluation status
Not relevant, explanation provided

Emissions in reporting year (metric tons CO2e)
<Not Applicable>

Emissions calculation methodology
<Not Applicable>

Percentage of emissions calculated using data obtained from suppliers or value chain partners
<Not Applicable>

Please explain
AAM has no other downstream emission sources.

C6.5a

(C6.5a) Disclose or restate your Scope 3 emissions data for previous years.

Past year 1

Start date
January 1 2020

End date
December 31 2020

Scope 3: Purchased goods and services (metric tons CO2e)
2334766

Scope 3: Capital goods (metric tons CO2e)
224199

Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2) (metric tons CO2e)
113974

Scope 3: Upstream transportation and distribution (metric tons CO2e)
104109

Scope 3: Waste generated in operations (metric tons CO2e)
4067

Scope 3: Business travel (metric tons CO2e)
4314

Scope 3: Employee commuting (metric tons CO2e)
27340

Scope 3: Upstream leased assets (metric tons CO2e)

Scope 3: Downstream transportation and distribution (metric tons CO2e)
89003

Scope 3: Processing of sold products (metric tons CO2e)

Scope 3: Use of sold products (metric tons CO2e)
1254796

Scope 3: End of life treatment of sold products (metric tons CO2e)
57421

Scope 3: Downstream leased assets (metric tons CO2e)

Scope 3: Franchises (metric tons CO2e)

Scope 3: Investments (metric tons CO2e)
41892

Scope 3: Other (upstream) (metric tons CO2e)

Scope 3: Other (downstream) (metric tons CO2e)

Comment

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?
No

C6.10

(C6.10) Describe your gross global combined Scope 1 and 2 emissions for the reporting year in metric tons CO2e per unit currency total revenue and provide any additional intensity metrics that are appropriate to your business operations.

Intensity figure
0.000074

Metric numerator (Gross global combined Scope 1 and 2 emissions, metric tons CO2e)
416269

Metric denominator
unit total revenue

Metric denominator: Unit total
5598000000

Scope 2 figure used
Market-based

% change from previous year
19.2

Direction of change
Decreased

Reason(s) for change
Change in renewable energy consumption

Please explain
This reduction is caused by a combination of efficiency projects and purchase of renewable electricity, REC and carbon credits in the U.S. to meet our U.S. goal of 100% renewable energy by 2025. 2022 Sales do not include Tekfor activity (June - December 2022). AAM's 2022 Consolidated Sales, including Tekfor, was $5,802.4 million.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?
No

C7.2

(C7.2) Break down your total gross global Scope 1 emissions by country/area/region.

Country/area/region	Scope 1 emissions (metric tons CO2e)
United States of America	39907
Brazil	1235
Czechia	2987
China	3107
Germany	5216
France	239
India	2115
Mexico	28439
Poland	1191
Spain	112
Thailand	543
United Kingdom of Great Britain and Northern Ireland	886
Republic of Korea	3

C7.3

(C7.3) Indicate which gross global Scope 1 emissions breakdowns you are able to provide.
By business division
By facility

C7.3a

(C7.3a) Break down your total gross global Scope 1 emissions by business division.

Business division	Scope 1 emissions (metric ton CO2e)
Driveline	48055
Metal Forming	37925

C7.3b

(C7.3b) Break down your total gross global Scope 1 emissions by business facility.

Facility	Scope 1 emissions (metric tons CO2e)	Latitude	Longitude
El Carmen Manufacturing Facility	1140	25.8896	-100.349511
Three Rivers Manufacturing Facility	13905	41.9573	-85.6421
Auburn Hills Manufacturing Complex	204	42.6915	-83.2557
Bolingbrook Manufacturing Facility	117	41.6843	-88.0518
Chicago Manufacturing Facility - Plant 2	262	41.8218	-87.6333
Columbus Manufacturing Facility	489	39.1391	-85.9542
Fort Wayne Manufacturing Facility	421	41.1405	-85.1779
Minerva Manufacturing Facility	1263	40.7234	-81.1163
Nurnberg Manufacturing Facility	302	49.4783	11.1281
Fraser Manufacturing Facility	1244	42.5523	-82.9322
Oslavany Manufacturing Facility	2719	49.1213	16.3405
Oxford Forge	1528	42.8597	-83.2921
Oxford Manufacturing Facility	381	42.8688	-83.2908
Royal Oak Manufacturing Facility	678	42.5322	-83.1795
Troy Manufacturing Facility	2140	42.5487	-83.1561
Zbysov Manufacturing Facility	163	49.154	16.3458
Zell Manufacturing Facility	3802	48.3495	8.0791
Barcelona Manufacturing Complex	54	41.3406	2.0194
Bluffton Manufacturing Facility	394	40.7229	-85.1763
Halifax Manufacturing Facility	482	53.77177	-1.8853
Decines Manufacturing Facility	107	45.754	4.942
North Vernon Manufacturing Facility	620	39.0302	-85.6391
Ramos Manufacturing Facility (RMC 1)	161	25.5664	-100.9241
Ridgway Manufacturing Facility	1386	41.4133	-78.7109
St. Marys Manufacturing Facility	293	41.4539	-78.547
Subiaco Manufacturing Facility	2424.42	35.2953	-93.6433
Suzhou Manufacturing Facility (SCMF1&2)	794.71	31.3214	120.8067
Twinsburg Manufacturing Facility	10261.09	41.2882	-81.4597
Warren Manufacturing Facility	35.56	42.5161	-83.0669
Araucaria Manufacturing Facility	1234.74	-25.5508	-49.3799
Changshu Manufacturing Facility - Plant 1	2312.55	31.7293	121.028
Chennai Manufacturing Facility	150.61	12.7164	80.0202
Glasgow Manufacturing Facility	403.12	55.8774	-4.3549
Guanajuato Manufacturing Complex - Plants 1-6	21294.13	20.8988	-101.3864
Pune Manufacturing Facility	1964.05	18.9677	74.5217
Valencia Manufacturing Facility	58.25	39.3104	-0.4205
Rayong Manufacturing Facility	542.78	13.0662	101.1773
Swidnica Manufacturing Facility	1190.99	50.8545	16.5207
Las Colinas Manufacturing Facility	1990.96	20.9675	-101.4255
Indaiatuba Manufacturing Facility	0	-23.137	-47.2364
Pyeongtaek Manufacturing Facility	3.24	37.0533	126.9775
Eisenach Manufacturing Facility	1112.3	50.0102	10.2567
Chakan Manufacturing Facility	0	18.7999	73.7759
Changshu Manufacturing Complex - Plant 2	0	31.7219	121.023
Emporium Manufacturing Facility	1696.76	41.5084	-78.2458
Guanajuato Forge	1991.64	20.8988	-101.3864
Lyon Manufacturing Facility	132.52	45.721	4.8692
Ramos Manufacturing Complex - Plant 2	0	25.5664	-100.9241
Rochester Manufacturing Facility	164.44	41.0716	-86.1888
Silao Manufacturing Facility	1861.43	20.9675	-101.4255
Ivancice Manufacturing Facility	105.67	49.10144	16.37752

