



## Overall Assessment

**Mosaic is most likely heading towards a +2.0°C pathway by 2030.**

Planet Tracker assessed Mosaic's Climate Transition strategy by analysing its GHG emissions trends from 2020 to 2023 and its alignment with the Paris Agreement. Mosaic has a GHG intensity goal to reduce Scope 1 and Scope 2 GHG emissions by 20% per tonne of finished product by 2025. It also has a goal to reach net zero for Scope 1 and Scope 2 by 2040. Although they do not currently have an approved science-based GHG emissions reduction target, Mosaic has indicated an intention to set an approved target in the next few years. Historical emission trends extrapolated forward (Scope 1 and 2 decreased 4% from 2020-2023) suggest Mosaic is not on track to deliver on its current goals. It also does not currently address its large and growing Scope 3 footprint (73% of total emissions in 2023). Mosaic should also provide more transparency on its current efforts to lower emissions. For instance, more detail on the size, nature and timing of intended investments would be welcome, as would an explanation of how they will drive emissions reductions.



Aligned with 1.5°C



Aligned with +2°C



Aligned with BAU+3°C

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## Climate Alignment

- Mosaic does not currently address its Scope 3 emissions footprint. Planet Tracker's analysis suggests this will grow to be 86% of total emissions by 2030 based on current trends. This underlines the need to address these emissions if Mosaic is to be Paris aligned.
- Historical trends extrapolated forward suggest Mosaic is not on track to deliver on its current goal of net zero by 2040 for Scope 1 and 2. We model Scope 1 and 2 emissions falling only c.-13% versus 2020 levels based on recent trends.



## Policy and Governance

- Mosaic seems to be at an early stage in developing its engagement on climate with its value chain and customers. Given recent growth in its Scope 3 footprint, addressing this area is critical.
- Mosaic's remuneration structure includes sustainability targets in short-term incentives, but not long-term incentives. More detail on the targets used and the inclusion of targets in the long-term scheme, particularly for addressing Scope 3 emissions is, needed.



## Risk Analysis

- Mosaic includes climate-related scenario analysis as part of its broader risk management processes. This includes outline estimates of the potential costs of climate impacts and potential investments needed to mitigate these risks.



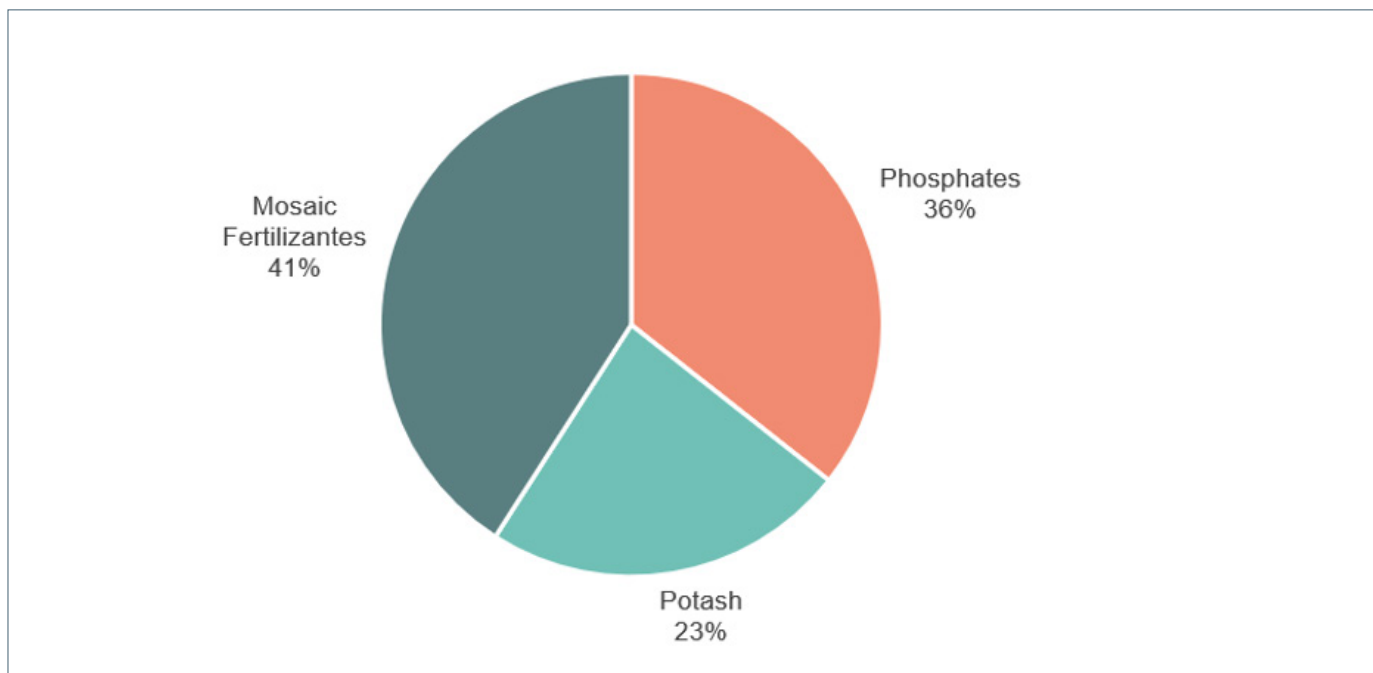
## Strategy Assessment

- Mosaic provides limited detail of its capital initiatives to address climate change. It is notable that there seems to be significant reliance on innovative new product development and as yet unproven technology to drive future emissions reductions. Greater clarity on the costs, timelines and overall expected emission impacts would reinforce investor belief in its ability to deliver on its goals.

