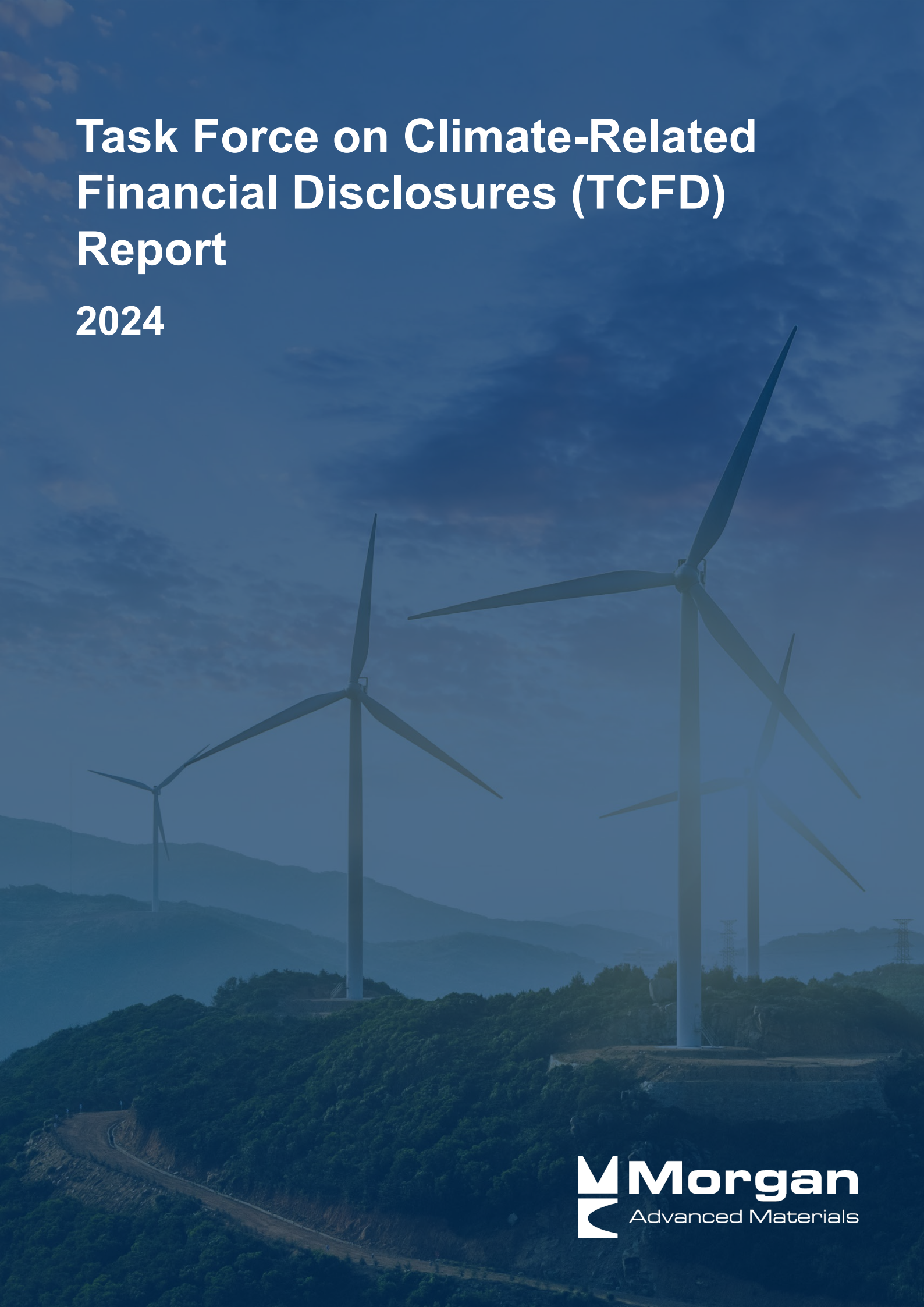
Task Force on Climate-Related Financial Disclosures (TCFD) Report

2024



Morgan Advanced Materials

Task Force on Climate-Related Financial Disclosures (TCFD) reporting

Morgan Advanced Materials is reporting in line with UK Listing Rule 6.6.6R(8) by providing climate-related financial disclosures consistent with the TCFD recommendations in this report.

We consider our climate related financial disclosures to be consistent with nine of the recommendations, which are set out in the table below. We are adopting an explain stance for 'Strategy' requirements b) and c).

Scenario analysis has been completed for most risks and opportunities. From a transitional risk perspective, due to the business reliance on natural gas we have modelled the financial impact of GHG taxes using our 10 biggest sites in respect of GHG emissions output. From a physical risk perspective, the financial impact of Heat Stress and/or a Water Stress incident has been considered for the top 25 applicable sites (based on revenue, GHG emissions, water consumption and where most likely to be exposed to physical climate change). We also modelled the financial impact from sea level rise and coastal flooding events for 10 sites which were selected due to their low lying locations and proximity to the coast.