C7.5

(C7.5) Break down your total gross global Scope 2 emissions by country/area/region.

Country/area/region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Brazil	1140	0
China	27313	27313
Czechia	11409	11409
France	450	450
Germany	15222	4523
India	7540	7540
Mexico	136924	136924
Poland	8875	908
Spain	2574	2574
United Kingdom of Great Britain and Northern Ireland	1530	710
United States of America	272585	133965
Republic of Korea	1836	1836
Thailand	2139	2139

C7.6

(C7.6) Indicate which gross global Scope 2 emissions breakdowns you are able to provide.

By business division

By facility

C7.6a

(C7.6a) Break down your total gross global Scope 2 emissions by business division.

Business division	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
Driveline	159943	143689
Metal Forming	329593	186601

C7.6b

(C7.6b) Break down your total gross global Scope 2 emissions by business facility.

Facility	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
El Carmen Manufacturing Facility	51052	51052
Araucaria Manufacturing Facility	982	0
Changshu Manufacturing Facility	12611	12614
Chennai Manufacturing Facility	1496	1496
Glasgow Manufacturing Facility	710	710
Guanajuato Manufacturing Plant 1-6	39112	39112
Pune Manufacturing Facility	5457	5457
Rayong Manufacturing Facility	2139	2139
Swidnica Manufacturing Facility	8875	908
Three Rivers Manufacturing Facility	14684	11329
Auburn Hills Manufacturing Complex	10122	10122
Eisenach Manufacturing Facility	3495	3495
Guanajuato Forge	12059	12059
Chicago Manufacturing Facility	4242	0
Columbus Manufacturing Facility	23698	0
Fort Wayne Manufacturing Facility	2781	2781
Fraser Manufacturing Facility	6447	0
Las Colinas Manufacturing Facility	5345	5345
Minerva Manufacturing Facility	6443	0
Nurnberg Manufacturing Facility	1028	1028
Oslavany Manufacturing Facility	7619	7619
Oxford Forge	13573	0
Oxford Manufacturing Facility	20570	0
Royal Oak Manufacturing Facility	26597	26597
Troy Manufacturing Facility	1971	0
Zell Manufacturing Facility	10699	0
Barcelona Manufacturing Complex	1567.21	1567.21
Bluffton Manufacturing Facility	17710	17710
Decines Manufacturing Facility	66.87	66.87
Halifax Manufacturing Facility	819.55	0
North Vernon Manufacturing Facility	38158.3	38158.3
Ramos Manufacturing Facility (RMC-1)	16375.27	16375.27
Ridgway Manufacturing Facility	21947.93	0
St. Marys Manufacturing Facility	9515.22	0
Subiaco Manufacturing Facility	20418.35	20418.35
Suzhou Manufacturing Facility (SCMF1 & 2)	14699.24	14699.24
Twinsburg Manufacturing Facility	10159.93	0
Valencia Manufacturing Facility	1006.27	1006.27
Warren Manufacturing Facility	649.48	649.48
Indaiatuba Manufacturing Facility	158	0
Pyeongtaek Manufacturing Facility	1835.53	1835.53
Ramos Manufacturing Facility 2 (RMC 2)	2044.93	2044.93
Bolingbrook Manufacturing Facility	2019.6	0
Chakan Manufacturing Facility	586.96	586.96
Emporium Manufacturing Facility	17748.07	6199.55
Lyon Manufacturing Facility	383.03	383.03
Rochester Manufacturing Facility	3130.06	0
Silao Manufacturing Facility	10714.53	10714.53
Zbysov Manufacturing Facility	3267.92	3267.92
Ivancice Manufacturing Facility	521.57	521.57
Valencia Manufacturing Facility	1006	1006
Guanajuato Development Center	223	223

C7.7

(C7.7) Is your organization able to break down your emissions data for any of the subsidiaries included in your CDP response?

No

C7.9

(C7.9) How do your gross global emissions (Scope 1 and 2 combined) for the reporting year compare to those of the previous reporting year?

Decreased

C7.9a

(C7.9a) Identify the reasons for any change in your gross global emissions (Scope 1 and 2 combined), and for each of them specify how your emissions compare to the previous year.

	Change in emissions (metric tons CO2e)	Direction of change in emissions	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	59513	Decreased	12.5	Purchase of more renewable energy was the primary and quantifiable method for understanding a large decrease in emissions. Additional emissions savings include some of the continuous improvement projects throughout the facilities.
Other emissions reduction activities		<Not Applicable>		The number of projects reported in 4.3a and the associated CO2 savings only represent those projects for which we have full data sets (CO2 savings, cost savings, etc.) Many more projects were actually implemented in 2022. As AAM works to better capture energy savings caused by continuous improvement projects, the savings are accounted for in major process updates, such as renewable energy consumption increases.
Divestment		<Not Applicable>		
Acquisitions		<Not Applicable>		
Mergers		<Not Applicable>		
Change in output		<Not Applicable>		
Change in methodology		<Not Applicable>		
Change in boundary		<Not Applicable>		
Change in physical operating conditions		<Not Applicable>		
Unidentified		<Not Applicable>		
Other		<Not Applicable>		

C7.9b

(C7.9b) Are your emissions performance calculations in C7.9 and C7.9a based on a location-based Scope 2 emissions figure or a market-based Scope 2 emissions figure?

