

Nutrien's 2021 CDP Climate Change Disclosure



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Welcome to your CDP Climate Change Questionnaire 2021

C0. Introduction

C0.1

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

Nutrien is the world's largest provider of crop inputs and services, playing a critical role in helping growers increase food production in a sustainable manner. We produce and distribute 27 million tonnes of potash, nitrogen and phosphate products world-wide annually. With over 23,000 employees – and operations and investments in 13 countries – Nutrien's crop inputs and services reach every major growing region of the world. Our Retail business provides a complete set of crop input products and solutions, including seed, crop protection, fertilizers and other crop inputs, as well as associated services, agronomic advice, financing and leading-edge digital capabilities. As the world's largest retail distributor of crop inputs, we operate more than 2,000 retail locations across the US, Canada, Australia and key areas of South America. Our operations service more than 500,000 grower accounts globally and over 100 crops, with corn, soybeans, wheat and canola accounting for the majority of our business.

Nutrien's NPK business includes nitrogen, phosphate and potash fertilizer manufacturing. Nutrien is the world's largest producer of potash with approximately 21 percent of global potash capacity. We have access to decades of low-cost reserves from our six potash mines in Saskatchewan, Canada. Nutrien has a total of 7.1 million metric tonnes (mt) of annual gross ammonia capacity from nine major facilities in North America and Trinidad with the ability to produce and sell more than 11 million annual metric tonnes of total finished nitrogen products. Nutrien has two integrated phosphate facilities in the US, both located near key fertilizer consuming markets and industrial customers. We are the second largest phosphate producer in North America and sell annually approximately 3 million tonnes of finished product. Our Specialty Products business includes feed ingredient plants, proprietary products, and Rainbow facilities. We also have an extensive transportation, storage and distribution network, including our own Retail operations, warehouse and transportation assets.

Fertilizer production and use have complex and conflicting impacts on GHG emissions along our value chain. Fertilizer, especially nitrogen, generates GHG emissions. However, nitrogen is critical for healthy crops, soil organic carbon and increasing yields. Our approach spans Nutrien's integrated business and utilizes our strong connections with growers to create meaningful reductions in GHG emissions through effective nutrient management and carbon sequestration at the field and farm level. We intend to reduce the direct GHG emissions from our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, through GHG reduction and efficiency projects. We disclosed our climate strategy and targeted reductions in April 2021.

The manufacturing of fertilizer accounts for more than 95 percent of our total direct (Scope 1) and indirect (Scope 2) emissions. Direct emissions are generated on site, from burning natural gas and other fuels, or from processes at our operations. Indirect emissions are from the off-site generation of purchased electricity, steam and heat. GHG emissions related to the three types of fertilizers we produce come from the following sources:

- Nitrogen: Nitrogen fertilizer is produced by reacting hydrogen from natural gas with nitrogen from the air to produce ammonia (NH₃), the basic building block of all nitrogen fertilizer. Approximately 95 percent of the natural gas we consume is in the production of ammonia, with two-thirds of this natural gas used as hydrogen feedstock. The main GHG emission sources are CO₂ from fuel

combustion, industrial process CO₂ as a byproduct of hydrogen generation, and nitrous oxide (N₂O) emissions generated as a byproduct of nitric acid production.

- Potash: Potash is mined underground, hoisted to the surface, then crushed and purified with electric-powered equipment to remove rock particles and salt before being dried. Scope 1 emissions are generated from gas-fired equipment, such as dryers and boilers, and Scope 2 emissions from the electricity required for processing.
- Phosphate: Phosphate fertilizer is produced by reacting sulfuric acid with phosphate rock to produce phosphoric acid, which can be reacted with ammonia to produce ammonium phosphate fertilizer or other products. The production process can generate GHG emissions in two ways. Entrained carbonates (dissolved CO₂ in the phosphate rock) are released into the air as CO₂ through the chemical reaction, and GHGs can also be released through the use of fossil fuels to calcine phosphate rock feedstock or dry fertilizer products.

On January 1, 2018, Nutrien Ltd. was created following the merger of equals between Agrium Inc. and Potash Corporation of Saskatchewan Inc. For further information, visit us at <https://www.nutrien.com/what-we-do>

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
Reporting year	January 1, 2020	December 31, 2020	No

C0.3

(C0.3) Select the countries/areas for which you will be supplying data.

- Argentina
- Australia
- Brazil
- Canada
- Chile
- Trinidad and Tobago
- United States of America
- Uruguay

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

Bulk inorganic chemicals

Ammonia

Fertilizers

Nitric acid

Other chemicals

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
<p>Board-level committee</p>	<p>(1) Description of the committee in the corporate structure and the level of responsibility they have towards climate-related issues: Risk management is governed by our Board and Board committees, who oversee our ELT in understanding the principal risks to our business, including ESG and climate-related risks. The Safety & Sustainability Committee (S&S Committee) has responsibility for the oversight of the Corporation's activities with respect to safety, health, the environment, cybersecurity and sustainability. In 2020, the Safety, Health, Environment & Security Committee was renamed the Safety & Sustainability Committee, to reflect its oversight of the Corporation's general strategy and policies relating to safe and sustainable business practices, including: the environment, health, climate change related risks and opportunities and cybersecurity, as well as the additional broader components of sustainability. It directly reports to and advises the board on these matters.</p> <p>(2) Explanation of how the responsibilities of the committee are related to climate issues, including at least one example of a climate-related decision made by the committee/individual: As climate-related and ESG risks and opportunities are generally longer term in nature, incorporating them into our strategic and business planning activities helps enhance our planning, decision making and resilience. Understanding climate risk, regulations and societal expectations allows us to capitalize on opportunities for growth and mitigate potential risk.</p> <p>In 2020, notable sustainability efforts by the Corporation's management included overseeing the development of the organization's sustainability and ESG strategy, including 2030 climate commitments. Alongside the attention placed on the COVID-19 pandemic, sustainability efforts remained focused on assessing climate risks and opportunities. Key to these efforts was the ability to report a baseline for Nutrien's Scope 1 and 2 greenhouse gas emissions inventory, and Nutrien received limited assurance from KPMG on its 2018 baseline greenhouse gas emissions in 2020. As a result of management's assessment of opportunities, the S&S Committee oversaw several potential commitments to action and the Corporation's comprehensive long-term strategy and ESG targets disclosed in April 2021, incorporating actionable targets on emission reduction.</p>

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	Please explain
<p>Scheduled – all meetings</p>	<p>Reviewing and guiding strategy</p> <p>Reviewing and guiding major plans of action</p> <p>Reviewing and guiding risk management policies</p> <p>Reviewing and guiding business plans</p> <p>Setting performance objectives</p> <p>Monitoring implementation and performance of objectives</p> <p>Overseeing major capital expenditures, acquisitions and divestitures</p> <p>Monitoring and overseeing progress against goals and targets for addressing climate-related issues</p>	<p>The Board S&S Committee meets on a recurring quarterly basis. Material issues, including climate, are brought to the Committee, and scheduled agenda items generally include: overview of Nutrien’s ESG rating profile; overview of Climate Issue Teams’ Climate Development; update on Climate Issue Team Scope 1 & 2 GHG emission reduction opportunities; and, update on ESG, TCFD and external disclosures. In 2020, the S&S Committee was involved with:</p> <p>(1) Reviewing and guiding strategy:</p> <ul style="list-style-type: none"> • The S&S Committee oversaw the S&S vision and strategy, reviewed the 5-year strategy and annual objectives, and oversaw Nutrien’s climate risk and GHG emissions strategy and process. The S&S Committee oversaw Nutrien’s second annual ESG Report. • The Board was briefed by: the VP of Sustainability & Stakeholder Relations (SSR), regarding overall climate strategy and key considerations; the management Climate Steering Committee regarding development and phasing of the climate strategy, next steps and risk and mitigation opportunities; and, the Senior Director, Strategy, and Senior Director, Sustainability & ESG, regarding updates on key action items related to climate strategy and disclosure. <p>(2) Reviewing and guiding major plans of action:</p> <ul style="list-style-type: none"> • The S&S Committee reviewed our significant climate-related legal and regulatory developments. • The Board and S&S Committees reviewed and approved our 2030 sustainability commitments. <p>(3) Reviewing and guiding risk management policies:</p> <ul style="list-style-type: none"> • The S&S Committee reviewed policies relating to sustainability and reviewed risks (including insurance risks) related to safety, health, environment (including climate-related, physical, technological, regulatory and social risks) and security. They also provided updates on significant legal and regulatory developments. • The Board was briefed by: The Climate Steering Committee will brief S&S on key operational climate risks and mitigation actions. The Enterprise Risk Management team (ERM) updates overall corporate climate risk and mitigation. • 2020 example: ERM provided annual update on Corporate level risks and climate risks as part of year-end reporting. <p>(4) Setting performance objectives:</p> <ul style="list-style-type: none"> • The S&S Committee reviewed and approved our 2030 climate related targets and supporting emission reduction targets. <p>(5) Monitoring implementation and performance of objectives, and (6) monitoring and overseeing progress against goals and targets for addressing climate-related issues:</p> <ul style="list-style-type: none"> • The S&S Committee reviewed safety, health, environmental & security performance summaries to identify any performance issues in 2020.

Frequency with which climate-related issues are a scheduled agenda item	Governance mechanisms into which climate-related issues are integrated	Please explain
		<ul style="list-style-type: none"> The Board annually reviews all previously set climate targets with the VP of Sustainability & Stakeholder Relations (SSR), Climate Issue Teams and operational leaders. (6) Overseeing major capital expenditures: The Board reviews annual capital expenditure related to climate action in September.

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)	Responsibility	Frequency of reporting to the board on climate-related issues
Chief Executive Officer (CEO)	Other, please specify Ensures climate-related risks are being properly managed and potential opportunities evaluated, approves the overall ESG and climate-related strategy.	Quarterly
Other C-Suite Officer, please specify Executive Vice President, Chief Strategy and Sustainability Officer	Other, please specify Executive oversight of the Sustainability function, including climate	Quarterly
Other, please specify ESG & Strategic Issue Governance Committee D ¹	Assessing climate-related risks and opportunities	As important matters arise
Other, please specify Scope 1, 2 and 3 Emission Teams	Other, please specify These teams are responsible for the development, management and performance of our climate strategy.	As important matters arise

D¹Nutrien's Climate Steering Committee

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).

The Corporation's risk management process is governed by the Board and its Committees, who oversee the Corporation's executive leadership team in understanding the principal risks to our business and strategy, including climate related risks. Key executive leadership team (ELT) members and committees that play an important role in the monitoring of ESG-related risks (including climate) include:

- The CEO reports to the Board and has overall responsibility for the leadership, strategic direction and business of the Corporation including monitoring and management of climate-related risks and opportunities. In 2020, the CEO guided our climate action strategy, including 2030 commitments and supporting ESG related targets. The introduction of Nutrien's Carbon Program

was presented by the CEO at the annual Investor Day in November, 2020. As the leader of the organization, we feel it is important that the CEO provide a clear tone from the top in regards to all climate-related initiatives and drives this down through his direct reports and the organization. It is critical that the CEO believes in the strategy and provides clear support and direction to the rest of the organization's efforts to reduce our GHG emission footprint, as well as delivering the strategy externally to all key stakeholders.

- The Executive Vice President, Chief Strategy and Sustainability Officer reports directly to the CEO and has a direct link to the S&S Committee. They are a member of the ELT who provides executive oversight of the Sustainability function, including climate, and strategic vision and leadership on sustainability related issues at the executive level. This role is critical to the organization in ensuring our climate-related initiatives are developed and resourced properly by the ELT and the CEO. This position also provides direction on action being taken by the ESG & Strategic Issue Working Group and ESG & Strategic Issue Governance Committee and helps develop and monitor the climate performance objectives for the company. In 2020, this role helped lead the development of the Feeding the Future Plan and supporting emission reduction commitments and targets.
- The ESG & Strategic Issue Governance Committee is responsible for oversight of the external disclosures tied to the risk mitigation and opportunities of key material issues/risks related to ESG, including climate-related risks. In 2020, the ESG & Strategic Issue Governance Committee was formed and developed the risk assessment process for all ESG risks including climate, and approved next steps for further climate-related disclosures.
- Scope 1, 2 and 3 Emission Teams is key to the integration of ESG and the climate action strategy across the company. This team of individuals will be responsible for executing on the existing climate action plan for Scope 1-3 emission reductions over the next 10 years and into the future, interacting and guiding operations on the performance of emissions versus targets.

In 2020, Nutrien management developed our climate strategy and action plan, along with near term and 2030 commitments and Scope 1 and 2 targets to reduce emissions by 30% per tonne of product produced. Nutrien's leadership and Board estimates that \$500 million to \$700 million in capital investments will be required as part of these Scope 1 and 2 emission reduction plans. This strategy was presented publicly and we are now in the process of solidifying on proof of concept on our Scope 3 emission reduction strategy tied to our Carbon Program and executing on our Scope 1 and 2 emission reductions in our Nitrogen and Potash business units.

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	Nutrien has several ESG related issues, including climate, tied to executive compensation, and has for a period of years. In 2020, executive compensation was tied to improvement in our ESG research ratings which also includes improvement in our climate-related disclosures. We saw an approximate 20 percent year-over-year improvement in our 2020 ESG ratings with key research providers.

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
Energy manager	Non-monetary reward	Energy reduction project	The Potash and Phosphate & Nitrogen Business Units manufacture and distribute nitrogen, phosphate and

Entitled to incentive	Type of incentive	Activity incentivized	Comment
			potash feed stocks and/or upgrade products, and account for the majority of Nutrien's GHG emissions. Our annual energy costs amount to approximately \$600 million. Energy conservation, and in particular reductions in fuel consumption, across the company have a significant cost-saving potential.
Other C-Suite Officer	Monetary reward	Behavior change related indicator	Incentives for Nutrien's EVP, Chief Strategy and Sustainability Officer includes items related to ESG/climate and are in the form of compensation as part of bonus structure through achieving KPIs. Additionally, recognition as part of a career progression scheme for managing climate-related risks and opportunities for the company provides incentives.
Corporate executive team	Monetary reward	Company performance against a climate-related sustainability index	Incentives for Nutrien's ELT are in the form of compensation as part of bonus structure through achieving KPIs. Annual incentive targets are set as a percentage of salary, with actual payouts based on a performance multiplier dependent on the achievement of predetermined annual goals. In addition, for 2020, the metrics within the annual incentive have been broadened to tie a component of leadership compensation to Nutrien's ESG performance, demonstrating our focus on key ESG risks (including climate) and progress across our sustainability strategic pillars. Note this is applicable to Named Executive Officers (NEOs) only. See page 48 of Nutrien's 2020 Proxy Circular. In 2021, further metrics were added to executive compensation tied directly to achieving emission reductions by 2030 - key project milestones are to be met by the end of 2021 in order to support the reduction target.
Environment/Sustainability manager	Monetary reward	Behavior change related indicator	Incentives for Nutrien's VP of Sustainability & Stakeholder Relations and the Senior Director of Sustainability & ESG are in the form of compensation as part of bonus structure through achieving KPIs. Additionally, recognition as part of a career progression scheme for managing climate-related risks and opportunities for the company provides incentives.
Chief Executive Officer (CEO)	Monetary reward	Company performance against a climate-related	Incentives for Nutrien's CEO are in the form of compensation as part of bonus structure through achieving KPIs. Annual incentive targets are set as a percentage of salary, with actual payouts based on a performance

Entitled to incentive	Type of incentive	Activity incentivized	Comment
		sustainability index	multiplier dependent on the achievement of predetermined annual goals. In addition, for 2020, the metrics within the annual incentive have been broadened to tie a component of leadership compensation to Nutrien's ESG performance, demonstrating our focus on key ESG risks (including climate) and progress across our sustainability strategic pillars. In 2021, further metrics were added to executive compensation tied directly to achieving emission reductions by 2030 - key project milestones are to be met by the end of 2021 in order to support the reduction target.
Other, please specify VP, Environmental Performance & Innovation	Monetary reward	Emissions reduction target	Incentives for Nutrien's VP, Environmental Performance & Innovation are in the form of compensation as part of bonus structure through achieving KPIs and directly the 2030 emissions reduction target. Additionally, recognition as part of a career progression scheme for managing climate-related risks and opportunities for the company provides 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	3	Nutrien's time horizons are representative of timelines associated with our short-term climate-related targets, our medium-term 2030 commitments on emissions reduction and discussions for longer-term 2050 climate-related strategies.
Medium-term	3	10	Nutrien's time horizons are representative of timelines associated with our short-term climate-related targets, our medium-term 2030 commitments on emissions reduction and discussions for longer-term 2050 climate-related strategies.
Long-term	10	30	Nutrien's time horizons are representative of timelines associated with our short-term climate-related targets, our medium-term 2030 commitments on emissions reduction and discussions for longer-term 2050 climate-related strategies.