## Company Overview

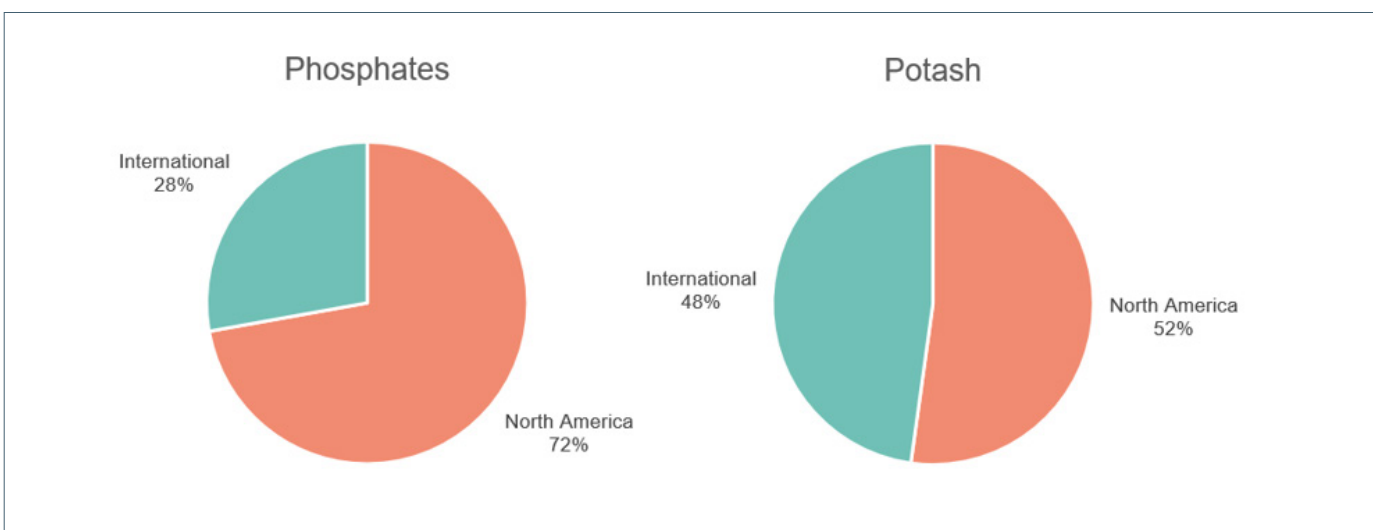
**The Mosaic Company** (Mosaic) is a U.S.-based integrated producer of concentrated phosphate and potash. Over the past five years (2020-2024), the company has reported an average annual revenue of USD 13 billion.

Mosaic operates through three core business segments: Phosphates, Potash and Mosaic Fertilizantes – see **Figure 1**. Mosaic Fertilizantes includes potash and phosphates facilities across Brazil, Paraguay, and Peru.



**Figure 1:** Revenue - Breakdown by Business Segments (5Y Avg.). Source: Mosaic's 10K 2021-2024.

Geographically, Mosaic only reports a revenue split at the divisional level for Potash and Phosphates – see **Figure 2**.