Market-based

C8. Energy

C8.1

(C8.1) What percentage of your total operational spend in the reporting year was on energy?

More than 0% but less than or equal to 5%

C8.2

(C8.2) Select which energy-related activities your organization has undertaken.

	Indicate whether your organization undertook this energy-related activity in the reporting year
Consumption of fuel (excluding feedstocks)	Yes
Consumption of purchased or acquired electricity	Yes
Consumption of purchased or acquired heat	Yes
Consumption of purchased or acquired steam	No
Consumption of purchased or acquired cooling	No
Generation of electricity, heat, steam, or cooling	No

C8.2a

(C8.2a) Report your organization's energy consumption totals (excluding feedstocks) in MWh.

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	Unable to confirm heating value	0	473254	473254
Consumption of purchased or acquired electricity	<Not Applicable>	338334	718177	1056511
Consumption of purchased or acquired heat	<Not Applicable>	0	1239	1239
Consumption of purchased or acquired steam	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of purchased or acquired cooling	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Consumption of self-generated non-fuel renewable energy	<Not Applicable>	<Not Applicable>	<Not Applicable>	<Not Applicable>
Total energy consumption	<Not Applicable>	338334	1192670	1531003

C8.2b

(C8.2b) Select the applications of your organization's consumption of fuel.

	Indicate whether your organization undertakes this fuel application
Consumption of fuel for the generation of electricity	No
Consumption of fuel for the generation of heat	Yes
Consumption of fuel for the generation of steam	Yes
Consumption of fuel for the generation of cooling	No
Consumption of fuel for co-generation or tri-generation	No

C8.2c

(C8.2c) State how much fuel in MWh your organization has consumed (excluding feedstocks) by fuel type.

Sustainable biomass

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
AAM does not consume any sustainable biomass.

Other biomass

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
AAM does not consume any other type of biomass.

Other renewable fuels (e.g. renewable hydrogen)

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
AAM does not consume any other renewable fuels, such as hydrogen

Coal

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
AAM does not consume any coal.

Oil

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
AAM does not consume any oil.

Gas

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
473253.7

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat

MWh fuel consumed for self-generation of steam

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment
Natural Gas and Propane for manufacturing process and space heating

Other non-renewable fuels (e.g. non-renewable hydrogen)

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
0

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

Total fuel

Heating value
Unable to confirm heating value

Total fuel MWh consumed by the organization
473254

MWh fuel consumed for self-generation of electricity
<Not Applicable>

MWh fuel consumed for self-generation of heat
0

MWh fuel consumed for self-generation of steam
0

MWh fuel consumed for self-generation of cooling
<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration
<Not Applicable>

Comment

C8.2e

(C8.2e) Provide details on the electricity, heat, steam, and/or cooling amounts that were accounted for at a zero or near-zero emission factor in the market-based Scope 2 figure reported in C6.3.

Country/area of low-carbon energy consumption
United States of America

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Low-carbon energy mix, please specify (Nuclear, Wind, Solar)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
275873

Tracking instrument used
Other, please specify (Contract, U.S. REC)

Country/area of origin (generation) of the low-carbon energy or energy attribute
United States of America

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
<Not Applicable>

Comment

Country/area of low-carbon energy consumption
Brazil

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
15578

Tracking instrument used
I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute
Brazil

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
<Not Applicable>

Comment

Country/area of low-carbon energy consumption
Poland

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
9371

Tracking instrument used
I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute
Please select

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
<Not Applicable>

Comment

Country/area of low-carbon energy consumption
United Kingdom of Great Britain and Northern Ireland

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Wind

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
3547

Tracking instrument used
I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute
United Kingdom of Great Britain and Northern Ireland

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
<Not Applicable>

Comment

Country/area of low-carbon energy consumption
Germany

Sourcing method
Retail supply contract with an electricity supplier (retail green electricity)

Energy carrier
Electricity

Low-carbon technology type
Hydropower (capacity unknown)

Low-carbon energy consumed via selected sourcing method in the reporting year (MWh)
33965

Tracking instrument used
I-REC

Country/area of origin (generation) of the low-carbon energy or energy attribute
Germany

Are you able to report the commissioning or re-powering year of the energy generation facility?
No

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)
<Not Applicable>

Comment

C8.2g

(C8.2g) Provide a breakdown by country/area of your non-fuel energy consumption in the reporting year.

Country/area
United States of America

Consumption of purchased electricity (MWh)
521126

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
521126

Country/area
Mexico

Consumption of purchased electricity (MWh)
347481

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]

347481

Country/area
Brazil

Consumption of purchased electricity (MWh)
15578

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
15578

Country/area
Poland

Consumption of purchased electricity (MWh)
9371

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
1239

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
10610

Country/area
United Kingdom of Great Britain and Northern Ireland

Consumption of purchased electricity (MWh)
7134

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
7134

Country/area
Czechia

Consumption of purchased electricity (MWh)
20744

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
20744

Country/area
France

Consumption of purchased electricity (MWh)
7688

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
7688

Country/area
Germany

Consumption of purchased electricity (MWh)
48325

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
48325

Country/area
Spain

Consumption of purchased electricity (MWh)
15413

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
15413

Country/area
China

Consumption of purchased electricity (MWh)
44768

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
44768

Country/area
Republic of Korea

Consumption of purchased electricity (MWh)
4329

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
4329

Country/area
Thailand

Consumption of purchased electricity (MWh)
5009

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
5009

Country/area
India

Consumption of purchased electricity (MWh)
9544

Consumption of self-generated electricity (MWh)
0

Is this electricity consumption excluded from your RE100 commitment?
<Not Applicable>

Consumption of purchased heat, steam, and cooling (MWh)
0

Consumption of self-generated heat, steam, and cooling (MWh)
0

Total non-fuel energy consumption (MWh) [Auto-calculated]
9544

C9. Additional metrics

C9.1

(C9.1) Provide any additional climate-related metrics relevant to your business.

