

C0. Introduction

C0.1

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

The Mosaic Company is the world’s leading producer and marketer of concentrated potash and phosphate crop nutrients. Our mission is to help the world grow the food it needs. The combination of our substantial company-owned mineral reserves, our production capacity, geographic locations and worldwide supply chain and distribution network differentiates Mosaic from other crop nutrient companies. Net sales for calendar year 2021 were approximately \$12.4 billion. Our business engages in every phase of crop nutrition development, from the mining of resources to the production and distribution of crop nutrients, animal feed ingredients and industrial products for customers around the globe. Our customer base includes wholesalers, retail dealers and individual growers in approximately 40 countries.

At Mosaic, we think of sustainability broadly: as the ability to sustain our business, to prosper and deliver value to our myriad stakeholders over many years. Our ESG performance targets, progress toward which we report annually, allow us to stretch for meaningful long-term improvements in the areas that are most important to our business. While our emissions profile is relatively low compared to many of our industry peers, we have still prioritized greenhouse gas emissions reductions as part of our long-term ESG strategy – in part because we are determined to participate in solutions to address climate change, and because we understand the interdependencies between climate, water, land and biodiversity and how critical they are to our mission to help the world grow the food it needs. Our action on climate change is good for the environment; the communities and ecosystems in which we operate; and for the long-term financial health and viability of our company.

We are a signatory to the United Nations Global Compact and we support its ten universal principles including human rights, labor, environment and anti-corruption.

C0.2

(C0.2) State the start and end date of the year for which you are reporting data.

	Start date	End date	Indicate if you are providing emissions data for past reporting years	Select the number of past reporting years you will be providing emissions data for
Reporting year	January 1 2021	December 31 2021	No	<Not Applicable>

C0.3

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

- Brazil
- Canada
- Paraguay
- Peru
- 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

C-CH0.7

(C-CH0.7) Which part of the chemicals value chain does your organization operate in?

Row 1

- Bulk organic chemicals**
Please select
- Bulk inorganic chemicals**
 - Ammonia
 - Fertilizers
- Other chemicals**
Please select

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, a Ticker symbol	MOS

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(s)	Please explain
Board-level committee	The Environmental Health, Safety, and Sustainable Development Committee (EHSS Committee) of the Mosaic Board of Directors (BoD) provides oversight of (and input to) our environmental, health, safety and sustainable development (EHSS) strategic vision and performance, including the safety and health of employees and contractors; environmental performance; the systems and processes designed to manage EHSS risks, commitments, public responsibilities and compliance; relationships with and any impact on communities with respect to EHSS matters; public policy and advocacy strategies related to EHSS issues; and achieving societal support of major projects. Climate-related issues are Mosaic's EHSS committee's responsibility because the subject matter is most closely aligned with this committee's expertise. In 2021, the EHSS Committee provided input on Mosaic's GHG reduction strategy, which ultimately included providing support for Mosaic's net-zero greenhouse gas emissions targets, which we announced in December 2021. Other committees of the BoD may from time to time have input on climate-related issues, like the Audit Committee, which provides oversight of Mosaic's top enterprise risk management risks.
Chief Executive Officer (CEO)	The Senior Leadership Team (SLT) consisting as of January 1, 2022 of the CEO, President and Director; SVP – CFO ; SVP – Human Resources; SVP – North America; SVP, General Counsel and Corporate Secretary; SVP – Mosaic Fertilizantes; SVP – Government and Public Affairs; SVP – Commercial; SVP – Mosaic Fertilizantes; SVP – Supply Chain; SVP – Global Strategic Marketing, Head of China and India; and SVP – Strategy and Growth, review the EHSS Committee's recommendations in order to develop new companywide policies, initiatives, targets and goals.

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 strategy Reviewing and guiding major plans of action Reviewing and guiding risk management policies Reviewing and guiding annual budgets Reviewing and guiding business plans Setting performance objectives Monitoring implementation and performance of objectives Overseeing major capital expenditures, acquisitions and divestitures	<Not Applicable>	In preparation for quarterly meetings with the EHSS Committee, Mosaic personnel prepare updates related to our ESG targets performance (GHGs) for the EHSS Committee of the BoD's review. In line with mechanism of reviewing and guiding strategy and reviewing and guiding annual budgets, the EHSS Committee communicates with Mosaic's management team on the development and oversight of climate-related targets (energy and GHGs) and the pathways (projects, CAPEX investments, production considerations) for achieving them. Because emissions-reduction targets are an instrument through which Mosaic strives for risk management and companywide performance improvement in climate-related areas, the EHSS Committee's reviewing and guiding our targets strategy directly contributes to oversight of these issues. The Committee is also regularly kept apprised of regulatory developments pertaining to the implementation of a carbon tax that impacts our Saskatchewan, Canada facilities.

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	The criteria we use to assess competence of board member(s) on climate-related issues is primarily experience with climate or energy matters, like policy or large-scale projects and initiatives; and skills or qualifications that are expressly relevant to climate matters.	<Not Applicable>	<Not Applicable>

C1.2

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

Name of the position(s) and/or committee(s)	Reporting line	Responsibility	Coverage of responsibility	Frequency of reporting to the board on climate-related issues
Other C-Suite Officer, please specify (VP EHS)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly
Other C-Suite Officer, please specify (SVP Government and Public Affairs)	<Not Applicable>	Both assessing and managing climate-related risks and opportunities	<Not Applicable>	More frequently than quarterly

C1.2a

(C1.2a) Describe where in the organizational structure this/these position(s) and/or committees lie, what their associated responsibilities are, and how climate-related issues are monitored (do not include the names of individuals).

Mosaic's Vice President of Corporate Environment, Health and Safety (VP EHS), a role that reports directly to Mosaic's SVP of Supply Chain, and among other things, manages the company's performance toward climate-related sustainability targets (GHGs). While climate-related responsibilities are shared by many at Mosaic, the rationale for the VP EHS having purview of these issues is due to the interplay between companywide EHS performance, which includes emissions performance and compliance with regulations, and our progress toward our climate-related sustainability targets. The VP EHS communicates directly with Mosaic's EHSS Committee of the BoD in quarterly meetings, providing regular updates on Mosaic's performance toward sustainability targets, our ESG strategy, and regulatory developments pertaining to the implementation of the carbon tax in Saskatchewan. Mosaic's SVP of Government and Public Affairs, a role that reports directly to our CEO, also has direct responsibility for assessing and managing climate-related risks and opportunities. The rationale for assigning this role the responsibility for sustainability at Mosaic is because the company prioritizes transparency and participates with various voluntary ESG or sustainability reporting initiatives throughout the year, including our annual companywide sustainability disclosure, an effort led by the public affairs team. This role has purview over the function of sustainability at Mosaic, which includes the collection and assurance of sustainability data, including GHG performance and tracking toward companywide GHG reduction targets; development of companywide sustainability strategy and the creation, implementation and monitoring of climate-related targets (GHGs and energy); communication of sustainability results to senior leaders, the EHSS Committee and other diverse stakeholders; issuance of the companywide sustainability disclosure and satisfying other ad hoc investor requests for information about Mosaic's performance; and the monitoring and communication of external climate issues that have the potential to impact Mosaic's business. These responsibilities rest with the SVP of Government and Public Affairs due to the need for broad, global external perspective and the role's extensive engagement with external stakeholders, including investors, communities, government and regulatory bodies. Also, this role is well suited for managing the broad issues of sustainability, including those related to climate change, because it interacts with and communicates heavily with the rest of the senior leadership team (SLT) and other senior leadership across geographies and business units at Mosaic.

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	

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	Type of incentive	Activity incentivized	Comment
Corporate executive team	Monetary reward	Emissions reduction project Efficiency target	Performance measures for members of Mosaic's executive and management teams and all salaried employees are based on financial and operational performance, including operating earnings, operating costs per tonne, incentive selling, general and administrative expenses and certain EHS metrics. Climate change is indirectly linked to compensation through operating cost savings that are achieved through site-specific initiatives and companywide programs aimed at reducing energy use and emissions. Further, annual incentive compensation is tied to climate through a management system effectiveness/risk reduction measure, the elements of which promote environmental, health, safety and sustainability behaviors and objectives. Sustainability performance, including reduction of GHGs and water withdrawals, are covered by the risk reduction program.
Management group	Monetary reward	Emissions reduction target	As part of our strategic priority of developing, engaging and empowering our people, we have a performance management process called "EDGE" – Evaluating, Developing and Growing Excellence. Our performance management process has evolved to include scaled competencies, goal alignment and an emphasis on employee and career development. Management and employees at various levels can establish individual goals, including achievement of or progress towards energy reduction projects or targets, results of which are linked to their respective annual incentives.

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	4	The short-term time horizon is generally aligned with Mosaic's general strategic planning horizons. Specifically, the five-year planning process is considered "medium-term," so the time period less than five years is considered "short-term."
Medium-term	5	9	The medium-term time horizon is generally aligned with Mosaic's general strategic planning horizons. Specifically, the company's five-year planning process is considered "medium-term," so we are considering the five-to-nine year timeframe medium-term.
Long-term	10	20	The long-term time horizon is generally aligned with Mosaic's general strategic planning horizons. Specifically, the company's five-year planning process is considered "medium-term" (with a five to nine year timeframe considered medium term) so the horizon beyond that, including the company's 2030 vision, is considered "long-term."

C2.1b

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

We define "substantive impact" as an impact, financial or non-financial, that could hinder our ability to achieve our strategy, or one that threatens Mosaic's ability to sustain our business or achieve business objectives. More specifically, though our definition of substantive varies by timing, financial condition and situation, a financial impact to operational expenses (as just one example) quantified at \$160 million or more would be considered substantive. Similarly, a greater than \$200 million impact on revenue would be considered substantive, although it may not meet the companywide threshold for materiality. In the context of climate-related risks, we consider risks across broad time horizons and assess other factors such as financial impact, likelihood, speed of onset impact on business and resources required to manage potential impacts. Regardless of speed of onset (which ranges from little or no warning to occurs over a year or more), if a risk is considered to have a major or severe impact on the results of our business, it would be considered substantive. Similarly, from a qualitative perspective, we would consider an impact substantive if it were an event a reasonable shareholder would consider when making an investment decision.

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

Mosaic includes climate-related risks and opportunities as part of a complex and multi-disciplinary companywide risk management process. At the highest level, we identify climate change as an enterprise-level risk; thus, climate-related risks and opportunities – some of which are considered substantive, having met an impact threshold to operational expenses (as just one example) quantified at \$160 million or more or exceeding a \$100 million impact on revenue – are included in our Enterprise Risk Management (ERM) program alongside other similarly pressing enterprise-level risks. The methods we use in the ERM process include internal discussions with senior leadership about the risk landscape – including new/emerging risks to our direct operations as well as upstream and downstream in the value chain, changing risks, and the implications of these changes to our business and its ability to fulfill our strategic aims. External intelligence, including regular discussions with trusted subject matter experts and consultancies, is another method we use to monitor the megatrend (long-term) landscape and assess its impact to our company at all stages of the value chain. Insights from these methods are assessed in the context of respective risks and opportunities up to a quarterly basis (more than one time per year), depending on their significance, which is determined largely by factors such as probability, magnitude, speed of onset, resources required for management, and business impact. Risk “owners,” who are members of the senior leadership team, facilitate regular deep dive discussions about the highest risks with the Board of Directors. Any material climate-related risks and mitigating actions identified as “top” ERM risks are presented to the audit committee. This regular cadence of communication (a primary method of identification and assessment) about risks and the Board’s oversight of top risks contributes to our ability to maintain a strong risk culture, promote transparency and mobilize necessary resources (respond to) to address the risk or harness the opportunity.

At an asset level, climate, including climate changes, and associated risks and opportunities that apply at asset levels are monitored regularly by teams at Mosaic including EHS, public affairs, enterprise risk management and market analysis using multiple methods: internal intelligence, market insights, external consultancies, and internal tools like an EHS risk register tool. Certain climate-related risks – namely physical risks that have the potential to impact our sites – are particularly well suited for our risk register tool, which is a specific method that identifies and scores (e.g., prioritizes) environmental and safety hazards by quantifying baseline, inherent and residual risk scores and collaborates with the workforce to implement operational controls to reduce or, ideally, in certain cases, eliminate the risk. Risk scores are calculated for each identified risk and take into consideration the severity of consequences expected, and the likelihood of exposure and any controls that have been implemented to reduce or eliminate the risk. Annual incentive compensation is tied to ESG through a risk reduction measure, which means annual compensation is based, in part, on the successful reduction/mitigation of the risk.

Additionally, as a complement to our standard risk identification processes, we recently initiated a companywide climate risk assessment and scenario analysis exercise as a discrete method to identify short-, medium- and long-term transition and physical risks to our sites, such as the threat of emerging regulations, sea level rise and other risks, and to assess the potential financial and production impacts on our operations – and to test the health of our cross-functional awareness of climate-related risks, how they cross over into other strategic areas, and their impacts to our business. The process, led by third-party subject matter experts, exposed a cross-functional group of senior managers and other leaders to new concepts and spurred conversation about how climate risk translates to company and strategic risk. The results of this assessment, which used qualitative and quantitative scenario analysis criteria, will help us further define, communicate and prioritize our response(s) to identified risks.

As for broadly responding to risks and opportunities, in general, it is the role of management to operate the business, including managing risks and opportunities. We make decisions about how to respond to climate-related risks (mitigate, transfer, accept or control) based on the results (assessed on significance factors described above) of the multi-disciplinary risk assessment process and scenario analysis. For example, a risk with especially high magnitude, probability and significance would warrant action ahead of risks that are assessed lower magnitude, probability and significance. Of note: besides the conceptual transfer of risk by purchasing insurance policies that temper our climate risk, to date, our decisions have primarily centered on mitigation and acceptance activities, so we offer a response that sheds light on those decisions.

For example, as we can’t altogether control or eliminate physical risks associated with adverse weather and climate change, particularly given the nature of our business and location of our operations, there is an element of acceptance of the risk, although we are focused on mitigation first. Our typical method of mitigating physical risks is buttressing our facilities against climate-related physical threats and working in earnest to reduce our companywide greenhouse gas emissions footprint. We view emissions reductions as a measure that will strengthen our core business and deliver meaningful results in the form of risk reduction.

Likewise, the threat of transition risks, namely increased pricing of GHG emissions, is pressing enough that we are managing it by emphasizing mitigation strategies based on the significance of the risk and its potential impact (financial or strategic) on our business. For example, whereas currently, roughly 30% of our GHG emissions occur in jurisdictions that are currently subject to carbon taxes, the IEA’s Sustainable Development Scenario Report suggests that advanced economies will require a \$63 carbon price in 2025 and a \$140 carbon price in 2040. The impact of such a carbon tax on Mosaic’s emissions footprint would be significant, potentially even material from a financial perspective, therefore, we are working in earnest at our highest emitting sites to reduce our emissions footprint and thus our exposure to the global risk of carbon taxes. This general approach applies to our treatment of other transition risks.