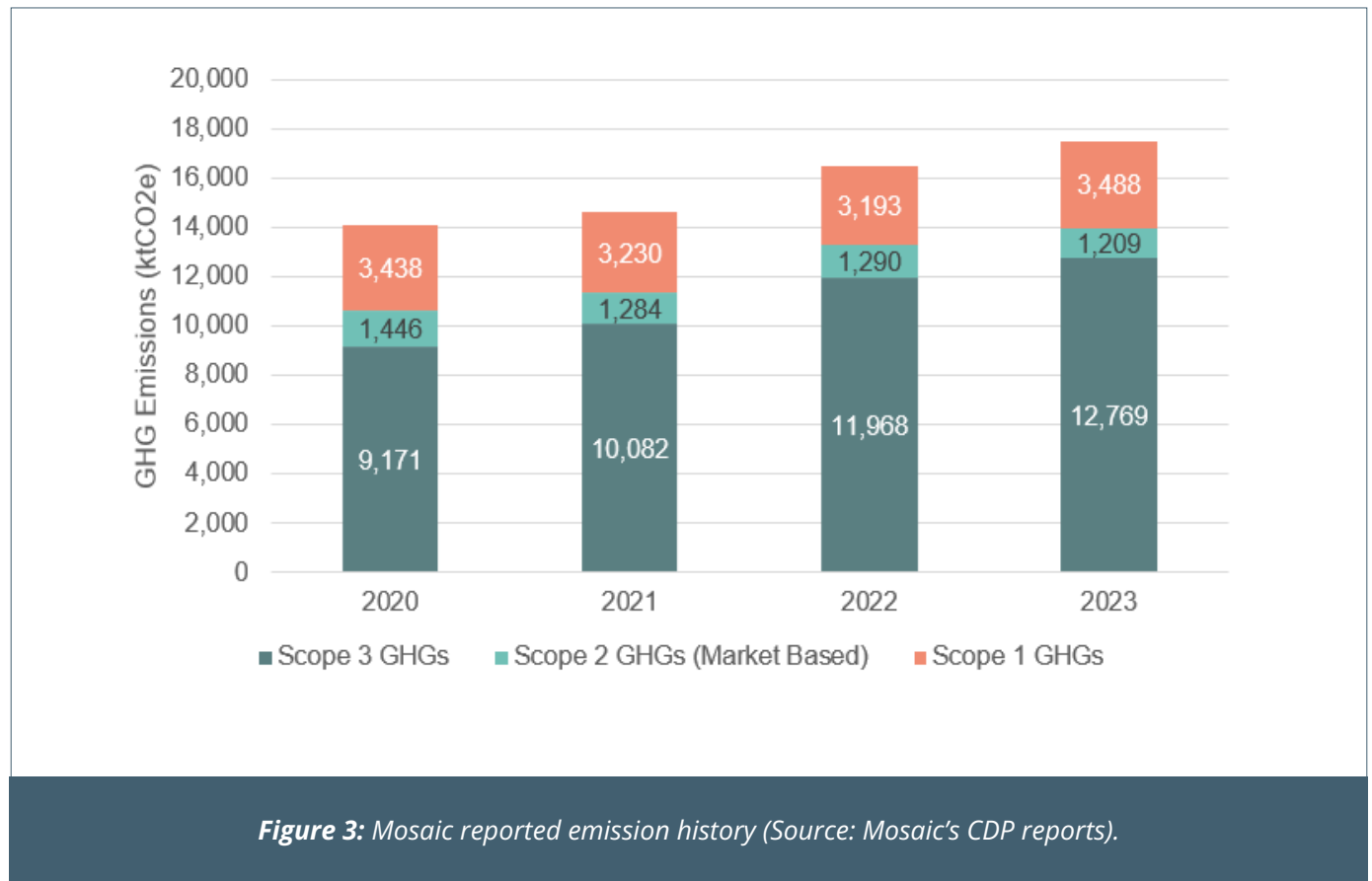


**Figure 2:** Breakdown by Geography (5Y Avg.). Source: Mosaic's 10K 2021-2024.

## Climate Alignment

### EMISSIONS INVENTORY

Based on company data from 2020-2023, total emissions increased from 14,054 kilotons of CO<sub>2</sub> equivalent (KTCO<sub>2</sub>e) in 2020 to 17,466 KTCO<sub>2</sub>e in 2023 (+24%).