It was considered that the potential risk in the short term would not be material and therefore scenarios were examined over the medium and long-term time horizon. However, we recognise the importance of scenario analysis in the development of our strategy. As part of the 2025 strategy plan review, the glidepath to reduce reliance on natural gas will be reviewed and the long-term impact associated mitigation considered.

Following a comprehensive scope 3 inventory exercise and subsequent development of improved reporting methodology, we now consider ourselves compliant with 'Metrics and targets' requirement b).

The climate-related financial disclosures made by Morgan Advanced Materials comply with the requirements of the Companies Act 2006 as amended by the Companies (Strategic Report) (Climate-related Financial Disclosure) Regulations 2022 and UK Government Climate-Related Financial Disclosure guidance.

Summary of disclosures:

Section	Requirement
Governance	a) Describe the Board's oversight of climate-related risks and opportunities. b) Describe management's role in assessing and managing climate-related risks and opportunities.
Strategy	a) Describe the climate-related risks and opportunities the organisation has identified over the short, medium, and long term. b) Describe the impact of climate-related risks and opportunities on the organisation's businesses, strategy and financial planning. c) Describe the resilience of the organisation's strategy, taking into consideration different climate-related scenarios, including a 2°C or lower scenario.
Risk management	a) Describe the organisation's processes for identifying and assessing climate related risks. b) Describe the organisation's processes for managing climate-related risks. c) Describe how processes for identifying, assessing and managing climate-related risks are integrated into the organisations overall risk management.
Metrics and targets	a) Disclose the metrics used by the organisation to assess climate-related risks and opportunities in line with its strategy and risk management processes. b) Disclose scope 1, 2 and if appropriate, scope 3 GHG emissions and related risks. c) Describe the targets used by the organisation to manage climate-related risks and opportunities and performance against targets.

Task Force on Climate-Related Financial Disclosures (TCFD) reporting continued

Governance

Our climate-related risk and opportunities governance structure starts with the Board, and cascades down through the organisation, as outlined in the table overleaf.

Our Board has oversight of our climate change, environmental and corporate responsibility matters and ensures that our Executive team progresses as planned to meet our commitments and goals. The Board receives a written update from the Group Director for Environment, Safety and Sustainability four times a year on progress against climate-related activities and actions. A presentation and discussion of climate related matters is included as a standing topic in the CEO's report to the Board. The impact of major capital expenditure projects on our 2030 environment goals is also assessed as part of the Board review process.

The metrics reviewed at each meeting include:

- Progress towards our 2030 absolute scope 1 & 2 CO_2e emissions target[1]; and
- Progress towards our 2030 water withdrawal and water stress targets[1].

During 2024 the Board received external training on the Corporate Sustainability Reporting Directive (CSRD), and four internal updates from the Group Director EHS&S on the Group's strategy and progress against an in-year plan.

During 2024, a new structure for ESG governance was introduced to provide a more robust, tiered structure to governance. This new structure provides a more focused review process and a better escalation pathway to ensure our key ESG priorities are delivered.

ESG Governance structure

Board

Frequency: Four times per year
Chair: Ian Marchant
Attendees: Main Board

Reporting ↑

Executive Sustainability Council

Frequency: Reports four times per year (prior to Board meeting)
Chair: Pete Raby
Attendees: Executive plus Group Function Senior Reps and Workstream Initiative Leads

Reporting & Escalations ↑ ↓ Direction & Decisions

Workstream SteerCo

Frequency: Monthly
Chair: Group Finance Director
Attendees: Initiative Leads, Group EHS&S Dir., Group ESG Manager, Group Risk Lead, Group Director of Finance, GBU[3] ESG leads, Head of Financial Planning & Analysis, Group Comms Director

Reporting & Escalations ↑ ↓ Decisions

Initiatives

Frequency: Monthly[2]
Chair: Initiative Lead
Attendees: GBU[3] Functional subject matter experts where required Group EHS&S, Finance members where appropriate

1. See metrics and targets section.
2. Frequency may vary based on the initiative.
3. The segments of the business are referred to internally and historically as Global Business Units ('GBUs') and these terms are used interchangeably in the Annual Report.