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	Legal requirements and environmental regulations (driven by climate change) that Mosaic is subject to could adversely affect our business, financial condition and results of operations, and the results could be material to us. Accordingly, current regulatory risks are relevant to Mosaic's ongoing risk assessment process and are regularly included in Mosaic's broad consideration and analysis of climate-related risks. For example, future changes to air quality standards required us to start replacing catalysts at some of our Florida concentrates facilities in order to comply with new standards. Mosaic's EHS, public affairs and legal teams are responsible for interpreting and implementing these regulatory changes, while Mosaic's finance team coordinates cross-functionally with those groups to estimate the financial impact of such changes.
Emerging regulation	Relevant, always included	Mining and fertilizer manufacturing are energy- and emissions-intensive endeavors and we are subject to complex laws and regulations. Accordingly, emerging climate regulations are relevant to Mosaic's ongoing risk assessment process and are regularly included in Mosaic's broad consideration and analysis of climate-related risks. For example, we are currently experiencing effects of indirect costs from a carbon tax in Canada associated with energy and transportation that are passed through to Mosaic. Similarly, we continue to monitor developments relating to environmental regulation (e.g. carbon tax, Clean Fuel Standard, etc.) that impacts our Saskatchewan, Canada potash facilities. A cross-functional team made up of public affairs, legal, EHS, finance and operations colleagues at Mosaic is currently working with the Saskatchewan Ministry of Environment, Environment and Climate Change Canada, industrial associations, and other government stakeholders to determine next steps for finalizing a regulatory and policy framework. We are also assessing the potential impacts of the proposed Clean Fuel Standard now under development by the federal government in Canada, which will apply to liquid fuels.
Technology	Relevant, always included	Regulatory changes could require process changes, operational modifications, installation of new technologies and research in the design of new equipment or technologies. For example, we may be required to make investments in technology, including burner replacements and additional heat recovery systems, in order to meet new regulatory requirements. This represents a risk to Mosaic in the form of potentially significant costs of equipment, or fines in the event that we are not compliant with regulations. Mosaic's finance team coordinates cross-functionally with EHS, legal and operations groups to estimate the financial impact of such changes. Accordingly, these risks are relevant to us and are regularly included in our consideration of climate-related risks. For example, future changes to air quality standards required us to start replacing catalysts at some of our Florida concentrates facilities in order to comply with new standards. Mosaic's EHS, public affairs and legal teams monitor for, interpret and implement regulatory changes while Mosaic's finance team coordinates cross-functionally with those groups to estimate the financial impact of such changes.
Legal	Relevant, always included	At this time, climate-related litigation claims have not been specifically notable to Mosaic because there have not been any climate-related legal claims against our company. However, we anticipate that this topic might be relevant to us in the future since the frequency of litigation by government and private parties against corporations is increasing and thus, it is a risk type we include in our organization's climate risk assessment. Furthermore, climate change litigation could have an impact on broad industry – for example, a decision adverse to an oil and gas company could result in a precedent that affects other industries and therefore, companies like Mosaic. We will continue to monitor legal precedent to assess this category's relevance to us.
Market	Relevant, always included	Market risks are relevant to Mosaic's ongoing risk assessment process and they are regularly included in Mosaic's broad consideration and analysis of climate-related risks. Mosaic's market analysis team monitors climate and growing regions, like the Midwest region of the United States, forecasting for climate-related events like droughts and floods, to determine their potential impact on fertilizer markets and Mosaic's financial performance. For example, a widespread flood might impact agricultural commodity (fertilizer or commodity crop) markets, which could in turn have a detrimental effect on Mosaic's annual net sales. Similarly, according to the Intergovernmental Panel on Climate Change, crop yields could decline 10-25% per degree of temperature rise, and this could present both a risk and an opportunity to Mosaic. Market risks are always included in Mosaic's assessment of climate-related risks and opportunities.
Reputation	Relevant, always included	Reputational risks are relevant to Mosaic's ongoing risk assessment process and they are regularly included in Mosaic's broad consideration and analysis of climate-related risks. For example, negative public perceptions of Mosaic or the mineral fertilizer industry that are a result of climate-related issues could potentially lead to reduced demand for goods, reduced revenue, or could negatively impact our profit. Similarly, climate-related issues could prompt permitting challenges that affect Mosaic's license to operate. Mosaic's EHS, legal and public affairs team regularly monitors issues and reputational vulnerabilities, assessing inputs such as media coverage and stakeholder perceptions of issues affecting our business.
Acute physical	Relevant, always included	Acute physical risks, such as hurricanes and acute seasonal flooding, are relevant to Mosaic's ongoing risk assessment process, and they are regularly included in Mosaic's broad consideration and analysis of climate-related risks. For example, Mosaic's market analysis team monitors climate and growing regions, like the growing regions in the Midwest region of the United States, forecasting for climate-related events like droughts and floods, to determine their potential impact on the markets and Mosaic's business performance. Our engineering, EHS and operations teams also regularly monitor acute physical risks. For example, our Phosphates facilities have a rainfall preparedness plan that forecasts how each of our concentrates facilities will perform with 30-percent above-normal rainfall rates. The plan, updated annually prior to the start of peak rainfall season, models the impact of above-average rainfall on a site's storage capacity and defines a contingency plan and necessary actions to mitigate potential risks.
Chronic physical	Relevant, always included	Chronic physical risks are relevant to Mosaic's ongoing risk assessment process and they are regularly included in Mosaic's broad consideration and analysis of climate-related risk. For example, Mosaic has approximately \$8 billion in physical assets in hurricane-prone areas. Widespread damage resulting in business interruption or facility closure to facilities within the zone(s) of risk could be detrimental to our operating activities and financial condition. Led by Mosaic's risk management group, we conduct annual property risk engineering assessments to identify and mitigate risk of loss associated with weather-related property damage or business interruption.

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?

Direct operations

Risk type & Primary climate-related risk driver

Current regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

As Mosaic's mining and manufacturing operations are emissions-intensive, initiatives to limit greenhouse gas by taxation or financial penalties could restrict Mosaic's operating activities, require us to make changes in our operating activities that would increase our operating costs, reduce our efficiency or limit our output, require us to make capital improvements to our facilities, increase our energy, raw material and transportation costs or limit their availability, or otherwise adversely affect our results of operations, liquidity or capital resources, and these effects could be material to us.

In late 2016, the Canadian federal government announced plans for a comprehensive tax on carbon emissions, under which provinces opting out of the tax would have the option of adopting a cap-and-trade system. In late 2018, the federal government implemented a federal carbon pricing backstop system that applies in any province or territory that does not have a carbon pricing system in place by 2018. The federal system applies, in part, to our Saskatchewan Potash facilities and there are financial consequences to Mosaic as a result. The federal government accepted Saskatchewan's plan for regulating industrial GHG emissions and Mosaic now reports to the Saskatchewan Ministry of Environment to meet 2030 reduction targets; however, Ottawa has imposed a carbon tax on GHG emissions from electricity in Saskatchewan and Mosaic is paying for that portion of its operations.

Our Canadian potash mines, located in the Province of Saskatchewan, are currently subject to a combination of federal and provincial regulations that assign a comprehensive tax on carbon emissions. Collectively, these facilities in Canada represented about 40% of Mosaic's total finished crop nutrient production tonnes and approximately 30% of total companywide emissions in 2021. One feature of the comprehensive tax on carbon emissions is a carbon levy charge from our electricity provider, which translates to increased indirect costs to our company (approximately \$3.7 million in 2021). Costs associated with the carbon levy are passed on from Mosaic's rail carriers in Canada, resulting in additional indirect costs to our company (approximately \$815,000 USD in 2021).

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-low

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

4500000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Ottawa's imposition of a carbon tax on GHG emissions from electricity in Saskatchewan has had an impact on Mosaic because our operations there rely on electricity from the local grid as a source of power. In 2021 we paid more than \$3.7 million USD in carbon levy funds to our electricity provider, translating to an increase in indirect costs to our company. More specifically, the per facility costs ranged from approximately \$250,000 to \$2.9 million at each of our three potash production sites. Costs associated with the carbon levies are passed on from Mosaic's rail carriers in Canada, resulting in additional indirect costs to our company (approximately \$815,000 USD in 2021). The levies were in effect for all of 2021; we arrived at this estimate of financial impact by anticipating similar full-year costs moving forward.

Cost of response to risk

144000

Description of response and explanation of cost calculation

We are responding to the risk of carbon pricing mechanisms, in part, by executing a strategy to reduce our emissions. The total costs associated with our response to carbon pricing in Canada is not available as a single item. Specifically, at our Canadian Potash sites, where our electricity consumption is subject to carbon levy paid to the local electricity provider, we are reducing our Scope 2 emissions. In 2021 we completed projects at four Saskatchewan potash facilities that reduced our scope 2 emissions by roughly 3,000 tonnes CO2e per year. One project involved decommissioning a 72kv utility supply (just one of the site's power distribution systems) at one Potash site in Saskatchewan. This particular site is especially observant of electricity use and scope 2 savings opportunities because it accounts for ~75% of scope 2 emissions from Mosaic's Saskatchewan facilities. The 72kv decommissioning project cost \$66,000 and reduced the facility's scope 2 emissions by 1,400 tonnes CO2e/year. Costs included items such as electrical cable and reconfiguration of equipment. The timeframe for completing the 72kv decommissioning was immediate (< 1 year) whereas the timeframe for the broader strategy to reduce our Scope 2 GHG emissions footprint is ongoing and longer-term in nature (>5 years). We are also responding to this risk by engaging associations and funding research that investigates new technologies that can deliver environmentally sustainable, secure and reliable, and cost-competitive energy that supports economic development and growth for our industry. As a specific example, in 2021 we invested ~\$80,000 in membership of International Minerals Innovation Institute (IMII) to research promising technologies such as geothermal, small modular reactors, and next generation carbon capture. In 2021, our participation and membership fees helped fund two important works streams: a) a renewable energy study, which recognized technologies like nuclear energy as being a promising long-term (greater than five years) option for the mining industry's decarbonization efforts; and b) an Alternative Energy Systems Innovation Challenge, which offered up to \$500,000 CAD (~\$390,000 USD) for innovators to bring alternative energy solutions that can be piloted at a mine site in Saskatchewan. Mosaic is contemplating the near-term pilot (within one year) of one of the solutions that earned recognition during the 2021 Innovation Challenge at our Belle Plaine site in Canada.

Comment

The \$144,000 response cost we are citing is the sum of the 72kv decommissioning project and the fees associated with our IMII membership.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation	Carbon pricing mechanisms
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Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

Mosaic is subject to environmental regulations (some of which are driven by climate change) that could adversely affect our business, financial condition and results of operations, and the results could be material to us. There are various initiatives under consideration in the United States, Canada and internationally that, if adopted, could adversely affect our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources, and these effects could be material to us. In addition to the carbon price already established in Canada, which affects our three Canadian potash mines in Saskatchewan, we are anticipating the

potential implementation of a price on carbon in the United States and Brazil, jurisdictions which, combined, account for approximately 65% of our companywide emissions. We are monitoring developments relating to the anticipated proposed legislation, as well as the potential future effect on our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

147000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Any agreement, regulation or program that limits or taxes direct and indirect GHG emissions from our facilities could increase operating costs directly and through suppliers. As of the date of this report, we are still monitoring regulatory developments and modeling their potential financial impacts on our business, so the figures we are providing at this stage are gross and simplified estimates. If we apply the International Energy Agency's (IEA) recommended price of \$63 per tonne of CO2e generated to the direct emissions from our U.S. facilities (roughly 1.7 million tonnes), the impact would be greater than \$107 million. In Brazil – where our emissions are approximately 600,000 tonnes CO2e per year– assuming the same IEA price on carbon, the impact to us would be approximately \$40 million. We are citing the sum of these estimates for the U.S. and Brazil (\$107 million + \$40 million = \$147 million) as our potential impact figure for this particular risk.

Cost of response to risk

3500000

Description of response and explanation of cost calculation

Broadly, Mosaic proactively emphasizes energy efficiency in our operations as one way to manage or mitigate the potential risks of climate-related regulatory changes and resulting potential changes in technology requirements. Naturally, the less we emit, the less we are likely to be impacted by carbon pricing mechanisms; we also recognize the significant operating, financial and reputational efficiencies we stand to achieve by reducing emissions. As a specific example of our management efforts, the Mosaic Fertilizantes business in Brazil undertook projects to optimize processes, replace fuels and upgrade equipment, all as part of a strategy to reduce GHG emissions and improve efficiency of operations. One project in particular, which occurred at one of our phosphate mine sites in the state of Minas Gerais that produced approximately 400,000 tonnes of finished product in 2021, replaced heavy oil with vegetable oil. The result of this projects was reduced fuel use and emissions savings of approximately 12,000 tonnes CO2e. The costs for this initiative totaled approximately \$3,500,000 and we did not realize any annual savings as a result of having introduced the vegetable oil to the process. There are other projects and approaches under consideration, costs for which vary drastically; the \$3.5 million cited as part of this risk was derived from actual costs (equipment and engineering/contractor support) associated with specific projects completed in 2021.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Acute physical	Other, please specify (Increased severity and frequency of extreme weather events such as cyclones and floods)
----------------	--

Primary potential financial impact

Increased indirect (operating) costs

Climate risk type mapped to traditional financial services industry risk classification

<Not Applicable>

Company-specific description

The trend of increased floods, windstorms, cyclones and other events as a result of climate change could affect Mosaic's business, particularly considering the location of our sites. More specifically, Mosaic has approximately \$8 billion in physical assets in hurricane-prone areas of Florida and Louisiana in the United States. Mosaic's insurance deductible for a covered wind event is, at a minimum, \$50 million per occurrence for mines and fertilizer production facilities in North America. Although our containments in these areas are built to withstand storms, additional sustained and increasingly intense hurricane activity could force a change in design standards for buildings, equipment, or containments. Similarly, a severe storm could cause physical damage to our facilities or business interruption. This could result in increased capital costs or costs per tonne of product.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)

<Not Applicable>

Potential financial impact figure – minimum (currency)

50000000

Potential financial impact figure – maximum (currency)

125000000

Explanation of financial impact figure

Mosaic's insurance deductible for a covered wind event is, at a minimum, \$50 million per occurrence for mines and fertilizer production facilities in North America. Although our containments and facilities are built to withstand storms, additional sustained hurricane activity could force a change in design standards for buildings, equipment or containments. This could result in increased capital costs or costs per tonne of product. In the event of widespread damage as a result of a severe storm, we may face costs up to or exceeding our insurance deductible of \$50 million. In 2021, Hurricane Ida caused damage to two of our sites in Louisiana, resulting in property damages that exceeded our deductible, costing Mosaic approximately \$125 million. This figure represents costs associated with business interruption and property damage (electrical equipment and miscellaneous infrastructure, the roof on one site and significant damage to the warehouse at another site). We use this figure to demonstrate the potential financial impact of future losses. Production impact and idle and plant costs are not included in this figure.

Cost of response to risk

30000000

Description of response and explanation of cost calculation

We manage these potential climate change risks by focusing on hurricane preparedness at all facilities that are within the zone of risk. Preparedness procedures and guidelines were in place in 2021 when Hurricane Ida made landfall in Louisiana as a category 4 storm and caused damage to two of Mosaic's concentrates sites. Both sites lost power for over 20 days. The cost associated with generators at one site was approximately \$170,000, which included the rental of three generators and miscellaneous service and parts line items. Beyond site preparedness as described above, and the practice of carrying ample global property insurance coverage to protect against property loss (premiums associated with which cost approximately \$28M/year), part of our strategy to manage hurricane risk is to conduct ongoing property risk engineering assessments to mitigate risks associated with property damage and business interruption. The types of actions that results from these assessments include improving existing flood and emergency response plans, replacing or redesigning roof structures to meet or exceed wind uplift requirements, and making enhancements to structures. The approximate cost of installing fasteners to secure roof panels as a way to reduce or avoid damage from hurricanes is \$150,000. This exact cost example is based on a project we completed in 2017 at one of our distribution sites and included the equipment and associated engineering/contractor support. As a result of installing these fasteners, the roof exceeded wind uplift requirements and thus, was theoretically less vulnerable to effects of hurricanes. In 2021 we continued planning for additional projects at one of our Florida sites that include wind mitigation plans, like constructing a motor control center above 100-year flood elevation requirements; and constructing a small storage building and replacing siding on a dock-side structure to meet new wind design requirements. The expected cost of these projects is approximately \$1.5 million. The costs associated replacing or redesigning roof structures and making enhancements to structures do not represent full costs associated with hurricane preparedness. The \$30M cited above is the rounded-up sum of property insurance premiums (\$28M/year) plus the expected costs of mitigation projects, like the construction of a motor control center above flood elevation requirements (\$1.5M), plus the cost of hurricane preparedness (\$170,000).