C2.1b

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

When identifying or assessing a Key Risk or climate-related risks, a substantive financial or strategic impact is defined as a significant negative impact or effect on the company's financial position, reputation, or safety, health and environment. For financial impacts, Earnings Before Interest, Tax, and Depreciation and Amortization (EBITDA) is used as a key quantifiable indicator. Financial impact may be assessed at the corporate level and/or at the individual business unit level, depending on the nature of the climate-related risk. Reputation impacts are based on a number of factors with the key drivers being stakeholder attention/concern, effect on corporate value and credit ratings. SH&E impacts are based on the safety and health of our people and communities, and the level of environmental impacts. We characterize a Key Risk as a risk or combination of risks that could threaten the achievement of our vision and ability to deliver on our strategy. We evaluate and develop responses for those risks that could have a significant safety and health, environmental, financial or reputational impact.

C2.2

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

Value chain stage(s) covered

Direct operations
Upstream
Downstream

Risk management process

Integrated into multi-disciplinary company-wide risk management process

Frequency of assessment

Annually

Time horizon(s) covered

Short-term
Medium-term
Long-term

Description of process

Nutrien identifies and assesses climate-related risks and opportunities as part of our enterprise risk management (ERM) process, which is supplemented by our ESG & Strategic Issue Governance Committee. This Committee is also involved in the escalation of climate-related risks and opportunities.

Our approach to risk management is guided by the COSO Enterprise Risk Management Framework (2017) and ISO 31000 Risk Management Guidelines. When considering ESG and climate-related risks, we also look to COSO's guidance on Applying Enterprise Risk Management to ESG-Related Risks and cross-reference our identified risks with SASB Chemicals and Metals and Mining Sustainability Accounting Standards along with TCFD recommendations. Risk management is governed by our Board and Board committees, who oversee our Executive Leadership Team in understanding the principal risks to our business, including ESG and climate-related risks. The Safety & Sustainability (S&S) Committee has responsibility for overseeing our

general strategy and policies relating to sustainability matters such as climate change-related risks and opportunities. The S&S Committee met four times in 2020. The ESG & Strategic Issue Governance Committee is responsible for annually assessing existing climate-related risks and opportunities, in conjunction with our annual enterprise risk management process, and revising these accordingly through the defined process described below.

We characterize a substantive impact as a significant negative impact on the company's financial results, reputation, or safety, health and environment. The combination of impact and likelihood assist in determining the level of acceptable risk and how that risk or opportunity is managed or retained. Our 2020 ESG material topic analysis involved identifying material ESG topics through megatrends analysis, stakeholders reputation surveys, materiality frameworks such as SASB (and the use of its Five Factor Test), Enterprise Risk Management (ERM) risks, digital stakeholder monitoring and ESG research and ratings. We cross-referenced these topics with our internal risk registry, developed through our ERM process, to ensure that Nutrien's principal ESG topics have been considered and that our risk management process is informed by this materiality assessment. We classify our material topics into three levels to reflect the degree of associated risk and the amount of coverage in Nutrien's ESG Report. Each topic includes a number of subtopics and related metrics. Level 1 topics represent our most significant ESG-related risks and opportunities. Level 1 topics are based on risks that can have broad impact on financial performance, operations, reputation or have legal implications and/or are of significant interest to stakeholders and opportunities for Nutrien for which we expect to set targets. Level 2 topics have significant environmental or social impact resulting from our operations and/or of high interest to stakeholders, lenders and potential investors. Level 3 topics are additional or emerging topics where interest or impact are increasing and/or requested by frameworks or rating agencies but may not represent significant risks or opportunities. Nutrien also uses climate-related impact scenario analysis on transitional and physical risks related to climate change for preliminary qualitative review. Validation of ESG and climate-related risks takes place at our strategic climate issue teams, reviewed by our ESG & Strategic Issues Working Group and approved by the ESG & Strategic Issues Governance Committee.

Case studies in how our process is applied to (1) physical and (2) transition risks:

(1) Our customers are impacted by changing weather patterns and more challenging growing conditions. These adverse conditions can delay or intermittently disrupt fieldwork during the planting and growing seasons, which may shift or reduce demand for the crop nutrients and crop protection products that we sell. In extreme cases, adverse or unexpected weather may impede farmers from applying crop nutrients and crop protection products until the following growing season or, in some cases, altogether, resulting in lower demand for our products and reduced revenues, as well as costs related to excess inventory. Changing weather patterns can also have an adverse effect on growing conditions (for example, water scarcity) and crop yields, which could lower the income of growers and impair their ability to purchase our crop nutrients, crop protection, seed products and services. Selecting suitable products and seed is becoming more complicated with changing weather conditions and the proliferation of highly specialized products for each condition. To help mitigate this risk we use forecast weather and agronomic information (crop physiology, soil characteristics, pest and disease impact) to provide growers with advice on grower practices and which products to apply, based on current and predicted conditions.

(2) We monitor policy and regulatory changes, technology costs, and potential changes in consumer behavior as potential risks during the transition toward a low-carbon economy. We are considering, and working to mitigate, the following transitional risks:

Canada's federal Greenhouse Gas Pollution Pricing Act has two parts: a federal fuel charge per

tonne of CO₂e, and a trading system for large industrial emitters, known as the output-based pricing system (OBPS). The federal fuel charge does not impact our Alberta nitrogen facilities or Saskatchewan potash operations as they are regulated under the provincial programs accepted as equivalent by the federal government large emitter program. The program for large emitters is different in each province:

All four of our nitrogen production facilities in Alberta (Carseland, Fort Saskatchewan, Joffre and Redwater) are subject to compliance reporting and carbon pricing. Three have been in the emitter program since 2007 applying to industrial facilities that emit more than 100,000 tonnes of CO₂e per year. Industrial emitter programs set emission intensity benchmarks that facilities must meet in one of three ways: emissions reductions; obtaining tradeable emissions performance or offset credits for emissions over the benchmark; or payment into a compliance fund. The Alberta carbon price for compliance fund credits for large emitters in 2020 was CAD\$30 per tonne CO₂e. The carbon price is now CAD\$40 in 2021 and will be CAD\$50 in 2022 in accordance with the federal benchmark.

We are also monitoring the Saskatchewan government's Prairie Resilience climate strategy which is relevant to all six of our potash mines. This provincial program targets facilities emitting over 25,000 tonnes of CO₂e annually and the provincial performance standard for the potash industry is based on achieving a 5 percent emissions intensity reduction by 2030 from a facility-specific three year average baseline.

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	<p>Current regulation transition risk is relevant to our assessment as we are subject to numerous federal, state, provincial and local environmental, health and safety laws and regulations, including laws and regulations relating to land, water and raw material use and management; the emission of contaminants to the air or water; land reclamation; the generation, treatment, storage, transportation, disposal and handling of hazardous substances and wastes; the clean-up of hazardous substance releases; and the demolition of existing plant sites upon permanent closure.</p> <p>We incur significant costs and associated liabilities in connection with these laws and regulations. There are substantial uncertainties as to the nature and timing of any future regulations with many of the laws and regulations continuing to become increasingly stringent, and the cost of compliance can be expected to increase over time. New or revised laws or regulations may result from pressure on law makers and regulators to address climate change, transition to a low-carbon economy or to address concerns related to fertilizer and food prices, accidents, terrorism or transportation of potentially hazardous substances. Increased or more stringent regulations, if enacted, could impact our ability to produce or transport certain products, increase our raw material, energy, transportation, and compliance costs, reduce our efficiency, require us to make capital improvements to our facilities and have a negative effect on our customer satisfaction, reputation and financial performance. To the extent that such regulations are not imposed in the countries where our competitors operate or are less stringent than regulations that may be imposed in the US, Canada or the other jurisdictions in which we operate, our competitors may have a cost or other competitive advantages over us.</p>

	Relevance & inclusion	Please explain
		<p>For example the Canadian federal government is currently conducting consultations with stakeholders to implement a federal Clean Fuel Standard that will apply to liquid fuels beginning in 2022 and gaseous fuels beginning in 2023. This standard will be designed to incentivize the development and use of lower carbon fuels. Nutrien is tracking development of the standard and will remain engaged through the consultation process.</p>
Emerging regulation	Relevant, always included	<p>Emerging regulation transition risk is relevant to our assessment as Nutrien generates GHG emissions directly and indirectly through the production, distribution and use of its products. These emissions may be subject to climate change policies and regulations, all of which are developing in unique ways within various federal, provincial and state jurisdictions. Increasing regulation of GHGs may impact our operations by requiring changes to our production processes or increasing raw material, energy, production or transportation costs in order to ensure compliance. There are also significant differences in the climate change policies of countries where Nutrien operates as some are parties to the Paris Agreement, negotiated in December 2015, under the United Nations Framework Convention on Climate Change, and some are not.</p> <p>For example , in the US, the US Environmental Protection Agency ("EPA") has issued GHG emissions regulations that establish a reporting program for emissions of CO2, methane and other GHGs, as well as a permitting program for certain large GHG emissions sources. We are also tracking development in climate action in the US under President Joe Biden's Administration as the EPA has reengaged on climate-related issues and the US is now in full support of the Paris agreement. The potential impact on the Company cannot be determined at this time though. Apart from federal regulation of GHGs, some US states have also enacted laws concerning GHG emissions that we are monitoring for impacts on our operations.</p> <p>The impacts of climate change and future restrictions on emissions of GHGs on the Company's operations could be material but cannot be determined with any certainty at this time.</p>
Technology	Relevant, always included	<p>Technology transition risk is relevant as the agriculture and food systems are undergoing rapid, complex, and disruptive technological changes. Individuals and businesses have access to unprecedented amounts of data and information. The advancement and adoption of technology and digital innovations in agriculture and across the value chain has increased and is expected to further accelerate as grower demographics shift and pressures from consumer preferences, governments and climate change initiatives evolve.</p> <p>For example, the development of seeds that require less crop nutrients, development of full or partial substitutes for our products or developments in the application of crop nutrients such as improved nutrient use or efficiency through use of precision agriculture could also emerge, all of which have the potential to adversely affect the demand for our products and results of operations, or create new opportunities for us and our competitors to engage growers with.</p> <p>Further risks include new digital services being offered by Nutrien Ag Solutions for growers online necessitate more digital interactions. The increasing need for improved data and supportive technological infrastructure requires rapid development, implementation and end-user uptake.</p>
Legal	Relevant, always included	<p>Legal transition risk is relevant as many of our operations and facilities are subject to a variety of regulatory requirements, permits and approvals, all of which vary depending on the operation in question. Licenses, permits and approvals at operating sites are obtained in accordance with</p>

	Relevance & inclusion	Please explain
		<p>applicable laws and regulations, which may limit or regulate: operating conditions, rates and efficiency; land, water and raw material use and management; product storage, quality and transportation; waste storage and disposal; and emissions and other discharges.</p> <p>For example with respect to air emissions, we anticipate that additional actions and expenditures may be required to meet increasingly stringent federal, provincial and state regulatory and permit requirements in the areas in which we operate, including existing and anticipated regulations under the US federal Clean Air Act. We continue to monitor developments in these various programs and assess their potential impact on our operations. The calciners at our Aurora, North Carolina phosphoric acid plant are subject to mercury emission limits adopted by the EPA in 2015, which do not reflect actual emissions during normal operations. The EPA published a final rule on November 3, 2020 that addresses this issue and removes the need for the state consent order under which the calciners have been operating. In 2015, we entered a consent decree that requires reductions in sulfur dioxide emissions at specified sulfuric acid plants with the final compliance dates occurring at the beginning of 2020. All such emission limits have been met by the dates specified in the consent decree schedule.</p>
Market	Relevant, always included	<p>Market risk is relevant as changing market fundamentals and global macroeconomic conditions could lead to a low crop price environment and reduced demand for our products or increased prices or decreased availability of raw materials used in making our products. We are exposed to various market factors that may impact our operating results including: changes in the price of, or ability to source, raw materials and energy, which could, among other things, impact our gross margins and profitability; commodity price volatility, including the possibility of asset impairment as a result thereof; currency volatility and risk, including as a result of the translation of foreign subsidiaries' financial statements to US dollars for consolidation at the Nutrien level; and fluctuations in interest rates which could negatively impact our financial results given our use of floating rate debt, floating rate credit facilities and commercial paper, as well as the refinancing of long-term debt and anticipated future financing needs. We seek to manage a portion of the risks relating to changes in commodity prices and foreign currency exchange rates by using derivative instruments; however, such instruments may be ineffective in fully mitigating such risks.</p> <p>For example changes in the price of raw materials and energy required to produce our products, including natural gas, which is the principal raw material used to manufacture our nitrogen products and a significant energy source in the potash milling and mining process, could have a material impact on our business. The price of raw materials and energy can fluctuate widely for a variety of reasons, including changes in availability because of additional capacity or limited availability due to curtailments, regulatory changes, including changes related to production of certain raw materials or energy sources, or other operating problems.</p> <p>Market risk could be impacted by climate-related issues as there is potential for production and or supply chain issues, leading to various impacts on food availability and purchase prices. These directly can impact overall market demand and shifts in agricultural production mix.</p>
Reputation	Relevant, always included	<p>Reputation is relevant as its one of the key criteria we use to assess our climate-related and ESG-related risks. Further our stakeholders, which consist of shareholders, customers, employees, suppliers, global and indigenous communities and governments, among others, may place an increasing importance on the structure of our business, our ability to execute on our strategy and our core sustainability and social</p>

	Relevance & inclusion	Please explain
		<p>responsibilities. Under performance due to weak market fundamentals or business issues, inadequate communication, engagement and/or collaboration with our stakeholders, inadequate management of climate change issues, or dissatisfaction with our practices or strategic direction may lead to a lack of support for our business plans.</p> <p>For example, loss of stakeholder confidence could impair our ability to execute on our business plans, negatively impacts our ability to produce or sell our products and may also lead to reputational and financial losses, or shareholder action.</p>
Acute physical	Relevant, always included	<p>Acute physical risks are relevant as they can have significant impacts on our customers and our operations/facilities.</p> <p>Our customers are impacted by changing weather patterns and more challenging growing conditions. These adverse conditions can delay or intermittently disrupt fieldwork during the planting and growing seasons, which may shift or reduce demand for the crop nutrients and crop protection products that we sell. In extreme cases, adverse or unexpected weather may impede farmers from applying crop nutrients and crop protection products until the following growing season or, in some cases, altogether, resulting in lower demand for our products and reduced revenues, as well as costs related to excess inventory. Changing weather patterns can also have an adverse effect on growing conditions (for example, water scarcity) and crop yields, which could lower the income of growers and impair their ability to purchase our crop nutrients, crop protection, seed products and services. While changing weather patterns may create more challenges in some regions globally, other areas may have opportunity to capitalize on new crops not previously possible. This will require flexible and adaptive services and distribution networks for our grower customers.</p> <p>Nutrien's sites and facilities can be impacted by weather-related risks, including hurricanes and floods, tornadoes and cyclones, wildfires and increased precipitation or snow melt. For example, Nutrien's phosphate operations in Aurora, NC and White Springs, FL are in hurricane zones and they have hurricane preparedness plans. A large portion of the Gulf of Mexico and the US east coast, where we have Retail facilities, are also in hurricane zones. We have hurricane preparedness plans for all Retail locations in these areas. The plans cover procedures for securing the facility and ordering supplies prior to, during, and after the storm event.</p> <p>Weather-related risks are treated like any other risk to our assets. We evaluate acute and chronic weather changes for physical risks to our sites and facilities. We maintain risk registers and emergency response plans at both the enterprise and site level, including appropriate insurance coverage for possible damage to facilities and business interruption. While climate-related physical impacts pose a risk to our overall business, they are minimal due to our broad geographical distribution of assets.</p>
Chronic physical	Relevant, always included	<p>Chronic physical risks are relevant as they can impact the agriculture sector and our operations/facilities. The prospective impact of climate change on our operations and those of our customers and farmers remains uncertain. The impacts of climate change include changing rainfall patterns, water shortages, wildfires, rising sea levels, changing storm patterns and intensities, and increasing temperature levels. These impacts vary by geographic location and the risk relating to the impact of climate change could include chronic risks resulting from longer-term changes in climate patterns.</p> <p>For example, water stress and water scarcity is a risk to our facilities and our customers. Climate change is linked to persistent drought conditions in many regions of the world. The resulting water scarcity and related</p>

	Relevance & inclusion	Please explain
		challenges of managing and sharing existing water resources makes efficient industrial water management especially critical in these areas.