Table 1 – Board and Management oversight of climate-related risks and opportunities

Board of Directors	› Has oversight of our climate change, environmental and corporate responsibility matters to ensure our Executive team progresses as planned to meet our commitments and goals. › Climate-related risks and opportunities are a scheduled Board agenda item four times per year and progress on environmental matters is reviewed four times per year, with updates on CO_2 and water progress in each meeting. › The competencies of the Board can be found on pages 59 and 60 of the Annual Report, which included skills and experience relevant to climate matters.
Chief Executive Officer	› Has overall responsibility for climate risk management and delivery of the sustainability strategy. › Environmental performance metrics, including CO_2 emissions and water usage, are reviewed each month with the GBU presidents as part of the monthly performance review cadence.
Nomination Committee	› Ensures the Board possesses the correct depth and balance of capabilities to support the Group's long-term position, including the expertise to assess the impact of climate change.
Audit Committee	› Supports the Board on matters relating to financial reporting, internal control and risk management. The Committee reviews the integrity of the Group's climate-related financial reporting and the process used to develop our TCFD-aligned disclosures and assesses climate-related risks for the purpose of monitoring management's progress in addressing them.
Remuneration Committee	› Responsible for remuneration policy, including the inclusion of sustainability-linked metrics and targets within performance-related pay. Greenhouse gas emissions targets are part of our Long-Term Incentive Plan (LTIP).[4]
Executive Sustainability Council	› Responsible for execution and monitoring of the sustainability strategy, including environmental and corporate responsibility matters, and the processes and controls regarding climate risks at a Group level. Includes GBU presidents. › Provides strategic direction, secures investment and resources. › Provides oversight and decision-making across the workstreams, manages escalation with a focus on outcomes an benefits.
Workstream SteerCo	› Monitors delivery against our net zero strategy through various workstreams, manages dependencies across projects. › Resolves risks and issued raised and identifies escalations. › Reports back to the Executive Sustainability Council.
Group Director, Environment Health, Safety and Sustainability (EHS&S)	› Reporting to the CEO, is responsible for developing further, and driving execution of, the ESG strategy. Manages and reports progress on environment and sustainability matters to the Executive team and to the Board of Directors. › Is a key part of the Group risk review process – which reviews current and emerging risks every six months and reports these to the Executive team. › Is a member of both the Workstream SteerCo and Executive Sustainability Council.
EHS&S Leadership Team	› Led by the Group Director EHS&S and comprising EHS&S leads from each of the GBUs, the team meets monthly to review strategy implementation and performance against 2030 targets.
Group Finance Director	› Reporting to the Group CFO, is responsible for overseeing ESG Compliance and reporting for the Group. › Chairs the Workstream SteerCo. and is a member of the Executive Sustainability Council. › Responsible for overseeing the risk management process for the Group, ensuring climate related risks are managed appropriately and reviewed on a six monthly basis.
GBU leadership teams	› Each GBU has a leadership team and they are responsible for sharing, reviewing and managing of both principal and emerging risks including climate risks. This includes related policy, guidelines and process, and is subject to Board oversight. › The GBUs develop business-specific risk registers and business continuity plans which are used in their annual strategic planning. These are presented to the Audit Committee and Executive Committees. › The individual GBUs monitor their own performance against ESG targets and implement climate-related policies and projects. › Representative from the GBU leadership team is a member of the Workstream SteerCo to ensure smooth rollout of workstream-related projects in the GBUs.

4. See the Annual Report - Directors Remuneration Report pages 84 to 109.

Strategy

Identification of risks and opportunities

In late 2020, we conducted a comprehensive materiality assessment to establish our ESG priorities up to 2030. We obtained feedback from our Board and surveyed over 160 senior business leaders to determine what ESG means to our organisation. Additionally, we gathered input from internal and external stakeholders and assessed our business performance against key ESG topics. Based on this information we identified our sustainability impacts on the environment and society as well as the risks and opportunities that were material to our business, and set ambitious goals for the future.

During 2024, we reviewed this materiality assessment. We engaged a number of key internal and external stakeholders, to ensure the topics identified remained relevant, and to better understand our business strategy and resilience. Having considered the all-sector and sector-specific risks and opportunities in Tables A1.1 and A1.2 in the TCFD guidance, the information in the Table 2 summarises our material risks and opportunities across the appropriate time horizons.

Scenarios Chosen

- 1.5°C model considers swift implementation of the necessary regulatory measures to limit global temperature rise to 1.5C by 2100 in line with the Paris Agreement.
- <2°C model considers the current trajectory based on government pledges.
- 2–4°C model considers a medium-case scenario where warming is somewhat limited.
- >4°C model considers a scenario where no steps are taken to limit warming.

Transition scenarios were chosen to explore different potential approaches that governments and the international community could take when setting carbon prices, and how this could impact us in different regions. These were taken from World Energy Outlook 2022 – published by the International Energy Agency. The Net Zero Emissions (NZE) scenario was chosen to understand the effect on the business of rapid implementation, and the Announced Pledges Scenario (APS) was chosen to explore the current trajectory. Likelihood scores were assessed based on anticipated speed of adoption of these measures across the international community.

Physical scenarios were chosen to explore best (<2°C) , medium (2–4°C) and worse (4°C) impacts from physical climate change at individual sites. These were modelled using different Intergovernmental Panel on Climate Change (IPCC) Shared Socioeconomic Pathways (SSPs). For the physical risks, the likelihood of reaching each global temperature rise was considered. For example, it was considered to be almost certain that the world will experience a temperature rise of 1.5°C, whereas it is less likely that 4°C would be reached. This likelihood was then combined with the likelihood of an incident occurring at a Morgan Advanced Materials site to give a final result.