Description
Waste

Metric value
75

Metric numerator
%

Metric denominator (intensity metric only)

% change from previous year
15

Direction of change
Increased

Please explain
AAM has established a corporate goal of achieving zero waste-to-landfill (ZWTL) by 2035 for all of its facilities. In addition, we have an interim goal of ZWTL by 2027 for all of those facilities for which the relevant infrastructure exists, recognizing, for example, that some facilities may not have pertinent recycling programs available in their area. The goal is expressed as the percentage of plants that have reached ZWTL, defined as a diversion rate of 90% or greater. An increase in the metric is a positive change. NOTE: 2021 performance should have been indicated in the previous CDP response as 65% of plants achieving ZWTL based on full-year 2021 waste generation data.

Description
Energy usage

Metric value
933

Metric numerator
5,224,627 mmBtu

Metric denominator (intensity metric only)
$5,598M Net sales

% change from previous year
6

Direction of change
Decreased

Please explain
Each facility is tasked with annual reduction goals of 3%.

C10. Verification

C10.1

(C10.1) Indicate the verification/assurance status that applies to your reported emissions.

	Verification/assurance status
Scope 1	Third-party verification or assurance process in place
Scope 2 (location-based or market-based)	Third-party verification or assurance process in place
Scope 3	Third-party verification or assurance process in place

C10.1a

(C10.1a) Provide further details of the verification/assurance undertaken for your Scope 1 emissions, and attach the relevant statements.

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
American Axle Manufacturing Inc. - CDP CY2022 - Verification Report_Final_Issued20230711.pdf

Page/ section reference
Page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1b

(C10.1b) Provide further details of the verification/assurance undertaken for your Scope 2 emissions and attach the relevant statements.

Scope 2 approach
Scope 2 market-based

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
American Axle Manufacturing Inc. - CDP CY2022 - Verification Report_Final_Issued20230711.pdf

Page/ section reference
Page 3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.1c

(C10.1c) Provide further details of the verification/assurance undertaken for your Scope 3 emissions and attach the relevant statements.

Scope 3 category
Scope 3: Purchased goods and services
Scope 3: Capital goods
Scope 3: Fuel and energy-related activities (not included in Scopes 1 or 2)
Scope 3: Upstream transportation and distribution
Scope 3: Waste generated in operations
Scope 3: Business travel
Scope 3: Employee commuting
Scope 3: Investments
Scope 3: Downstream transportation and distribution
Scope 3: Use of sold products
Scope 3: End-of-life treatment of sold products

Verification or assurance cycle in place
Annual process

Status in the current reporting year
Complete

Type of verification or assurance
Limited assurance

Attach the statement
American Axle Manufacturing Inc. - CDP CY2022 - Verification Report_Final_Issued20230711.pdf

Page/section reference
3

Relevant standard
ISO14064-3

Proportion of reported emissions verified (%)
100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?
No, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.1

(C11.1) Are any of your operations or activities regulated by a carbon pricing system (i.e. ETS, Cap & Trade or Carbon Tax)?
Yes

C11.1a

(C11.1a) Select the carbon pricing regulation(s) which impacts your operations.
Germany ETS

C11.1b

(C11.1b) Complete the following table for each of the emissions trading schemes you are regulated by.

Germany ETS

% of Scope 1 emissions covered by the ETS
6

% of Scope 2 emissions covered by the ETS
0

Period start date
January 1 2022

Period end date
December 31 2022

Allowances allocated
0

Allowances purchased
0

Verified Scope 1 emissions in metric tons CO2e
0

Verified Scope 2 emissions in metric tons CO2e
0

Details of ownership
Facilities we own and operate

Comment
This regulatory scheme is only applied to AAM facilities in the form of a carbon tax on fuel usage, which is comprised in our case of natural gas for process and building heating, and fuels for our vehicle pool.

C11.1d

(C11.1d) What is your strategy for complying with the systems you are regulated by or anticipate being regulated by?

The Germany ETS applies to AAM in the form of a carbon tax on our consumption of fuels (natural gas and vehicle fuel), which we pay and will continue to do so. There is a provision of the regulation that specifies certain sections of industries that can be partially exempted from the carbon tax. We are anticipating that heat treating will be added to that section, allowing us to claim back part of that tax in the future, since we operate annealing and case hardening processes that would be classified as heat treating. We will continue to attempt to identify and implement energy efficiency projects to reduce the amount of natural gas and vehicle fuel that we consume.

The answer to 11.1a and 11.1b are as complete as AAM is aware. In the next year, AAM plans to evaluate a further study of carbon pricing systems that could impact our operations.

C11.2

(C11.2) Has your organization canceled any project-based carbon credits within the reporting year?
No

C11.3

(C11.3) Does your organization use an internal price on carbon?
No, and we do not currently anticipate doing so in the next two years

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?
Yes, our suppliers
Yes, other partners in the value chain

C12.1a

(C12.1a) Provide details of your climate-related supplier engagement strategy.