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	Drought
----------------	---------

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

Mosaic is dependent on freshwater in our mining and production processes. Changes in precipitation resulting in droughts or water shortages in our operating geographies across North and South America, which could limit our allocation of water, could ultimately restrict our operating activities, require us to make changes in our operating activities that would increase our operating costs, reduce our efficiency or limit our output. We are opting to flesh out an example related to limited production output for this specific risk.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

124000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Mosaic's 2021 net sales totaled approximately \$12.4 billion. A theoretical decrease in production output associated with a lack of critical water supplies that resulted in 1% lower sales companywide could translate to approximately \$124 million less revenue based on 2021 performance.

Cost of response to risk

6120000

Description of response and explanation of cost calculation

We are committed to responsible water use. We manage the potential risk of extreme changes in precipitation patterns, more specifically drought, by recycling high percentages of the water used in our operations and by exploring the use of alternative water sources like reclaimed water, where possible. We have also invested in reverse osmosis (RO) technology, which reduces our reliance on freshwater resources. For example, as part of their larger water conservation efforts, Mosaic's Bartow facility uses reverse osmosis to produce more than 250 gallons per minute of treated water back for use at the facility's sulfuric acid plant, thereby reducing freshwater needs by the same amount. It cost approximately \$6.1 million to run the reverse osmosis plant at our Bartow facility in 2021. These cost estimates represent contract services, production materials, rental of equipment, electricity and required repairs and supplies for the year. Another site in Florida introduced a method to reduce reliance on groundwater resources by recycling water for use in the acid wash (flotation) process, as quality parameters allow. The project cost approximately \$20,000 and reduced water use by more than 250 million gallons/year. Figures represent the cost of installing a valve and piping to tap into the recycled water. Mosaic personnel (engineers and maintenance colleagues) completed the work so there were no incremental contractor costs associated with this initiative.

The cost of response cited represents the sum of project costs for both initiatives in 2021. These specific initiatives represent an example of our response to managing the broad risk of drought or water shortages to our direct operations. As water management efforts are ongoing, we can anticipate similar costs moving forward and we are using these initiatives to estimate the cost of our response to this risk.

Comment

Identifier

Risk 5

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Chronic physical	Changing precipitation patterns and types (rain, hail, snow/ice)
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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

Potential climate change risks that contribute to adverse and increasingly severe weather conditions, including the impact of changes in rainfall patterns and projected increases in temperature, could have a negative impact on Mosaic in the form of decreased demand for our finished crop nutrient products. Even longer-term, changing precipitation and temperature patterns could make certain growing regions permanently less productive, thus affecting demand for Mosaic's core fertilizer products. As a specific example, some models project that climate change will contribute to a decline in yields in key growing regions in the United States, where approximately 30% of Mosaic's net sales originated in 2021 (please note, this estimate is for net sales from the United States in total and not a reference to a specific at-risk growing region).

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

124000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Mosaic's 2021 net sales totaled approximately \$12.4 billion. A theoretical decrease in demand for our products that resulted in 1% lower sales companywide could translate to approximately \$124 million less revenue based on 2021 performance.

Cost of response to risk

57000000

Description of response and explanation of cost calculation

Mosaic's market analysis team continually monitors climate and growing regions, forecasting for climate-related events like droughts, floods and severe weather events, to determine their potential impact on the markets, our production, and Mosaic's overall financial performance. As another strategy to manage this risk, we are investing in research and product development and partnership opportunities to study and maximize the performance of Mosaic's fertilizer product portfolio in diverse, changing and stressful soil and climatic environments. For example, Mosaic's agronomic research program focuses on methods to build resilient soils with soil health, 4R nutrient stewardship and balanced crop nutrition initiatives. Our data from lab, greenhouse, and field research consistently demonstrates that healthy soils achieve enhanced productivity and profitability, especially in climate-induced stressful growing conditions. In 2021 we conducted over 560 small plot trials in Argentina, Brazil, Chile, China, Canada, India, Latin America (Mexico to Peru), Turkey and the United States. These activities cost approximately \$3 million in 2021. Also, in 2021 we announced a new agreement (bringing the total to three) to develop and launch agricultural solutions, including a nutrient efficiency product and a nitrogen-fixing microbial product, that contribute to soil health in diverse applications and have positive environmental benefits. In 2021 we invested approximately \$54 million in R&D agreements, equity investments and venture capital investments to progress this work to develop new agricultural solutions.

Comment

Identifier

Risk 6

Where in the value chain does the risk driver occur?

Upstream

Risk type & Primary climate-related risk driver

Market	Other, please specify (Decreased supply of key raw materials)
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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

Energy companies are beginning to transition away from oil to other forms of low-carbon energy. As a result, reduced oil refinery operating rates in the U.S. could result in decreased availability of molten sulfur, which could increase costs of sulfur procurement or decrease availability of sulfur, an essential raw material input for Mosaic's phosphate fertilizer production operations. While we have not yet become subject to such results in the sulfur procurement markets due to the transition away from oil, exceptionally cold weather did result in refinery closures in 2020 and 2021, which affected sulfur supplies in 2021 and constrained Mosaic's production of finished crop nutrient products in the first half of the year. Using these 2021 refinery closures as an example, we can project that if it becomes necessary to procure sulfur at higher costs, and if we are unable to pass those costs on in our product prices, or if we are unable to procure sulfur at volumes necessary for our operations, such events could have a material adverse effect on our phosphate business, and/or our financial condition or operating results. For context, in 2021 we used approximately 4.9 million long tons of sulfur to produce crop nutrient products.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

20000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

In early 2021 we realized higher raw material costs, primarily for sulfur, because of oil refinery closures in late 2020 and early 2021 due to lower fuel demand and extreme cold weather in the gulf region in the first quarter of 2021. Drawing from the experience from these events (which contributed to an approximately 250,000 tonnes reduction of production in Q1 2021) to demonstrate the potential impact of low sulfur supplies in the future, results in a hypothetical impact of approximately \$20 million. We arrived at this figure by assuming a 250,000-tonne reduction in production multiplied by the Q1 2021 average finished product selling price of \$477 and applying a gross margin of 17%.

Cost of response to risk

10000000

Description of response and explanation of cost calculation

Deployment of a diverse supply chain strategy is one way we mitigate the potential risk of high raw material costs and disruptions in raw materials supply. Specifically, dedicated sulfur transportation barges and tugs and a 50% ownership interest in a company that has sulfur transportation and terminaling businesses in the Gulf of Mexico position Mosaic to source an adequate, flexible and cost-effective supply of sulfur, our third key input, to our Florida and Louisiana phosphate production facilities. Further, we believe that our investments in sulfur logistical and melting assets continue to afford us a competitive advantage compared to other producers in cost and access to sulfur in that we can supplement our need for molten sulfur with prilled sulfur. The cost of our operation of the sulfur melter in 2021 was approximately \$10 million, which represented utilities, process chemicals, people costs (payroll), contract labor, maintenance, repair costs and other costs. It excludes depreciation.

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?

Downstream

Opportunity type

Markets

Primary climate-related opportunity driver

Access to new markets

Primary potential financial impact

Increased revenues through access to new and emerging markets

Company-specific description

Climate change is expected to have significant effects on agricultural systems as more frequent and more severe heat waves, droughts and floods threaten agricultural productivity, and thus food security and nutrition for a growing population. This increased pressure on governments, growers and other agricultural stakeholders to maintain agricultural productivity despite an increase in abiotic stressors driven by climate change (heat, drought, floods, etc.) presents an opportunity to Mosaic in the form of new and emerging product markets (and thus a financial benefit from new revenue sources). For example, Brazil, one of Mosaic's key markets, representing net sales of approximately \$5 billion in 2021, is a global breadbasket and leads the world in production of key staple crops including soybean and corn. As the climate changes, warmer and drier climatic conditions in Brazil could threaten the stability of that critical food supply. Biologicals, including some of the products we are developing, are gaining attention as a means to address the resilience of cropping systems in the face of changing climate regimes, persistent pests, changing precipitation patterns, etc., and could be especially critical to agriculture in markets like Brazil. Mosaic, given our agronomic expertise and role in the agricultural supply chain, is positioned to expand our core business to capture some of the biologicals market.

Time horizon

Medium-term

Likelihood

About as likely as not

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

60000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Market research purchased by Mosaic suggests that the size of the biologicals market is expected to grow to roughly \$3 billion by 2027. The solutions Mosaic is developing are part of a subset of the biologicals market, referred to as microbials. If Mosaic captures 5% of the microbials segment of the biologicals market, estimated at approximately \$1.2 billion by 2027, the result could be upwards of \$60 million in earned revenue annually.

Cost to realize opportunity

66900000

Strategy to realize opportunity and explanation of cost calculation

In order to manage important market opportunities like this one, in 2019 we formed a strategy and growth team, led by a Senior Vice President that reports directly to Mosaic's CEO, to pursue diverse opportunities and yield mutual benefits for Mosaic and its customers. The group is exploring products and solutions that address myriad agricultural challenges, some of which are driven by increasing climate-related risks and opportunities, like a plant's ability to thrive in increasingly stressful conditions (drought, changing temperatures, etc.). In 2021 we invested approximately \$54 million in R&D agreements, equity investments and venture capital investments to progress this work. Our investments were \$12 million and \$0.8 million in 2020 and 2019, respectively. The sum of three years' investment was \$66.9 million, which is the value we are citing as the cost to realize this opportunity. Most recently, in 2021 we announced a new agreement (bringing the total to three in the last three years) to develop and launch agricultural solutions, including a nutrient efficiency product and a nitrogen-fixing microbial product (microbials), that contribute to soil health in diverse applications and have positive environmental benefits. We anticipates solutions like these becoming increasingly important to global food security as pressure builds on agricultural stakeholders to maintain agricultural productivity despite an increase in abiotic stressors driven by climate change (heat, drought, floods, etc.). Some of the opportunities associated with this strategy could be realized in the short-term (within four years), namely the commercialization of new product solutions, but as noted above, the potential impact figure is based on market research out to 2027 (considered medium-term based), which is the year the market is expected to reach \$1.2 billion.

Comment**Identifier**

Opp3

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Shift in consumer preferences

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Mosaic sells its products to customers in 40 countries. Changes in the length of growing seasons in certain regions, like portions of Canada, may increase the productivity (and therefore planting demand) of some crops, which could improve the productivity of agriculture and result in an increased demand for agricultural inputs like the crop nutrients Mosaic supplies as its core business. For reference, our net sales to Canada in 2021 were approximately \$794 million, or roughly 6% of companywide net sales in 2021. In a scenario where certain growing region could become more productive due to climate change, Mosaic could see increased demand for crop nutrients, namely higher-yield fertilizer products like MicroEssentials® and other performance products, and the increased demand could have a positive effect on our operating results and financial condition. The effects could be significant to us.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

Yes, a single figure estimate

Potential financial impact figure (currency)

197000000

Potential financial impact figure – minimum (currency)

<Not Applicable>

Potential financial impact figure – maximum (currency)

<Not Applicable>

Explanation of financial impact figure

Our company had sales of approximately \$1.97 billion of performance products, a category which includes MicroEssentials®, during 2021. A hypothetical increase of 10% in sales volume of specialty products, including MicroEssentials®, from 2021 levels could result in over \$197 million in added revenue (calculated by multiplying 2021 performance product sales of \$1,973.6 million from Form 10-K by 110%).

Cost to realize opportunity

3000000

Strategy to realize opportunity and explanation of cost calculation

Mosaic's balanced approach to crop nutrition is a strategy to manage potential opportunities driven by the effects of climate change, such as change in temperature and the length of growing season. Mosaic has established relationships with key universities and research organizations around the globe to develop and test innovative products like our MicroEssentials® line, which features crop nutrient blends specially designed for the soils of various parts of the world. In 2021 we conducted 560 small plot trials in Argentina, Brazil, Chile, China, Canada, India, Northern Latin America (Mexico to Peru), Turkey and the United States. The benefits of small plot trials and research are data and outcomes we can use to inform Mosaic's agronomy activities and our sales/commercial strategy, which could ultimately contribute to higher sales of performance products. For example, we are analyzing the potential benefits of synergy of Mosaic's phosphate and potash performance products in different soils to support our product portfolio; we are also assessing micronutrient addition and their uptake in various soil conditions. The cost associated with conducting more than 560 trials in 2021 was approximately \$3 million.

Comment

The reference to sales volumes in Canada excludes volumes sold through Canpotex.

C3. Business Strategy

C3.1

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

Row 1

Transition plan

No, our strategy has been influenced by climate-related risks and opportunities, but we do not plan to develop a transition plan within two years

Publicly available transition plan

<Not Applicable>

Mechanism by which feedback is collected from shareholders on your transition plan

<Not Applicable>

Description of feedback mechanism

<Not Applicable>

Frequency of feedback collection

<Not Applicable>

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

<Not Applicable>

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

Mosaic has an ambitious net-zero target that applies to our Scope 1 and 2 emissions. The pathway for achieving these reductions, though not validated by the science-based targets initiative per their requirements, includes initiatives that will reduce our absolute emissions significantly; we communicate with our stakeholders on these plans regularly. We also participated in the Assessing low-Carbon Transition (ACT) initiative development process and provided input on a sectoral decarbonization approach for the chemicals sector. Put simply, we are quite engaged in this space and we continue to explore the feasibility of a 1.5°C target, however, we need to develop more concrete plans and advance supplier engagement to understand their reduction pathways before we can be comfortable stating that our transition plan is 1.5°C aligned.