Climate-related materiality impacts

Climate-related materiality impacts are aligned with our broader risk assessment criteria, which is defined using adjusted operating profit* impact as follows:

- **1 – Negligible financial impact** (£0–£0.1 million), the lowest level are those risks where the Company can absorb the financial impact, and the reputational impact is relatively non-existent or negligible.
- **2 – Low financial impact** (£0.1–£1 million), with a potential to be made public via notices from regulatory bodies.
- **3 – Moderate financial impact** (£1–£5 million), with the potential to be known by the public or to damage our Company's reputation.
- **4 – High financial impact** (£5–£10 million), with the potential to impact customer confidence.
- **5 – Significant financial impact** (£10–£20 million) and/or reputational damage.
- **6 – Critical financial impact** (>£20 million) and/or reputational damage.

Likelihood assessments are aligned with our broader risk assessment criteria, and reflects the likelihood of the scenario and incident occurrence, where the risk probability is defined as follows:

- 1 – Rare 0–5%
- 2 – Low 5–10%
- 3 – Moderate 15–25%
- 4 – High 25–50%
- 5 – Significant 50–75%
- 6 – Inevitable >75%

Climate-related risks and opportunities

Climate-related risks and opportunities could impact the Group strategy over the short, medium and long term. These are aligned with our broader risk assessment criteria and are defined as follows:

- **Short term (0–3 years).** Detailed financial plans are developed, incorporating the strategic spending requirements to decarbonise our business and realise growth opportunities.
- **Medium term (3–10 years).** Aligns with our 2030 ESG targets. Each GBU develops transition plans within this time horizon to realise these targets.
- **Long term (10–25 years).** Aligns with our 2050 ESG ambitions. In this time horizon we expect to see a significant shift in technologies to allow us to decarbonise our business but realise that significant uncertainties exist and must be considered when developing long-term transition plans.

Strategic impact

1 Big positive difference
2 Delight the customer
3 Innovate to grow

Table 2 – Summary of our material risks and opportunities

Risk/opportunity & time horizon	How it impacts Morgan Advanced Materials	Link to our strategy/associated opportunity	Scenario likelihood/impact	Comments and response	Related metrics and targets
Transition risks & opportunities					
Reliance on natural gas Medium term 1. Impact of rising wholesale costs and GHG pricing instruments. 2. New manufacturing technology to reduce natural gas use and lower carbon output. 3. Damage to reputation.	Natural gas is widely used across the Group especially in our high-temperature furnaces. 1. Continued reliance on natural gas increases the Group's financial exposure with increasing wholesale costs. 2. Transitioning to lower carbon manufacturing processes requires investment. In many cases, the technology is not yet available to enable either electrification or other low carbon fuels (such as green hydrogen). 3. The reputational impact from being a carbon intensive business may deter potential employees and third parties that want to work with us.	1 2 3 Reducing the carbon footprint of key products will support our customers with their net zero ambitions. Investing in new and existing manufacturing processes to drive efficiency improvements will help mitigate financial exposure.	Medium term 1.5°C[5] Likelihood 4 Impact 3 <2°C[6] Likelihood 3 Impact 3 Long term <2°C[6] Likelihood 2 Impact 4	The results show an increasing likelihood and impact from reliance on natural gas across both scenarios. The modelling does not include rising wholesale prices, as this is already included in our strategic and financial planning which mitigates any significant risk. Our reputational damage has not been modelled. The long-term modelling has focused on below 2°C scenario under the basis that temperatures are already at 1.5°C in 2024 and we have assumed that, although in the medium-term temperatures might remain at 1.5°C, in the long-term temperatures will be above 1.5°C. GHG pricing instruments will likely begin to come into force closer to 2030. Based on current guidance the majority of our sites produce CO_2 emissions at a level lower than the thresholds. A key part of our transition plan before 2030 is our investment in R&D for key product families to establish their decarbonisation pathway. The cross-GBU furnace working group is working to establish efficiency improvement and decarbonisation opportunities. As an example, we are signatories of the Ceramics UK 'Towards Net Zero' initiative and are part of their Hydrogen research project. Our products help our customers to save energy. The impact from high fuel prices in recent years has been passed these on to our customers and we would expect to pass on carbon costs in the same way, enabling our customers to choose the most carbon efficient technology. Operational excellence plans are focused on efficiencies to run our processes to enable optimisation of gas consumption. Our pledge to increasingly source renewable and nuclear energy demonstrates our commitment to decarbonisation.	Commitment to reduce scope 1 and 2 emissions by 50% by 2030 from a 2015 baseline. Commitment to source 80% renewable and nuclear electricity by the end of 2025.
Growth in our faster growing markets Short to medium term	Increasing demand for semiconductors, healthcare, clean energy and clean transportation solutions to support the global net zero transition offers growth opportunity for Morgan Advanced Materials.	1 2 3 These markets align well with both our purpose and strategy. Our products support the global transition to a more sustainable future.	These segments contribute 22% of total sales.	Increasing decarbonisation drivers will increase demand for our products. We are investing in capacity to better serve these growing markets and have dedicated market specialists to ensure we address their needs. In these markets, We have newer products with high levels of differentiation and we continue to invest in R&D to develop products which meet the needs of tomorrow.	Revenue and % growth in our faster growing market. Investment in R&D.