Type of engagement
Information collection (understanding supplier behavior)

Details of engagement
Collect targets information at least annually from suppliers
Collect climate transition plan information at least annually from suppliers

% of suppliers by number
28

% total procurement spend (direct and indirect)
90

% of supplier-related Scope 3 emissions as reported in C6.5
54

Rationale for the coverage of your engagement
In 2021, we determined that 86% of AAM's GHG emissions originated from our suppliers and 79% of our Scope 3 Emissions came from our direct material suppliers. Of that direct spend, approximately 66% came from our metals suppliers (iron, steel and aluminum), allowing us to identify where our collaborative emission reduction efforts should be focused. We placed greater emphasis on working with our suppliers to reduce their emissions in alignment with our reduction pledges. In 2021 AAM developed a full sustainable procurement strategy that was launched in Q1 of 2022. This included 86% of our suppliers (based on Scope 3) being asked to commit to their own environmental stewardship goals and share those initiatives with AAM upon requests. 79% of our suppliers (based on Scope 3) were also asked to respond to an SAQ administered by NQC. In addition, 67% of those suppliers are required to set and validate science-based targets by the year 2027. 70% of our suppliers (based on Scope 3) are a part of our Supplier Sustainability Council (SSC), where we collaborate on key strategic discussions and benchmarking. In 2022, we also surveyed our SSC members to understand who had already set science-based targets. By the end of the year, 12% of suppliers in that population had their targets validated and 14% committed to submitting to SBTi. We will perform the survey again in 2023. In 2022, we submitted our GHG inventory to SBTi for validation. We were compelled to reevaluate our methodology for Scope 3 which resulted in an additional sub-category, reducing the contribution of our supplier's emissions in the Scope 3 category from 79% to 54%. As a result, our supplier engagement strategy is now based on 54% of supplier-related Scope 3 emissions.

Impact of engagement, including measures of success
Our measure of success will be having 67% of our suppliers (by emissions) establish and validate science-based targets by 2027. Their work to meet those targets will help us achieve our goals for Scope 3 reductions, since our strategy was developed in 2021 and deployed in Q1 of 2022. By the end of 2022, 12% of suppliers in that population had their targets validated and 14% committed to submitting to SBTi. In 2022, we submitted our GHG inventory to SBTi for validation. We were compelled to reevaluate our methodology for scope 3 which resulted in an additional sub-category, reducing the contribution of our supplier's emissions in the Scope 3 category from 79% to 54%. As a result, our supplier engagement strategy is now based on 54% of supplier-related Scope 3 emissions. Having 67% of our suppliers (by emissions) establish and validate their science-based targets by 2027 is still a measure of success.

Comment

Type of engagement
Engagement & incentivization (changing supplier behavior)

Details of engagement
Run an engagement campaign to educate suppliers about climate change
Provide training, support, and best practices on how to set science-based targets
Directly work with suppliers on exploring corporate renewable energy sourcing mechanisms

% of suppliers by number
1.3

% total procurement spend (direct and indirect)
35

% of supplier-related Scope 3 emissions as reported in C6.5
54

Rationale for the coverage of your engagement
In 2022, AAM launched a Supplier Sustainability Council (SSC) with the greater purpose of:
1.) Providing a forum to share best practices and lessons learned to improve collective sustainability performance
2.) Aligning supplier partners with AAM sustainability objectives to help us meet and exceed customer expectations
3.) Collaborating to accelerate sustainability improvements across the value chain.

The council is comprised of 21 direct and indirect suppliers who are the highest contributors to our Scope 3 emissions (70% by emissions) in the product and services category. Our quarterly sessions focus on learning and collaboration subjects and current activity sharing by our members to help improve our collective performance in key sustainability areas including the science-based target commitment and validation process, materiality assessments, renewable energy/energy treasure map programs, supply chain mapping and other relevant topics. By engaging these key direct and indirect suppliers, we are ensuring that they have the resources they need to achieve our collective climate objectives.

Impact of engagement, including measures of success
Our measure of success will be having 67% of our suppliers (by emissions) establish and validate science-based targets by 2027. Their work to meet those targets will help us achieve our goals for Scope 3 reductions, since our strategy was developed in 2021 and deployed in Q1 of 2022. By the end of 2022, 12% of suppliers in that population had their targets validated and 14% committed to submitting to SBTi. In 2022, we submitted our GHG inventory to SBTi for validation. We were compelled to reevaluate our methodology for Scope 3 which resulted in an additional sub-category, reducing the contribution of our supplier's emissions in the Scope 3 category from 79% to 54%. As a result, our supplier engagement strategy is now based on 54% of supplier-related Scope 3 emissions. Having 67% of our suppliers (by emissions) establish and validate their science-based targets by 2027 is still a measure of success.

Comment

C12.1d

(C12.1d) Give details of your climate-related engagement strategy with other partners in the value chain.

AAM actively participates in multiple climate-related engagements with other partners, including sustainability-oriented business organizations, trade associations, and academia. All the engagements described below, some local and some applicable across the company's global operations, work to develop, innovate, and share technology and operational knowledge that can reduce or eliminate Scope 1, 2, or 3 emissions through information sharing and potential collaborations. All these organizations are either trade/peer groups or leaders in sustainability and climate action in our industry or region. It is important to AAM to be involved in organizations that can help to move the needle on climate-related issues, as benefits may be realized for society and for the company (both in terms of actual climate impacts and reputation). Success will be measured in the form of emissions reductions and, hopefully, cost reduction that can be traced to knowledge shared through these engagements. Many of the engagements are early in their development and extensive, concrete results have not been achieved yet, for the most part. AAM is a member (and our CEO is on the board) of the Michigan ESG Leadership Council. Its membership includes top leaders of businesses with significant presence and investments in Michigan, several Michigan universities, a health care company and a utility. The stated mission of the Council is “to advance the vision, thought leadership and resources necessary to position Michigan, its diverse communities and its businesses for a healthy, sustainable and prosperous future.” We are also an active member of the Suppliers Partnership for the Environment, a group of automotive OEMs and suppliers whose mission is to advance environmental sustainability throughout the auto industry. The organization provides the opportunity for members to connect and share environmental sustainability best practices and strategies with industry peers, and learn about emerging issues impacting the environment and their business operations. One example of the collaborative effort was developing and publishing a guidance document to help companies in the automotive value chain in establishing a framework for CO2 reporting and reduction aligned with common industry expectations.

C12.2

(C12.2) Do your suppliers have to meet climate-related requirements as part of your organization’s purchasing process?