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

Primary potential financial impact

Increased direct costs

Company-specific description

Current and increasing regulation of GHGs may impact our operations by requiring changes to our production processes or increasing raw material, energy, production or transportation costs in order to ensure compliance. The regulation of GHG emissions could also result in additional costs to Nutrien in the form of taxes, emission allowances or other carbon pricing mechanisms. In addition, the regulation of GHG emissions may cause increased input costs and compliance-related costs for agricultural customers, which could result in lower demand for our products and reduced revenues.

Sources of GHGs from our production operations include emissions from the reforming of natural gas to produce hydrogen, which is used to synthesize ammonia, as well as process emissions from some of our nitric acid plants. The CO₂ emissions related to this chemical process cannot be economically abated with currently available technologies. We have developed strategies to attempt to improve energy efficiency in our production operations, to capture and store carbon, and to reduce the amount of nitrous oxide ("N₂O") emissions from our nitric acid facilities. Our new comprehensive Carbon Program empowers growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts.

Our Canadian manufacturing facilities are primarily located in the provinces of Alberta and Saskatchewan and are subject to a variety of federal and provincial requirements to reduce GHG emissions ranging from carbon taxes to emissions-intensity reduction requirements. The GGPPA Federal Fuel Charge backstop was implemented in Alberta in January 2020. Currently, Ontario, New Brunswick, Manitoba, Saskatchewan, Alberta, Yukon and Nunavut have the Federal Fuel

Charge in place, while the other provinces and territory have provincial/territorial fuel levies. The federal OBPS currently applies in Ontario, New Brunswick, Manitoba, Prince Edward Island, Saskatchewan (for electricity generation and natural gas transmission only), Yukon and Nunavut, while the other provinces and territory have provincial/territorial systems that have been deemed equivalent to the federal OBPS.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Low

Are you able to provide a potential financial impact figure?

Yes, an estimated range

Potential financial impact figure (currency)
Potential financial impact figure – minimum (currency)

500,000

Potential financial impact figure – maximum (currency)

3,000,000

Explanation of financial impact figure

(Potential financial impact figures above are annual.) The provincial framework that will create a credit trading system and provincial technology fund for meeting emission compliance obligations is still under development; however, our aggregated potash compliance obligation for the 2019 emission year is estimated to be immaterial based on a Federal Fuel Charge of CAD\$20 per CO₂e tonne in 2019. For 2020, our aggregated potash compliance obligation is estimated to be minimal based on a Federal Fuel Charge of CAD\$30 per CO₂e tonne in 2020. In accordance with the GGPPA backstop, the Federal Fuel Charge will increase to CAD\$40 per CO₂e tonne in 2021. In Alberta under the CCIR, our aggregated 2019 emission compliance costs for our Alberta regulated facilities were approximately \$3 million. On January 1, 2020, the Alberta government replaced the CCIR with the Technology Innovation and Emissions Reduction Regulation (“TIER”). TIER was designed to meet federal GGPPA carbon standards with a carbon price of CAD\$30 per CO₂e tonne in 2020. By aligning with the federal carbon standard for emission compliance, large emitting facilities are not subject to the Federal Fuel Charge. In November 2020, the Alberta government issued a Ministerial Order that increased the TIER carbon price to CAD\$40 per CO₂e tonne in 2021, ensuring continued alignment with the federal GGPPA carbon price through 2021. The Alberta government has not yet committed to an increased carbon price of CAD\$50 per CO₂e tonne for 2022 to maintain alignment with the GGPPA. We anticipate our compliance costs to increase in the medium to long-term from 2020 levels.

Cost of response to risk

50,000,000

Description of response and explanation of cost calculation

We have several projects underway that are expected to reduce the carbon footprint of our nitrogen operations. Construction began on abatement projects totalling approximately \$50 million (one-time cost), that are expected to reduce CO₂ equivalent emissions by over 1 million tonnes by the end of 2023. Further, we have several other projects that will reduce our overall emission

intensity.

We attempt to minimize our Canadian compliance costs through the implementation of various efficiency and emissions reduction projects, including: overall efforts to increase operational efficiency; operating a cogeneration facility in partnership with TransCanada Energy Ltd., a subsidiary of TC Energy Corporation, at Carseland, Alberta that captures waste heat and produces emission offset credits; and operating a cogeneration facility in partnership with SaskPower at our Cory, Saskatchewan potash mine that captures waste heat and provides all of the mine's steam requirements. We have also partnered with Enhance Energy Inc. to supply CO₂ from the Redwater nitrogen facility to the Alberta Carbon Trunk Line to be captured and used for enhanced oil recovery in Central Alberta. The project began its first CO₂ injection in December 2019 and operated throughout 2020. The Redwater facility sent approximately 165,000 tonnes of CO₂ to the Alberta Carbon Trunk Line in 2020.

Comment

We estimate capital investment requirements in the range of \$500 million to \$700 million to achieve our targeted Scope 1 and 2 emission intensity reduction of 30 percent from 2018 baseline emissions by 2030.

Identifier

Risk 2

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Chronic physical

Changes in precipitation patterns and extreme variability in weather patterns

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

Our grower customers are impacted by changing regional weather factors, primarily increasing temperatures and volatile precipitation, which can impact growing conditions and crop mix, lowering the income of growers and impairing their ability to purchase our crop nutrients, crop protection, seed products and services.

Adverse conditions, including as a result of climate change, that can delay or intermittently disrupt fieldwork during the planting and growing seasons may cause agricultural customers to use different forms of crop nutrients and crop protection products, which may adversely affect demand for the forms of products that we sell or may impede farmers from applying our crop nutrients and crop protection products until the following growing season, or in some cases not at all, resulting in lower demand for our products and reduced revenues. In addition, we face the significant risk and cost of continuing to carry inventory should our customers' activities be curtailed during their normal application seasons. We must manufacture and distribute product throughout the year in order to meet peak season demand, as well as react quickly to unexpected changes in weather patterns that affect demand. Weather can also have an adverse effect on crop yields, which could lower the income of growers and impair their ability to purchase our crop nutrients, crop protection, and seed products and services.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Cost of response to risk

0

Description of response and explanation of cost calculation

There are no significant direct response costs. Our full-service offering, continued investment in technology, and integrated digital platform position our Retail business as a leader in agricultural solutions for growers. Key initiatives include: our Carbon Program, grower pilot projects for sustainable products and soil health, weather expertise to help adapt to changing global climate, agronomic services and our digital analytics. In addition, simplified access to the right financial products has a role in helping growers endure difficult years and unanticipated climate-related events. We offer flexible financing solutions to our US customers in support of Nutrien Ag Solutions agricultural product and service sales and provide grower credit through Nutrien Financial.

Comment

Identifier

Risk 3

Where in the value chain does the risk driver occur?

Downstream

Risk type & Primary climate-related risk driver

Market
Changing customer behavior

Primary potential financial impact

Decreased revenues due to reduced demand for products and services

Company-specific description

As the globe transitions to lower-carbon options for all consumer products including food, it is expected that growers could potentially be impacted by key stakeholder expectations for changing growing practices and crop inputs used. The main sources of environmental impacts related to the application of crop inputs at the farm level are: (1) Emissions to atmosphere: Denitrification and volatilization are the reduction of soil nitrate to nitrogen gases such as N₂O and loss of nitrogen to the atmosphere as ammonia gas, primarily from urea-based fertilizers; (2) Loss to water: When fertilizers containing nitrogen and phosphorus are improperly applied to crops, some nutrients may leach into groundwater or reach surface water by runoff; and (3) Impacts to land: Growing healthy crops is one of the best ways to maintain soil health on farmland. Nutrients in excess or deficit can weaken crops and reduce yields.

The advancement and adoption of technology and digital innovations in agriculture and across the value chain have increased and are expected to further accelerate as grower demographics shift and pressures from consumer preferences, governments and climate change initiatives evolve. The development of seeds that require less crop nutrients, development of full or partial substitutes for our products, or developments in the application of crop nutrients such as improved nutrient use or efficiency through use of precision agriculture could also emerge, all of which have the potential to adversely affect the demand for our products and results of operations.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

A potential financial impact figure is not available

Cost of response to risk

100,000,000

Description of response and explanation of cost calculation

In 2020, Nutrien spent approximately \$100M in Research & Development ("R&D") in areas that include, but are not limited to: Environmentally Smart Nitrogen, nitrogen inhibitors and stabilizers, Smart Nutritional MAP+MST, plant biostimulants and biological pesticides, adjuvants and seed innovation.

In response to a transitions to lower-carbon options, reducing the environmental impacts from the agricultural products we manufacture and sell is one way we can help our customers manage the increasing environmental and societal pressures they face. We continue to offer growers products

and technologies with a lower environmental impact and facilitate the adoption of agronomic best practices. Key initiatives to support our growers to be more resilient to the transition include our Carbon Program, whole-acre sustainable products and services, digital tools for decision support, and Nutrien Financial services.

To advance our sustainable products, our R&D teams focus on innovative solutions for nutrient efficiency, micronutrient deficiency, crop quality, sustainability and yield enhancement. Each R&D project meets the following criteria: (1) Superior Science: Technologies originated and advanced within our portfolio offer unique combinations of chemistry, biologicals, genetics or traits; (2) Differentiated Functionality: Products developed and commercialized have features and functionality differentiated from those of existing solutions; and (3) Sustainable Agriculture: Technologies and products increase input efficiency, minimize nutrient loss, reduce environmental impact, and/or improve production agriculture and food safety

Comment

Identifier

Risk 4

Where in the value chain does the risk driver occur?

Direct operations

Risk type & Primary climate-related risk driver

Emerging regulation
Carbon pricing mechanisms

Primary potential financial impact

Increased direct costs

Company-specific description

Emerging regulation related to GHGs may impact our operations by requiring changes to our production processes or increasing raw material, energy, production or transportation costs in order to ensure compliance. The regulation of GHG emissions could also result in additional costs to Nutrien in the form of taxes, emission allowances or other carbon pricing mechanisms. In addition, the regulation of GHG emissions may cause increased input costs and compliance-related costs for agricultural customers, which could result in lower demand for our products and reduced revenues.

Related to our US operations, the EPA has issued GHG emissions regulations that establish a reporting program for emissions of CO₂, methane and other GHGs, as well as a permitting program for certain large GHG emissions sources. Beyond that, there is uncertainty regarding full implications of new or amended federal GHG regulations in the US under the current presidential administration. There is the potential for some movement on US Federal Climate policy during the current presidential administration, but the scope of any legislation will depend heavily on the ability to pass such legislation through the US House and Senate. As such, the potential impact on the Company cannot be determined at this time. Apart from federal regulation of GHGs, some US states have also enacted laws concerning GHG emissions that we are monitoring for impacts on our operations.

The Canadian federal government is also currently conducting consultations with stakeholders to implement a federal Clean Fuel Standard that will apply to liquid fuels beginning in 2022 and

gaseous fuels beginning in 2023. This standard will be designed to incentivize the development and use of lower carbon fuels. Nutrien is tracking development of the standard and will remain engaged through the consultation process.

The impacts of climate change and future restrictions on emissions of GHGs on the Company's operations could be material but cannot be determined with any certainty at this time.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

The impacts of climate change and future restrictions on emissions of GHGs on the Company's operations could be material but cannot be determined with any certainty at this time.

Cost of response to risk

500,000,000

Description of response and explanation of cost calculation

In the medium to long-term, by reducing our emissions, we can decrease carbon taxes paid or potentially decrease the risk of any other emerging regulatory action against GHG emitters. We will do this through emission reduction initiatives that will support our targeted reduction of Scope 1 and 2 GHG emissions intensity by 30 percent by 2030, compared to our 2018 baseline, and committing to SBTi targets and engaging in the development of a sectoral decarbonization approach (or "SDA" method) for target setting. To achieve our 30 percent operational emission intensity target, we estimate capital investment requirements in the range of \$500 million to \$700 million by 2030, with most projects meeting our minimum return requirements without a significant cost of carbon assumption.

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?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

Self / Co-generation of electricity and steam within our nitrogen and potash production operations:

Generating lower-carbon energy is one of the ways we can reduce our energy-related Scope 2 emissions. We have two cogeneration projects that efficiently combine heat and power generation. These facilities use natural gas to generate electricity using an efficient gas turbine, and waste heat from the exhaust is recovered to make valuable steam. The emissions reduction is significant as we are eliminating the requirement for coal-fired grid power to our facilities and associated transmission and distribution losses of electricity over long distances.

At our Carseland, AB facility, we partner with TC Energy Corporation to generate steam for our operations from waste heat from their natural gas-fired power plant. This efficient process offsets the requirement for a natural gas boiler to be fired at our site. We use more than 75 percent of the electricity generated, which has a significantly lower emissions intensity than grid electricity.

At our Cory Potash mine in Saskatchewan, we consume steam from a SaskPower cogeneration facility, reducing some of our natural gas requirements. Further, Nutrien is constructing a natural gas facility at our Rocanville, SK Potash mine site that is expected to meet the majority of that facility's power demand with lower-emission electricity than available from the grid. It is being designed to provide us with steam, offsetting a portion of the steam supply we currently generate using gas-fired boilers. The Rocanville cogeneration facility is expected to be commissioned in mid-2022 with the addition of cogeneration expected as early as 2023.

Time horizon

Short-term

Likelihood

Likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)**Potential financial impact figure – minimum (currency)****Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

Financial impact not known at this time as we are currently working through several opportunities for self/ co-generation projects.

Cost to realize opportunity**Strategy to realize opportunity and explanation of cost calculation**

There are several opportunities for Nutrien to partner with other industry peers to provide supportive byproducts in manufacturing processes, as well as internal projects that enhance cost effective electricity supply that is lower than grid supply while also reducing natural gas fired boiler operations. Prime example of this is our cogeneration facility at Carseland, Alberta. The cogeneration plant, owned by TC Energy, recovers waste heat from their power generation process to produce steam for our facility. This enables us to reduce the amount of steam we need to generate in natural gas boilers, thus lowering GHG emissions. Nutrien is currently working through our self/ co-generation opportunities and their financial impacts. Nutrien is currently reviewing projects at our Rocanville, Lanigan and Allan, SK, potash mines and other Nutrien facilities.

Comment

The overall impact of this opportunity reduces the use of energy intensive processes within our operations, thereby reducing operating costs. At the same time, these opportunities reduce emissions from facilities and attributed carbon taxes in Alberta, Canada at approximately CDN\$50/mt by 2022. These opportunities will support our commitment to achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced, from a baseline year of 2018, as well as our target to reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023. We are proactively accelerating the expected decarbonization of the grid by investing in self/co-gen and preserving optionality to utilize carbon capture technology to improve reduce emissions even further in the future.

Identifier

Opp2

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Use of more efficient production and distribution processes

Primary potential financial impact

Reduced direct costs

Company-specific description

Energy efficiency projects through brownfield facility expansions and technological investment:

Nitrogen: The majority (more than two-thirds) of our natural gas consumption is as hydrogen feedstock to produce hydrogen in our nitrogen operations. The remaining one third is used as fuel to provide heat and energy required for the ammonia production process. We continue to seek opportunities to improve our energy efficiency, which also helps to reduce our emissions and operating costs. Nutrien has developed a comprehensive list of energy efficiency projects across the entire nitrogen business that will be developed into an energy efficiency improvement plan in 2021. Nutrien plans to execute two projects in 2021 that will have an impact on energy efficiency.

Potash: Approximately 40 percent of Nutrien's total Scope 2 emissions are related to electricity consumption at our potash operations. Electricity to power equipment for potash processing represents approximately 15 percent of Nutrien's potash production costs. This is a significant cost and source of energy consumption, and we are evaluating options to reduce energy consumption, as well as renewable energy opportunities as described below.

Time horizon

Medium-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact not known at this time as we are currently working through several opportunities for energy efficiency projects.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

There are opportunities through nitrogen plant brownfield expansions and technological improvements that result in better energy efficiency, lower natural gas coefficients and lower GHG intensity per tonne of ammonia production. One such recent project was completed at Geismar, Louisiana in 2019, resulting in 0.9% lower GHG intensity per tonne of ammonia produced. At this

time, we are considering similar projects of varying degrees of size and within our nitrogen, potash and phosphate production assets.