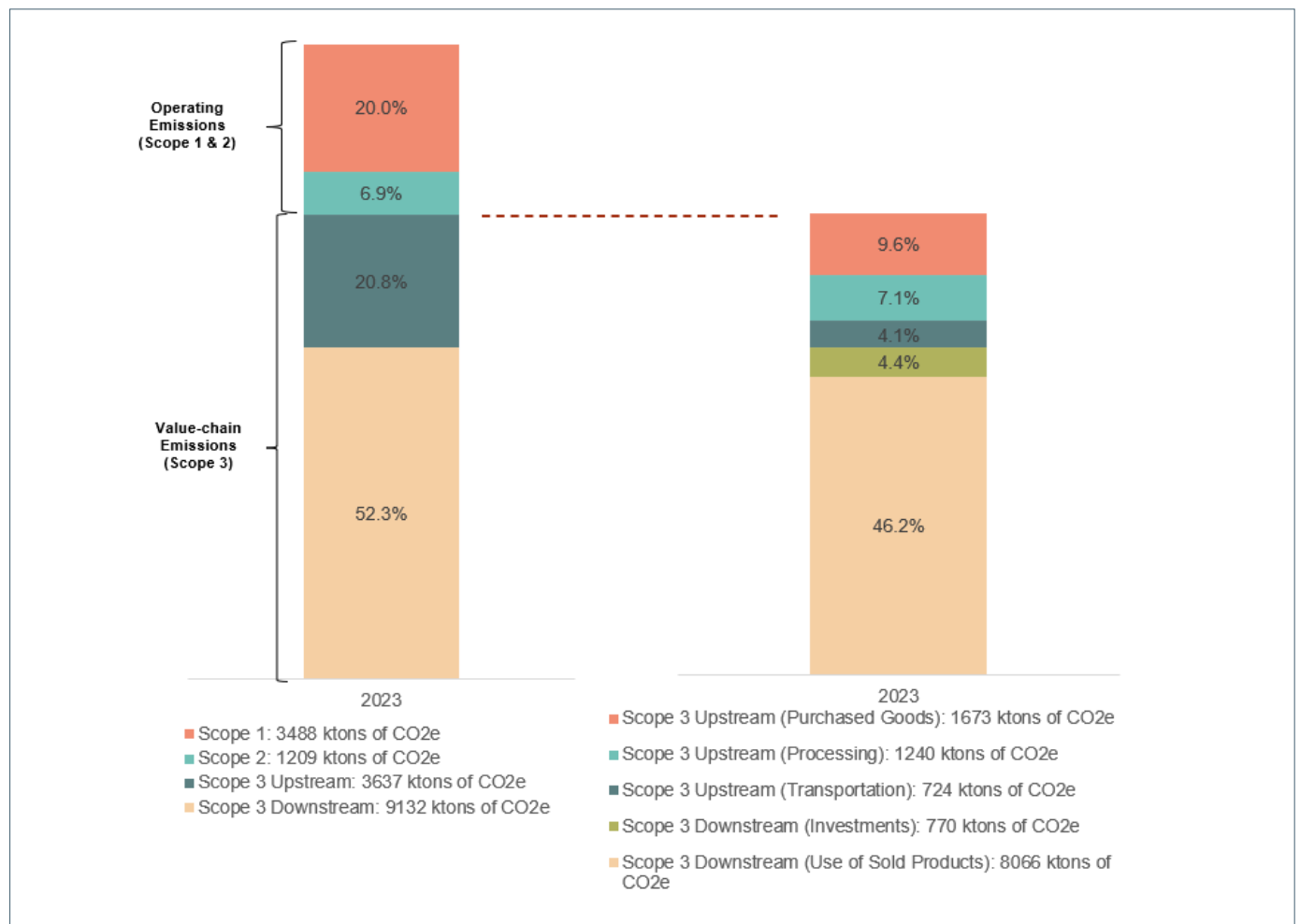
Mosaic's 2023 total GHG footprint broke down as follows:

- **Scope 1 emissions:** 3,488 KTCO<sub>2</sub>e, 20% of total emissions.
- **Scope 2 emissions (market-based):** 1,209 KTCO<sub>2</sub>e, 6.9% of total emissions.
- **Upstream Scope 3 emissions:** 3,637 KTCO<sub>2</sub>e, 20.8% of total emissions.
- **Downstream Scope 3 emissions:** 9,132 KTCO<sub>2</sub>e, 52.3% of total emissions.

Within the Scope 3 category, key contributors were:

- **Purchased Goods and Services** (upstream): 9.6% of total emissions.
- **Transportation** (upstream): 4.1% of total emissions.
- **Processing** (upstream): 7.1% of total emissions.
- **Use of Sold Products** (downstream): 46.2% of total emissions.
- **Investments** (downstream): 4.4% of total emissions.

For more details, see **Figure 4**.



**Figure 4: Total GHG Footprint (2023) - Percentage Breakdown by Scope.**  
(Source: Mosaic's CDP response 2023).

## EMISSIONS TRENDS AND TARGETS

### Historical and Expected Emissions

Based on company reported figures, between 2020 and 2023, Mosaic's total GHG emissions increased by 24%. This increase was characterised by broadly flat Scope 1 emissions, declining Scope 2 emissions and a significant rise in Scope 3 (both upstream and downstream) – **Figure 5**.

		2020	2021	2022	2023	CAGR
<b>Scope 1 GhG Emissions</b>	<b>Ktons of CO2e</b>	3,438	3,230	3,193	3,488	0%
<b>Scope 2 (market-based) GhG Emissions</b>	<b>Ktons of CO2e</b>	1,446	1,284	1,290	1,209	-6%
<b>Scope 3 GhG Emissions</b>	<b>Ktons of CO2e</b>	9,171	10,082	11,968	12,769	12%