Yes, suppliers have to meet climate-related requirements, but they are not included in our supplier contracts

C12.2a

(C12.2a) Provide details of the climate-related requirements that suppliers have to meet as part of your organization’s purchasing process and the compliance mechanisms in place.

Climate-related requirement

Implementation of emissions reduction initiatives

Description of this climate related requirement

To achieve our science-based target, we require 67% of our suppliers (by emissions) to have targets validated by SBTi by 2027. This is a critical step in reducing our Scope 3 emissions, which comprise approximately 90% of our total emissions footprint. By the end of 2022, 12% of suppliers in that population had their targets validated and 14% committed to submitting to SBTi.

We were compelled to reevaluate our methodology for scope 3 which resulted in an additional sub-category, reducing the contribution of our supplier's emissions in the Scope 3 category from 79% to 54%. As a result, our supplier engagement strategy is now based on 54% of supplier-related Scope 3 emissions.

% suppliers by procurement spend that have to comply with this climate-related requirement

59

% suppliers by procurement spend in compliance with this climate-related requirement

20

Mechanisms for monitoring compliance with this climate-related requirement

Supplier self-assessment
Off-site third-party verification

Response to supplier non-compliance with this climate-related requirement

Retain and engage

C12.3

(C12.3) Does your organization engage in activities that could either directly or indirectly influence policy, law, or regulation that may impact the climate?

Row 1

External engagement activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
Yes, our membership of/engagement with trade associations could influence policy, law, or regulation that may impact the climate

Does your organization have a public commitment or position statement to conduct your engagement activities in line with the goals of the Paris Agreement?
No, and we do not plan to have one in the next two years

Attach commitment or position statement(s)
<Not Applicable>

Describe the process(es) your organization has in place to ensure that your external engagement activities are consistent with your climate commitments and/or climate transition plan
AAM utilizes the same governance structure and processes we developed for our overall sustainability program to ensure that our direct and indirect activities that may influence policy are consistent with our overall strategy regarding climate change. Activities that further the Company's overall climate change strategy are subject to approval of the corporate Policy Committee and/or the CEO. As the Sustainability Program Lead (and a member of this committee), the President is responsible for bringing high-level policy or funding decisions to the Committee. If approved, the President would report significant decisions affecting strategy to the Board of Directors. There were no activities requiring such approval during 2022. As a Tier 1 automotive supplier, AAM has been a member of well-established industry trade associations for decades. Over time, a number of these associations have developed expertise and taken positions regarding climate change policy that generally support the automotive industry's efforts to address climate change. Notably, the Automotive Industry Action Group (AIAG), the Forging Industry Association (FIA), National Association of Manufacturers (NAM) and the Suppliers Partnership for the Environment (SP) have publicly stated their positions on climate change. As a member of these trade associations, our participation is indirect. AAM's Code of Business Conduct prohibits the use of Company funds for political purposes, including for contributions to a political party, candidate or committee. Accordingly, we do not maintain a political action committee (PAC). However, we actively monitor the regulatory environment and changes in laws and governmental policies as a matter of importance to our commitment to comply with environmental laws and regulations and reduce the environmental impact of our operations.

Primary reason for not engaging in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

Explain why your organization does not engage in activities that could directly or indirectly influence policy, law, or regulation that may impact the climate
<Not Applicable>

C12.3b

(C12.3b) Provide details of the trade associations your organization is a member of, or engages with, which are likely to take a position on any policy, law or regulation that may impact the climate.

Trade association
Other, please specify (Automotive Industry Action Group (AIAG))

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
Based upon the service offerings detailed on their website, AIAG provides resources on science-based targets, climate-related emerging issues, RE100 and other similar initiatives, a GHG working group, and much
more.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
No, we have not evaluated

Trade association
Other, please specify (Forging Industry Association (FIA))

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
FIA's Energy and Environment Work Group has stated on their website "The forging industry of the future will be energy-efficient and will protect the environment. In the next century, the forging plant will be a zero environmental liability, making it a valued and responsible
neighbor in its community. To accomplish this, the forging industry must consider ways it can substantially reduce its energy intensity by developing and applying advanced technology." They have established a strategic target in the area of energy conservation as part of their support for this vision.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
No, we have not evaluated

Trade association

National Association of Manufacturers

Is your organization's position on climate change policy consistent with theirs?
Unknown

Has your organization attempted to influence their position in the reporting year?
No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
<Not Applicable>

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
No, we have not evaluated

Trade association
Other, please specify (Suppliers Partnership for the Environment)

Is your organization's position on climate change policy consistent with theirs?
Consistent

Has your organization attempted to influence their position in the reporting year?
No, we did not attempt to influence their position

Describe how your organization's position is consistent with or differs from the trade association's position, and any actions taken to influence their position
From their website, "Suppliers Partnership for the Environment" (SP) has been a leading forum for global automakers, their large and small suppliers, the US EPA and other government entities from around the world. They work together to improve the environmental sustainability and business value of the global automotive supply chain, including efforts to improve energy efficiency and drive carbon reduction initiatives across the supply chain. Looking forward, several of SP's member companies are leading action to advance the next generation of ambitious environmental sustainability goals aspiring to advance positive environmental, economic and community impacts on the road toward carbon neutrality. As the automotive industry continues its work toward these goals, SP is providing a unique forum to facilitate increased OEM and supplier dialogue and collaboration on common definitions, tools and resources to support our members in advancing action on absolute carbon reduction across the supply chain. SP organizes regular presentations, workshops, and initiatives to educate suppliers in developing and progressing carbon reduction programs / projects, with support of subject-matter experts from SP member companies as well as government and non-profit collaborators. In addition, SP continually seeks new opportunities to support OEMs and suppliers in working together to promote common approaches and accelerate action in support of shared carbon reduction goals, while minimizing duplication of effort and reducing burdens on the supply chain." It appears that their position is in line with ours, and more than likely consistent with the Paris agreement, but this is not explicitly stated as such.