Comment

Energy efficiency projects focus on improving the amount of energy consumed per tonne of product produced, thereby reducing not only overall total GHG emissions but the GHG intensity per tonne as well - effectively reducing carbon tax expense and input energy costs. These opportunities will support our commitment to achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced, from a baseline year of 2018. We also have a supportive target to abate one million tonnes of GHG emissions in nitrogen production from a specific suite of projects by the end of 2023.

Identifier

Opp3

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Carbon capture, utilization and storage (CCUS) provides another technical option for reducing GHG emissions:

CCUS provides another technical option for reducing GHG emissions. Captured CO₂ can be used for enhanced oil recovery ("EOR"), a process where CO₂ is permanently injected into underground geological formations to maximize recovery and extend the life of oil reservoirs. Nutrien participates in two such projects at our Redwater, AB and Geismar, LA facilities. In 2020, our Geismar facility captured and diverted 270,000 tonnes of CO₂ from the atmosphere. Our Redwater facility started capturing previously vented CO₂ in December 2019 for injection into the Alberta Carbon Trunk Line. The Redwater facility sent approximately 167,000 tonnes of CO₂ to the Alberta Carbon Trunk Line in 2020. [Learn more about the Alberta Carbon Trunk Line project.](#)

At our Joffre, AB Nitrogen facility, hydrogen is acquired from a nearby industrial producer as a byproduct. Since 1987, we have been sourcing hydrogen directly from a neighboring company, allowing us to eliminate the GHG-intensive step of processing natural gas into hydrogen. This results in an estimated 15 to 20 percent lower GHG intensity per tonne of product compared to a typical steam methane reforming ammonia facility. There are no direct emissions as hydrogen is input directly into the synthesis loop of the production process for ammonia.

As of December 31, 2020, Nutrien has annual production capability for approximately 1 million tonnes of blue/low-carbon ammonia at our Geismar, Redwater and Joffre nitrogen facilities.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)**Potential financial impact figure – minimum (currency)****Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

Financial impact not known at this time as we are currently working through several opportunities for further carbon capture and resale projects.

Cost to realize opportunity**Strategy to realize opportunity and explanation of cost calculation**

Capture CO₂ for resale opportunities exist at our Augusta, GA, Borger, TX, Geismar, LA, Lima, OH, Trinidad and Redwater, AB facilities. Our nitrogen fertilizer facilities produce pure CO₂ that can be reused in many applications. We capture and sell a portion of this CO₂ for industrial applications, turning a waste stream into a useful product. Another portion of the CO₂ is sold for enhanced oil recovery. At our Redwater, AB facility we are currently capturing 167,000 tonnes of CO₂ in 2020. This opportunity is one of our largest and most promising opportunities for strategic emission reduction.

Comment

Carbon capture projects are focused on sending process CO₂ to other organizations for use in other manufacturing processes, generating resale revenue and credits for Nutrien. These opportunities will support our commitment to achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced, from a baseline year of 2018, as well as our target to reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023.

Identifier

Opp4

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Resource efficiency

Primary climate-related opportunity driver

Other, please specify

Use of N₂O catalyst technologies in the manufacturing process and reliability improvements

Primary potential financial impact

Reduced direct costs

Company-specific description

Process improvements: Nitric acid production N₂O emissions abatement projects and reliability improvements:

N₂O abatement: N₂O is a byproduct of nitric acid production. Because one tonne of N₂O is equivalent to 298 tonnes of CO₂, reductions in N₂O have the potential to significantly reduce GHG emissions. Nutrien has begun the process to install or upgrade N₂O abatement technology at every nitric acid facility, subject to technical limitations, and we are already abating emissions at our Redwater, AB, Geismar, LA and Augusta, GA nitrogen facilities. This technology is expected to remove up to 90 percent of N₂O emissions from nitric acid production. With identified N₂O projects at other facilities, we are aiming to incrementally reduce emissions associated with nitric acid production by up to 1 million tonnes of CO₂e annually by end of 2023. The investment in N₂O abatement is the highest impact, lowest cost avenue for material GHG emission reduction.

Reliability improvements: Reliability and plant turnaround schedules are important to our GHG emissions profile because plant start-ups and shutdowns result in higher GHG emissions compared with normal, continuous operations. This is particularly relevant in the case of our nitrogen facilities since production interruptions result in non-routine process gas venting.

Time horizon

Medium-term

Likelihood

Likely

Magnitude of impact

Medium-high

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact not known at this time as we are currently working through several opportunities for further N₂O abatement projects.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

We are evaluating N₂O catalyst technologies that could remove up to 90 percent of N₂O emissions from our nitric acid production. We are currently evaluating projects at our Kennewick,

WA, Augusta, GA, Lima, OH and Geismar, LA, nitrogen facilities. Opportunities in N₂O abatement are among the most impactful emissions reduction projects Nutrien can execute and will be instrumental in our targeted reduction of one million tonnes of CO₂e by the end of 2023 from a specific suite of projects.

Comment

N₂O abatement projects focus on investments to reduce emissions; however, they have no impact on our carbon tax as one does not exist in the US. These opportunities will support our commitment to achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced, from a baseline year of 2018, as well as our target to reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023.

Identifier

Opp5

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development and/or expansion of low emission goods and services

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

The sale of environmentally smart products and services:

Reducing the environmental impacts from the agricultural products we manufacture and sell is one way we can help our customers manage the increasing environmental and societal pressures they face. To lead the next wave of sustainability in agriculture, we are offering growers products and technologies with a lower environmental impact and facilitating the adoption of agronomic best practices.

The global need to feed a growing population while minimizing the environmental impacts of agriculture is an opportunity for Nutrien to provide the right technological solutions for growers' most pressing challenges: maximizing nutrient use efficiency, minimizing nutrient loss, and increasing crop quality and yields.

One of the main sources of emissions to air related to the application of fertilizers at the farm level is denitrification. When nitrogen is applied, it is subject to natural microbial conversion in the soil, or denitrification, which converts nitrogen to N₂O, a potent GHG (one tonne of N₂O is equivalent to 298 tonnes of CO₂). Another contributor to emissions is volatilization, which is the loss of nitrogen to the atmosphere as ammonia gas. In certain conditions (warm temperatures, moist soil, surface application) up to 40 percent of nitrogen can be lost to volatilization within hours of application. In both cases, reducing nitrogen loss is critical to reducing emissions from agriculture.

Time horizon

Short-term

Likelihood

Virtually certain

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact not known at this time as we are currently working through several opportunities for further environmentally favourable products and services.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

As climate conditions change, the ideal window to plant and apply fertilizer may become more restricted. We have developed enhanced efficiency fertilizer products such as Environmentally Smart Nitrogen or ESN® and nitrogen stabilizers to widen the range of conditions where fertilizer can be applied effectively. We have the ability to increase production of these products as demand increases, with over 400,000 tonnes produced and sold in 2020. We also produce diesel exhaust fluid (DEF) grade urea (a dry product shipped to industrial customers to formulate liquid DEF) and liquid DEF (aqueous urea solution). When liquid DEF is injected into the exhaust pipeline of larger vehicles and machinery using diesel fuel, it can improve fuel efficiency and reduce emissions by converting NO_x to N₂ and H₂O. Nutrien has the capacity to produce 725,000 tonnes of DEF annually and the ability to develop further capacity.

Nutrien is also able to provide our grower customers with precision application of nitrogen products on their fields based on their soil data within our digital tool in our Retail business unit. This places the nitrogen in the most efficient and sustainable manner with the potential to reduce emissions once the nitrogen has volatilized.

As the world's largest retailer of crop input products, we have access to the latest in technological advancements related to the environment. We invest approximately \$100 million per year in research and development of new and improved products.

Comment

The ability to sell the latest in advanced products and services that improve the efficiency of nitrogen application is an opportunity to generate further revenues while strategically helping our grower customer increase yields while reducing their climate footprint.

Identifier

Opp6

Where in the value chain does the opportunity occur?

Downstream

Opportunity type

Products and services

Primary climate-related opportunity driver

Development of new products or services through R&D and innovation

Primary potential financial impact

Increased revenues resulting from increased demand for products and services

Company-specific description

Nutrien's Comprehensive Carbon Program:

Nutrien is partnering with growers, value chain stakeholders, governments and NGOs to develop a Carbon Program that will be designed to support the advancement of a carbon credit market for the agricultural industry through soil carbon sequestration and reduced GHG emissions.

Soils naturally store carbon through vegetation. Human activities can either negatively affect this process (which results in carbon loss) or positively impact this process by improving carbon sequestration. One way to improve this process is to increase the level of organic matter in the soil, since soils with higher levels of organic matter can retain more water and nutrients, and also store more carbon.

GHG emissions result from the application of nitrogen fertilizers and are primarily in the form of N₂O due to natural biological processes in the soil; however, in the absence of nitrogen fertilizers, crop production and quality would drop dramatically.

Nutrien's Carbon Program partners directly with growers from field planning to harvest while supporting sustainable agriculture and enhancing grower profitability. Our program is unique in several key areas:

- trust-based advisory planning and long-term relationships with the grower,
- grower specific carbon recipes leveraging our proprietary practices and crop inputs while providing digitized crop planning from field data,
- on-farm agronomy support and advice,
- streamlined data collection and easy validation tied to our digital hub and analytic tools, and
- potential monetization for grower payout with Nutrien partnering and managing carbon credit sales within the value chain.

Growers have the ability, through the use of best practices, to increase and maintain optimal levels of soil organic carbon in their soil and optimize the application and efficiency of nitrogen fertilizer to reduce or sequester up to 1 to 2 tonnes of carbon per acre with potential for further increases with new technology.

Our Carbon Program has the ability to generate long-term value for grower customers. By supporting growers to adopt best practices, leverage digital technology and use crop inputs that support sustainability, we can drive emission improvements throughout the entire agricultural value chain. Supporting the development of compliance and voluntary carbon marketplaces to pay growers for every tonne of CO₂e reduced and sequestered is key to enable growers to be more productive, profitable and sustainable.

Time horizon

Medium-term

Likelihood

Virtually certain

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)

Potential financial impact figure – minimum (currency)

Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact not known at this time as we are currently working through several opportunities for further advancement of our Carbon Program and it is in pilot stage in 2021. There are also competitive reasons for not disclosing these figures.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

The program is currently in development with an anticipated larger-scale commercial implementation in North America and other geographies beginning in 2022. Key components include:

Grower engagement: In 2021, we expect to conduct multiple program pilots in the US and Canada. We will partner with key accounts to build and scale program functionality through collaboration.

Digital hub development: Nutrien intends to develop a grower specific “toolbox” on our digital platform, which will include features such as automated grower data collection, annual field planning sustainability analytics, carbon outcome measurement and streamlined monetization.

Value chain partner outreach: Broad partner outreach is underway with strategic suppliers, downstream partners, NGOs, academic institutions, governments and execution partners. The initial interest in our program is very promising.

Methodology: Grower data collection will primarily use our Agrible sustainability platform. Carbon credits will be generated using existing and under development protocols/frameworks to independently verify and validate carbon performance, leveraging proven agronomic modeling and soil sampling methods to generate high-quality credits.

Carbon credit transaction and market: Our intention is to create high-quality carbon assets that can be monetized in voluntary and compliance markets.

It is possible that Nutrien will purchase carbon assets generated in the program and apply them against our emissions footprint. Nutrien will look to expand the Carbon Program once we have completed our initial pilot implementation and developed a pathway to scalability.

Comment

Overall, the strategic opportunity is to be able to enable growers to be more productive by enhancing agricultural output, increase grower profitability from the monetization of positive carbon outcomes, drive operational resiliency to adhere to evolving compliance and regulatory landscape and support increased environmental stewardship to preserve long-term land

productivity and soil health. Nutrien's unique end-to-end capabilities and access to the grower will help to establish production agriculture as a viable source of nature based climate solutions to offset Scope 1 & 2 emission of ag and cross industry market participants and generate supply chain interventions to reduce shared Scope 3 emissions (originating on-farm) of ag value-chain participants.

Identifier

Opp7

Where in the value chain does the opportunity occur?

Upstream

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

Renewable energy opportunities within our Scope 2 emissions:

Scope 2 emissions are primarily generated where energy is produced upstream and accounted for at the point of consumption. Reductions in Scope 2 emissions can be achieved at the point of energy production as well as at the point of consumption. Lower GHG emission energy options for Nutrien include:

- self-generated wind and solar energy projects that are located on fertilizer production sites, such as our potash operations;
- long-term power purchasing agreements ("PPAs") with third parties to either directly or virtually supply lower- or no-emission renewable sources of energy; and
- purchase of emissions offset credits or renewable electricity certificates ("RECs").

Time horizon

Short-term

Likelihood

Very likely

Magnitude of impact

Medium

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)
Potential financial impact figure – minimum (currency)
Potential financial impact figure – maximum (currency)

Explanation of financial impact figure

Financial impact not known at this time as we are currently working through several opportunities for renewable energy projects/agreements.

Cost to realize opportunity

Strategy to realize opportunity and explanation of cost calculation

Nutrien is in the process of reviewing several opportunities in both Canada and the United States for our nitrogen and potash facilities that involve the purchase of renewable energy credits (RECs) to offset Scope 2 emissions, power purchase agreements (PPAs) and behind the fence (BTFs) generator opportunities. Related to this, we are in the process of reviewing long-term electricity contracts with both regulated and non-regulated providers. At the same time, we are exploring both solar and wind power options for our potash operations in Canada, and opportunities at our Borger, TX, nitrogen facility with a focus on leveraging from best-in-class mature project programs that can reduce our Scope 2 emissions in these operations. The renewable energy opportunity will also be critical to the consideration of developing "green" ammonia as well, which uses hydrogen and more electricity in its manufacturing process while emitting fewer emissions than a natural gas based ammonia production. Without robust renewable energy supply in North America, "green ammonia" production is not economical.

Comment

The strategic opportunity is to be able to reduce our electrical footprint through external partnerships and new technology which will reduce operating costs and regulatory carbon taxes. These opportunities will support our target to deploy self-generated wind and solar energy at four potash facilities by the end of 2025.

Identifier

Opp8

Where in the value chain does the opportunity occur?

Direct operations

Opportunity type

Energy source

Primary climate-related opportunity driver

Use of lower-emission sources of energy

Primary potential financial impact

Reduced direct costs

Company-specific description

Low-carbon options for ammonia production:

To achieve further emission reductions in ammonia production, end markets for low-carbon products must emerge and technology will need to advance. Overall, the economics of these opportunities must align in order to drive adoption. Available low-carbon options that Nutrien is considering include blue and green ammonia production. These pathways represent a range of technologies and processes to reduce the carbon intensity of ammonia production over the medium and long term.

LOW-CARBON AMMONIA SOLUTIONS EXPLAINED:

Blue ammonia is made of hydrogen obtained from fossil fuels and primarily via a process that captures and sequesters the carbon dioxide produced rather than releasing it into the atmosphere. It can also be made from hydrogen obtained as a byproduct from other industries.

Green ammonia is made of hydrogen obtained through a process that uses 100 percent renewable and carbon-free sources such as water electrolysis with renewable power.

Time horizon

Long-term

Likelihood

About as likely as not

Magnitude of impact

High

Are you able to provide a potential financial impact figure?

No, we do not have this figure

Potential financial impact figure (currency)**Potential financial impact figure – minimum (currency)****Potential financial impact figure – maximum (currency)****Explanation of financial impact figure**

Financial impact not known at this time as we are currently working through several opportunities for low carbon ammonia production.

Cost to realize opportunity**Strategy to realize opportunity and explanation of cost calculation**

The ability to realize this opportunity is going to depend on renewable energy infrastructure being developed in North America in the long-term that will allow for a more cost effective and economical production of low-carbon ammonia. End markets for low-carbon ammonia will also need to be developed, as the purchase price of this ammonia will be higher due to its cost of production, and potential demand is from industrial users as a low-carbon source of hydrogen energy, from growers as a means by which to reduce their own emissions when nitrogen is applied to soil for crops, and possible use in transportation as marine fuel.

Comment

This opportunity will be a focus for Nutrien over the medium to long-term and will support our 2030 commitment to invest in new technologies and pursue the transition to low-carbon fertilizers, including blue and green ammonia.

C3. Business Strategy

C3.1

(C3.1) Have climate-related risks and opportunities influenced your organization’s strategy and/or financial planning?