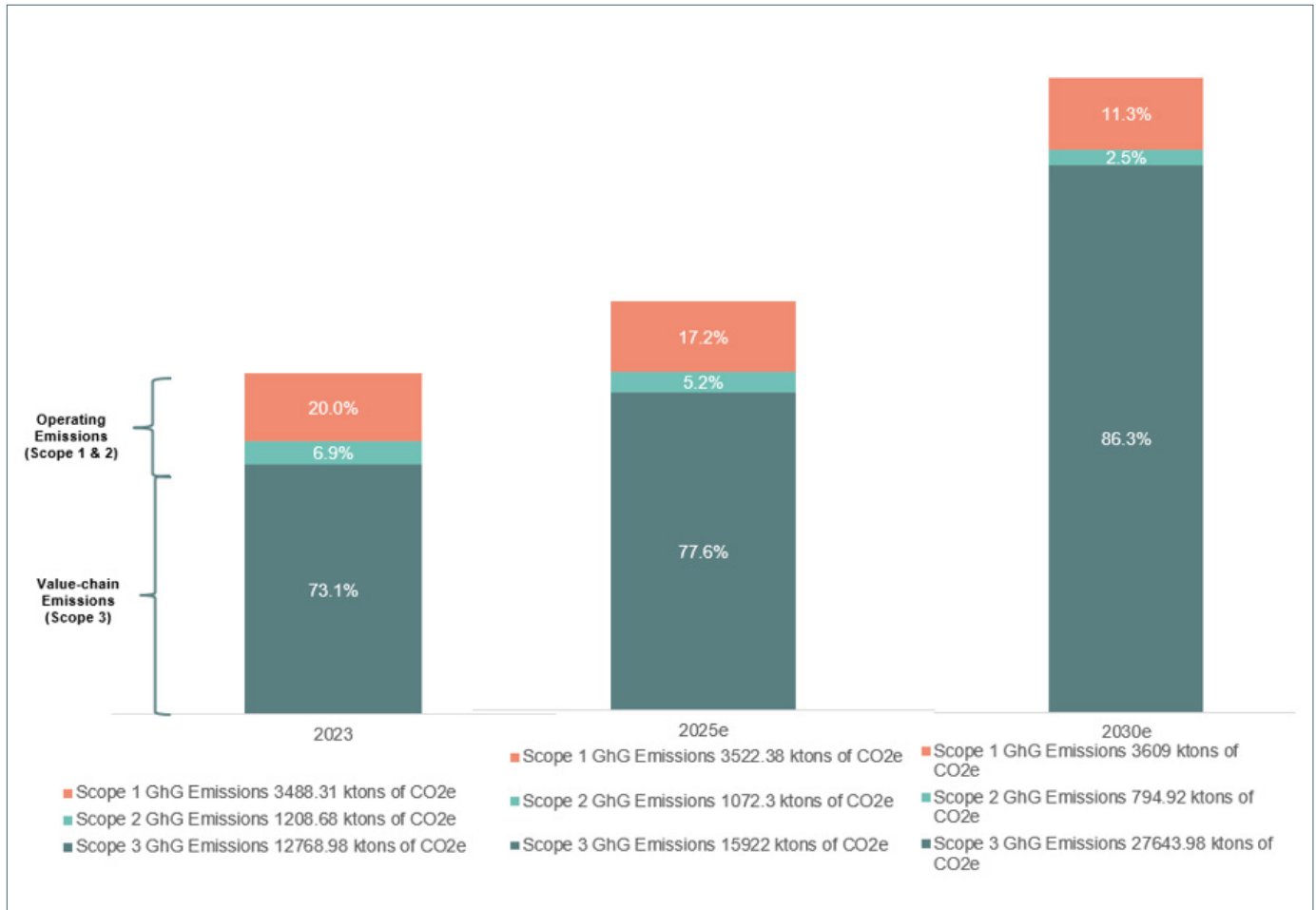
*Figure 5: Mosaic emission trends from 2020 to 2023 (Source: Mosaic's CDP responses).*

A high-level extrapolation model was employed to forecast Mosaic's emissions up to 2030. This model projects the annual emissions change rate from the past four years forward, assuming that the company continues its historical mitigation efforts while maintaining an intrinsic annual revenue growth rate in the low single digits.

Based on the recent reported emissions history, according to Planet Tracker's extrapolation:

- **Scope 1 emissions** are expected to increase by 5% by 2030 vs. 2020.
- **Scope 2 emissions** are projected to decrease by 45% by 2030 vs. 2020.
- **Scope 3 emissions** are expected to increase by 201% by 2030 vs. 2020.

This would result in an absolute emissions increase of 128% vs. 2020, with projected emissions reaching 32,048 KTCO<sub>2</sub>e by 2030, compared with 17,466 KTCO<sub>2</sub>e in 2023. In this scenario, operational emissions (Scopes 1 and 2) would account for 14% of the total footprint, while upstream Scope 3 activities would contribute 86%, as presented in **Figure 6**.



**Figure 6:** Expected Scope 1, 2, and Scope 3 CO<sub>2</sub>e evolution (2025e & 2030e) – Percentage Breakdown by Scope.  
Source: Mosaic's CDP responses and Planet Tracker Calculations.

## Decarbonisation Targets

Mosaic have a GHG intensity goal to reduce Scope 1 and Scope 2 GHG emissions by 20% per tonne of finished product by 2025. It also has a goal to reach net zero for Scope 1 and Scope 2 by 2040. Although they do not currently have an approved science-based GHG emissions reduction target, Mosaic have indicated an intention to set an approved target in the next few years.

## Policy and Governance

### ENGAGEMENT AND INFLUENCE

#### Suppliers' Engagement

Mosaic engages with its suppliers on climate change. At the moment this engagement remains largely exploratory, with Mosaic assessing the dependencies and impacts of its suppliers.