5. Net Zero Emissions (NZE) scenario from World Energy Outlook 2022 – International Energy Agency.
6. Announced Pledges Scenario (APS) from World Energy Outlook 2022 – International Energy Agency.

Task Force on Climate-Related Financial Disclosures (TCFD) reporting continued

Strategic impact

1 Big positive difference
2 Delight the customer
3 Innovate to grow

Table 2 – Summary of our material risks and opportunities (continued)

Risk/opportunity & time horizon	How it impacts Morgan Advanced Materials	Link to our strategy/associated opportunity	Scenario likelihood/impact	Comments and response	Related metrics and targets
Physical risks & opportunities					
Heat stress Medium term	Heat stress at our manufacturing facilities could negatively affect our staff, plant and materials.	1 The health and safety of our employees is our top priority.	**Medium term** <2°C[7] Likelihood 3 Impact 2 2–4°C[8] Likelihood 4 Impact 2 >4°C[9] Likelihood 2 Impact 2 **Long term** <2°C[7] Likelihood 2 Impact 2 2–4°C[8] Likelihood 2 Impact 3 >4°C[9] Likelihood 2 Impact 3	Extreme heat events become more likely and impactful in the >4% scenario. Mitigations to protect employee health are relatively straightforward to implement. Our global manufacturing footprint and diversified supply chain means products could be manufactured at other facilities. The potential impacts from heat stress is considered as part of our ongoing manufacturing strategy. Mitigations such as the provision of air-conditioned rest rooms, cooling vests, alterations to shift working patterns to avoid working in the hottest hours of the day have been implemented at our sites which are most impacted by rising temperatures. This has enabled us to protect our employee health, but also maintain current productivity levels. These adjustments have been taken into account in our most up-to-date scenario analysis.	We are now monitoring heat stress incidents through our H&S reporting system. A 0.10 lost-time accident rate by 2030. Top quartile engagement score.
Water stress Medium term	Water is used in the manufacture of our materials. Drought events where process water is limited could impact our sites.	3 Innovating to reduce the process water used in our manufacturing processes reduces both the cost of the water and the energy required to dry the product.	**Medium term** <2°C[7] Likelihood 3 Impact 2 2–4°C[8] Likelihood 4 Impact 2 >4°C[9] Likelihood 2 Impact 1 **Long term** <2°C[7] Likelihood 2 Impact 2 2–4°C[8] Likelihood 2 Impact 3 >4°C[9] Likelihood 2 Impact 1	Drought events increase in duration in the >4% scenario. A key part of our transition plan before 2030 is our investment in R&D for key product families to reduce water use and share best practice in water conservation. Water conservation projects are ongoing at our facilities as part of our Operational Excellence programmes. In Gujarat, India we have begun installation of a recirculating cooling tower which will be commissioned in 2025. By reducing our consumption across our locations we mitigate the possibility of being forced to reduce operations. The water stress at a location is evaluated as part of our ongoing manufacturing strategy.	30% reduction in water withdrawal by 2030 from a 2015 baseline. 30% reduction in water withdrawal at water stressed sites by 2030 from a 2015 baseline.
Sea level rise Medium to long term	Some of our factories are in low lying locations. Flood events could damage plant and interrupt supply of product to customers.	2 Our global manufacturing footprint means products could be manufactured at other facilities, supporting our customers through any interruptions.	**Medium term** <2°C[10] Likelihood 3 Impact 3 2–4°C[10] Likelihood 4 Impact 3 >4°C[10] Likelihood 2 Impact 3	The impact from sea level rise and coastal flooding events was found to be moderate with flood damage, loss of production and potential protection or relocation costs the key impact. We have undertaken an analysis of our exposure to sea level rise and coastal events in our sites most at risk. Of our 60 manufacturing sites, four were identified as having >1% annual risk of flooding before 2050. Our analysis has shown the impact from sea level rise alone is low. This increases when coupled with the possibility of coastal events where we have considered the impact of annual to once in a thousand year flooding events. This risk is being actively considered as part of our risk management and ongoing review of our physical portfolio.	Impact analysis will be updated as new data becomes available. Metrics not developed.