Yes

C3.1b

(C3.1b) Does your organization intend to publish a low-carbon transition plan in the next two years?

	Intention to publish a low-carbon transition plan	Comment
Row 1	No, we do not intend to publish a low-carbon transition plan in the next two years	<p>We believe a combination of strategies will be needed to meet society’s decarbonization goals. Our reduction plans include activities to reduce the direct GHG emissions at our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, while reducing other material emissions that are upstream and downstream of our operations. In 2020, Nutrien continued to advance its climate strategy, and we defined several key targets and identified numerous opportunities to reduce our emissions, all of which are supportive of a low-carbon transition plan.</p> <p>Nutrien is committed to GHG emission reduction and supports the goals of the Paris Agreement. This is demonstrated by our 30 percent targeted reduction in operational GHG emissions intensity by 2030 and through our commitment to the Science Based Targets initiative (“SBTi”) to set a science-based target. To set a science-based target, Nutrien has engaged with the WBCSD and industry peers to develop a sectoral decarbonization approach (“SDA”). A SDA is one of three possible methods for setting a science-based target. Nutrien is also actively building a pathway for low-carbon nitrogen fertilizer production.</p> <p>In late 2020, Nutrien launched what we expect to be the agricultural industry’s most comprehensive end-to-end Carbon Program with a goal of making it easier for growers to increase productivity, improve sustainability and boost profitability. The program is designed to increase grower margins per acre and generate verifiable carbon credits that can potentially be monetized.</p>

C3.2

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

Yes, qualitative and quantitative

C3.2a

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

Climate-related scenarios and models applied	Details
IEA Sustainable development scenario	As part of Nutrien’s advancement of its climate action strategy, which we disclosed in early 2021, we commenced a preliminary multi-year analysis assessing how climate-related scenarios can impact our company. The initial scenarios relate to transition risk and were identified based on Nutrien’s principal ESG risks and on our material

Climate-related scenarios and models applied	Details
	<p>ESG topics through engagement with stakeholders, sourcing topics from reporting frameworks and in-depth research on risk, reputation management, and megatrends.</p> <p>The financial impact model covers the time horizon over the next 20 years until 2040, in-line with IEA's Sustainable Development Scenario and Stated Policies Scenario. Key internal inputs are production estimates and emissions intensity factors and external inputs were based on assumptions in IEA's 2020 World Energy Outlook, specifically around CO2 emissions and carbon pricing. The key areas of our organization considered in this analysis were our Nitrogen, Potash and Phosphate business segments, which account for the majority of our manufacturing facilities and Scope 1 and 2 emissions profiles.</p> <p>While this analysis is ongoing, preliminary results indicate that the impacts of increased carbon regulation could result in additional costs to Nutrien in the form of taxes or emission allowances, facilities improvements, energy costs or otherwise, which in turn could increase Nutrien's operational costs. Because the impact of any future GHG-related regulatory requirements is dependent on the timing and design of such requirements, Nutrien is unable to predict with any certainty the potential impact on it at this time. Nonetheless, the results from this analysis are expected to help inform our business objectives and strategy in relation to improvements to reduce GHG emissions at our facilities and set key climate related commitments and targets such as:</p> <p>(1) N2O abatement: N2O is a byproduct of nitric acid production. Because one tonne of N2O is equivalent to 298 tonnes of CO2, reductions in N2O have the potential to significantly reduce GHG emissions. We are evaluating N2O project capital, permitting and feasibility that could remove up to 90 percent of N2O emissions from nitric acid production and will be instrumental in our target to reduce emissions by one million tonnes by the end of 2023.</p> <p>(2) Reliability improvements: Reliability and plant turnaround schedules are important to our GHG emissions profile because plant start-ups and shutdowns result in higher GHG emissions compared with normal, continuous operations. This is particularly relevant in the case of our nitrogen facilities since production interruptions result in non-routine process gas venting.</p> <p>By reducing our emissions, we can decrease carbon taxes paid or potentially decrease the risk of any other regulatory action against GHG emitters. We will do this through emission reduction initiatives that will support our targeted reduction of Scope 1 and 2 GHG emissions intensity by 30 percent by 2030, compared to our 2018 baseline, and committing to SBTi targets and engaging in the development of a sectoral decarbonization approach (or "SDA" method) for target setting.</p>
<p>IEA CPS</p>	<p>As part of Nutrien's advancement of its climate action strategy, which we disclosed in early 2021, we commenced a preliminary multi-year analysis assessing how climate-related scenarios can impact our company. The initial scenarios relate to transition risk and were identified based on Nutrien's principal ESG risks and on our material ESG topics through engagement with stakeholders, sourcing topics from reporting frameworks and in-depth research on risk, reputation management, and megatrends.</p> <p>The financial impact model covers the time horizon over the next 20 years until 2040, in-line with IEA's Sustainable Development Scenario and Stated Policies Scenario. Key internal inputs are production estimates and emissions intensity factors and external inputs were based on assumptions in IEA's 2020 World Energy Outlook, specifically around CO2 emissions and carbon pricing. The key areas of our organization considered in this analysis were our Nitrogen, Potash and Phosphate business segments, which account for the majority of our manufacturing facilities and Scope 1 and 2 emissions profiles.</p> <p>While this analysis is ongoing, preliminary results indicate that the impacts of increased carbon regulation could result in additional costs to Nutrien in the form of taxes or emission allowances, facilities improvements, energy costs or otherwise,</p>

Climate-related scenarios and models applied	Details
	<p>which in turn could increase Nutrien’s operational costs. Because the impact of any future GHG-related regulatory requirements is dependent on the timing and design of such requirements, Nutrien is unable to predict with any certainty the potential impact on it at this time. Nonetheless, the results from this analysis are expected to help inform our business objectives and strategy in relation to improvements to reduce GHG emissions at our facilities and set key climate related commitments and targets such as:</p> <p>(1) N2O abatement: N2O is a byproduct of nitric acid production. Because one tonne of N2O is equivalent to 298 tonnes of CO2, reductions in N2O have the potential to significantly reduce GHG emissions. We are evaluating N2O project capital, permitting and feasibility that could remove up to 90 percent of N2O emissions from nitric acid production and will be instrumental in our target to reduce emissions by one million tonnes by end of 2023.</p> <p>(2) Reliability improvements: Reliability and plant turnaround schedules are important to our GHG emissions profile because plant start-ups and shutdowns result in higher GHG emissions compared with normal, continuous operations. This is particularly relevant in the case of our nitrogen facilities since production interruptions result in non-routine process gas venting.</p> <p>By reducing our emissions, we can decrease carbon taxes paid or potentially decrease the risk of any other regulatory action against GHG emitters. We will do this through emission reduction initiatives that will support our targeted reduction of Scope 1 and 2 GHG emissions intensity by 30 percent by 2030, compared to our 2018 baseline, and committing to SBTi targets and engaging in the development of a sectoral decarbonization approach (or “SDA” method) for target setting.</p>
<p>RCP 2.6</p>	<p>As part of Nutrien’s advancement of its climate action strategy, which we disclosed in early 2021, we commenced a preliminary multi-year analysis of physical risks due to climate change to our grower customers and to our own operations. These were identified based on Nutrien’s principal ESG risks and on our material ESG topics through engagement with stakeholders, sourcing topics from reporting frameworks and in-depth research on risk, reputation management, and megatrends.</p> <p>While this ongoing analysis is still preliminary, the impact model will cover the time horizon over the next 30 years, focused primarily between 2030 and 2050 as these relate to key milestones for global emission reductions. We used the IPCC AR5 RCP physical risk scenarios - primarily 2.6, 4.5 and 8.5 to represent three possible outcomes (both the outlier scenarios and middle case scenario) for a balanced approach and view of possibilities to help develop our climate strategy. Key inputs for this analysis will be our global operational footprint and grower customer regional location data, along with historical weather data for temperatures and precipitation by region which helps determine continuing trends in weather patterns. The key data used from the IPCC RCPs are temperature change, precipitation and volatility of these two factors - all of which could have an impact on both growing conditions for farmers (impact crop yields and mix) and global ag markets (food demand and supply and crop input demand). The physical risk to operations from climate is tied to possible rising water levels on coastal locations and scarcity of water in certain local regions for operations.</p> <p>The key areas of our organization considered in the preliminary analysis is our Retail operations with its direct connection to grower customers and our Wholesale fertilizer production operations due to consumption of water for production purposes and some facilities’ proximity to riverways and coastal regions.</p> <p>Initiatives to support our growers to be more resilient to climate-related changes include:</p> <ul style="list-style-type: none"> • Our Carbon Program, • Grower pilot projects for sustainable products and soil health, • Weather expertise to help adapt to changing global climate,

Climate-related scenarios and models applied	Details
	<ul style="list-style-type: none"> • Agronomic services and our digital analytics, and • Nutrien Financial services. <p>We evaluate acute and chronic weather changes for physical risks to our sites and facilities. We maintain risk registers and emergency response plans at both the enterprise and site level, including appropriate insurance coverage for possible damage to facilities and business interruption. While climate-related physical impacts pose a risk to our overall business, they are minimal due to our broad geographical distribution of assets.</p>
<p>RCP 4.5</p>	<p>As part of Nutrien’s advancement of its climate action strategy, which we disclosed in early 2021, we commenced a preliminary multi-year analysis of physical risks due to climate change to our grower customers and to our own operations. These were identified based on Nutrien’s principal ESG risks and on our material ESG topics through engagement with stakeholders, sourcing topics from reporting frameworks and in-depth research on risk, reputation management, and megatrends.</p> <p>While this ongoing analysis is still preliminary, the impact model will cover the time horizon over the next 30 years, focused primarily between 2030 and 2050 as these relate to key milestones for global emission reductions. We used the IPCC AR5 RCP physical risk scenarios - primarily 2.6, 4.5 and 8.5 to represent three possible outcomes (both the outlier scenarios and middle case scenario) for a balanced approach and view of possibilities to help develop our climate strategy. Key inputs for this analysis will be our global operational footprint and grower customer regional location data, along with historical weather data for temperatures and precipitation by region which helps determine continuing trends in weather patterns. The key data used from the IPCC RCPs are temperature change, precipitation and volatility of these two factors - all of which could have an impact on both growing conditions for farmers (impact crop yields and mix) and global ag markets (food demand and supply and crop input demand). The physical risk to operations from climate is tied to possible rising water levels on coastal locations and scarcity of water in certain local regions for operations.</p> <p>The key areas of our organization considered in the preliminary analysis is our Retail operations with its direct connection to grower customers and our Wholesale fertilizer production operations due to consumption of water for production purposes and some facilities’ proximity to riverways and coastal regions.</p> <p>Initiatives to support our growers to be more resilient to climate-related changes include:</p> <ul style="list-style-type: none"> • Our Carbon Program, • Grower pilot projects for sustainable products and soil health, • Weather expertise to help adapt to changing global climate, • Agronomic services and our digital analytics, and • Nutrien Financial services. <p>We evaluate acute and chronic weather changes for physical risks to our sites and facilities. We maintain risk registers and emergency response plans at both the enterprise and site level, including appropriate insurance coverage for possible damage to facilities and business interruption. While climate-related physical impacts pose a risk to our overall business, they are minimal due to our broad geographical distribution of assets.</p>
<p>RCP 8.5</p>	<p>As part of Nutrien’s advancement of its climate action strategy, which we disclosed in early 2021, we commenced a preliminary multi-year analysis of physical risks due to climate change to our grower customers and to our own operations. These were identified based on Nutrien’s principal ESG risks and on our material ESG topics through engagement with stakeholders, sourcing topics from reporting frameworks and in-depth research on risk, reputation management, and megatrends.</p> <p>While this ongoing analysis is still preliminary, the impact model will cover the time</p>

Climate-related scenarios and models applied	Details
	<p>horizon over the next 30 years, focused primarily between 2030 and 2050 as these relate to key milestones for global emission reductions. We used the IPCC AR5 RCP physical risk scenarios - primarily 2.6, 4.5 and 8.5 to represent three possible outcomes (both the outlier scenarios and middle case scenario) for a balanced approach and view of possibilities to help develop our climate strategy. Key inputs for this analysis will be our global operational footprint and grower customer regional location data, along with historical weather data for temperatures and precipitation by region which helps determine continuing trends in weather patterns. The key data used from the IPCC RCPs are temperature change, precipitation and volatility of these two factors - all of which could have an impact on both growing conditions for farmers (impact crop yields and mix) and global ag markets (food demand and supply and crop input demand). The physical risk to operations from climate is tied to possible rising water levels on coastal locations and scarcity of water in certain local regions for operations.</p> <p>The key areas of our organization considered in the preliminary analysis is our Retail operations with its direct connection to grower customers and our Wholesale fertilizer production operations due to consumption of water for production purposes and some facilities' proximity to riverways and coastal regions.</p> <p>Initiatives to support our growers to be more resilient to climate-related changes include:</p> <ul style="list-style-type: none"> • Our Carbon Program, • Grower pilot projects for sustainable products and soil health, • Weather expertise to help adapt to changing global climate, • Agronomic services and our digital analytics, and • Nutrien Financial services. <p>We evaluate acute and chronic weather changes for physical risks to our sites and facilities. We maintain risk registers and emergency response plans at both the enterprise and site level, including appropriate insurance coverage for possible damage to facilities and business interruption. While climate-related physical impacts pose a risk to our overall business, they are minimal due to our broad geographical distribution of assets.</p>

C3.3

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

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
Products and services	Yes	Climate-related risks and opportunities related to increasing environmental and societal pressures that our customers face have influenced our strategic decisions towards our portfolio of products and services. The main sources of environmental impacts related to the application of fertilizers at the farm level are: (1) denitrification (natural microbial reduction of soil nitrate to nitrogen gases such as N2O) and volatilization (loss of nitrogen as ammonia gas); (2) in case of improper application of fertilizers containing nitrogen and phosphorus to crops, some nutrients may leach into groundwater or reach surface water by runoff; and (3) water use, as water is required for crop irrigation in many arid growing environments. Reducing the environmental impacts from the agricultural products we manufacture and sell is one way we can help our customers

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
		<p>manage these pressures. As part of Nutrien’s corporate and sustainability strategies, the company is focused on being a leader in reducing carbon emissions generated along the ag value chain.</p> <p>E.g. At our nitrogen production facilities, we have the capability to produce approx. 1 M tonnes of blue/low-carbon ammonia annually, we are planning to expand the production of sustainable products and reduce our carbon footprint through energy use efficiency and abatement projects. At our potash mines, we are planning to reduce our carbon footprint and lower our costs through self-generated electricity and heat, and we are progressing projects to improve water management. Initiatives to support our growers to be more resilient to climate-related changes include our Carbon Program, weather expertise to help adapt to changing global climate and agronomic services and our digital analytics on our digital platform.</p> <p>Nutrien continues to develop new products to support soil health. We have invested in or acquired companies like Actagro, Agricen and CH Biotech that develop products to complement natural interactions between soil and crops, bringing innovative products to our retail network. Known as ag biologicals, this diverse group of products is derived from naturally occurring microorganisms, plant extracts, beneficial insects or other organic matter, and includes biostimulants and biocatalysts that enhance microbial activity, increase nutrient availability and uptake, and improve plant response to stressful conditions.</p>
<p>Supply chain and/or value chain</p>	<p>Evaluation in progress</p>	<p>Since some food retailers are demanding their final products have a lower carbon footprint throughout the value chain, we have started to look at options to reduce the carbon footprint of our products. If we can do this to the extent expected by food retailers, they may show preference to purchasing our products.</p> <p>In 2019, we developed an evaluation plan in which we intend to reduce the direct GHG emissions from our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, through GHG reduction and efficiency projects. Key steps include exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities; evaluating reduction opportunities and mitigation strategies along our entire value chain; continuing to assess how climate-related scenarios can impact our company; and developing GHG reduction projects and targets.</p> <p>As a result, we launched our climate action strategy in April 2021 with clear emission reduction commitments and targets. We have also launched our Carbon Program, which will support growers in trapping more carbon in their soils and allow them to be compensated for this through carbon credits which can be acquired by partners in the agricultural value chain, including suppliers. A key pillar of this initiative will be our digital platform, which will include features such as automated grower data collection, annual field planning sustainability analytics, carbon outcome measurement and streamlined monetization. Nutrien unveiled a portfolio approach to its 2021 North American carbon pilots to identify the best path to successfully scale its Carbon Program. The</p>