Mosaic requires its suppliers to comply with all applicable local environmental laws when working with Mosaic. It also requires them to pay any taxes on fuel or utility bills.

Mosaic is in the process of collecting data on its suppliers' ESG performance which could, in future, be used to set requirements to continue business with Mosaic. These requirements could, in future, include climate change related targets. It runs a North America supplier survey to collect performance on key ESG metrics. It reports a 99% response rate on this survey.

Mosaic does work as part of a broader fertiliser industry initiative on innovations focused on reducing environmental impacts. It has a particular focus on ammonia production, for instance to examine Carbon Capture and Sequestration (CCS).

#### Customers' Engagement

Mosaic runs campaigns to encourage customers to reduce the GHG emission impacts of its sold products. This focuses on customer education about how to apply fertiliser at the right rate, right time and right place to maximise impacts whilst minimising emissions. Mosaic targets 25 million acres to be using these practices by 2025. As of 2023, 15.7 million acres were under this management regime.

Mosaic is part of Partnerships for Climate Smart Commodities. It is involved with work on climate-smart rice, for instance reducing methane emissions via better growing practices.

#### Influence on Policymakers

Mosaic is a member of industry trade associations which engage in lobbying. It also collaborates on potential innovations to address GHG emissions. For instance:

- **International Fertilizer Association (IFA):** IFA is a global industry association with 400 members. It seeks to promote efficient and responsible production and use of fertiliser. Its work has included reports looking at technology such as soil carbon sequestration.

Mosaic has a public commitment to ensure its lobbying is in line with global environmental treaties. It examines on a case-by-case basis opportunities for collaboration to ensure they align with its internal goals and values.

## **MANAGEMENT ALIGNMENT**

### **Sustainability Targets Oversight**

Mosaic operates with a Board of Directors of 12 members. The Chair is an independent director.

A number of sub-committees report to the Board of Directors, these are: Audit Committee; Compensation and Human Resources Committee; Governance Committee; and Environmental, Health, Safety and Sustainable Development Committee.

The Environmental, Health, Safety and Sustainable Development Committee meets at least three times a year. Its roles include an annual review of the Company's sustainability strategy and performance. It also has oversight of risk management related to sustainability and advises on the inclusion of sustainability in executive compensation setting. It reports back to the full board on these issues.

### **Management Compensation**

Mosaic's executive compensation consists of a base salary, a short-term (annual) bonus tied to performance targets and a long-term incentive scheme linked to stock price performance. For 2024, 88% of CEO pay and 78% of named executive officer pay was "at risk".

The short-term incentive scheme targets financial metrics, strategic goals and an ESG scorecard. It uses a target payout of 75% to 140% of base salary. Payout can range from 0% to 200% of this target amount.

Targets for the short-term incentive scheme were:

- **25% weight – Incentive Adjusted Operating Earnings**
- **20% weight – Incentive Free Cash Flow**
- **10% weight – Cost control**
- **10% weight – Performance Product Sales**
- **15% weight – ESG performance scorecard**
- **20% weight – Strategic goals**

The ESG performance scorecard is split equally between sustainability goals and an Environmental, Health and Safety metric.

Mosaic notes that the ESG metrics used also apply to non-sales salaried employees globally, ensuring alignment across the company with ESG strategy.

The long-term incentive scheme features restricted stock units (RSUs) to incentivise executives to remain with the company and performance stock units (PSUs) tied to total shareholder return. For the PSUs to vest, the company must deliver 10% TSR growth and positive adjusted net earnings over a three-year assessment period.

We are pleased to see some link to sustainability performance in the short-term incentive plan, although the exact targets used are unclear. Given Mosaic's long-term need to address its GHG emissions if it is to align with the Paris Agreement, Planet Tracker would like to see the inclusion of sustainability targets in the long-term incentive scheme too.

## **Risk Analysis**

### **FINANCIAL IMPACT**

Mosaic considers short-term as 0-4 years, medium-term as 5-9 years and long-term as more than 10 years when considering risks and opportunities from environmental dependencies and impacts. It considers both risks and opportunities from environmental dependencies, including climate change, as part of its risk management processes, with analyses undertaken multiple times per year.

Mosaic's assessment of climate-related risk includes scenario analysis using the RCP 2.6 stringent pathway scenario and RCP 6.0 scenario.

### **Opportunities**

Mosaic notes a potential that climate change could open up new markets. A changing climate will impact many key agricultural areas potentially increasing demand for new innovative products which increase crop resilience.

Mosaic also believes that changes in the length of growing seasons could lead to greater demand for crop nutrients. It is addressing this potential demand by developing high-yield fertilisers such as its PowerCoat biological fertiliser complement.

### **Transition Risks**

Mosaic considers carbon pricing as a potential risk to its business. It particularly notes the potential impacts on its Canada-based operations from proposed carbon price increases over time, whilst the current level of cost already impacts its own operational electricity costs and the cost of services such as transport for its goods.