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 and quantitative	<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 RCP 2.6	Company-wide	<Not Applicable>	The inputs to the scenario analysis were individual site latitude and longitude; impact metrics for each site like finished product production, throughput for distribution sites and employees per site; summaries of mitigation strategies; and company production forecasts. We selected the highest-scored physical and transition global risks from a climate risk assessment for each scenario analysis. The timelines we considered were 2030 and 2050. The 2030 timeline is relevant given its proximity to Mosaic’s five-year planning period, which we use for capital and strategic planning; however, it is limiting in the context of this exercise in that many long-term physical risks will not materialize within the time window. As such, we selected the 2050 timeline to model the impact of longer-term nature of chronic physical risks and transition risks on Mosaic’s business. Conversely, transition risks, particularly those related to emerging regulation, are likely to materialize much sooner, so for that reason, the 2030 timeline is relevant. The risk assessment and scenario analysis considered Mosaic’s direct operations; upstream and downstream supply chains; and market for products.
Physical climate scenarios RCP 6.0	Company-wide	<Not Applicable>	The inputs to the scenario analysis were individual site latitude and longitude; impact metrics for each site like finished product production, throughput for distribution sites and employees per site; summaries of mitigation strategies; and company production forecasts. We selected the highest-scored physical and transition global risks from a climate risk assessment for each scenario analysis. The timelines we considered were 2030 and 2050. The 2030 timeline is relevant given its proximity to Mosaic’s five-year planning period, which we use for capital and strategic planning; however, it is limiting in the context of this exercise in that many long-term physical risks will not materialize within the time window. As such, we selected the 2050 timeline to model the impact of longer-term nature of chronic physical risks and transition risks on Mosaic’s business. Conversely, transition risks, particularly those related to emerging regulation, are likely to materialize much sooner, so for that reason, the 2030 timeline is relevant. The risk assessment and scenario analysis considered Mosaic’s direct operations; upstream and downstream supply chains; and market for products.
Transition scenarios IEA SDS	Company-wide	<Not Applicable>	The inputs to the transition scenario analysis were individual site latitude and longitude; impact metrics for each site like finished product production, throughput for distribution sites and employees per site; summaries of mitigation strategies; and company production forecasts. We selected the highest-scored physical and transition global risks from a climate risk assessment for each scenario analysis. The timelines we considered were 2030 and 2050. The 2030 timeline is relevant given its proximity to Mosaic’s five-year planning period, which we use for capital and strategic planning; however, it is limiting in the context of this exercise in that many long-term physical risks will not materialize within the time window. As such, we selected the 2050 timeline to model the impact of longer-term nature of chronic physical risks and transition risks on Mosaic’s business. Conversely, transition risks, particularly those related to emerging regulation, are likely to materialize much sooner, so for that reason, the 2030 timeline is relevant. The risk assessment and scenario analysis considered Mosaic’s direct operations; upstream and downstream supply chains; and market for products.
Transition scenarios IEA STEPS (previously IEA NPS)	Company-wide	<Not Applicable>	The inputs to the scenario analysis were individual site latitude and longitude; impact metrics for each site like finished product production, throughput for distribution sites and employees per site; summaries of mitigation strategies; and company production forecasts. We selected the highest-scored physical and transition global risks from a climate risk assessment for each scenario analysis. The timelines we considered were 2030 and 2050. The 2030 timeline is relevant given its proximity to Mosaic’s five-year planning period, which we use for capital and strategic planning; however, it is limiting in the context of this exercise in that many long-term physical risks will not materialize within the time window. As such, we selected the 2050 timeline to model the impact of longer-term nature of chronic physical risks and transition risks on Mosaic’s business. Conversely, transition risks, particularly those related to emerging regulation, are likely to materialize much sooner, so for that reason, the 2030 timeline is relevant. The risk assessment and scenario analysis considered Mosaic’s direct operations; upstream and downstream supply chains; and market for products.

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

The questions we sought to answer when undertaking scenario analysis were, broadly: a. how, and in what time frame (2030 or 2050), are physical risks most likely to materialize, and how are they expected to affect our companywide operations; b. to which perils are we most objectively vulnerable; and c. companywide, which transition risks are most pressing to our business, and how vulnerable are we to emerging prices on carbon in our operating jurisdictions?

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

Climate-related physical scenario analysis results indicated that hurricanes are the peril representing the greatest risk to our global operations. Not surprisingly, there is significant hurricane risk related to our Florida and Louisiana sites (eight mining and production facilities in total) in both of the time periods analyzed (2030 and 2050), per the focal questions. Physical risks in general are highest for our US operations and most likely to materialize in the 2050 timeframe. The most significant transition risk is the potential or current implementation of carbon price in the countries where we have operations. This risk is concentrated in the U.S., where a carbon pricing structure is under consideration and where most of our emissions occur, although the proposed pricing structure is still uncertain; and in Canada, where a carbon pricing structure is already in place (and subject to change with regular regulatory review). In the context of our focal questions, the potential annual impact of penalties on our scope 1 emissions under a Sustainable Development Scenario over the 2030 and 2050 time horizons is \$384 million and \$547 million per year. Another transition risk that could potentially affect our operations is the increased cost of raw materials, specifically related to volatility in ammonia and sulfur availability and prices – two key inputs to the phosphate manufacturing process. The results of both the physical and transition scenario analyses have informed our decisions and actions in a few key ways: a) by elevating climate-related risks to site risk registers, which will help inform our approach for buttressing facilities against climate-related physical threats; and 2) by reinforcing the strategic imperative of activities such as generation of low-carbon energy through cogeneration from waste heat at our facilities, and in the company’s investment of significant capital in the development of Esterhazy K3, a potash mine expansion that is expected to deliver significant risk reduction, operational and GHG reduction benefits to our company.

(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	Climate-related risks and opportunities related to meeting the evolving needs of customers and growers, such as reducing the impact of crop nutrients on the environment, have influenced our product development strategy. Recently, Mosaic made the strategic decision to formalize the companywide priority to "Grow and Strengthen Our Product Portfolio." As a result, Mosaic's newly formed strategy and growth team, led by a Senior Vice President that reports directly to Mosaic's CEO, was established to pursue diverse opportunities and yield mutual benefits for Mosaic and its customers. The group is exploring products and solutions that address myriad agricultural challenges, some of which are driven by increasing climate-related risks and opportunities, like a plant's ability to thrive in increasingly stressful conditions (drought, changing temperatures, etc.). In 2021 we invested approximately \$54 million in R&D agreements, equity investments and venture capital investments to progress this work. Some of the opportunities associated with this strategy could be realized in the short-term (within four years), namely the commercialization of new product solutions.
Supply chain and/or value chain	Yes	Agriculture is susceptible to climate impacts in many ways, particularly as it relates to downstream use of our products because the use of crop nutrient products contributes to climate change, primarily through the release of N ₂ O from the application of nitrogen-based fertilizers. It is in this context that climate-related risks and opportunities have influenced our strategy across the value chain. We know it is important to contribute to solutions that address climate change, and that is why we are adapting our product portfolio and seeking opportunities to bring products to market that help the users of our products – growers – reduce the impact of their activities on the environment. As a specific example, in 2020, Mosaic announced a partnership with BioConsortia to collaborate on new nitrogen-fixing microbial products, which naturally "fix" atmospheric nitrogen, converting it to ammonia and making it available to crops during the growing season, thereby reducing growers' reliance on the addition of synthetic nitrogen fertilizers. We progressed this partnership in 2021. Pressure on the agricultural value chain to minimize the impact of agriculture on the environment is increasing and products like nitrogen fixing microbial projects are one promising solution; accordingly, we are anticipating the release of other biological products within the next four years (short-term). Other risks, such as the risk of widespread changes in location and productivity of growing regions will materialize more slowly and thus, our response to them is longer-term in nature.
Investment in R&D	Yes	Mosaic has made the strategic decision to establish relationships with key universities, technology development companies and research organizations around the globe to develop and test innovative products like our MicroEssentials® line. Mosaic invests in research partnerships that focus on soil chemistry and fertilizer technology and develop innovative fertilizer formulations to improve nutrient use efficiency in a variety of climate regimes, which could potentially allow for growing crops in increasingly stressful growing conditions. Climate risks and opportunities have shaped the extent to which we invest in certain research partnerships on an annual (short-term) basis; they have also shaped the nature of our ongoing (longer-term) research. As an example of a notable strategic decision in this area, in 2021 we invested approximately \$54 million in R&D agreements, equity investments and venture capital investments related to efforts to grow and strengthen our product portfolio. Some of our R&D investments were related to development of products such as nitrogen-fixing microbial products, which help promote more sustainable farming practices while also solving for the world's increasing demand in food supply.
Operations	Yes	In anticipation of changing weather patterns, potential shortages of water, the possibility of increasing energy costs and possible carbon/energy taxes and their potential effects on our business, Mosaic employs a strategy that focuses on operational excellence and we have made strategic decisions about our operating activities in order to address operating efficiency and resource management. The most substantial strategic decision in this area in 2021 was our announcement of new companywide net-zero targets emissions by 20% per tonne of finished product by 2025. The target will affect our individual facilities (operations), who will be responsible for executing strategies to reduce emissions. Further, in 2021 we advanced key initiatives in our pathway to net-zero. For example, we are exploring carbon capture and sequestration (CCS) at our highest emitting site in Louisiana, which could reduce emissions by up to 500,000 tonnes/year. We are also exploring CCS at another site in Saskatchewan.

(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	<p>Revenues</p> <p>Indirect costs</p> <p>Capital expenditures</p> <p>Capital allocation</p> <p>Access to capital</p> <p>Assets</p>	<p>Revenues: As part of our annual financial planning process, for example, a widespread flood or inclement weather might impact agricultural commodity markets, which could in turn affect Mosaic's annual sales. Adverse weather may also cause a loss of production and may disrupt our supply chain or adversely affect delivery of products to customers, which may also have an impact on revenues. In the second half of 2021, we experienced production impacts related to Hurricane Ida, which made landfall as a category 4 near our Louisiana concentrates sites. One impact was the sale of finished goods inventory at a discount, which resulted in an approximately \$8 million negative impact to our 2021 revenue.</p> <p>Indirect costs: One of the consequences of the carbon tax in Canada is pass-through costs to Mosaic from third parties. Specifically, in 2021 we continued to see price increases for electricity consumption at our Saskatchewan facilities as a result of the regulations (approximately \$3.7 million USD in 2021) and for rail freight services that are required to move Mosaic's products downstream to customers (approximately \$815,000 USD). Accordingly, indirect costs are part of our financial planning process.</p> <p>Direct costs, capital expenditures (CAPEX): We consider EHS laws and regulations, some of which are climate-related, and their effect(s) on operating costs and capital expenditures. Severe climate-related events, including hurricanes, have in the past, and may in the future, adversely affect our operations, resulting in increased direct costs or decreased production. These impacts are part of our broad financial planning process on an annual basis. Mosaic's market analysis team monitors climate and growing regions, forecasting for climate-related events like droughts, floods and severe weather events, to determine their potential impact on the markets, our production and Mosaic's overall financial performance. As another example that has an impact on our operating costs, Mosaic forecasts the financial implications of carbon pricing mechanisms in Canada. Our evaluation is considering the operating cost impacts of direct energy consumption as well as indirect impacts of how the tax is passed on to Mosaic from third parties. In 2021 we continued to see price increases for electricity consumption at our Saskatchewan facilities as a result of these changing regulations. Specifically, we paid more than \$3.7 million USD (\$4.8 million CAD) in the form of carbon levy funds to the utility provider in Saskatchewan – charges that are tied directly to Mosaic's electricity consumption due to pass-through costs from the utility. This impact on our operating costs is considered low magnitude. We also consider availability of CAPEX for projects that could improve our environmental performance, including energy or GHG efficiency. As an example, Mosaic is assessing changes in emission allowances that should be effective by 2023 that will have an impact on some of our Phosphate concentrate facilities. Current equipment may not meet emissions requirements and we have initiated projects requiring capital expenditures to replace or upgrade catalysts at the affected facilities. The approximate cost per catalyst replacement is \$2 million and these anticipated costs, as well as the timeline for replacing the catalysts, are part of Mosaic's capital expenditures planning process. As another example, Mosaic is assessing changes in boiler emission allowances that will be effective in 2026 that will have significant impact on one of our Saskatchewan potash mines. Current boilers may not meet emissions requirements and we are exploring options, including equipment alterations that would require capital investments (thus affecting capital allocation), in order to meet compliance standards. A capital project team has been assembled to conduct detailed analyses to assess solutions and the potential cost implications, but based on preliminary estimates, the financial impact could be more than \$73 million. This impact on our capital expenditures is considered high magnitude. Moreover, these costs impact Mosaic's ability to remain competitive against other global fertilizer and mining companies that operate in lower-cost jurisdictions without similar carbon tax or environmental costs.</p> <p>Capital allocation: Climate-related risks and opportunities have influenced our approach to capital allocation because many of the emissions-reductions opportunities we have identified will require capital investments. At the same time, these initiatives can be hard to justify because they don't meet traditional financial hurdle criteria. As a result, we are exploring a capital allocation designation for ESG projects to help drive the investments necessary to reduce our GHG emissions. As noted, the lower our emissions, the less exposed we are to the threat of carbon pricing in our global operations – a risk we have identified through scenario analysis that affects us in the short- and long-term horizons. Capital budgets planning horizon is approximately five years long (medium-term); however, the decision to formalize a capital allocation is likely to happen within a year (short-term).</p> <p>Access to capital: At this time, our identified risks related to climate change have not had an impact on our company's access to capital. However, Mosaic understands that climate-related issues can possibly have an impact on a company's credit score, which could, in turn, affect long-term access to debt capital. Similarly, we understand that external perceptions of Mosaic's ESG performance by the investor community, including elements related to climate, could have a positive or negative impact on our access to equity capital. We are employing adaptation and mitigation strategies at our operations and regularly engaging financial stakeholders in order to minimize or avoid negative impacts, and to impart an understanding of the criticality of fertilizer to sustainable food security. We are also contemplating the use of "green" financial instruments, tied to our sustainability performance, to further drive company progress toward ESG targets and to access lower borrowing interest rates.</p>

C4. Targets and performance

C4.1

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

Intensity target

C4.1b

(C4.1b) Provide details of your emissions intensity target(s) and progress made against those target(s).

Target reference number

Int 1

Year target was set

2020

Target coverage

Company-wide

Scope(s)

Scope 1

Scope 2

Scope 2 accounting method

Location-based

Scope 3 category(ies)

<Not Applicable>

Intensity metric

Metric tons CO2e per metric ton of product

Base year

2015

Intensity figure in base year for Scope 1 (metric tons CO2e per unit of activity)

0.17924

Intensity figure in base year for Scope 2 (metric tons CO2e per unit of activity)

0.07639

Intensity figure in base year for Scope 3 (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in base year for all selected Scopes (metric tons CO2e per unit of activity)

0.25563

% of total base year emissions in Scope 1 covered by this Scope 1 intensity figure

93

% of total base year emissions in Scope 2 covered by this Scope 2 intensity figure

80

% of total base year emissions in Scope 3 (in all Scope 3 categories) covered by this Scope 3 intensity figure

<Not Applicable>

% of total base year emissions in all selected Scopes covered by this intensity figure

90

Target year

2025

Targeted reduction from base year (%)

20

Intensity figure in target year for all selected Scopes (metric tons CO2e per unit of activity) [auto-calculated]

0.204504

% change anticipated in absolute Scope 1+2 emissions

10.72

% change anticipated in absolute Scope 3 emissions

0

Intensity figure in reporting year for Scope 1 (metric tons CO2e per unit of activity)

0.1627970502

Intensity figure in reporting year for Scope 2 (metric tons CO2e per unit of activity)

0.0657723331

Intensity figure in reporting year for Scope 3 (metric tons CO2e per unit of activity)

<Not Applicable>

Intensity figure in reporting year for all selected Scopes (metric tons CO2e per unit of activity)

0.2285693833

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

52.9292663224191

Target status in reporting year

Underway

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Target ambition

<Not Applicable>

Please explain target coverage and identify any exclusions

In 2020, we announced a target to reduce our combined Scope 1 and Scope 2 GHG emissions by 20% per tonne of finished product by 2025. Current GHG reduction targets are based on internal operational performance and cover Scope 1 and 2 emissions from operations in North and South America, including facilities acquired in our Mosaic Fertilizantes business in early 2018. Our GHG target, although not recognized by the Science Based Targets Initiative for being in line with their particular methodology, was developed with science-based models that take company and industry-specific factors into account. Our GHG target does not include Scope 3 emissions at this time. However, we are engaging our supply chain to reduce the most relevant Scope 3 emissions. We report those emissions categories in Section 6.