Funding figure your organization provided to this trade association in the reporting year (currency as selected in C0.4)

Describe the aim of your organization's funding
<Not Applicable>

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?
No, we have not evaluated

C12.4

(C12.4) Have you published information about your organization's response to climate change and GHG emissions performance for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Publication
In voluntary sustainability report

Status
Complete

Attach the document
2022 AAM Sustainability Report.pdf
2022 AAM Sustainability Report.pdf

Page/Section reference
The Environmental section of our Corporate Sustainability Report, pages 8-20, is particularly pertinent to climate change. The Product section, pages 46-53, discusses advances in product technology that are targeted toward light-weighting and vehicle electrification technologies. The Supply Chain section, pages 54-59, describes activities related to our suppliers and climate change, while the Governance section, page 64 discusses the board-level oversight of sustainability issues.

Content elements
Governance
Strategy
Risks & opportunities
Emissions figures
Emission targets
Other metrics

Comment
Our sustainability report includes an overarching review of our progress towards climate and other environmental sustainability targets, as well as oversight of the sustainability program, sustainability strategies, opportunities in this area, and especially our new, aggressive targets (including net-zero targets) that were recently established.

Publication
In mainstream reports

Status
Complete

Attach the document
2022-aam-annual-report.pdf

Page/Section reference
Climate change is referenced multiple times in our Annual Report/Form 10-K. In our 2022 Annual Report, climate change and related topics are included, such as our objectives, business risk, natural disasters, governance, and our role as a company in working to combat global climate change and its impact. The following pages have specific content pertaining to climate change: pages 4-5 (letter from our Chairman) and pages 18, 23-25, 33, 53 (Form 10-K).

Content elements
Governance
Strategy
Risks & opportunities
Emission targets
Other metrics

Comment
Our Annual Report/Form 10-K includes climate-related topics and our performance such as corporate objectives, status of these objectives, acknowledgement of risks related to climate change that could impact the business, and governance of the topics. Along with this information, we include responses and specific programs implemented to address key climate-related issues. There is also an acknowledgement that various stakeholders, including customers, suppliers, providers of debt and equity capital, regulators and those in the workforce, are increasing their expectations. These stakeholders expect companies to do their part to combat global climate change and its impact, and to conduct their operations in an environmentally sustainable and socially responsible manner with appropriate oversight by senior leadership.

Publication
In other regulatory filings

Status
Complete

Attach the document
Proxy Statement May 2023.pdf

Page/Section reference
In our Proxy Statement/Form DEF 14A we reference climate change in multiple sections. For example, we provide relevant information on the management of the company, including climate-related topics, environmental performance, risk management, etc. The following pages have climate-related content: pages 5, 9, 15, 17, 18, 29, 32 and 34.

Content elements
Governance
Strategy
Risks & opportunities
Emission targets

Comment
Our Proxy Statement/Form DEF 14A includes climate-related topics and pertinent information such as awareness of our shareholder expectations regarding sustainability and our Board of Director's active engagement in overseeing AAM's climate-related objectives. It also covers the link between our sustainability performance and annual incentive compensation program. The content in the Proxy reinforces AAM's comprehensive approach to addressing climate-related topics as a key strategic objective for our future success.

C12.5

(C12.5) Indicate the collaborative frameworks, initiatives and/or commitments related to environmental issues for which you are a signatory/member.

	Environmental collaborative framework, initiative and/or commitment	Describe your organization's role within each framework, initiative and/or commitment
Row 1	We are not a signatory/member of any collaborative framework, initiative and/or commitment related to environmental issues	<Not Applicable>

C15. Biodiversity

C15.1

(C15.1) Is there board-level oversight and/or executive management-level responsibility for biodiversity-related issues within your organization?

	Board-level oversight and/or executive management-level responsibility for biodiversity-related issues	Description of oversight and objectives relating to biodiversity	Scope of board-level oversight
Row 1	No, and we do not plan to have both within the next two years	<Not Applicable>	<Not Applicable>

C15.2

(C15.2) Has your organization made a public commitment and/or endorsed any initiatives related to biodiversity?

	Indicate whether your organization made a public commitment or endorsed any initiatives related to biodiversity	Biodiversity-related public commitments	Initiatives endorsed
Row 1	No, and we do not plan to do so within the next 2 years	<Not Applicable>	<Not Applicable>

C15.3

(C15.3) Does your organization assess the impacts and dependencies of its value chain on biodiversity?

Impacts on biodiversity

Indicate whether your organization undertakes this type of assessment
No and we don't plan to within the next two years

Value chain stage(s) covered
<Not Applicable>

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
<Not Applicable>

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
<Not Applicable>

Dependencies on biodiversity

Indicate whether your organization undertakes this type of assessment
No and we don't plan to within the next two years

Value chain stage(s) covered
<Not Applicable>

Portfolio activity
<Not Applicable>

Tools and methods to assess impacts and/or dependencies on biodiversity
<Not Applicable>

Please explain how the tools and methods are implemented and provide an indication of the associated outcome(s)
<Not Applicable>

C15.4

(C15.4) Does your organization have activities located in or near to biodiversity- sensitive areas in the reporting year?
Not assessed

C15.5

(C15.5) What actions has your organization taken in the reporting year to progress your biodiversity-related commitments?

	Have you taken any actions in the reporting period to progress your biodiversity-related commitments?	Type of action taken to progress biodiversity- related commitments
Row 1	No, we are not taking any actions to progress our biodiversity-related commitments, but we plan to within the next two years	<Not Applicable>

C15.6

(C15.6) Does your organization use biodiversity indicators to monitor performance across its activities?

	Does your organization use indicators to monitor biodiversity performance?	Indicators used to monitor biodiversity performance
Row 1	No	Please select

C15.7

(C15.7) Have you published information about your organization's response to biodiversity-related issues for this reporting year in places other than in your CDP response? If so, please attach the publication(s).

Report type	Content elements	Attach the document and indicate where in the document the relevant biodiversity information is located

C16. Signoff

C-FI

(C-FI) Use this field to provide any additional information or context that you feel is relevant to your organization's response. Please note that this field is optional and is not scored.