Mosaic notes a risk of potential higher costs of some raw materials (notably molten sulphur) if oil refinery volumes decline. This could increase costs.

Mosaic has acknowledged that climate change-related risks could affect its access to capital in the future either by impacting its credit score or due to investors negatively assessing its ESG performance.

### **Physical Risks**

Mosaic considers both acute physical risks associated with climate change, for instance drought or floods as well as chronic risks such as changing precipitation patterns and increased severity of extreme weather.

Mosaic notes that it has around USD 8 billion in assets in areas of the U.S. which are prone to hurricanes. They are already facing significant insurance costs for these facilities which will likely worsen if climate change drives an intensity in storms. Additionally, more severe storms may require capital investment to upgrade buildings and facilities to be more resilient.

Mosaic notes risk from changes in demand for its product driven by climate change-induced increases in severe weather or precipitation patterns. If climate change adversely impacts major crop growing areas this could drive down demand for fertilisers in current core markets.

Mosaic's mining operations are dependent upon freshwater. Drought in operational regions could impact the availability or cost of water. This could cause increased costs or limit output.

## **RISK MANAGEMENT**

### **Risk Management**

Mosaic considers a risk or opportunity to have a substantive effect if it could drive an absolute increase or decrease more than USD 200 million in revenue or USD 160 million in operational expenses.

### **External Policy Risk Management**

Mosaic is working to increase the energy efficiency of its operations to mitigate risks from carbon pricing or other regulatory impacts on energy costs or emissions. For example, a phosphate mine in Brazil replaced heavy oil with vegetable oil, leading to reduced fuel use and a notable GHG emissions reductions.

Mosaic engages with its financial stakeholders to explain its approach to GHG emissions reductions to help reduce potential impacts to its access to capital. Mosaic is considering the use of sustainability linked financial instruments to tie ESG performance to its access to capital.

### **Physical Risk Management**

Mosaic is addressing increased risk from extreme weather by, for instance, construction of flood-resistant doors at certain sites or specific hurricane preparedness investments. This includes the likes of back-up power supplies in case of storm damage to grid connections.

In response to rising drought risk, Mosaic is working to improve water efficiency at its operations. It is looking to recycle more water at its operations, for instance via investment in reverse osmosis technology.

Mosaic continually monitors regional climate reports for key growing regions to understand the risk of drought or other severe weather which could impact demand for its products. Over the long-term, they are investing in R&D to come up with innovative new products suited to more stressed or changing weather conditions. For instance, products which promote soil health and resilience to help during periods of stress.

## Strategic Assessment

### CAPITAL ALIGNMENT

Mosaic aims to reduce GHG intensity for Scope 1 and Scope 2 by 20% per tonne of finished product by 2025. It also has a goal to reach net zero for Scope 1 and Scope 2 by 2040. It provides limited detail on how it will deliver on these goals. It has indicated it is working on projects in a couple of areas:

- **Energy efficiency:** Mosaic is investing in energy-efficient technologies and processes. It is also considering renewable energy and alternative energy sources. Mosaic has invested to integrate the internal generation of electricity at some of its facilities, in a process called cogeneration based on using waste heat from the manufacturing processes. This reduces Mosaic's overall external energy demand and thus its GHG emissions.
- **Innovation:** Mosaic is working on developing products that help its customers reduce GHG emissions. Its R&D spending over the past four years was USD 54.4 million, some of which was focused on this project area.
- **Carbon Capture and Sequestration (CCS):** Mosaic is exploring the use of CCS at one of its major sites in Louisiana. It has suggested the technology could reduce emissions by 500,000 tonnes a year.

Mosaic's climate-aligned capital initiatives, in our view, remain fairly limited in scope or rely on as yet unproven technology. Greater clarity on the size of intended capital outlays and how its investments will drive reductions in emissions and over what timescale is needed.

## **TRANSITION APPRAISAL**

Planet Tracker assessed Mosaic's Climate Transition strategy by analysing its GHG emissions trends from 2020 to 2023 and its alignment with the Paris Agreement. Mosaic has a GHG intensity goal to reduce Scope 1 and Scope 2 GHG emissions by 20% per tonne of finished product by 2025. They also have a goal to reach net zero for Scope 1 and Scope 2 by 2040. Although they do not currently have an approved science-based GHG emissions reduction target, Mosaic has indicated an intention to set an approved target in the next few years.

Our modelling of its current emission trajectory suggests that Mosaic is not on track to deliver on its Scope 1 and 2 net zero goal. We model Scope 1 and 2 emissions to fall only 10% by 2030 versus 2020 levels, well below the 43% reduction required for Paris alignment. We also note that this goal ignores Mosaic's Scope 3 footprint. With Scope 3 representing 73% of Mosaic's emissions in 2023 and showing a relentless growth trend over recent years (+12% CAGR 2020-2023), failing to address Scope 3 would significantly limit the impact of its other efforts on overall Paris alignment.