7. Shared Socioeconomic Pathway 2.6 (SSP1-2.6).
8. Shared Socioeconomic Pathway 7.0 (SSP3-7.0).
9. Shared Socioeconomic Pathway 8.5 (SSP5-8.5).
10. Climate Central Coastal Screening Tool – https//coastal.climatecentral.org/

Impact of risks and opportunities on the business strategy

The first transition risk explored was our reliance on natural gas in the manufacturing process. Although only two of our sites are currently exposed to an emissions trading scheme, there is risk in the future that more of our operations will be exposed to carbon pricing instruments and the rising wholesale cost of natural gas, as well as potential access to affordable renewable energy and/or carbon-free energy. In the short to medium term financial planning decisions have already been made with climate in mind, including:

- Continuing investment in our green electricity tariff, where feasible, despite increasing energy costs.
- Investing in self-generation energy projects. In 2023 three solar PV systems were committed, with an additional PV system commissioned at our Fostoria, USA plant, which is due to come on line in 2025. In total Morgan Advanced Materials generated 1.7GWh renewable electricity on-site, an increase of 9% compared to 2023.
- Engagement of external support to create a roadmap to explore opportunities to invest further in renewable power purchasing agreements (PPAs) to secure renewable energy at a fixed price to gain energy price certainty.

Assuming annual growth in emissions linked to business growth, both the 1.5°C and >2°C scenarios predicted a similar impact in 2030, but increasingly diverged in 2040 and 2050, with higher impact in the 1.5°C scenario. The impacts of both scenarios continue to worsen in the longer term. The impact shows the potential costs to Morgan Advanced Materials of not being proactive in planning for decarbonisation and enacting our decarbonisation roadmap.

Our customer's exposure to carbon pricing mechanisms could also be an opportunity. Our products help our customers to become more efficient, by reducing losses in their manufacturing operations or in the operation of their product. For example, we can demonstrate how our thermal management solutions are supporting our customers to maximise throughput efficiency and minimise their carbon footprints.

We have significant transition opportunity in our faster growing market segments of semiconductors, healthcare, clean energy and clean transportation, over the short-term. Given the relatively short time horizon we have not run scenario analysis on these growth rates.

Heat stress and water stress scenario analysis examined potential changes in peak temperatures and drought months at 25 of our largest sites. Sea level rise risk was assessed for sites with a higher risk of flooding before 2050. Impact scorings were based on potential temporary interruptions to manufacturing operations. Changing physical risks are being actively considered as part of the ongoing review of our physical portfolio.

Our net zero roadmap

Preparing for the future

Identifying the big scope 3 contributors and solutions to help us decarbonise. GBU Glidepaths to decarbonise. We will also deliver on our water usage commitments.

- Conversion of some low temperature furnaces to electricity.
- Development of scope 3 emissions strategy.
- Life cycle assessment on some products.
- Engineering solutions to increase energy efficiency and water recycling.
- Inclusion of a shadow carbon price in capex business cases.
- Investing in R&D for carbon-free furnaces.

2024–2026 →

Scaling up

Starting to invest in decarbonising our business and value chain.

- Installation of pilot carbon-free furnaces.
- Further conversion of lower temperature furnaces to electricity.
- Working with our value chain to reduce scope 3 emissions.
- By 2026, 80% of our electricity will be renewable and nuclear.

2026–2030 →

Investment in key technologies

Investing in new technologies to transition the business to a greener future.

- By 2030 we will reduce our scope 1 and 2 emissions by 50%.
- We will source 100% renewable and nuclear-backed electricity.
- We will reduce our scope 3 emissions by 15%.

2030 →

- Conversion of higher temperature furnaces to electricity/ alternative low carbon fuel.
- Working with our value chain to further reduce scope 3 emissions.
- Conversion of remaining furnaces to carbon-free alternatives.

2040 →

- Our ambition is to reach net zero scope 1 and 2 emissions by 2050.

2050

Business resilience

The resilience of the Group to these climate risks has been assessed. Our global footprint, strong market positions, and diverse portfolio is our strength. Our customer base is widely spread. We largely make products where we sell them with localised supply chains. In the event of a local shock, manufacturing of product could be transferred to other sites within the GBU.

Our scenario analysis around our natural gas reliance allows us to plan for changes in operating costs and balance our global manufacturing strategy.

As part of our strategic planning in 2025, we will look to further embed climate considerations into our financial and strategic planning processes. Our current assessment indicates that the impact of climate-related issued has not significantly impacted our financial performance or financial position, and we do not anticipate it will in the short to medium term.

Therefore, the climate-related threats and opportunities identified are emerging and/or operational risks that will continue to be monitored and evaluated. The most significant risks have been integrated into functional and divisional risk registers and they are reviewed by their functional owners.

Transition plan

The risks and opportunities considered by the Board have directly informed our strategy to deliver on our 2030 goals. These form the foundation of our net zero roadmap to ensure we achieve our targets.

We are making good progress. We have transitioned a number of lower temperature furnaces and ovens from natural gas to electric firing with good results and reduced water usage considerably through recycling. We have started to understand our scope 3 position and the opportunities in more detail.