For our GHG target, we selected a 2015 baseline year for our North America business because it represented a fairly "typical" year for Mosaic whereas the years that followed brought cyclical market conditions and operational decisions that are not representative of our business. We selected a 2018 baseline year for our Mosaic Fertilizantes business due to the "first-hand" availability of data following our 2018 acquisition of mining and production sites in Brazil.

Plan for achieving target, and progress made to the end of the reporting year

In 2021 we achieved an 11% reduction in Scope 1 and 2 emissions from our baseline thanks to efforts of our employees to conduct fuel- and energy-saving projects across the businesses. We will reach our target with projects incentivized from our ESG Risk Register programs like the reverse osmosis heat input system at our New Wales site and a cogeneration tie line between our Bartow and South Pierce facilities, which will increase internal use of GHG emissions-free cogenerated electricity. We are also exploring carbon capture at our two highest-emitting sites, which, if successful, will reduce our Scope 1 emissions footprint significantly.

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?

Net-zero target(s)

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

Int1

Target year for achieving net zero

2040

Is this a science-based target?

No, but we anticipate setting one in the next 2 years

Please explain target coverage and identify any exclusions

Our net-zero target includes our companywide Scope 1 and Scope 2 emissions.

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

We have a plan that focuses foremost on mitigation of the emissions from our operations, and we will also rely on nature-based solutions. We will reduce emissions from our sites –deploying process optimizations, operating more efficiently, using renewable energy, making investments in electrification and equipment. We are uniquely positioned with our significant landholdings to maximize carbon removal through nature-based solutions, including land covered with vegetation that sequesters carbon.

We are on track to achieve a 20% intensity target by 2025. We intend to reach net-zero in our Florida operations by 2030. Our plan is to achieve net-zero GHG emissions companywide by 2040.

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	27	1029159
To be implemented*	2	27873
Implementation commenced*	25	357314
Implemented*	11	243484.32
Not to be implemented	6	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 production processes	Fuel switch
---	-------------

Estimated annual CO2e savings (metric tonnes CO2e)

11000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Voluntary/Mandatory

Voluntary

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

0

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

3500000

Payback period

No payback

Estimated lifetime of the initiative

6-10 years

Comment

Our Mosaic Fertilizantes business substituted heavy oil with vegetable oil resulting in emissions savings of approximately 11,000 tonnes CO2e/year. The price for vegetable oil in 2021 was incrementally higher than heavy oil due to market demand so we did not realize any savings as a result of this initiative. Therefore, at this time, it is difficult to estimate a financial payback.

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement
---	-------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

6700

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1000000

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

27800000

Payback period

No payback

Estimated lifetime of the initiative

6-10 years

Comment

Steam optimization from the upgrade to a larger sulfuric acid converter, which increased heat and thus steam production that was used to generate power. This project was base sustaining, therefore no proper "payback" is associated with it, but we are realizing annual savings from the incremental power generation.

Initiative category & Initiative type

Energy efficiency in buildings	Lighting
--------------------------------	----------

Estimated annual CO2e savings (metric tonnes CO2e)

13000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

6000000

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

2500000

Payback period

4-10 years

Estimated lifetime of the initiative

6-10 years

Comment

Companywide, we upgraded lighting to more efficient LEDs, which reduces purchased electricity and GHG emissions.

Initiative category & Initiative type

Energy efficiency in production processes	Smart control system
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

1500

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

1200000

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

75000

Payback period

<1 year

Estimated lifetime of the initiative

6-10 years

Comment

Multiple initiatives at our Canadian- and US-based potash facilities helped reduced scope 2 emissions.

Initiative category & Initiative type

Energy efficiency in production processes	Process optimization
---	----------------------

Estimated annual CO2e savings (metric tonnes CO2e)

2000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

125000

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

5000

Payback period

<1 year

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Machine/equipment replacement
---	-------------------------------

Estimated annual CO2e savings (metric tonnes CO2e)

7000

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 2 (location-based)

Voluntary/Mandatory

Voluntary

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

600000

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

1100000

Payback period

1-3 years

Estimated lifetime of the initiative

6-10 years

Comment

Initiative category & Initiative type

Energy efficiency in production processes	Other, please specify (Transition of production from a less efficient site to a more efficient one.)
---	---

Estimated annual CO2e savings (metric tonnes CO2e)

202284

Scope(s) or Scope 3 category(ies) where emissions savings occur

Scope 1

Scope 2 (location-based)

Voluntary/Mandatory

Please select

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

108000000

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

158000000

Payback period

1-3 years

Estimated lifetime of the initiative

>30 years

Comment

Due to the closure of our Esterhazy K1 and K2 sites, we have eliminated future brine management costs at these locations. Rough payback was calculated by considering the costs of closure and the avoided annual costs of brine management, based on actual 2020 cost of brine management.

C4.3c

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

Method	Comment
Employee engagement	Mosaic emphasizes the philosophy of continuous improvements to reduce energy use in our manufacturing facilities and support functions, and we recognize that employees on the front line often have the best ideas. Mosaic fosters a culture which encourages employees to bring forward ideas, and this open dialogue has driven investments that result in energy savings and/or emissions reductions. In 2021, we continued an internal communications effort to recognize employees for their efforts, large and small, in improving environmental performance and meeting companywide 2025 ESG Performance Targets.
Other (Site responsibility for sustainability initiatives)	Mosaic facilities have employees that are designated engineers and/or sustainability site leads. The role of these site leads, in part, is to identify project opportunities (some of which require investments) for improving energy efficiency and GHG emissions that will help us achieve our 2025 target to reduce GHG emissions by 20% per tonne of product.
Compliance with regulatory requirements/standards	New or proposed regulatory emissions requirements may require modifications to our facilities or to operating procedures and these modifications may involve significant investments. We analyze the cost of complying with regulatory compliance against the cost of intervening with solutions that will reduce GHG emissions.

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

Product or service

Taxonomy used to classify product(s) or service(s) as low-carbon

No taxonomy used to classify product(s) or service(s) as low carbon

Type of product(s) or service(s)

Other	Other, please specify (fertilizer)
-------	------------------------------------

Description of product(s) or service(s)

Mosaic's performance product MicroEssentials® has been shown to increase corn yields an average of 7.2 bushels per acre, or 4.3%, compared to traditional fertilizer. MicroEssentials® was also recently labeled an Enhanced Efficiency Fertilizer (EEF), which means it reduces nutrient losses to the environment while increasing nutrient availability for the plant or crop. This product helps enable farmers to avoid GHG emissions.

Have you estimated the avoided emissions of this low-carbon product(s) or service(s)

Yes

Methodology used to calculate avoided emissions

Other, please specify (Product-specific methodology)

Life cycle stage(s) covered for the low-carbon product(s) or services(s)

Use stage

Functional unit used

MicroEssentials

Reference product/service or baseline scenario used

Diammonium Phosphate (traditional fertilizer products)

Life cycle stage(s) covered for the reference product/service or baseline scenario

Use stage

Estimated avoided emissions (metric tons CO2e per functional unit) compared to reference product/service or baseline scenario

20000

Explain your calculation of avoided emissions, including any assumptions

Mosaic's performance product MicroEssentials® has been shown to increase corn yields an average of 7.2 bushels per acre, or 4.3%, compared to traditional fertilizer. Assuming a 4.3% yield advantage with MicroEssentials®, a corn farmer with a 350-acre farm can theoretically produce yields similar to those from a 365.05-acre farm. By using MicroEssentials®, this farmer could avoid approximately 0.1816 tonnes of Scope 1 CO2e/year, through reduced corn harvesting equipment usage, resulting in greater yields with MicroEssentials® and fewer acres farmed. This theoretical example is fleshed out below to give an idea of annual scale of avoided emissions for 100 farms. The estimate takes into consideration the tonnes of CO2e/gallon generated by the diesel fuel needed for the operation of a corn harvester per acre. The potential yield of a 350-acre farm yielding 365.05 acres worth of crops was used as the baseline for this Scope 1 emissions savings. A 2.5 mph corn harvester (farm equipment) uses 1.15 gallons/acre of diesel fuel, which equates to 0.0120648 tonnesCO2e/gallon of diesel fuel. Assuming a 4.3% yield advantage with MicroEssentials®, a corn farmer with a 350-acre farm can theoretically produce yields similar to those from a 365.05-acre farm. This farmer could avoid approximately 0.1816 tonnes of Scope 1 emissions/year by harvesting the same yield on a smaller area. For every 100 farms similar to this example equals a combined savings of 18.16 tonnes of Scope 1 CO2e/year. There are 900 million acres of farmland in the United States and we are using 20,000 tonnes of CO2e as a conservative and theoretical estimate. The percentage of total sales is for revenue from performance products (a category that includes MicroEssentials®) as a share of total revenue from all product types. Sales for MicroEssentials® are not available as a separate line item. Note for Methodology: US EPA Climate Leaders: Direct HFC and PFC Emissions from Manufacturing Refrigeration and Air Conditioning Equipment; GHG Protocol: A Corporate Accounting and Reporting Standard; US EPA Climate Leaders: Direct Emissions from Mobile Combustion Sources US EPA Mandatory Greenhouse Gas Reporting Rule: Subpart G (Ammonia) and Z (Phosph. Acid); US EPA Climate Leaders: Indirect Emissions from Purchases/Sales of Electricity and Steam Stoichiometric mass balance for reactive species containing CO2 or carbon compounds; Mass Balance from European Fertilizer Manufacturers Association Guidance for Ammonia.

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

16

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?

No

Name of organization(s) acquired, divested from, or merged with

<Not Applicable>

Details of structural change(s), including completion dates

<Not Applicable>

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	In 2021, we expanded our Scope 3, Category 4 boundary to include trucking movements from more of our operations.

C5.1c

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

	Base year recalculation	Base year emissions recalculation policy, including significance threshold
Row 1	No, because the impact does not meet our significance threshold	Five percent is generally our threshold for recalculation or restatement of information. The addition of Louisiana trucking activities represented less than 2% of total Scope 3 emissions; therefore, a restatement or baseline recalculation was not necessary.

C5.2

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

Scope 1

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

3432104.132

Comment

Scope 2 (location-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

1462872.795

Comment

Scope 2 (market-based)

Base year start

January 1 2015

Base year end

December 31 2015

Base year emissions (metric tons CO2e)

1462872.795

Comment

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)

2415226

Comment

Scope 3 category 2: Capital goods

Base year start

January 1 2020

Base year end

December 31 2020

Base year emissions (metric tons CO2e)

300000

Comment

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)

498116

Comment

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)

246754

Comment

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)

2787

Comment

Scope 3 category 6: Business travel

Base year start

January 1 2020

Base year end

December 31 2020

Base year emissions (metric tons CO2e)

619

Comment

Scope 3 category 7: Employee commuting

Base year start

January 1 2020

Base year end

December 31 2020

Base year emissions (metric tons CO2e)

30000

Comment

Scope 3 category 8: Upstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 9: Downstream transportation and distribution

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

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)

5832

Comment

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)

4798346

Comment

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

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 13: Downstream leased assets

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 14: Franchises

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

Scope 3 category 15: Investments

Base year start

January 1 2020

Base year end

December 31 2020

Base year emissions (metric tons CO2e)

631470

Comment

Scope 3: Other (upstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

0

Comment

Scope 3: Other (downstream)

Base year start

Base year end

Base year emissions (metric tons CO2e)

Comment

C5.3

(C5.3) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard (Revised Edition)

US EPA Center for Corporate Climate Leadership: Indirect Emissions From Purchased Electricity

US EPA Center for Corporate Climate Leadership: Direct Emissions from Mobile Combustion Sources

US EPA Mandatory Greenhouse Gas Reporting Rule

Other, please specify (1-stoichiometric mass balance for reactive species containing CO2 or Carbon compounds to estimate emissions 2-mass balance from European

Fertilizer Manufacturers Association Guidance for Ammonia Manufacturing to estimate emissions from ammonia prod.)

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)

3229612.774

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

Figures exclude emissions from land use change in our Florida phosphate operations. We expect that these emissions are material to our total global footprint; as of the date of this report, we are working to quantify this source as part of our scope 1 emissions total. Approximately 29 percent of Mosaic’s Scope 1 emissions (those generated in Canada) are covered under emissions-limiting regulations. Total emissions figures are higher starting in 2018 due to inclusion of recently acquired Mosaic Fertilizantes facilities in Brazil.”

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

Market based emissions available for most locations in the United States, Brazil and Saskatchewan, representing 96% of our total Scope 2 emissions. We do not have market-based emission factors available for sites in Peru or Paraguay at this time.

C6.3

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

Reporting year

Scope 2, location-based

1304824.846

Scope 2, market-based (if applicable)

1284403.75

Start date

<Not Applicable>

End date

<Not Applicable>

Comment

C6.4

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

No

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)

2260000

Emissions calculation methodology

Fuel-based method

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

0

Please explain

Category 1 emissions are associated with the purchase of ammonia for production of phosphate crop nutrients and use in smaller applications at our Esterhazy, Saskatchewan complex. This category was assured by ERM CVS.

Capital goods

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

311903

Emissions calculation methodology

Spend-based method

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

0

Please explain

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

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

580000

Emissions calculation methodology

Average product method

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

0

Please explain

Upstream transportation and distribution

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

310000

Emissions calculation methodology

Supplier-specific method

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

100

Please explain

Trucking represents upstream transportation of raw materials, in-process and finished goods related to our Florida and Louisiana Phosphate operations. Rail emissions exclude unladen backhaul trips. This category was assured by ERM CVS.

Waste generated in operations

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

5000

Emissions calculation methodology

Waste-type-specific method

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

0

Please explain

Applied DEFRA factors for waste categories by treatment/disposal method and adjusted for 2021 waste generation volumes. This category was not assured by ERM CVS for the 2021 reporting year. It includes emissions associated with our disposal of non-mining wastes generated from our mines and manufacturing facilities. For wastes of "unknown" or mixed categories, we assigned an average of landfill factors for construction debris as provided by the DEFRA standard.

Business travel

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

We have collected data for this category for the last 5+ years and emissions represent less than 1% of our total scope 3 footprint, an impact we consider immaterial. Due to resource constraints, we opted not to collect this data in 2021, instead seeking assurance on more material categories. We will continue to revisit this category to assess its materiality to our total scope 3 footprint.

Employee commuting

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

Based on experience with collecting data for this category, we estimate that employee commuting represents less than 0.05% of our total scope 3 footprint. Given the recent change of our workforce to partially working remotely, we anticipate it was even lower in 2021. We will continue to revisit this category to assess its materiality to our total scope 3 footprint.

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

Emissions associated with leased assets under Mosaic's operational control including land, pumps, autos, mobile equipment and railcars are accounted for in Scope 1 and 2 inventories. Emissions associated with other upstream leased assets (IT equipment, copiers, etc.) are estimated to represent less than 0.1% of total scope 3 emissions. This is logical and in line with expectations considering the emissions accounted for in purchased goods and services, fuel- and energy-related activities and use of sold products categories.

Downstream transportation and distribution

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

25000

Emissions calculation methodology

Average product method

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

0

Please explain

Based on Greenhouse Gas Protocol's Corporate Value Chain Accounting and Reporting Standard, a majority of Mosaic's shipments of finished products are accounted for within the Upstream Transportation category; however, we estimate that approximately 5% of maritime movements (estimated at 500,000 tonnes CO2e/year) are considered downstream, which would represent approximately 1% of companywide scope 3 emissions.