	Have climate-related risks and opportunities influenced your strategy in this area?	Description of influence
		<p>portfolio leverages Nutrien’s unique end-to-end capabilities while engaging a broad base of key industry partners and supply chain stakeholders across Canada and the US including American Farmland Trust, BASF, Corteva Agriscience, Ingredion, Maple Leaf Foods, PepsiCo and Syngenta. Maple Leaf Foods is also partnering with Nutrien to engage growers within its Manitoba supply chain to generate carbon outcomes that are independently verified by Gold Standard’s SustainCERT. The partnership will enable future carbon improvement opportunities across Maple Leaf’s entire Canadian supply chain and serve as a model for supporting climate action by investing in agriculture.</p>
<p>Investment in R&D</p>	<p>Yes</p>	<p>Climate-related risks and opportunities related to sustainable agriculture (which will shape the strategy and direction of our company) and reducing environmental footprints has influenced our R&D investment strategy. We have clear sustainable commitments as well, which include investing in new technologies and to pursue the transition to low-carbon fertilizers, including blue and green ammonia, as well as leveraging our farm-focused technology partnerships and investments to drive positive impact in industry and grower innovation. These priorities allow us to capitalize on opportunities for growth and mitigate potential risk. Our R&D priorities assist us in offering growers’ products and technologies with a lower environmental impact and facilitating the adoption of agronomic best practices. In 2020, we spent approximately \$100 million in R&D. We continue to develop products that improve crop yields and farming economics while at the same time reduce environmental impacts, including:</p> <p>(1) Smart Nutrition MAP: In 2019, we introduced a patented product that integrates micronized sulfur into the ammonium-phosphate fertilizer (MAP) granules. This product speeds sulfur delivery to the plant and reduces the potential for sulfur loss.</p> <p>(2) Products that improve soil health: Our C2 Technology products consist of extracted carbon and carbohydrate reacted with nutrients for improved soil health and plant performance by increasing nutrient uptake and availability.</p> <p>(3) Seed breeding innovation: Seed breeding is the process of combining the traits of different seeds to produce improved characteristics for specific environments or conditions.</p> <p>(4) In 2019, we acquired Actagro LLC, a developer, manufacturer and marketer of environmentally sustainable soil and plant health products and technologies. This complements Nutrien’s Loveland Products, which offers high-performance crop input products.</p> <p>(5) In 2020, Nutrien acquired Agbridge, a wireless data transport system that enables efficiencies, productivity and real-time information transfer between equipment, advisors and growers. This and our acquisitions of Agrible (ag sustainability software tool) and Waypoint Analytical enhance our ability to provide real-time sustainable solutions and agronomic advice to our customers.</p>

Have climate-related risks and opportunities influenced your strategy in this area?		Description of influence
Operations	Yes	<p>As we generate significant amounts of GHG emissions (through the production, distribution and use of our products) and climate-change policies and emissions regulations are evolving and/or increasing, we developed a Climate Action Plan in 2020 and released in April 2021, in which we intend to reduce the direct GHG emissions from our manufacturing facilities and the indirect emissions from purchased energy, such as steam and electricity, through GHG reduction and efficiency projects.</p> <p>We have committed to the following in our operations related to climate:</p> <ul style="list-style-type: none"> • Achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced by 2030, from a baseline year of 2018; • By 2030, invest in new technologies and pursue the transition to low-carbon fertilizers, including blue and green ammonia. <p>The following targets will support the above commitments:</p> <ul style="list-style-type: none"> • Reduce GHG emissions in nitrogen production by one million tonnes CO₂e by the end of 2023; and, • Deploy self-generated wind and solar energy at four potash facilities by the end of 2025. <p>As part of this process, in 2020 and 2021 we received limited external assurance on our 2018 and 2020 Scope 1 and 2 emissions. Key steps remaining to this process include: exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities in 2021; evaluating reduction opportunities and mitigation strategies along our entire value chain and continuing to assess how climate-related scenarios can impact our company. We set a specific commitment related to our Scope 3 emissions that impacts both our upstream and downstream emissions as follows:</p> <ul style="list-style-type: none"> • Launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts. <p>The Carbon Program aims to allow growers to sequester carbon in the soils while being rewarded for this effort, and in turn, global suppliers and buyers in the agricultural value chain will be able to offset their emissions with carbon offsets and the potential for Nutrien to access carbon insets while helping grower customers reduce their own emissions.</p>

C3.4

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

Financial planning elements that have been influenced		Description of influence
Row 1	Capital allocation	Climate-related risks and opportunities have influenced our financial planning in relation to how we allocate capital and potential business acquisitions. As part of Nutrien’s Strategy, we want to be a leader in

	Financial planning elements that have been influenced	Description of influence
	<p>Acquisitions and divestments</p> <p>Access to capital</p>	<p>agricultural sustainability. With this, Nutrien is focused on being a leader in reducing carbon emissions generated along the ag value chain. Nutrien’s Carbon Program aims to create the opportunity to financially reward growers who apply best practices and climate smart products, which is expected to drive a step change in agricultural sustainability and improved carbon management. By leveraging our unique relationship with the grower, we can deliver an end-to-end program where we can add value throughout.</p> <p>At our nitrogen production facilities, we have the capability to produce approximately 1 million tonnes of blue/low-carbon ammonia annually, we are planning to expand the production of sustainable products and we are further planning to reduce our carbon footprint through energy use efficiency and abatement projects. At our potash mines, we are planning to reduce our carbon footprint and lower our costs through self-generated electricity and heat, and we are progressing projects to improve water management.</p> <p>In 2020, we made important investments at our production facilities including emission controls at our nitrogen facilities, investments in mining automation, and expanding our capacity of diesel exhaust fluid that can lower vehicle emissions.</p> <p>Opportunities to access climate-related and “green” funding from banking institutions and investors is becoming more prevalent for investment in climate-related projects and goals. Nutrien continues to evaluate these funding opportunities as we execute on our climate strategy and will consider when appropriate.</p> <p>Further, in early 2021 Nutrien announced a 30 percent targeted reduction in operational GHG emissions intensity by 2030 (from a baseline year of 2018) and through our commitment to the Science Based Targets initiative (“SBTi”) to set a science-based target. To achieve our 30 percent operational emission intensity target, we estimate capital investment requirements in the range of \$500 million to \$700 million by 2030.</p> <p>Nutrien manages its capital structure, funding and allocation tactically within a 1-year time horizon and strategically over the medium and longer-term. Capital allocation decisions are also part of our 5-year strategic planning process, or to meet regulatory requirements, and approved annually by the Board. Potential acquisitions are typically analyzed and completed within a 1 to 2-year time frame, with analysis based on a long-term view of potential cash flows, risks and opportunities. Decisions around sourcing new capital, whether from the equity markets, debt markets or other sources of financing, are managed dynamically in response to market conditions and within authority delegated from Nutrien’s Board or with explicit Board approval.</p>

C3.4a

(C3.4a) Provide any additional information on how climate-related risks and opportunities have influenced your strategy and financial planning (optional).

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) (or Scope 3 category)

Scope 1+2 (Location-based)

Intensity metric

Metric tons CO₂e per unit of production

Base year

2018

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

0.68

% of total base year emissions in selected Scope(s) (or Scope 3 category) covered by this intensity figure

100

Target year

2030

Targeted reduction from base year (%)

30

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

0.476

% change anticipated in absolute Scope 1+2 emissions

-13

% change anticipated in absolute Scope 3 emissions

0

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

0.66

% of target achieved [auto-calculated]

9.8039215686

Target status in reporting year

New

Is this a science-based target?

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

Target ambition**Please explain (including target coverage)**

By 2030, achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced from a baseline year of 2018. The target covers all Nutrien operations and will be met through implementation of several projects, including:

- nitrous oxide abatement, which will abate approximately 1 million tonnes CO₂e per year by the end of 2023 from our nitric acid manufacturing processes;
- energy efficiency initiatives in our nitrogen and potash operations, which will reduce greenhouse gas emissions as well as energy costs;
- carbon capture utilization and storage at our Redwater and Geismar facilities, which will capture and divert additional industrial process CO₂ emissions to enhanced oil recovery; and,
- cogeneration projects and renewable energy generation at our potash operations will reduce Scope 2 emissions.

Nutrien has committed to develop a science-based target aligned with the SBTi criteria and submit the target the SBTi for validation. To set a science-based target, Nutrien has engaged with the WBCSD and industry peers to develop a sectoral decarbonization approach ("SDA"). A SDA is one of three possible methods for setting a science-based target.

See: <https://sciencebasedtargets.org/companies-taking-action> (search for "Nutrien Ltd.")

C4.2**(C4.2) Did you have any other climate-related targets that were active in the reporting year?**

Target(s) to increase low-carbon energy consumption or production

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

Low 1

Year target was set

2020

Target coverage

Business division

Target type: absolute or intensity

Absolute

Target type: energy carrier

Electricity

Target type: activity

Production

Target type: energy source

Renewable energy source(s) only

Metric (target numerator if reporting an intensity target)

Percentage

Target denominator (intensity targets only)

Base year

2020

Figure or percentage in base year

0

Target year

2025

Figure or percentage in target year

100

Figure or percentage in reporting year

0

% of target achieved [auto-calculated]

0

Target status in reporting year

New

Is this target part of an emissions target?

Yes, this target will contribute to Nutrien's intensity target, "By 2030, achieve at least a 30 percent reduction in GHG emissions (Scope 1 + 2) per tonne of our products produced from a baseline year of 2018." (CDP Climate reference: "Int 1")

Is this target part of an overarching initiative?

No, it's not part of an overarching initiative

Please explain (including target coverage)

Our target is to deploy self-generated wind and solar energy at four potash facilities by the end of 2025 (note, for the purposes of this form, the metric is "% of four potash sites with self-generated wind and solar energy deployed"). Approximately 40 percent of Nutrien's total Scope 2 emissions are related to electricity consumption at our potash operations. Electricity to power equipment for potash processing represents approximately 15 percent of Nutrien's potash production costs. This is a significant cost and source of energy consumption. Scope 2 emissions are primarily generated where energy is produced upstream and accounted for at the point of consumption. Reductions in Scope 2 emissions can be achieved at the point of energy production as well as at the point of consumption. Lower GHG emission energy options for Nutrien include self-generated

wind and solar energy projects that are located on fertilizer production sites, such as our potash operations, amongst other renewable energy options. This target is part of Nutrien's Feeding the Future Plan to make key transformations through ambitious 2030 commitments that drive systemic change and lead the next wave of agricultural evolution. The relevant focus area is "Environment and Climate Action", where we aim to provide solutions and platforms to achieve emissions reductions in alignment with climate science.

Nutrien is committed to GHG emission reduction and supports the goals of the Paris Agreement. This is demonstrated by our 30 percent targeted reduction in operational GHG emissions intensity by 2030 and through our commitment to the Science Based Targets initiative ("SBTi") to set a science-based target. To set a science-based target, Nutrien has engaged with the WBCSD and industry peers to develop a sectoral decarbonization approach ("SDA"). A SDA is one of three possible methods for setting a science-based target.

To achieve our 30 percent operational emission intensity target, we estimate capital investment requirements in the range of \$500 million to \$700 million by 2030, with most projects meeting our minimum return requirements without a significant cost of carbon assumption. Going forward, we may deploy additional emissions abatement projects as the compliance landscape evolves and the direct and indirect costs of carbon to our business rationalize incremental capital investment.

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	71	
To be implemented*	7	900,000
Implementation commenced*	8	416,000
Implemented*	0	0
Not to be implemented	0	0

C4.3b

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

C4.3c

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

Method	Comment
Dedicated budget for other emissions reduction activities	Nutrien dedicated capital in 2021 to implement a set of high-impact projects in our Nitrogen business to eliminate approximately 1 million metric tonnes of CO2e by the end of 2023. To achieve our 2030 commitments, we are focused on four strategic pillars: (1) Process Improvements: Implementing a range of process improvements to reduce GHG emissions at our nitrogen facilities including best available Nitrous

Method	Comment
	<p>Oxide (N2O) abatement installed by 2023.</p> <p>(2) Energy Efficiency Initiatives: Continuous improvement of the energy efficiency of our Nitrogen facilities with committed incremental capital to materially improve our energy consumption over the next decade.</p> <p>(3) Carbon Capture, Utilization and Storage (CCUS): We are leaders in this space, with two world-class carbon sequestration projects active at our Redwater and Geismar Nitrogen facilities.</p> <p>Over the next decade, we are committed to maximizing the sequestration or use of excess CO2 from our fleet.</p> <p>(4) Renewables / Cogeneration: We will be deploying a broad range of solutions to mitigate emissions associated with the electricity consumed in operations, including opportunities to install renewable or self-generation capacity at existing facilities.</p>
Marginal abatement cost curve	Nutrien developed a marginal abatement cost curve based upon a comprehensive list of emission reduction opportunities across the business. The curve was utilized to develop an achievable target of 30% intensity reduction by 2030.

C4.5

(C4.5) Do you classify any of your existing goods and/or services as low-carbon products or do they enable a third party to avoid GHG emissions?

Yes

C4.5a

(C4.5a) Provide details of your products and/or services that you classify as low-carbon products or that enable a third party to avoid GHG emissions.

Level of aggregation

Product

Description of product/Group of products

We define "blue/low-carbon ammonia" as ammonia produced primarily utilizing carbon capture, utilization and storage ("CCUS") or other low-emission production technologies to significantly reduce the carbon intensity of resultant production; this definition does not include end product use. As of December 31, 2020, Nutrien has annual production capability for approximately 1 million tonnes of blue/low-carbon ammonia at our Geismar, Redwater and Joffre nitrogen facilities via two different types of projects:

(1) CCUS provides a technical option for reducing GHG emissions. Captured CO2 can be used for enhanced oil recovery ("EOR"), a process where CO2 is permanently injected into underground geological formations to maximize recovery and extend the life of oil reservoirs. Nutrien participates in two such projects at our Redwater, AB and Geismar, LA facilities. In 2020, our Geismar facility captured and diverted 270,000 tonnes of CO2 from the atmosphere. Our Redwater facility started capturing previously vented CO2 in December 2019 for injection into the Alberta Carbon Trunk Line. The Redwater facility sent approximately 167,000 tonnes of CO2 to the Alberta Carbon Trunk Line in 2020.

(2) At our Joffre, AB Nitrogen facility, hydrogen is acquired from a nearby industrial producer as a byproduct. Since 1987, we have been sourcing hydrogen directly from a neighboring company, allowing us to eliminate the GHG-intensive step of processing natural gas into hydrogen. This results in an estimated 15 to 20 percent lower GHG intensity per tonne of product compared to a

typical steam methane reforming ammonia facility. There are no direct emissions as hydrogen is input directly into the synthesis loop of the production process for ammonia.

Are these low-carbon product(s) or do they enable avoided emissions?

Low-carbon product

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

We consider our “blue/low-carbon ammonia” to be low-carbon versus the alternative or baseline of steam methane reforming operations that vent all CO₂ to the atmosphere.

% revenue from low carbon product(s) in the reporting year

0.2

Comment

By the year 2030, we aim to make key transformations through ambitious commitments that drive systemic change and lead the next wave of agricultural evolution. We have set a 2030 commitment to invest in new technologies and pursue the transition to low-carbon fertilizers, including blue and green ammonia. Nutrien's commitment to GHG emission reduction is also demonstrated by our 30 percent targeted reduction in operational GHG emissions intensity by 2030 and through our commitment to the Science Based Targets initiative (“SBTi”) to set a science-based target.

To achieve further emission reductions in ammonia production, end markets for low-carbon products must emerge and technology will need to advance. Overall, the economics of these opportunities must align in order to drive adoption. Available low-carbon options that Nutrien is considering include blue and green ammonia production. These pathways represent a range of technologies and processes to reduce the carbon intensity of ammonia production over the medium and long term.

In the short term, Nutrien's key priorities to lower the GHG emissions associated with ammonia production are to:

- actively pursue opportunities to position Nutrien's blue/low-carbon ammonia for use in proof-of-concept trials for emerging markets that command a premium for low-carbon intensity products;
- participate in the Ammonia Energy Association's certification effort to create a universally recognized standard for low-carbon ammonia emissions intensity, while working with a third party to create tradeable credits for Nutrien's blue/low-carbon ammonia;
- scope and potentially invest in transformational low-carbon production pathways, including industry/technology partnerships, engineering studies and pilot projects to enable future commercial scale-up; and
- position Nutrien to scale low-carbon ammonia production as end markets develop, providing a step-improvement in long-term emissions profile.