Risk management

The Board recognises the need to understand and assess climate related risks. Risk management and internal control are fundamental to achieving the Group's strategic objectives.

Principal and emerging risks are identified both 'top-down' by the Board and the Executive Committee and 'bottom-up' through the GBUs and central functions. Senior executives including the CEO and Executive Committee are responsible for the management of the Group's principal risks, including climate related risks.

Further details on our procedures for identifying, assessing, and managing risk can be found on pages 43 to 47, in the Risk Management section of our Annual Report.

Our Workstream Steering Committee meets bi-monthly to oversee management of our most significant environmental and climate related risks.

The senior management teams for the different GBUs are responsible for developing risk mitigation and management strategies for the risks identified for their individual businesses. Each risk is assessed to determine its potential financial impact, and potential likelihood of materialising. Mitigating controls are identified and assessed to derive a net risk score, used for risk prioritisation.

Climate change is captured as part of the new combined principal risk, External environment, which covers transition and physical term risks listed on page 45 in the 'Risk Management' section of the Annual Report.

The Board reviewed the preparedness of Morgan Advanced Materials to the principal risks with a significant potential impact at Group level twice during 2024. Additionally, the Audit Committee carried out a focused risk review of each GBU. These reviews included an analysis of the principal risks, and the controls, monitoring and assurance processes established to mitigate those risks to acceptable levels. The overall risk from climate change was assessed to have a high severity rating.

Metrics and targets

We have reflected on the most appropriate metrics and targets to help us manage our climate risks and opportunities effectively. These are identified in the climate impact tables and their values are summarised here. We have had our scope 1, 2 & 3 targets independently verified by the Science-based Targets initiative to ensure that our ambition is aligned with the UN Paris Agreement on climate change well below the 2°C scenario.

Our commitments are as follows:

- Morgan Advanced Materials commits to reduce absolute scope 1 and 2 GHG emissions 50% by 2030 from a 2015 base year[11];
- Morgan Advanced Materials also commits to increase active annual sourcing of renewable and nuclear-backed electricity from 0% in 2015 to 80% in 2025 and 100% by 2030; and
- Morgan Advanced Materials further commits to reduce absolute scope 3 GHG emissions 15% by 2030 from a 2019 base year.

Metric description	Target type	Baseline year	Baseline value	FY 2030 target	2024 progress
Scope 1 & scope 2 GHG (tonnes)	Absolute	2015	342,694	171,347	152,871
Scope 3 GHG purchased goods & services (tonnes)	Absolute	2019	1,171,941	996,150	369,825
Water consumed in regions of high baseline water stress (m^3)	Absolute	2015	431,004	301,703	341,052
Commitment to source 80% renewable and nuclear electricity by 2025	Intensity	2019	1%	100%	75%

11. Climate central coastal risk screening tool – based on IPCC RCPs.

Our scope 1, scope 2 and selected environmental metrics have been assured by ERM CVS. A copy of the assurance statement can be found on our website[12]. Scope 1 and 2 GHG emissions are reported from manufacturing/production sites only, accounting for approximately 93.6% of Morgan's operational control based on personnel headcount distributed by sites globally.

In 2024, a comprehensive scope 3 inventory exercise and subsequent development of improved reporting methodology was completed. Our screening exercise, across all relevant categories, used spend and/or volume based data was retrieved from the Company's ERP[13] and/or finance systems, and emission factors[14] applied matched to activities in 2024 only.

Remuneration Committee integration of targets into Long-Term Incentive Plan

Sustainability measures represent 15% of total LTIP awards for Executive Directors, and these are linked directly to the business metrics for scope 1 and 2 GHG emissions. The balance of the award is focused on financial performance measures.

Introducing internal carbon pricing

In the next year, we will be introducing a shadow internal carbon price (ICP) to our capital investment business case assessment process. Although the ICP is not a real cost of the investment, it demonstrates what the impact would be of carbon taxation forecast for 2030, and we will use it to evaluate and compare potential investments.

Streamlined energy and carbon report

This report summarises our energy usage, associated emissions, energy efficiency actions and energy performance under the government policy Streamlined Energy & Carbon Reporting (SECR); see table in Appendix. This is implemented by the Companies (Directors' Report) and Limited Liability Partnerships (Energy and Carbon Report) Regulations 2018. Also, it summarises in the appendix, the methodologies utilised for all calculations related to the elements reported under energy and carbon. Morgan Advanced Materials plc are a UK incorporated business and is also a main-market listed company. Under SECR legislation we are mandated to include energy consumption, emissions, intensity metrics and all energy efficiency improvements implemented in our most recent financial year, for our UK operations. An operational boundary has been applied for the purposes of the reporting.

For specific examples of actions taken within the year to reduce energy consumption please refer to the Annual Report page 28.