Processing of sold products

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

10000

Emissions calculation methodology

Hybrid method

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

0

Please explain

Includes all tonnes of crop nutrients sold in North America and assumes that they are blended at the distributor level. This value was not assured by ERM CVS.

Use of sold products

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

5790000

Emissions calculation methodology

Other, please specify (2019 IPCC methodology)

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

0

Please explain

The emissions associated with use of sold products is from 2019 IPCC N2O emissions from managed soils. We applied a Tier 1 methodology, which does not take into account different land cover, soil types, climatic conditions or management practices. This figure was assured by ERM CVS.

End of life treatment 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

Not applicable. Mosaic's principal products are crop nutrients, which are applied to the soil and then taken up by plants; the plants can be used for human or animal food.

Downstream leased assets

Evaluation status

Not relevant, calculated

Emissions in reporting year (metric tons CO2e)

250000

Emissions calculation methodology

Other, please specify (EPA calc. for enteric fermentation)

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

0

Please explain

Notes: EPA calculation for enteric fermentation assumes mature cows in the South Atlantic region of the United States, applying a factor of 69.80 CH4 per cow. Figure assumes 2 cows per acre of land leased for cattle grazing.

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

Not applicable to Mosaic operations. Mosaic does not operate franchises.

Investments

Evaluation status

Relevant, calculated

Emissions in reporting year (metric tons CO2e)

540000

Emissions calculation methodology

Investment-specific method

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

100

Please explain

This figure represents emissions associated with our 25% equity share investment in Ma'aden Wa'ad Al Shamal Phosphate Company in the Kingdom of Saudi Arabia and includes emissions associated with fuels and purchased electricity. It does not include other equity method investments. ERM CVS has reviewed this category; please refer to ERM CVS' Assurance Statement for more information

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

Not applicable to Mosaic operations. Downstream emissions accounted for in other categories.

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

Not applicable to Mosaic operations. Downstream emissions accounted for in other categories.

(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

0.000366953

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

4534437.62

Metric denominator

unit total revenue

Metric denominator: Unit total

1235700000

Scope 2 figure used

Location-based

% change from previous year

35.11

Direction of change

Decreased

Reason for change

Reduction in intensity was a combination of emissions reduction initiatives and revenue increases. Our year over year absolute emissions decreased by approximately 8%, and revenue increased over 40% since 2020.

Intensity figure

386.3041080252

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

4534437.62

Metric denominator

full time equivalent (FTE) employee

Metric denominator: Unit total

11738

Scope 2 figure used

Location-based

% change from previous year

7

Direction of change

Decreased

Reason for change

Absolute CO2e decreased by approximately 8% year over year while employee count was relatively stable, resulting in fewer emissions per full time equivalent employee.

C7. Emissions breakdowns

C7.1

(C7.1) Does your organization break down its Scope 1 emissions by greenhouse gas type?

Yes

C7.1a

(C7.1a) Break down your total gross global Scope 1 emissions by greenhouse gas type and provide the source of each used greenhouse warming potential (GWP).

Greenhouse gas	Scope 1 emissions (metric tons of CO2e)	GWP Reference
CO2	3215144.84	IPCC Fourth Assessment Report (AR4 - 100 year)
CH4	8901.04	IPCC Fourth Assessment Report (AR4 - 100 year)
N2O	5566.895	IPCC Fourth Assessment Report (AR4 - 100 year)

C7.2

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

Country/Region	Scope 1 emissions (metric tons CO2e)
United States of America	1547684.969
Canada	887107.423
Brazil	613311.836
Paraguay	162.183
Peru	181346.363

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)
Phosphate	1684785.26
Potash	927077.27
Fertilizantes	613474.02
Distribution	4276.23

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
Faustina	711563	30.083384	-90.914391
New Wales	305075	27.832701	-82.051048
Bartow	144563	27.907545	-81.800537
Plant City	21761	28.168056	-82.141667
Uncle Sam	106318	30.037428	-90.827377
Riverview	125930	27.860191	-82.3936
Four Corners	35231	27.646202	-82.087097
Green Bay	23116	27.820769	-81.784767
South Fort Meade	16219	27.647848	-81.756477
South Pierce	7786	27.765583	-81.940331
South Pasture	2750	27.585763	-81.94291
Wingate	2869	27.504131	-82.130203
Hookers Prairie	0	27.917828	-82.437286
Big Bend	81	27.80416	-82.397083
Taft	0	30.019122	-90.774707
Belle Plaine	700193	50.427658	-105.198296
Esterhazy K2	109948	50.65768	-101.848412
Colonsay	23962	51.934105	-105.763496
Esterhazy K1	43984	50.729282	-101.933723
Carlsbad	39970	32.412258	-103.939217
Esterhazy K3	9021	50.646084	-101.991946
Fospar	52107	-25.510841	-48.521633
Tampa Marine	100	27.926672	-82.43187
Houston	119	29.744053	-95.114723
Savage	22	44.779415	-93.336426
Henderson	192	37.815159	-87.658173
Paranagua	185	-25.510841	-48.521633
Uberaba	0	-19.982393	-47.900391
Alto Araguaia	0	-17.151678	53.192689
Rio Verde	122	-17.807942	-51.008695
Candeias	92	-12.66295	-38.51944
Sorriso	289	-12.604993	-55.749907
Pekin	39	40.587875	-89.660637
Campo Grande	44	-21.258281	-48.492311
Paranagua II	449	-25.531969	-48.549938
Uberaba II	272	-19.788737	-47.943228
Vileta	162	-25.667817	-57.690011
Rondonópolis	410	-16.619864	-54.701082
Catalão	109	-18.190415	-47.970764
Hopewell	0	27.915899	-82.131219
Bonnie	177	27.863068	-81.932498
Hookers Point	91	27.917532	-82.439013
Port Sutton	92	27.905096	-82.410554
Rio Grande II	224	-32.102711	-52.113065
Cajati	160826	-24.714879	-48.124609
Uberaba III	231964	-19.993207	-47.883844
Araxa	25960	-19.629278	-46.977984
Catalao II	30992	-18.164763	-47.905652
Patrocinio	26966	-19.015003	-46.80879
Tapira	73496	-19.842885	-46.852427
Taquari-Vassouras	8479	-10.651971	-37.03583
Patos de Minas	267	-18.374014	-46.913118
Miski Mayo	181346	-5.802229	-81.05289
Pine Bend	597	44.740681	-93.112228
Carnalita	58	-10.651971	-37.03583

C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4

(C-CE7.4/C-CH7.4/C-CO7.4/C-EU7.4/C-MM7.4/C-OG7.4/C-ST7.4/C-TO7.4/C-TS7.4) Break down your organization's total gross global Scope 1 emissions by sector production activity in metric tons CO2e.

	Gross Scope 1 emissions, metric tons CO2e	Net Scope 1 emissions , metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	1446370	<Not Applicable>	
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Electric utility activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO2e)	Scope 2, market-based (metric tons CO2e)
United States of America	753261.979	704720.265
Canada	499940.952	498412.081
Brazil	72570.594	72570.594
Paraguay	150.269	150.269
Peru	8550.549	8550.549

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)
Phosphate	684846.65	649733.37
Potash	567977.04	553202.59
Distribution	8929.79	8746.93
Fertilizantes	72720.86	72720.86

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)
Belle Plaine	16731.979	16680.81
Carlsbad	68036.089	54791
Big Bend	660.601	640.881
Bonnie	0	0
Bartow	51420.626	49885.612
Faustina	30809.675	21368.29
Green Bay	0	0
Colonsay	52041.893	51882.744
Mulberry	0	0
Nichols	0	0
New Wales	40509.797	39300.494
Plant City	20377.687	19769.37
Riverview	31063.084	30135.785
South Pierce	5077.434	4925.861
Taft	0	0
Uncle Sam	23148.914	16055.11
Henderson	1143.833	1143.833
Hookers Point	997	967
Houston	221.243	221.243
Pekin	212.709	212.709
Port Sutton	1173.308	1138.282
Savage	214.772	214.772
Tampa Marine	200.403	194.42
Esterhazy K1	106114.719	105790.209
Esterhazy K2	258163.019	257373.529
Esterhazy K3	66889.343	66684.789
Alto Araguaia	0	0
Candeias	31.359	31.359
Campo Grande	6.156	6.156
Catalão	46.094	46.094
Fospar	2436.547	2436.547
Paranagua	61.88	61.88
Paranagua II	91.244	91.244
Rondonópolis	99.469	99.469
Rio Verde	48.269	48.269
Sorriso	93.283	93.283
Uberaba	0	0
Uberaba II	39.832	39.832
Villela	150.269	150.269
Four Corners	330201.237	320344.032
Fort Green	0	0
Hookers Prairie	0	0
Hopewell	0	0
Miski Mayo	8550.549	8550.549
Lonesome	0	0
South Fort Meade	81061.474	78641.618
South Pasture	0	0
Wingate	61965.573	60115.769
Streamsong	3754.621	3642.538
Rio Grande II	50.839	50.839
Cajati	5785.456	5785.456
Guara	3.117	3.117
Uberaba III	13031.03	13031.03
Araxa	7522.349	7522.349
Catalao II	9736.31	9736.31
Tapira	21471.089	21471.089
Taquari-Vassouras	11748.456	11748.456
Patrocínio	235.059	235.059
Patos de Minas	32.756	32.756

C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7

(C-CE7.7/C-CH7.7/C-CO7.7/C-MM7.7/C-OG7.7/C-ST7.7/C-TO7.7/C-TS7.7) Break down your organization's total gross global Scope 2 emissions by sector production activity in metric tons CO2e.

	Scope 2, location-based, metric tons CO2e	Scope 2, market-based (if applicable), metric tons CO2e	Comment
Cement production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Chemicals production activities	203067.819	182081.403	This emissions total represents the sum of all phosphates concentrates (chemical manufacturing) facilities.
Coal production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Metals and mining production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (upstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (midstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Oil and gas production activities (downstream)	<Not Applicable>	<Not Applicable>	<Not Applicable>
Steel production activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport OEM activities	<Not Applicable>	<Not Applicable>	<Not Applicable>
Transport services activities	<Not Applicable>	<Not Applicable>	<Not Applicable>

C-CH7.8

(C-CH7.8) Disclose the percentage of your organization's Scope 3, Category 1 emissions by purchased chemical feedstock.

Purchased feedstock	Percentage of Scope 3, Category 1 tCO2e from purchased feedstock	Explain calculation methodology
Ammonia	100	100% of our reported Scope 3, category 1 emissions are from the purchase of ammonia, which we estimate to be our most material category 1 emissions source. This figure has been third-party assured by ERM CVS.

C-CH7.8a

(C-CH7.8a) Disclose sales of products that are greenhouse gases.

	Sales, metric tons	Comment
Carbon dioxide (CO2)	0	
Methane (CH4)	0	
Nitrous oxide (N2O)	0	
Hydrofluorocarbons (HFC)	0	
Perfluorocarbons (PFC)	0	
Sulphur hexafluoride (SF6)	0	
Nitrogen trifluoride (NF3)	0	

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	Emissions value (percentage)	Please explain calculation
Change in renewable energy consumption	0	No change	0	We have several renewable energy projects planned for upcoming years in Brazil and the United States; however we cannot attribute a change in gross global emissions reductions to a change in renewable energy consumption for 2021.
Other emissions reduction activities	243484.32	Decreased	4.95	Companywide emissions savings projects for 2021 decreased our overall emissions by 4.95%. We arrived at this percentage by dividing the reduction from projects (243,484.32) by the 2020 total emissions (4,919,986) $=(243,484.32/4,919,986.27)*100=4.95\%$
Divestment		<Not Applicable >		
Acquisitions		<Not Applicable >		
Mergers		<Not Applicable >		
Change in output	299496.42	Decreased	6.09	Due to a year-over-year decrease in ammonia production, we experienced a decrease in tonnes of CO2e. Similarly, a decrease in finished product tonnes accounted for a decrease in year-over-year GHG emissions. Overall there was a 6.09% decrease in emissions attributed to these changes. We arrived at this percentage by dividing the total CO2e Impact of the changes in output (299,496.42) and then dividing by the 2020 total emissions (4,919,986). $(299,496.42/4,919,986)*100=6.09\%$
Change in methodology		<Not Applicable >		
Change in boundary		<Not Applicable >		
Change in physical operating conditions	0	Please select		
Unidentified	110825.95	Increased	2.25	Due to 'unidentified' reasons, emissions were lower than the previous year by 2%. Last year, 101,826 tonnes of CO2e were increased by means we could not readily separate. Our total Scope 1 & Scope 2 emissions in the previous year were 4,919,986. We arrived at 0.88% by dividing the unexplained increase in emissions (110,825.95) by 2020 Scope 1 and 2 (4,919,986) $(110,825 /4,919,986)*100=2.25\%$
Other	0	No change	0	There were no other identified reasons.

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?

Location-based

C8. Energy

C8.1

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

More than 5% but less than or equal to 10%

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	Yes

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)	LHV (lower heating value)	355833.07	10016582.94	10372416.01
Consumption of purchased or acquired electricity	<Not Applicable>	5609.64	4792015.08	4797624.72
Consumption of purchased or acquired heat	<Not Applicable>	0	18755465.87	18755465.87
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>	0	<Not Applicable>	0
Total energy consumption	<Not Applicable>	361442.71	33564063.89	33925506.6

C-CH8.2a

(C-CH8.2a) Report your organization's energy consumption totals (excluding feedstocks) for chemical production activities in MWh.

Consumption of fuel (excluding feedstocks)

Heating value

LHV (lower heating value)

MWh consumed from renewable sources inside chemical sector boundary

355833.07

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

10016582.94

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

10372416.01

Consumption of purchased or acquired electricity

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

5609.64

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

3519750.21

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

1272264.87

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

4797624.72

Consumption of purchased or acquired heat

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

18755465.87

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

18755465.87

Consumption of self-generated non-fuel renewable energy

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

0

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

0

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

0

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

0

Total energy consumption

Heating value

<Not Applicable>

MWh consumed from renewable sources inside chemical sector boundary

361442.71

MWh consumed from non-renewable sources inside chemical sector boundary (excluding recovered waste heat/gases)

13536333.14

MWh consumed from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary

20027730.74

Total MWh (renewable + non-renewable + MWh from recovered waste heat/gases) consumed inside chemical sector boundary

33925506.59

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	Yes
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	Yes

C8.2c

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

Sustainable biomass

Heating value

LHV

Total fuel MWh consumed by the organization

355556.18

MWh fuel consumed for self-generation of electricity

0

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

0

Comment

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

0

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

0

Comment

Other renewable fuels (e.g. renewable hydrogen)

Heating value

LHV

Total fuel MWh consumed by the organization

276.89

MWh fuel consumed for self-generation of electricity

0

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

0

Comment

Coal

Heating value

Unable to confirm heating value

Total fuel MWh consumed by the organization

0

MWh fuel consumed for self-generation of electricity

0

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

0

Comment

Oil

Heating value

LHV

Total fuel MWh consumed by the organization

1969758.51

MWh fuel consumed for self-generation of electricity

0

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

0

Comment

Gas

Heating value

LHV

Total fuel MWh consumed by the organization

8046824.42

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

4523735.73

MWh fuel consumed for self-generation of steam

502637.3

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

2992486.02

Comment

Includes propane and natural gas

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

0

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

0

Comment

Total fuel

Heating value

LHV

Total fuel MWh consumed by the organization

10372416

MWh fuel consumed for self-generation of electricity

0

MWh fuel consumed for self-generation of heat

4523735.73

MWh fuel consumed for self-generation of steam

502637.3

MWh fuel consumed for self-generation of cooling

<Not Applicable>

MWh fuel consumed for self- cogeneration or self-trigeneration

2992486.02

Comment

C8.2d

(C8.2d) Provide details on the electricity, heat, steam, and cooling your organization has generated and consumed in the reporting year.