C16.1

(C16.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Senior Vice President of Human Resources and Sustainability	Other, please specify (Senior Vice President of Human Resources and Sustainability)

SC. Supply chain module

SC0.0

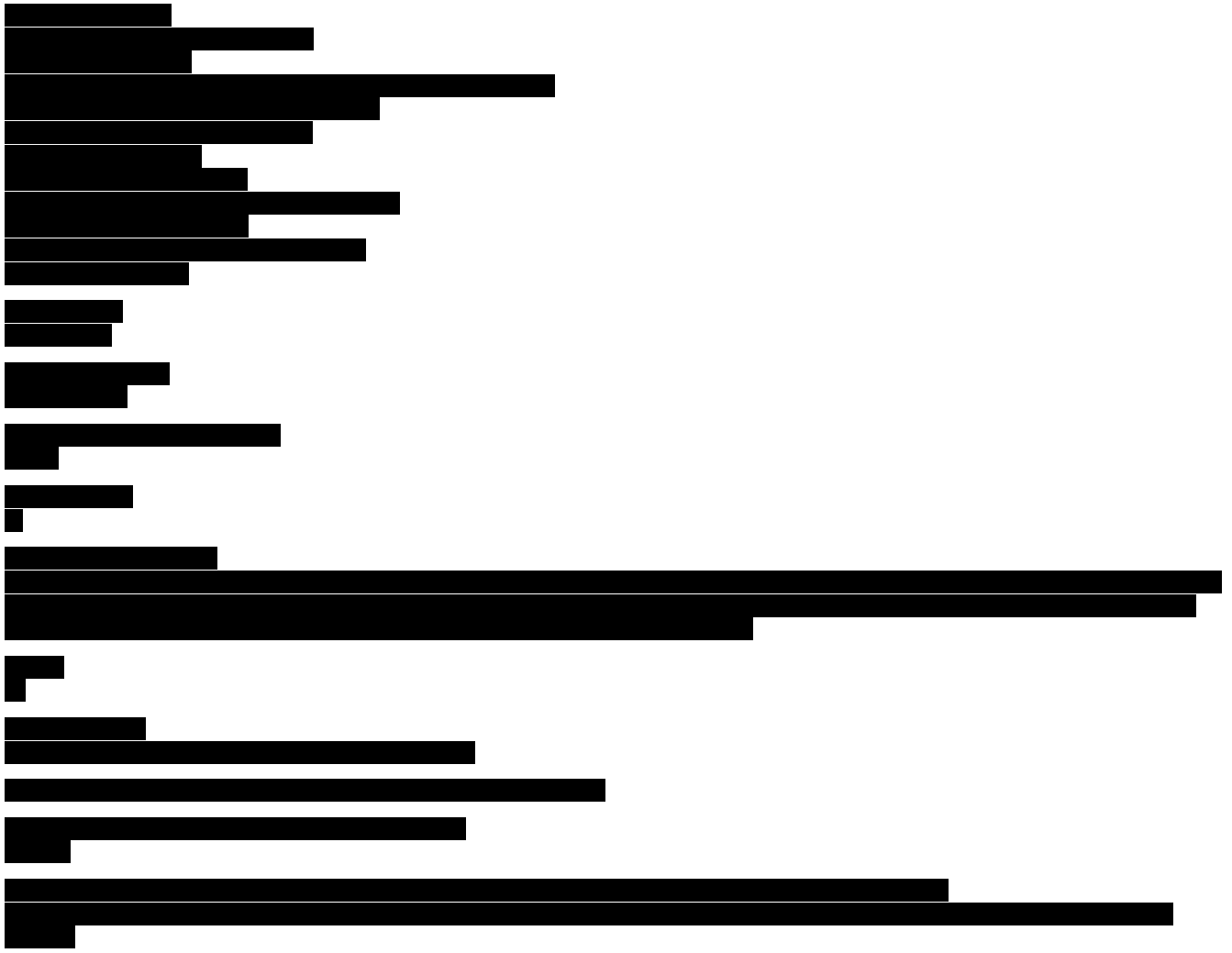
(SC0.0) If you would like to do so, please provide a separate introduction to this module.

We strive to develop and maintain relationships with companies that share our vision, values and commitment to sustainability and diversity. AAM collaborates with Supplier Partners around the globe to deliver POWER to our customers, minimize our impact on the planet and reflect the communities in which we operate. In 2022, we launched the first phase of our sustainable procurement strategy, updated and enhanced the Supplier Requirements Manual and created a Supplier Sustainability Council. Reinforcing greater transparency through our tiered suppliers helps create a resilient supply chain. As we continue to advance our supply chain and procurement strategy, we are determining appropriate monitoring processes. In 2023 we launched a Supplier Code of Conduct and are developing plans to integrate sustainability criteria into our sourcing decision processes.

SC0.1

(SC0.1) What is your company's annual revenue for the stated reporting period?

	Annual Revenue
Row 1	5598000000



SC1.2

(SC1.2) Where published information has been used in completing SC1.1, please provide a reference(s).

SC1.3

(SC1.3) What are the challenges in allocating emissions to different customers, and what would help you to overcome these challenges?

We face no challenges	Our current methodology is to allocate emissions to each customer according to the relative percentage of sales. Our legacy management systems do not systematically collect data to a level to be able to calculate emissions by customer. As we do not consider that we have challenges in this area, we do not see the need for measures to overcome these non-existent challenges. We are developing our capabilities to gather this data through automated systems and development of staff resources.

SC1.4

(SC1.4) Do you plan to develop your capabilities to allocate emissions to your customers in the future?

Yes

SC1.4a

(SC1.4a) Describe how you plan to develop your capabilities.

Our current methodology is to allocate emissions to each customer according to the relative percentage of sales. Our legacy management systems do not systematically collect data to a level to be able to calculate emissions by customer. We continue to work to develop our capabilities to gather this data through automated systems and development of staff resources.