Challenges in accelerating progress on Scope 1 and 2 emission reductions include the following:

- current technological limitations to reducing emissions,
- capital costs required to invest in new technologies,
- uncertainty around policy and carbon prices in the jurisdictions where we operate, and
- limitations imposed by original plant design and age of facilities due to life spans often more than 40 years.

Level of aggregation

Group of products

Description of product/Group of products

In 2020, Nutrien launched a unique Carbon Program that is expected to drive a step change in agricultural sustainability and improved carbon management. Soils naturally store carbon through vegetation. Human activities can either negatively affect this process (which results in carbon loss) or positively impact this process by improving carbon sequestration.

Agriculture has a critical role to play in addressing carbon emissions. Growers have the ability, through the use of best practices, to increase and maintain optimal levels of organic matter in their soil and optimize the application and efficiency of nitrogen fertilizer to reduce or sequester approximately 1 to 2 tonnes of carbon per acre with potential for further increases with new technology over time. As a result, agriculture is positioned to become a leading source of carbon credits.

Nutrien's Carbon Program has the ability to generate long-term value for grower customers by making each acre more profitable and developing an incremental revenue stream tied to sustainable farming practices, driving long-term agriculture sustainability leadership and building operational resiliency to satisfy rapidly evolving compliance and regulatory expectations. By supporting growers to adopt best practices, leverage digital technology (which can measure and analyze impact) and use crop inputs that support sustainability, we can drive emission improvements throughout the entire agricultural value chain. Supporting the development of a carbon credit market to pay growers for every tonne of reduced and sequestered CO₂e is key to achieving the overall objective.

Nutrien's Carbon Program partners directly with growers from field planning to harvest while supporting sustainable agriculture and enhancing grower profitability. Our program is unique in several key areas:

- trust-based advisory planning and long-term relationships with the grower,
- grower specific carbon recipes leveraging Nutrien's proprietary practices and crop inputs while providing digitized crop planning from field data,
- on-farm agronomy support and advice,
- streamlined data collection and easy validation tied to our digital hub and analytic tools, and
- potential one-stop monetization for grower payout with Nutrien partnering and managing carbon credit sales within the value chain.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Carbon assets will be generated using existing and under development protocols/frameworks to independently verify and validate carbon performance, leveraging proven agronomic modelling and soil sampling methods to generate high-quality credits.

% revenue from low carbon product(s) in the reporting year

0

Comment

The potential impacts from climate-related risks are significant to Nutrien and have been identified as a top ESG-related concern by our stakeholders. We are focused not only on reducing the

carbon footprint of our fertilizer production (primarily nitrogen), but also partnering with growers to deliver natural climate solutions and sustainably increase crop yields while reducing GHG emissions and sequestering more carbon in the soil.

We have developed strategic sustainability priorities that support key transformations and address our most material environmental, social and governance (ESG) risks and opportunities. By the year 2030, we aim to make key transformations through ambitious commitments that drive systemic change and lead the next wave of agricultural evolution.

One of our 2030 Commitments is to launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts.

Activated through our Retail division, Nutrien Ag Solutions, our differentiated, end-to-end Carbon Program, is focused on generating and monetizing high-quality carbon assets, a process which starts with our trusted advisory relationship with growers to:

- Assess eligibility and establish a carbon baseline to measure future improvements;
- Build a customized whole-acre carbon solution, leveraging our broad suit of proprietary and 3rd-party products, proven to maximize carbon outcomes;
- Provide season-long agronomic advice and services to support practice implementation;
- Measure end-of-season carbon outcomes using industry accepted standards and protocols, leveraging field-level data and science-based methods of quantification;
- Independently validate and verify carbon outcomes to ensure quality; and
- Potentially provide seamless carbon asset monetization options for growers, including insights into long-term economic, agronomic, and sustainability performance improvement opportunities.

Nutrien is uniquely positioned to leverage our proprietary assets and capabilities to deliver a seamless grower experience that delivers standalone agronomic ROI and maximizes carbon outcomes and value creation through the adoption of sustainable agronomic practices.

Learn more: <https://www.nutrien.com/sustainability/strategy/feeding-planet-sustainably/carbon-program>

Level of aggregation

Group of products

Description of product/Group of products

Nutrien is committed to protecting and preserving the environment by offering customers a wide array of environmentally smart products. We are expanding our portfolio of sustainable products.

Examples:

(1) Advanced-generation coatings and other technologies significantly reduce the potential for nutrient loss to the environment, and associated field-level GHG emissions. As climate conditions change, the ideal window to plant and apply fertilizer may become more restricted. Nitrogen that is lost to water or the atmosphere can have negative impacts for the environment and is an economic loss for the farmer. Volatilization is the loss of nitrogen to the atmosphere as ammonia gas. In certain conditions (warm temperatures, moist soil, surface application) up to 40 percent of nitrogen can be lost to volatilization within hours of application. Additionally, nitrogen is subject to natural microbial conversion in the soil, which converts it to N₂O, a potent GHG (one tonne of N₂O is equivalent to 298 tonnes of CO₂). In both cases, reducing nitrogen loss is critical to reducing emissions from agriculture. We have developed enhanced efficiency fertilizer products and nitrogen stabilizers to widen the range of conditions where fertilizer can be applied effectively.

ESN® Smart Nitrogen is a urea granule contained within a flexible polymer coating. The coating protects the nitrogen from loss into air or water and releases nitrogen at a rate that is controlled by soil temperature and matches the nitrogen demand of the growing crop. Nitrogen stabilizers are synthetic or biofertility products that are combined with nitrogen-based fertilizers to minimize nitrogen loss and maximize utilization.

(2) We produce and sell diesel exhaust fluid (“DEF”) which is a urea liquid solution that, when combined with diesel in larger vehicles and machinery, can improve fuel efficiency and reduce emissions.

Are these low-carbon product(s) or do they enable avoided emissions?

Avoided emissions

Taxonomy, project or methodology used to classify product(s) as low-carbon or to calculate avoided emissions

Other, please specify

Nutrien uses the Agrible platform for tracking management practices and GHG emission reduction estimates based on the Field to Market methodology. (<https://fieldtomarket.org/our-programs/leading-with-science/fieldprint-platform/>)

% revenue from low carbon product(s) in the reporting year

Comment

A combination of soil and plant tissue testing, and a variety of nitrogen efficiency products and split application methods are implemented as appropriate for the local environmental conditions and crops. The yield impacts are measured in the field in comparison to the growers standard practice. Nutrien uses the Agrible platform for tracking management practices and GHG emission reduction estimates based on the Field to Market methodology. Products are selected for the local conditions with yields and estimated GHG emission reductions are determined and an adaptive management approach is used to revise practices based on yearly results.

ESN® is a leading controlled-release nitrogen fertilizer product providing growers with significant economic and environmental benefits. This patented coated-fertilizer product allows for more efficient delivery of the nitrogen to the plant while it grows based on soil moisture and temperature characteristics. By delivering nitrogen when the plant needs it most, this advanced product can significantly reduce the risk of nitrogen loss to the air and water. See <https://www.smartnitrogen.com/>

C5. Emissions methodology

C5.1

(C5.1) Provide your base year and base year emissions (Scopes 1 and 2).

Scope 1

Base year start

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO₂e)

11,192,409

Comment

The 2018 base year Scope 1 and Scope 2 (location-based) emissions were third-party verified to a Limited Level of Assurance in Q1 2020. Nutrien's Inventory Management Plan used to quantify Scope 1 emissions is available on Nutrien's website at <https://www.nutrien.com/sustainability/esg-portal/esg-statements-policies>.

Scope 2 (location-based)**Base year start**

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO₂e)

3,046,260

Comment

The 2018 base year Scope 1 and Scope 2 (location-based) emissions were third-party verified to a Limited Level of Assurance in Q1 2020.

Scope 2 (market-based)**Base year start**

January 1, 2018

Base year end

December 31, 2018

Base year emissions (metric tons CO₂e)

2,840,444

Comment

Scope 2 (market-based) emissions for 2018 have been updated since 2019 submission to account for electricity purchased in 2018 from a third-party cogeneration facility for Alberta nitrogen manufacturing operations. Market-based Scope 2 emissions have not been third-party verified.

C5.2**(C5.2) Select the name of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.**

IPCC Guidelines for National Greenhouse Gas Inventories, 2006

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

US EPA Mandatory Greenhouse Gas Reporting Rule

US EPA Emissions & Generation Resource Integrated Database (eGRID)

Other, please specify

Canadian regulatory reporting requirements mandate the emission factors and quantification methodologies that must be used for large emitting facilities. These methodologies are listed in C5.2a.

C5.2a

(C5.2a) Provide details of the standard, protocol, or methodology you have used to collect activity data and calculate emissions.

Alberta Greenhouse Gas Quantification Methodologies, Alberta Environment and Parks, as updated (Alberta); *Canada's Greenhouse Gas Quantification Requirements*, Greenhouse Gas Reporting Program, as updated (Canada). These documents include emission factors and calculation methods that must be used for regulatory reporting, both provincially and federally, for large emitting facilities.

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)

10,422,352

Comment

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

C6.3

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

Reporting year

Scope 2, location-based

2,744,667

Scope 2, market-based (if applicable)

2,666,371

Comment

Market-based emissions are quantified using 2020 published Green-e (R) Residual Mix Emission Rates for US facilities. Alberta nitrogen facilities considered emissions associated with electricity

provided by a third-party cogeneration facility. Remaining Canadian and international operations used regional grid factors.

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?

Yes

C6.4a

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

Source

New Brunswick potash facility

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

The Nutrien New Brunswick Potash Facility was permanently closed in 2018. The facility has been in care and maintenance since 2016. There are no manufacturing operations at this facility. Associated emissions from facility activities are not material.

Source

Dyna-Gro and Actagro operations.

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

There are two Dyna-Gro and two Actagro proprietary brand manufacturing operations. Emissions have not yet been quantified for these operations, but they are not material sources of emissions.

Source

European Wholesale Distribution network

Relevance of Scope 1 emissions from this source

Emissions are not relevant

Relevance of location-based Scope 2 emissions from this source

Emissions are not relevant

Relevance of market-based Scope 2 emissions from this source (if applicable)

Emissions are not relevant

Explain why this source is excluded

Emissions associated with the European distribution network are not included. Nutrien operates a small number of storage and sales offices in four European countries. Emissions from these activities are negligible.

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, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from purchased goods and services (categories 1 and 2 combined) are the second largest source of emissions in our Scope 3 inventory. Therefore, these emissions are considered relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Capital goods

Evaluation status

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from purchased goods and services (categories 1 and 2 combined) are the second largest source of emissions in our Scope 3 inventory. Therefore, these emissions are considered relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

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

Evaluation status

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from fuel and energy related activities account for a small percentage (more than 1%) of total emissions, therefore are considered to be relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Upstream transportation and distribution**Evaluation status**

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from upstream transportation of materials to Nutrien's facilities account for a small percentage (more than 1%) of total emissions, therefore are considered to be relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Waste generated in operations**Evaluation status**

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that GHG emissions from waste generated in Nutrien's operations are not material as they represent less than 1% of total Scope 3 emissions. These emissions are considered not relevant.

Methodology: Data on volume of waste generated in Nutrien's facilities annually is tracked in SAP. This data is tracked by waste type (hazardous and non-hazardous) and by end-of-life treatment (disposed and recycled) and converted to GHG emissions using factors from the EPA WARM v15 tool.

In this tool, the total waste by disposal method is converted to GHG emissions using average waste treatment specific emissions factors. Only emission factors from waste transportation, combustion, and/or fugitive methane were included in emissions estimations. Avoided emissions such as stored carbon or other negative emissions were not included per the Scope 3 Guidance. Since all emission factors for recycling are negative, emissions from recycling were conservatively assumed to be zero as these emissions should only be reported as avoided emissions if a company is able to provide data to support that the emissions were avoided (i.e. that their materials were collected, recycled, and used to create new products).

This estimation includes emissions from waste that is landfilled, incinerated or composted. All hazardous waste that is not recycled is assumed to be combusted. All other disposed Municipal Solid Waste (MSW) was categorized into final disposal based on EPA's Advancing Sustainable Materials Management: 2015 Fact Sheet.

Business travel**Evaluation status**

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that GHG emissions associated with business travel are less than 1% of Nutrien's Scope 3 inventory, therefore these emissions are considered not relevant.

Methodology: Nutrien collects data from employee business travel by air through the Carlson Wagonlit Travel (CWT) system. This system tracks distance travelled, therefore the distance-based method was used to calculate approximate emissions. Flights were categorized by distance, including short-haul (under 785 km), medium (between 785 to 3,700 km) and long haul (greater than 3,700 km). Medium and long haul flight distances were also divided by economy, business, and first class. Passenger emission factors by flight distance and class from DEFRA were used to calculate GHG emissions.

Nutrien collects data on employee car rentals from Avis and Budget. Avis and Budget track the miles travelled and gallons used by car type and also provide emissions calculations for all car rentals.

Nutrien collects data on employee travel via rail through the CWT system. The system tracks the total rail distance travelled by employees. Passenger emission factors for rail from EPA were used to calculate GHG emissions.

Employee commuting

Evaluation status

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that GHG emissions associated with employee commuting are not material and are less than 1% of the Scope 3 inventory, therefore they are considered not relevant.

Methodology: Employee commuting emissions were estimated using average commuting time and distance statistics from census data in the US, UK, Australia and Canada. Nutrien tracks the number of employees by facility. This assessment was completed using 2018 data, and in 2018, Nutrien had 22,060 total employees globally.

Based on this data, an average miles by type of transportation (passenger car, public transit, and carpooling) was estimated using average commute distance and time by county for US and Canada, state/province for Australia, and UK for European countries, utilizing data from US, UK, Australia, and Canada Census data. This information was converted into GHG emissions using emission factors from US EPA Climate Leadership and UK DEFRA.

Upstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory. Nutrien directly manages assets and these are included in the Scope 1 and 2 GHG emissions. Nutrien does not have any upstream leased assets, therefore GHG emissions from this source are zero.

Downstream transportation and distribution

Evaluation status

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from downstream transportation of materials to Nutrien's facilities account for a small percentage (more than 1%) of total emissions, therefore are considered to be relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Processing of sold products

Evaluation status

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from processing of sold products account for a small percentage (more than 1%) of total emissions, therefore are considered to be relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Use of sold products

Evaluation status

Relevant, not yet calculated

Please explain

We are refining our Scope 3 estimate and developing our understanding to better realize related opportunities. In our preliminary analysis, emissions related to the use of sold products represent up to 70% of our total Scope 3 emissions. The globally accepted approach to estimate emissions from the use of nitrogen-based fertilizers (2006 IPCC Tier 1 methodology and default emission factors) contains significant limitations as it does not account for parameters such as application methods, soil composition, crop type, agricultural practices or innovative products, and therefore, cannot measure or demonstrate the result of carbon reduction efforts by Nutrien. Nutrien has taken several steps to increase the granularity of data collected and refine the calculation methodology, including:

- forming a working group led by a 3rd-party consultant, including Nutrien employees who specialize in environment & climate, sustainable agriculture, and agronomy to investigate data availability & calculation approaches including 2019 IPCC updates;
- determining that a hybrid quantification approach based on “best available data” by region would be of the most value to Nutrien, and would include: (1) application of 2019 IPCC disaggregated wet/dry emission factors to North American nitrogen product sales, which accounts for agroclimatic zones. This methodology is not a true IPCC Tier 2 approach as it is not specific to a region and therefore is described as a “disaggregated” Tier 1 methodology, and (2) application of the IPCC default Tier 1 methodology for all sales regions other than North America;
- establishing an internal process & methodology document to capture assumptions & calculation approach rationale;
- completing the process to collect complete & accurate global retail & manufacturing sales volume data, including nitrogen content by product type & sales region; and
- engaging Colorado State University & a 3rd-party consultant to assist with mapping North American sales data to geographic regions allocated between “wet” & “dry” regions to calculate emissions using the disaggregated Tier 1 methodology.

One of Nutrien's 2030 Commitments is to launch and scale a comprehensive Carbon Program for growers, which will provide services and products to reduce grower emissions but also capture more carbon in a grower's soil and compensate them through a carbon credit market.

End of life treatment of sold products

Evaluation status

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory. Nutrien's products are primarily used in agriculture, therefore do not require end of life treatment. Emissions associated with end of life treatment are zero (0).

Downstream leased assets

Evaluation status

Not relevant, explanation provided

Please explain

We completed a preliminary assessment of our 2018 Scope 3 emissions inventory. Nutrien assets are directly managed by Nutrien and are included in Scope 1 and 2 GHG emissions. Nutrien does not have any downstream leased assets, therefore, GHG emissions from this source are zero (0).