	Total Gross generation (MWh)	Generation that is consumed by the organization (MWh)	Gross generation from renewable sources (MWh)	Generation from renewable sources that is consumed by the organization (MWh)
Electricity	1657268.21	1593259.23	0	0
Heat	4771934.06	4771934.06	0	0
Steam	20091739.72	20091739.72	0	0
Cooling	0	0	0	0

C-CH8.2d

(C-CH8.2d) Provide details on electricity, heat, steam, and cooling your organization has generated and consumed for chemical production activities.

Electricity

Total gross generation inside chemicals sector boundary (MWh)

1061126.69

Generation that is consumed inside chemicals sector boundary (MWh)

779128.72

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

1061126.69

Heat

Total gross generation inside chemicals sector boundary (MWh)

505811.65

Generation that is consumed inside chemicals sector boundary (MWh)

505811.65

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

Steam

Total gross generation inside chemicals sector boundary (MWh)

14590066.32

Generation that is consumed inside chemicals sector boundary (MWh)

14590066.32

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

14590066.32

Cooling

Total gross generation inside chemicals sector boundary (MWh)

0

Generation that is consumed inside chemicals sector boundary (MWh)

0

Generation from renewable sources inside chemical sector boundary (MWh)

0

Generation from waste heat/gases recovered from processes using fuel feedstocks inside chemical sector boundary (MWh)

0

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.

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Wind

Country/area of low-carbon energy consumption

Canada

Tracking instrument used

Contract

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

73

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

Canada

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2012

Comment

Mosaic's Colonsay facility has a green power purchase agreement with utility (SaskPower) to purchase low carbon electricity and it is accounted for here.

Sourcing method

Direct procurement from an off-site grid- connected generator e.g. Power purchase agreement (PPA)

Energy carrier

Electricity

Low-carbon technology type

Hydropower (capacity unknown)

Country/area of low-carbon energy consumption

Brazil

Tracking instrument used

Contract

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

5536.64

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

Brazil

Commissioning year of the energy generation facility (e.g. date of first commercial operation or repowering)

2020

Comment

Mosaic Fertilizantes' Distribution/Blending unit facility have a Green Power Purchasing agreement for renewable energy(wind, solar or hydraulic). Fospar only includes the operations of the port terminal.

C8.2g

(C8.2g) Provide a breakdown of your non-fuel energy consumption by country.

Country/area

Brazil

Consumption of electricity (MWh)

1255451.57

Consumption of heat, steam, and cooling (MWh)

5226526.23

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

6481977.8

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Canada

Consumption of electricity (MWh)

1085430.07

Consumption of heat, steam, and cooling (MWh)

0

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

1085430.07

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Paraguay

Consumption of electricity (MWh)

1168.5

Consumption of heat, steam, and cooling (MWh)

0

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

1168.5

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

Peru

Consumption of electricity (MWh)

28732.3

Consumption of heat, steam, and cooling (MWh)

0

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

28732.3

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

Country/area

United States of America

Consumption of electricity (MWh)

5113009.44

Consumption of heat, steam, and cooling (MWh)

18755465.87

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

23868475.31

Is this consumption excluded from your RE100 commitment?

<Not Applicable>

C-CH8.3

(C-CH8.3) Does your organization consume fuels as feedstocks for chemical production activities?

Yes

C-CH8.3a

(C-CH8.3a) Disclose details on your organization’s consumption of fuels as feedstocks for chemical production activities.

Fuels used as feedstocks

Natural gas

Total consumption

170235.81

Total consumption unit

thousand cubic metres

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

1.8

Heating value of feedstock, MWh per consumption unit

10.7

Heating value

LHV

Comment

Calculated using 1 MMBtu equivalent to 27.3 m³ natural gas from U.S. Energy Information Administration. Density of natural gas estimated at 0.8kg/m³.

Fuels used as feedstocks

Other, please specify (Molten Sulfur)

Total consumption

4303000

Total consumption unit

metric tons

Inherent carbon dioxide emission factor of feedstock, metric tons CO2 per consumption unit

0

Heating value of feedstock, MWh per consumption unit

0

Heating value

LHV

Comment

Emissions from feedstock take the form of SO₂ which is consumed in the process to create an intermediary for our process. The heating value was calculated using energy generation per ton of intermediary production converted to per ton feedstock input.

C-CH8.3b

(C-CH8.3b) State the percentage, by mass, of primary resource from which your chemical feedstocks derive.

	Percentage of total chemical feedstock (%)
Oil	0
Natural Gas	5
Coal	0
Biomass	0
Waste (non-biomass)	0
Fossil fuel (where coal, gas, oil cannot be distinguished)	95
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

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

Description

Energy usage

Metric value

2.75

Metric numerator

Total Energy Consumption

Metric denominator (intensity metric only)

Metric tonnes finished product

% change from previous year

7

Direction of change

Increased

Please explain

The increase in energy intensity was driven by a decrease in total production.

Description

Other, please specify (Cogenerated power)

Metric value

1657270

Metric numerator

Power produced in MWh

Metric denominator (intensity metric only)

1

% change from previous year

14

Direction of change

Decreased

Please explain

Cogenerated power decreased as a result of a decrease in sulfuric acid production. Cogenerated power is generated by harnessing waste heat from the sulfuric acid manufacturing process. Emissions associated with original source of the heat, sulfuric acid production, are accounted for in scope 1 emissions. As there are no incremental emissions associated with the production of power from this process, we are including it as a low-carbon source.

Description

Energy usage

Metric value

30400147

Metric numerator

Direct Energy (MWh)

Metric denominator (intensity metric only)

1

% change from previous year

3

Direction of change

Decreased

Please explain

Decrease in direct energy was a result of a decrease in production and energy-saving initiatives.

Description

Energy usage

Metric value

3519750

Metric numerator

Indirect Energy(MWh)

Metric denominator (intensity metric only)

1

% change from previous year

7

Direction of change

Decreased

Please explain

Decrease in indirect energy was a result of a decrease in production and energy-saving initiatives..

Description

Energy usage

Metric value

33919897

Metric numerator

Total Energy (Direct & Indirect Energy[MWh])

Metric denominator (intensity metric only)

1

% change from previous year

3

Direction of change

Decreased

Please explain

Decrease in energy was a result of a decrease in production and energy-saving initiatives. This value differs from the figure reported in C8 because it excludes the total consumption of purchased/acquired electricity from renewable (solar) resources.

C-CH9.3a

(C-CH9.3a) Provide details on your organization's chemical products.

Output product

Ammonia

Production (metric tons)

258124.7

Capacity (metric tons)

455000

Direct emissions intensity (metric tons CO2e per metric ton of product)

0

Electricity intensity (MWh per metric ton of product)

0

Steam intensity (MWh per metric ton of product)

0

Steam/ heat recovered (MWh per metric ton of product)

0

Comment

As ammonia is an input used in our finished crop nutrient products, we have not calculated the emissions intensity associated with this chemical specifically.

Output product

Other, please specify (Sulfuric Acid)

Production (metric tons)

13430400.56

Capacity (metric tons)

225000

Direct emissions intensity (metric tons CO2e per metric ton of product)

0

Electricity intensity (MWh per metric ton of product)

0

Steam intensity (MWh per metric ton of product)

0

Steam/ heat recovered (MWh per metric ton of product)

1.5

Comment

As sulfuric acid is an intermediate input used in our finished crop nutrient products, we have not calculated the emissions intensity associated with this chemical specifically. Rather, it is included in the facility, business unit and company-wide emissions figures

Output product

Other, please specify (Phosphoric Acid)

Production (metric tons)

4280734.77

Capacity (metric tons)

5300000

Direct emissions intensity (metric tons CO2e per metric ton of product)

0

Electricity intensity (MWh per metric ton of product)

0

Steam intensity (MWh per metric ton of product)

0

Steam/ heat recovered (MWh per metric ton of product)

0

Comment

As phosphoric acid is an intermediate input used in our finished crop nutrient products, we have not calculated the emissions intensity associated with this chemical

specifically. Rather, it is included in the facility, business unit and company-wide emissions figures.

Output product

Other, please specify (Phosphate Crop and Animal Feed Production)

Production (metric tons)

19838506

Capacity (metric tons)

11700000

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.1628

Electricity intensity (MWh per metric ton of product)

0.1774

Steam intensity (MWh per metric ton of product)

1.3872

Steam/ heat recovered (MWh per metric ton of product)

Comment

Per CDP methodology, direct emissions intensity represents the Scope 1 emissions per unit production of operations related to phosphate crop and animal feed products. Also per CDP methodology, electricity intensity represents the electrical power consumed, both purchased and electricity that is generated within the facility, per unit production of operations related to phosphate crop and animal feed products.

Output product

Other, please specify (Potash)

Production (metric tons)

8204000

Capacity (metric tons)

10500000

Direct emissions intensity (metric tons CO2e per metric ton of product)

0.113

Electricity intensity (MWh per metric ton of product)

0.1078

Steam intensity (MWh per metric ton of product)

0

Steam/ heat recovered (MWh per metric ton of product)

0

Comment

Per CDP methodology, direct emissions intensity represents the Scope 1 emissions per unit production of operations related to potash crop nutrients. Also per CDP methodology, electricity intensity represents the electrical power consumed, both purchased and electricity that is generated within the facility, per unit production of operations related to potash crop nutrients.

C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6

(C-CE9.6/C-CG9.6/C-CH9.6/C-CN9.6/C-CO9.6/C-EU9.6/C-MM9.6/C-OG9.6/C-RE9.6/C-ST9.6/C-TO9.6/C-TS9.6) Does your organization invest in research and development (R&D) of low-carbon products or services related to your sector activities?

	Investment in low-carbon R&D	Comment
Row 1	Yes	

C-CH9.6a

(C-CH9.6a) Provide details of your organization's investments in low-carbon R&D for chemical production activities over the last three years.

Technology area	Stage of development in the reporting year	Average % of total R&D investment over the last 3 years	R&D investment figure in the reporting year (optional)	Comment
Waste heat recovery	Large scale commercial deployment	≤20%		<p>Mosaic has invested heavily in equipment that enables the internal generation of electricity in a process called cogeneration. The process of heat recovery allows several of our Phosphate plants and mines to significantly reduce the amount of third-party, primarily fossil-fuel based electricity required from utility companies. The cogeneration process begins at our manufacturing operations, where we use sulfuric acid to liberate crop nutrients (phosphorous) from raw material inputs. This process generates a significant amount of waste heat that is recovered and converted to steam by bottoming cycle combined heat and power systems. This steam is sent to turbine generators and converted to virtually greenhouse gas emissions-free electricity that powers our manufacturing facilities and mines. In instances when we generate more clean cogenerated energy than we can use at our own operations, the excess is exported to the local grid.</p> <p>We are constantly looking for opportunities to improve the efficiency and output of our cogeneration assets, including bringing additional turbo generators online to increase our low-GHG electrical generation capacity, when possible. Accordingly, there is no "end date" for this investment. The amount of investment depends on the specific project, but as an example of an investment figure, in 2016 we brought a turbo generator online at our Uncle Sam facility that can provide up to an additional 15 megawatts of low-GHG electrical generation capacity. This initiative cost approximately \$21 million. We are investigating technology upgrades that would allow us to harness additional waste heat to enable more production of cogenerated electricity at our Brazil phosphate facilities. Multiple heat recovery systems would cost \$250,000,000.</p>
Unable to disaggregate by technology area	<Not Applicable>	≤20%	80000	As a specific example, in 2021 we invested approximately \$80,000 in membership of International Minerals Innovation Institute (IMI) to research topics like safety; promising technologies; and emissions-reducing solutions such as hydrogen, small modular reactors, and next generation carbon capture. We view this research as important to the industry's long-term decarbonization goals.

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

ERM CVS 2022 CDP Assurance Statement_Mosaic_29Jul_FINAL.pdf

Page/ section reference

1/1

Relevant standard

ERM GHG Performance Data Assurance Methodology

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 location-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

ERM CVS 2022 CDP Assurance Statement_Mosaic_29Jul_FINAL.pdf

Page/ section reference

1/1

Relevant standard

ERM GHG Performance Data Assurance Methodology

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: Fuel and energy-related activities (not included in Scopes 1 or 2)
- Scope 3: Upstream transportation and distribution
- Scope 3: Investments
- Scope 3: Use 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

ERM CVS 2022 CDP Assurance Statement_Mosaic_29Jul_FINAL.pdf

Page/section reference

1/1

Relevant standard

ERM GHG Performance Data Assurance Methodology

Proportion of reported emissions verified (%)

94

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?

Yes

C10.2a

(C10.2a) Which data points within your CDP disclosure have been verified, and which verification standards were used?

Disclosure module verification relates to	Data verified	Verification standard	Please explain
C5. Emissions performance	Year on year change in emissions (Scope 1 and 2)	ERM GHG Performance Data Assurance Methodology	Our assurance statement applies to year-over-year change in GHG emissions (Scope 1&2 [location-based]) between 2020 and 2021. The year over year difference in scope 1 and scope 2 emissions was -8%.
C8. Energy	Energy consumption	ERM GHG Performance Data Assurance Methodology	Our assurance statement applies to total direct energy (30,400,147 MWh) and total indirect energy (3,519,750 MWh).

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.

Saskatchewan OBPS - ETS

C11.1b

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

Saskatchewan OBPS - ETS

% of Scope 1 emissions covered by the ETS

25

% of Scope 2 emissions covered by the ETS

50

Period start date

January 1 2018

Period end date

December 31 2030

Allowances allocated

0

Allowances purchased

0

Verified Scope 1 emissions in metric tons CO₂e

887107

Verified Scope 2 emissions in metric tons CO₂e

504527

Details of ownership

Facilities we own and operate

Comment

2021 emissions cited here represent those which were third-party assured by ERM CVS to a moderate standard alongside the rest of Mosaic's companywide emissions. Mosaic undertakes a separate validation exercise of scope 1 emissions from sites that are governed by the Saskatchewan OBPS-ETS; however, as of the date of this report, the final 2021 results have not been validated by the Ministry of Environment.

C11.1d

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

In late 2016, the Canadian federal government announced plans for a comprehensive tax on carbon emissions, under which provinces opting out of the tax would have the option of adopting a cap-and-trade system. In late 2018, the federal government also implemented a federal carbon pricing backstop system that applies in any province or territory that does not have a carbon pricing system in place by 2018. The federal system applies, in part, to our Saskatchewan Potash facilities. The federal government accepted Saskatchewan's plan for regulating industrial GHG emission and Mosaic now reports to the Saskatchewan Ministry of Environment to meet 2030 reduction targets; however, the federal government imposed a carbon tax on GHG emissions from electricity, which will affect our facilities in Saskatchewan. Mosaic will continue to work with the Saskatchewan Ministry of Environment, Environment and Climate Change Canada and other government stakeholders, through participation in industry associations, to determine the remaining regulatory details. We will also continue to monitor developments relating to the anticipated proposed legislation, as well as the potential future effect on our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources. In the meantime, we are complying by paying embedded carbon penalties that are passed through to us by utilities and rail providers; we will also stay in compliance by paying any direct penalties assessed by the provincial government. In advance of the government's 2030 targeted reduction, our facilities are complying by actively working toward companywide 2025 ESG Performance Targets to reduce GHGs per tonne of product; longer term, we are also contributing to companywide net-zero targets (announced in Dec. 2021). Our target date for achieving net-zero emissions is 2030 for Florida (one of our primary operating geographies in North America) and 2040 for the rest of the organization; we have a short term target to reduce emissions by 20% per tonne of product by 2025. Other efficiency projects and large-scale projects and partnerships that have the potential to drive further reductions in GHG emissions are under consideration, including the installation of boilers that will reduce NOx emissions and have the potential to reduce GHGs; and implementation of carbon capture and storage (CCUS). Our approach to engagement on CCUS in the hopes of progressing it for our site is cross-functional in nature and includes government, industry and other parties.