Methodology

This report (including the scope 1 and 2 consumption and CO_2e emissions data) have been developed and calculated using the GHG Protocol – A Corporate Accounting and Reporting Standard (World Business Council for Sustainable Development and World Resources Institute, 2004); Greenhouse Gas Protocol – Scope 2 Guidance (World Resources Institute, 2015); Environmental Reporting Guidelines: Including Streamlined Energy and Carbon Reporting Guidance (HM Government, 2019). Global scope 2 calculations have been developed using a combination of sources – e-Grid for US locations; AIB (2023 version) where available for European countries, and IEA 2023 emission factors in all other cases globally. DEFRA Emissions Factor Database 2024 version 1 has been used across the majority of scope 1, utilising the published kWh calorific value (CV) and $kgCO_2e$ emissions factors relevant for reporting period for the year ending 31 December 2024.

12. www.morganadvancedmaterials.com/ESGAssurance/
13. Enterprise Resource Planning systems.
14. UK government GHG conversion factors for company reporting, IEA emission factors 2024, EcoInvent 3.0. Last reviewed in Oct. 2024.

Appendix – Responsible business

Scope 1 and 2 emissions and streamlined energy and carbon reporting

	Units	2024	2023	2022	2021	2020	2015
Scope 1 energy consumption	MWh	**533,674**	574,531	636,583	648,833	592,325	
UK	MWh	**34,655**	38,316	37,988	37,358	36,277	
Global excluding UK	MWh	**499,019**	536,215	598,595	611,475	556,048	
Scope 1 GHG emissions	tCO_2e	**111,011**	110,563	121,989	122,817	116,552	205,570
UK	tCO_2e	**7,357**	7,374	5,657	6,880	6,686	
Global excluding UK	tCO_2e	**103,654**	103,189	116,332	115,937	109,866	
Scope 2 energy consumption	MWh	**382,356**	395,366	423,955	417,835	387,177	
UK	MWh	**13,584**	14,198	15,205	15,083	15,673	
Global excluding UK	MWh	**368,772**	381,168	408,750	402,752	371,504	
Scope 2 GHG emissions (market-based)	tCO_2e	**41,860**	47,011	89,115	107,070	160,126	137,124
UK	tCO_2e	**0**	0	0	0	3,657	
Global excluding UK	tCO_2e	**41,860**	47,011	89,115	107,070	156,469	
GHG intensity	tCO_2e/£m	**139**	141	190	242	304	391
UK	tCO_2e/£m	**104**	169	106	179	276	
Global excluding UK	tCO_2e/£m	**141**	140	194	245	305	
Biogenic CO_2 emissions[15]	tCO_2e	**543**	719	978	877	501	1,368

Scope 3 emissions screening results

Morgan Advanced Materials scope 3 GHG emissions results (tCO_2e)		2024	2023	2022	2021	2020
Category 1	Purchased goods and services	**223,768**	410,641	474,257	439,775	394,744
Category 2	Capital goods	**49,763**	100,351	75,768	49,794	42,816
Category 3	Fuel and energy related activities	**30,751**	31,567	30,497	52,118	61,163
Category 4	Upstream transport	**13,598**	46,613	71,143	58,777	48,935
Category 5	Waste generated in operations	**15,293**	9,597	12,344	11,889	11,210
Category 6	Business travel	**8,427**	13,903	9,360	5,509	3,953
Category 7	Employee commuting	**27,914**	12,750	12,750	12,750	12,750
Category 8	Upstream leased assets	**–**	–	–	–	–
Category 9	Downstream transport	**190**	22,705	18,780	18,052	15,912
Category 10	Processing of sold products	**5**	26,995	30,361	28,116	28,477
Category 11	Use of sold products	**–**	53,146	49,843	43,389	39,837
Category 12	End of life of sold products	**148**	81,107	57,050	58,062	53,725
Category 13	Downstream leased assets	**–**	–	–	–	–
Category 14	Franchises	**–**	–	–	–	–
Category 15	Investments	**–**	–	–	–	–
	Total scope 3 GHG emissions (tCO_2e)	**369,857**	809,375	842,153	778,231	713,522
	Total scope 1 and 2 GHG emissions (tCO_2e)	**152,871**	157,574	211,104	229,887	276,678
	Total GHG emissions (tCO_2e)	**522,728**	966,949	1,053,257	1,008,118	990,200

Waste and recycling

	Units	2024	2023	2022	2021	2020	2019	2018
Total waste generated	metric tonnes	**34,972**	36,853	47,879	39,918	35,660	48,676	46,605
Waste generation intensity	metric tonnes/£m	**32**	33	43	42	39	46	45
Total waste recycled	metric tonnes	**16,905**	17,384	25,406	21,547	18,214	27,833	25,943
% recycling of total waste	%	**48**	47	53	54	51	57	56

15. Biogenic emissions result from the combustion of biological materials. These are considered carbon neutral and therefore reported separately. Emissions were calculated using the UK Government GHG Conversions Factors for Company Reporting (2024 version).