Planet Tracker's assessment also reviewed Mosaic's Policies, Governance, Risk Management, and Capital Alignment to evaluate its ability to deliver on emissions reduction. The company provides limited detail on how it will drive emissions reductions over the medium-term. There seems to be a significant reliance on innovation in products or as yet unproven technology, such as CCS. Similarly, Mosaic's engagement on climate is not well developed, with supplier engagement still at an exploratory stage and customer engagement focused on education.

Mosaic's Climate Risk Assessment and Management strategy offers a comprehensive approach to risk mitigation, with scenario analysis conducted regularly as part of the business' broader risk management strategy.

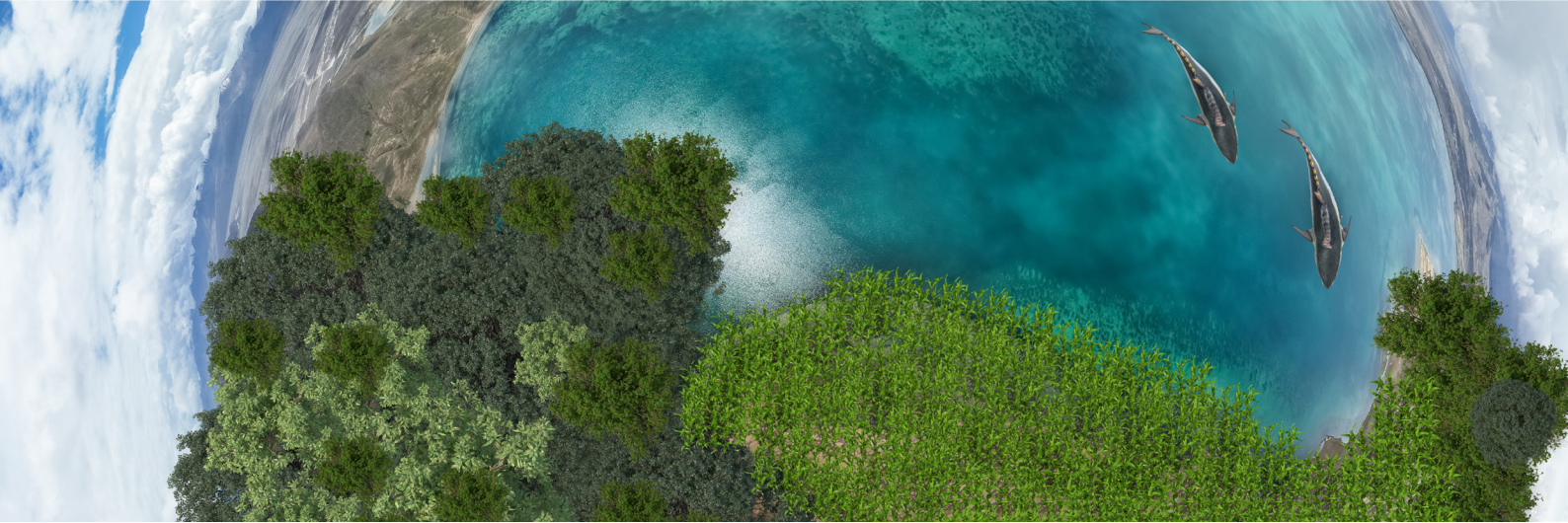
In conclusion, Mosaic demonstrates some commitment to achieving its current climate goals. However, its current targets would not align with a +1.5°C pathway as they do not address its significant Scope 3 footprint. Additionally, more transparency is needed on its strategy for achieving the goals it has in place. For instance, investors should push for greater detail on the investment needed, timeline and nature of the changes which will deliver emissions reduction.

**Planet Tracker concludes Mosaic is likely to align with a +2.0°C pathway by 2030.**

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## ABOUT PLANET TRACKER

Planet Tracker is a non-profit financial think tank producing analytics and reports to align capital markets with planetary boundaries. We aim to create a significant and irreversible transformation of global financial activities by 2030. By informing, enabling and mobilising the transformative power of capital markets we aim to deliver a financial system that is fully aligned with a net-zero, nature-positive economy. Planet Tracker proactively engages with financial institutions to drive change in their investment strategies. We ensure they know exactly what risk is built into their investments and identify opportunities from funding the systems transformations we advocate.

## PLANET TRACKER'S CLIMATE TRANSITION ANALYSIS

As part of its Petchems programme, Planet Tracker is examining the transition plans of chemical companies covered by the Climate Action 100+ list (<https://www.climateaction100.org/whos-involved/companies>). Our goal is to provide investors with the key information and analysis they need to be able to hold leading chemical companies to account for the quality of their climate transition plans and their execution against those plans. We also encourage investors to use this information to engage effectively with these companies with the ultimate aim of driving the sustainable transformation of the chemical industry.

## ACKNOWLEDGEMENTS

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