C11.2

(C11.2) Has your organization originated or purchased any project-based carbon credits within the reporting period?

No

C11.3

(C11.3) Does your organization use an internal price on carbon?

Yes

C11.3a

(C11.3a) Provide details of how your organization uses an internal price on carbon.

Objective for implementing an internal carbon price

Navigate GHG regulations
Change internal behavior

GHG Scope

Scope 1
Scope 2

Application

In anticipation of regulatory changes in our operating geographies, namely the United States where we have phosphate and potash mining and chemical plants, we have applied various pricing scenarios to our emissions performance in order to assess our potential exposure to carbon pricing schemes. To date, the internal price on carbon hasn't been formalized as a decision-making tool for leadership, but we anticipate doing so in the next two years.

We also have used this price to simulate the impact of carbon pricing on the economic feasibility of a project that would otherwise be difficult to justify.

Actual price(s) used (Currency /metric ton)

63

Variance of price(s) used

Using the example above, we have applied uniform pricing for our U.S.-based operations, using current/average GHG performance.

Type of internal carbon price

Shadow price

Impact & implication

We have applied various pricing scenarios to our emissions performance in order to assess our potential exposure to carbon pricing schemes. For example, if we apply the International Energy Agency's (IEA) recommended price of \$63 per tonne of CO₂e generated to the direct emissions from our U.S. facilities (roughly 1.8 million tonnes CO₂e/year), the impact would be greater than \$110 million per year. This example is a gross simplification and doesn't take into account any potential exemptions for essential or energy intensive trade exposed industries like the one Mosaic operates in. We are monitoring these developments closely. We have also used a shadow price to assess its implication on our capital decision-making process. More specifically, projects that are otherwise hard to justify are more compelling with the introduction of a price on carbon. As of the date of this report, Mosaic has not formalized an internal price on carbon.

C12. Engagement

C12.1

(C12.1) Do you engage with your value chain on climate-related issues?

Yes, our suppliers
Yes, our customers/clients

C12.1a

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

Type of engagement

Innovation & collaboration (changing markets)

Details of engagement

Run a campaign to encourage innovation to reduce climate impacts on products and services

% of suppliers by number

1

% total procurement spend (direct and indirect)

10

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

24

Rationale for the coverage of your engagement

Ammonia production represents approximately 1.8% of global emissions; thus it is a collective decarbonization priority for the fertilizer industry and other producers of this critical product. For Mosaic, ammonia represents a significant scope 3 emissions source to us (roughly 60%), and also approximately 60% of the total lifecycle GHG emissions for our commodity phosphate products, which is our rationale for participating in this engagement. Our rationale for prioritizing this engagement is because of the impact ammonia has on our scope 3 emissions and total life cycle impact of our products.

Impact of engagement, including measures of success

We are engaging alongside the fertilizer industry and other stakeholders to promote sound policy and tax incentives such as the 45Q tax credit, that could enable significant sustainability projects like carbon capture and sequestration (CCS) to become commercially feasible. Implementation of CCS at existing ammonia facilities would transform the product into "blue ammonia" which would translate to reductions in emissions for producers and users alike.

The measure of success is reduction in GHG emissions associated with global ammonia supplies. To date, since implementation of CCS is a longer-term endeavor with an anticipated initiation date in the United States of 2024/2025, we do not have results to share, but we are heavily engaged in this space with the longer-term agenda in mind. We realize this example might fall short of CDP's scoring criteria because we do not have short-term results to share, but we are including it nonetheless because of ammonia's contribution to global GHG emissions. We view this work as a critical step to advancing the global climate agenda.

Comment

Of note, Mosaic satisfies a portion of its total ammonia needs through self-production. We are exploring CCS at this site in earnest. Successful implementation of CCS at our ammonia facility would result in a significant Scope 1 emissions reduction for our company.

Type of engagement

Information collection (understanding supplier behavior)

Details of engagement

Collect climate change and carbon information at least annually from suppliers

% of suppliers by number

75

% total procurement spend (direct and indirect)

80

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

60

Rationale for the coverage of your engagement

We introduced a supplier survey to assess our suppliers' performance in key ESG areas, including GHG reporting and management. Our rationale for including 80% of North America spend - which was bucketed into supply chain, MRO spend and other suppliers, contractors and service providers - was that this approach and level of coverage provides access to a majority of our suppliers by number and spend. The diversity across suppliers that is represented within this 80% coverage also allows us to assess potential differences between companies' current behaviors based on key characteristics (size, revenue, industry, etc.), and develop a context-based approach to ongoing engagement.

Impact of engagement, including measures of success

As of mid-2021, we have gathered insights from suppliers representing more than \$3.5 billion in expenditures. The data show that approximately 13% of Mosaic's North American contractors and service providers track GHGs in their operations. Approximately 26% have programs in place to reduce energy use and GHGs. We will measure success of the engagement by our suppliers' participation in the survey, and by seeing an increase in the number of suppliers who track GHGs or have strategies in place to reduce GHGs.

Comment

C12.1b

(C12.1b) Give details of your climate-related engagement strategy with your customers.

Type of engagement & Details of engagement

Education/information sharing	Run an engagement campaign to educate customers about the climate change impacts of (using) your products, goods, and/or services
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% of customers by number

80

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

70

Please explain the rationale for selecting this group of customers and scope of engagement

We know it is important to contribute to solutions that address the impacts of crop nutrient products on the environment, including management of emissions associated with ammoniated fertilizer products like the ones Mosaic sells to customers in 40 countries around the globe. Mosaic supports the minimization of greenhouse gas emissions from the activities related to global food supply by encouraging stakeholders in the value chain, including direct retailer customers who interact directly with the end users of our products, to enhance their understanding, adoption and promotion of 4R Nutrient Stewardship practices. By applying the right fertilizer at the right rate, right time and in the right place, farmers minimize environmental impacts associated with fertilizer use, including potential greenhouse gas emissions (namely the release of N₂O). We select this group of customers due to their farming practices in key growing regions. The nutrient service providers who supply them crop nutrients are Mosaic's direct customers, and they represent roughly 80% of total nutrient services providers in North America. Similarly important to our rationale, the use of sold products category, which this initiative addresses, represents approximately 57% of our total scope 3 emissions, and roughly 70% of total customer-related scope 3 emissions.

Impact of engagement, including measures of success

We measure success of this engagement in a variety of ways, including the number of acres under the guidance of 4R Nutrient Stewardship Certification programs in the United States and Canada. As of 2021, we have facilitated adoption of 4R Nutrient Stewardship practices on more than 10 million acres, representing an increase of 3 million acres, or 42% since 2020. Our measure of success is to have facilitated the adoption of 4R practices on 25 million acres by 2025. Considering a 2019 baseline of 3.9 million acres, we were approximately 40% to the 2025 target as of the end of 2021 with 10 million acres under management. These nutrient service providers, who are Mosaic's direct customers, represent approximately 80% of total nutrient services providers.

C12.2

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

Yes, climate-related requirements are 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

Complying with regulatory requirements

Description of this climate related requirement

Mosaic's supplier agreements require suppliers to comply with all applicable laws and regulations in the performance of their work for Mosaic. In the context of climate, compliance requires paying embedded carbon taxes on fuel and utility bills.

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

40

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

40

Mechanisms for monitoring compliance with this climate-related requirement

- Certification
- Supplier self-assessment
- Second-party verification
- Grievance mechanism/Whistleblowing hotline

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

Direct or indirect engagement that could influence policy, law, or regulation that may impact the climate

Yes, we engage directly with policy makers

Yes, we engage indirectly through trade associations

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 engagement activities are consistent with your overall climate change strategy

Mosaic strives to be the global leader in the crop nutrient industry. We recognize the importance of being active in industry associations and cross-sector business forums that provide common platforms to advance cutting-edge scientific research and best management practices within our company and our industry. In addition to having a publicly available Leadership on Climate Change document that states our companywide position on climate change, Mosaic has a process in place to carefully consider, on a case-by-case basis, the relevance of the engagement opportunities and alignment with our values and business strategies and pursues mutually beneficial partnerships.

For example, we participate in key cross-sector and industry partnerships through membership and Board and/or committee involvement, which allows us to influence the work done by respective organizations in a way that is consistent with our strategy. This applies across geographies and operating units. Mosaic takes part in industry efforts

to address the challenges of climate change and commits to further engage with policy makers and stakeholders on the issue of climate change. Mosaic recognizes that our action on climate change is good for the environment and for the long-term financial health and viability of our company. Agronomy, EHS, and Public Affairs professionals interact with policymakers and global thought leaders to encourage the transfer of knowledge and to incorporate the latest thinking on sustainability into the Mosaic risk management process.

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>

C12.3a

(C12.3a) On what policy, law, or regulation that may impact the climate has your organization been engaging directly with policy makers in the reporting year?

Focus of policy, law, or regulation that may impact the climate

Carbon tax

Specify the policy, law, or regulation on which your organization is engaging with policy makers

Federal and provincial carbon tax

Policy, law, or regulation geographic coverage

Regional

Country/region the policy, law, or regulation applies to

Canada

Your organization's position on the policy, law, or regulation

Oppose

Description of engagement with policy makers

In 2016 the Canadian federal government announced plans for a comprehensive tax on carbon emissions, under which provinces opting out of the tax would have the option of adopting a cap-and trade system. In addition, the Province of Saskatchewan, in which our Canadian potash mines are located, has stated that a carbon pricing system will not be implemented in the province and that legal action will be sought against the federal government, if necessary. In December 2017, Saskatchewan announced a comprehensive plan to address climate change that does not include an economy-wide price on carbon but does include a system of tariffs and credits for large emitters. The plan was subject to federal review and approved by the federal government. Our Saskatchewan Potash facilities will continue to work with the Saskatchewan Ministry of Environment and Environment and Climate Change Canada, through participation in industry associations, to determine next steps. We will also continue to monitor developments relating to the anticipated proposed legislation, as well as the potential future effect on our operating activities, energy, raw material and transportation costs, results of operations, liquidity or capital resources.

Details of exceptions (if applicable) and your organization's proposed alternative approach to the policy, law or regulation

Production of potash in Canada results in significantly lower CO2e emissions per ton of product than the potash produced by the major overseas producers. Canadian potash producers are already subject to higher tax rates, higher shipping costs and higher electricity costs than the world's other major potash producers. Implementation of a carbon tax in Canada places an additional economic hardship on Canadian potash producers, reducing their competitiveness and effectively suppressing the marketability of the world's most environmentally friendly potash; while adding to the advantages already enjoyed by the major overseas potash producers. Implementation of the carbon tax will likely cause Canadian potash producers to lose market share due to inevitable operating cost increases. Overseas potash producers are beneficiaries of the Canadian carbon tax, resulting in increased carbon emission intensity from the global potash industry as a whole.

Have you evaluated whether your organization's engagement is aligned with the goals of the Paris Agreement?

No, we have not evaluated

C12.3b

(C12.3b) Provide details of the trade associations your organization 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 (The Fertilizer Institute)

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

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

Per the TFI website, "TFI is the leading voice in the U.S. fertilizer industry, representing the public policy, communication and statistical needs of producers, manufacturers, retailers and transporters of fertilizer. Issues of interest to TFI members include security, international trade, energy, transportation, the environment, worker health and safety, and farm bill and conservation programs to promote the use of enhanced efficiency fertilizer."

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

900000

Describe the aim of your organization's funding

The aim of our funding is to amplify the voice of the fertilizer industry and to contribute to positive public policy, communication, stewardship, sustainability and market intelligence outcomes for the fertilizer industry.

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 (International Minerals Innovation Institute)

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

Consistent

Has your organization influenced, or is your organization attempting to influence their position?

We publicly promote their current position

State the trade association's position on climate change, explain where your organization's position differs, and how you are attempting to influence their position (if applicable)

IMII's major potash and uranium minerals company members share in the global commitment to reduce GHG emissions.

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

80000

Describe the aim of your organization's funding

Mosaic's investment of \$80,000 in membership of International Minerals Innovation Institute (IMII) goes toward research of topics like safety; promising technologies; and emissions-reducing solutions such as geothermal, small modular reactors, and next generation carbon capture.

Have you evaluated whether your organization's engagement with this trade association is aligned with the goals of the Paris Agreement?

Yes, we have evaluated, and it is aligned

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 mainstream reports

Status

Complete

Attach the document

MOS-2021.12.31-10K-Full-Draft-IR (1).pdf

Page/Section reference

F-27 - F-30

Content elements

Governance

Strategy

Risks & opportunities

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

0-2021-Sustainability-Disclosure-and-GRI.pdf

Page/Section reference

pg. 1, pgs. 50-51

Content elements

Emissions figures

Emission targets

Comment

Publication

In voluntary communications

Status

Complete

Attach the document

0-Our-Leadership-on-Climate-Change.pdf

Page/Section reference

1-2

Content elements

Governance

Strategy

Risks & opportunities

Comment

Publication

In other regulatory filings

Status

Complete

Attach the document

2022 Proxy.pdf

Page/Section reference

pg. 9/84

Content elements

Strategy

Emission targets

Comment

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	Yes, executive management-level responsibility	Protection of biodiversity is critical to global sustainable development and a significant component of Mosaic's sustainability efforts. In both our phosphate and potash operations in the United States, Canada and Brazil, prior to the start of mining — or when extending or expanding a mine — permits are secured from local, regional, state and federal government agencies. This exhaustive planning and approval process protects water, air, ecology, wildlife, transportation, safety and other environmental, health, and public welfare considerations. Members of our executive team, who directly lead the businesses responsible for the day-to-day work related to biodiversity management, provide oversight of the rigorous permitting and stakeholder engagement processes.	<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	Yes, we have endorsed initiatives only	<Not Applicable>	Other, please specify (We are participating in a study of the fertilizer industry's impacts on biodiversity, which will assess risks and opportunities. It will also help identify industry-specific indicators that the industry can use to measure performance.)

C15.3

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

	Does your organization assess the impact of its value chain on biodiversity?	Portfolio
Row 1	Yes, we assess impacts on biodiversity in both our upstream and downstream value chain	<Not Applicable>

C15.4

(C15.4) 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>

C15.5

(C15.5) 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, we do not use indicators, but plan to within the next two years	Please select

C15.6

(C15.6) 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
In voluntary sustainability report or other voluntary communications	Impacts on biodiversity Biodiversity strategy	pg. 43/84

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	President and Chief Executive Officer	Chief Executive Officer (CEO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I understand that my response will be shared with all requesting stakeholders	Response permission
Please select your submission options	Yes	Public

Please confirm below

I have read and accept the applicable Terms