Franchises

Evaluation status

Not relevant, explanation provided

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that GHG emissions from franchises account for less than 1% of total emissions, therefore are considered not relevant. Methodology: Our preliminary assessment of Scope 3 emissions was conducted using 2018 data, when Nutrien had 22 retail franchise sites. Emissions from these sites arise primarily from use of electricity at the sites. Energy use for retail sites was estimated using square foot data. Electricity intensity was sourced from the US Department of Energy's Commercial Building Survey which provides electricity intensity by building size and building use. Emissions were estimated using IEA 2018 factors for these locations. As of December 31, 2020, Nutrien had 16 retail franchise sites.

Investments

Evaluation status

Relevant, not yet calculated

Please explain

We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities, and evaluating reduction opportunities and mitigation strategies along our entire value chain. We completed a preliminary assessment of our 2018 Scope 3 emissions inventory and found that emissions from investments account for a small percentage (more than 1%) of total emissions, therefore are considered to be

relevant in 2018 and assumed to not have materially changed for 2020. Our calculation methodologies are currently being refined.

Other (upstream)

Evaluation status

Please explain

Other (downstream)

Evaluation status

Please explain

C6.7

(C6.7) Are carbon dioxide emissions from biogenic carbon relevant to your organization?

No

C6.10

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

Intensity figure

0.00063

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

13,088,723

Metric denominator

unit total revenue

Metric denominator: Unit total

20,908,000,000

Scope 2 figure used

Market-based

% change from previous year

6

Direction of change

Decreased

Reason for change

The decrease in revenue emission intensity was a combination of a lower emission numerator and a higher revenue denominator. Scope 1 & 2 emissions decreased marginally by approximately 2% in 2020 as a result of increased CO₂ capture for both urea production and export for enhanced oil recovery, and due to closure of one of our four ammonia plants in Trinidad in response to market conditions and lower global prices for ammonia. While emissions decreased slightly, sales revenues increased by approximately 4% due to acquisitions and strong organic growth coupled with higher potash and nitrogen sales volumes.

Intensity figure

0.65

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

13,088,723

Metric denominator

unit of production

Metric denominator: Unit total

20,090,000

Scope 2 figure used

Market-based

% change from previous year

5.2

Direction of change

Decreased

Reason for change

The decrease in production emission intensity was a combination of a lower emission numerator and a higher production denominator. Scope 1 & 2 emissions decreased marginally by approximately 2% in 2020 as a result of increased CO₂ capture for both urea production and export for enhanced oil recovery, and due to closure of one of our four ammonia plants in Trinidad in response to market conditions and lower global prices for ammonia. Total production of NPK products increased by approximately 3% as a result of a 7.6% increase in potash (K) production relative to 2019 due to increased demand.

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 CO ₂ e)	GWP Reference
CO ₂	9,103,563	IPCC Fourth Assessment Report (AR4 - 100 year)
CH ₄	66,744	IPCC Fourth Assessment Report (AR4 - 100 year)
N ₂ O	1,252,045	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 CO ₂ e)
Canada	2,829,997
United States of America	4,667,951
Trinidad and Tobago	2,874,785
South America	18,657
Australia	30,962

C7.3

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

By business division

C7.3a

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

Business division	Scope 1 emissions (metric ton CO ₂ e)
Nitrogen	8,923,260
Phosphate	594,029
Potash	463,984
Specialty Products (includes feed grade phosphate plants, Loveland Products Inc. operations, Americus Rainbow operations and the New Madrid ESN facility)	94,146
Transportation, Distribution & Logistics	10,178
Retail	334,644
Corporate Offices	2,111

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 CO ₂ e	Comment
Chemicals production activities	10,075,418	Includes all Scope 1 emissions from facilities that produce NPK products as well as Specialty Products (feed grade phosphate plants, Loveland Products Inc. operations, Rainbow facility, New Madrid ESN facility). It excludes emissions associated with Corporate offices, Transportation & Distribution operations and Retail facilities.

C7.5

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

Country/Region	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)	Purchased and consumed electricity, heat, steam or cooling (MWh)	Purchased and consumed low-carbon electricity, heat, steam or cooling accounted for in Scope 2 market-based approach (MWh)
Canada	1,794,723	1,640,130	3,463,590	0
United States of America	823,031	899,328	2,072,501	0
Trinidad and Tobago	119,457	119,457	235,765	0
South America	2,739	2,739	14,121	0
Australia	4,708	4,708	5,960	0
Belgium	9	9	51	0

C7.6

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

By business division

C7.6a

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

Business division	Scope 2, location-based (metric tons CO ₂ e)	Scope 2, market-based (metric tons CO ₂ e)
Nitrogen	1,089,312	972,549
Phosphate	324,663	354,148
Potash	1,212,261	1,212,261
Specialty Products (includes feed grade phosphate plants, Loveland Products Inc. operations, Americus Rainbow operations and the New Madrid ESN facility)	20,563	22,383
Transportation, Distribution & Logistics	13,156	14,067
Retail	81,823	88,071
Corporate Offices	2,890	2,892

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 CO ₂ e	Scope 2, market-based (if applicable), metric tons CO ₂ e	Comment
Chemicals production activities	2,646,798	2,561,341	Includes all Scope 2 emissions from facilities that produce NPK products as well as Specialty Products (feed grade phosphate plants, Loveland Products Inc. operations, Rainbow facility, New Madrid ESN facility). It excludes emissions associated with Corporate offices, Transportation, Distribution & Logistics (TD&L) operations and Retail facilities.

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 tCO ₂ e from purchased feedstock	Explain calculation methodology
Natural gas	9	This value represents the estimated Scope 3 Category 1 emission contribution for natural gas feedstock used in ammonia production. We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities and evaluating reduction opportunities and mitigation strategies along our entire value chain. As indicated in question C6.5, we completed a preliminary assessment of our Scope 3 emissions inventory and found that emissions from purchased goods and services (categories 1 and 2 combined) are the second largest source of emissions in our Scope 3 inventory.
High Value Chemicals (Steam cracking)	6	This value represents the estimated Scope 3 Category 1 emission contribution for purchased hydrogen feedstock used in ammonia production at our Joffre plant. We continue to advance our climate strategy, which includes exploring Scope 3 GHG emissions to better understand our greatest impacts and opportunities and evaluating reduction opportunities and mitigation strategies along our entire value chain. As indicated in question C6.5, we completed a preliminary assessment of our Scope 3 emissions inventory and found that emissions from purchased goods and services (categories 1 and 2 combined) are the second largest source of emissions in our Scope 3 inventory.

C-CH7.8a

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

	Sales, metric tons	Comment
Carbon dioxide (CO2)	1,072,271	Includes CO2 sold to third parties for enhanced oil recovery (EOR) and other industrial use.
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	No renewable energy has previously been consumed.
Other emissions reduction activities	0	No change	0	No material emission reduction projects were executed in 2020.
Divestment	0	No change	0	
Acquisitions	50,000	Increased	0.4	With the acquisition of Ruralco in Australia in late 2019, and growth of the business in South America, the Retail business unit emissions increased by approximately 50,000 t CO2e. +50,000 t CO2e (Scope 1 + 2) in 2020 in Retail / 13,202,982 t CO2e (Scope 1 + 2) total emissions in 2019 x 100% = +0.4%.
Mergers	0	No change	0	
Change in output	203,000	Decreased	1.5	The slight decrease in emissions was mainly due to a small decrease in ammonia production as a result of market conditions and a lengthy production outage at one of the potash facilities. -203,000 t CO2e decrease in NPK (Scope 1 + 2) in 2020 / 13,202,982 t CO2e (Scope 1

	Change in emissions (metric tons CO2e)	Direction of change	Emissions value (percentage)	Please explain calculation
				+ 2) total emissions in 2019 x 100% = -1.5%.
Change in methodology	0	No change	0	
Change in boundary	31,000	Increased	0.2	Scope 1 Retail emissions increased slightly as a result of the inclusion of international Retail vehicle fleet emissions, which were previously not reported. +31,000 t CO2e (Scope 1 + 2) in 2020 / 13,202,982 t CO2e (Scope 1 + 2) total emissions in 2019 x 100% = +0.2%.
Change in physical operating conditions	0	No change	0	
Unidentified	0	No change	0	
Other	0	No change	0	

C7.9b

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

Market-based

C8. Energy

C8.1

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

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

C8.2

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

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

C8.2a

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

	Heating value	MWh from renewable sources	MWh from non-renewable sources	Total (renewable and non-renewable) MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	0	31,203,719	31,203,719
Consumption of purchased or acquired electricity		0	4,665,938	4,665,938
Consumption of purchased or acquired steam		0	1,126,049	1,126,049
Total energy consumption		0	36,995,706	36,995,706

C-CH8.2a

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

	Heating value	Total MWh
Consumption of fuel (excluding feedstock)	HHV (higher heating value)	29,702,967
Consumption of purchased or acquired electricity		4,458,056
Consumption of purchased or acquired steam		1,126,049
Total energy consumption		35,287,072

C8.2b

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

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

C8.2c

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

Fuels (excluding feedstocks)

Diesel

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

680,884

MWh fuel consumed for self-generation of heat

680,884

MWh fuel consumed for self-generation of steam

0

Emission factor

2.72

Unitkg CO₂e per liter**Emissions factor source**

Published emission factors from USEPA, Alberta Environment and Environment Canada. For more detailed information regarding emission factors, please see Nutrien's GHG Emissions Inventory Management Plan.

Comment

Due to variations in regulatory jurisdictions, the emission factor represents an approximate weighted average across the organization. The CO₂e emission factor was obtained factors for CO₂, CH₄ and N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Natural Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

29,192,251

MWh fuel consumed for self-generation of heat

27,433,855

MWh fuel consumed for self-generation of steam

1,443,887

Emission factor

53.47

Unitkg CO₂e per million Btu**Emissions factor source**

US and Canadian facilities subject to regulatory greenhouse gas reporting programs calculate site specific carbon dioxide emission factors based on the site specific fuel composition. Non-regulated facilities utilize published emission factors based on USEPA (Table C-1 to Subpart C of Part 98-Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel & Table

C-2 to Subpart C of Part 98-Default CH₄ and N₂O Emission Factors for Various Types of Fuel) or Environment Canada published guidance.

Comment

Due to variations in regulatory jurisdictions, the emission factor represents an approximate weighted average across the organization. The CO_{2e} emission factor was obtained by taking specific emission factors for CO₂, CH₄ & N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Propane Gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

42,100

MWh fuel consumed for self-generation of heat

42,100

MWh fuel consumed for self-generation of steam

0

Emission factor

1.52

Unit

kg CO_{2e} per liter

Emissions factor source

Published emission factors from USEPA, Alberta Environment and Environment Canada. For more detailed information regarding emission factors, please see Nutrien's GHG Emissions Inventory Management Plan.

Comment

Due to variations in regulatory jurisdictions, the emission factor represents an approximate weighted average across the organization. The CO_{2e} emission factor was obtained by taking specific emission factors for CO₂, CH₄ & N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Motor Gasoline

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

340,835

MWh fuel consumed for self-generation of heat

340,835

MWh fuel consumed for self-generation of steam

0

Emission factor

2.37

Unitkg CO₂e per liter**Emissions factor source**

Published emission factors from USEPA, Alberta Environment and Environment Canada. For more detailed information regarding emission factors, please see Nutrien's GHG Emissions Inventory Management Plan.

Comment

Due to variations in regulatory jurisdictions, the emission factor represents an approximate weighted average across the organization. The CO₂e emission factor was obtained by taking specific emission factors for CO₂, CH₄ & N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Fuel Oil Number 2

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

42,016

MWh fuel consumed for self-generation of heat

42,016

MWh fuel consumed for self-generation of steam

0

Emission factor

74.21

Unitkg CO₂e per million Btu**Emissions factor source**

Table C-1 to Subpart C of Part 98-Default CO₂ Emission Factors and High Heat Values for Various Types of Fuel & Table C-2 to Subpart C of Part 98-Default CH₄ and N₂O Emission Factors for Various Types of Fuel.

Comment

This fuel is limited to US sites, therefore only the published Part 98 factors are used.

Fuels (excluding feedstocks)

Fuel Oil Number 6

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

106,664

MWh fuel consumed for self-generation of heat

106,664

MWh fuel consumed for self-generation of steam

0

Emission factor

75.35

Unit

kg CO2e per million Btu

Emissions factor source

Table C-1 to Subpart C of Part 98-Default CO2 Emission Factors and High Heat Values for Various Types of Fuel & Table C-2 to Subpart C of Part 98-Default CH4 and N2O Emission Factors for Various Types of Fuel.

Comment

This fuel is limited to US sites, therefore only the published Part 98 factors are used.

Fuels (excluding feedstocks)

Subbituminous Coal

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

348,213

MWh fuel consumed for self-generation of heat

348,213

MWh fuel consumed for self-generation of steam

0

Emission factor

97.92

Unit

kg CO2e per million Btu

Emissions factor source

Table C-1 to Subpart C of Part 98-Default CO2 Emission Factors and High Heat Values for Various Types of Fuel & Table C-2 to Subpart C of Part 98-Default CH4 and N2O Emission Factors for Various Types of Fuel.

Comment

This fuel is limited to US sites, therefore only the published Part 98 factors are used.

Fuels (excluding feedstocks)

Marine Gas Oil

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

315,275

MWh fuel consumed for self-generation of heat

315,275

MWh fuel consumed for self-generation of steam

0

Emission factor

3,250

Unit

kg CO2e per metric ton

Emissions factor source

UK Government GHG Conversion Factors for Company Reporting (DEFRA 2020)

Comment

The CO2e emission factor was obtained by taking specific emission factors for CO2, CH4 & N2O and applying the global warming potentials.

Fuels (excluding feedstocks)

Marine Fuel Oil

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

111,497

MWh fuel consumed for self-generation of heat

111,497

MWh fuel consumed for self-generation of steam

0

Emission factor

3,160

Unit

kg CO2e per metric ton

Emissions factor source

UK Government GHG Conversion Factors for Company Reporting (DEFRA 2020)

Comment

The CO2e emission factor was obtained by taking specific emission factors for CO2, CH4 & N2O and applying the global warming potentials.

Fuels (excluding feedstocks)

Jet Kerosene

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

6,278

MWh fuel consumed for self-generation of heat

6,278

MWh fuel consumed for self-generation of steam

0

Emission factor

9.84

Unit

kg CO2e per gallon

Emissions factor source

EPA GHG Emission Factors Hub

Comment

The CO2e emission factor was obtained by taking specific emission factors for CO2, CH4 & N2O and applying the global warming potentials.

Fuels (excluding feedstocks)

Liquefied Petroleum Gas (LPG)

Heating value

Total fuel MWh consumed by the organization

614

MWh fuel consumed for self-generation of heat

614

MWh fuel consumed for self-generation of steam

0

Emission factor

6.02

Unit

kg CO2e per gallon

Emissions factor source

EPA GHG Emission Factors Hub and GHG Protocol-Emission Factors from Cross-Sector Tool

Comment

The CO₂e emission factor was obtained by taking specific emission factors for CO₂, CH₄ & N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Compressed Natural Gas (CNG)

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

91.16

MWh fuel consumed for self-generation of heat

91.16

MWh fuel consumed for self-generation of steam

0

Emission factor

7.21

Unit

kg CO₂e per gallon

Emissions factor source

EPA GHG Emission Factors Hub and GHG Protocol-Emission Factors from Cross-Sector Tool

Comment

The CO₂e emission factor was obtained by taking specific emission factors for CO₂, CH₄ & N₂O and applying the global warming potentials.

Fuels (excluding feedstocks)

Wood

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

9,948

MWh fuel consumed for self-generation of heat

9,948

MWh fuel consumed for self-generation of steam

0

Emission factor

95.05

Unit

kg CO₂e per million Btu

Emissions factor source

Table C-1 to Subpart C of Part 98-Default CO2 Emission Factors and High Heat Values for Various Types of Fuel & Table C-2 to Subpart C of Part 98-Default CH4 and N2O Emission Factors for Various Types of Fuel.

Comment

The CO2e emission factor was obtained by taking specific emission factors for CO2, CH4 & N2O and applying the global warming potentials.

Fuels (excluding feedstocks)

Other, please specify
Waste purge gas

Heating value

HHV (higher heating value)

Total fuel MWh consumed by the organization

7,052

MWh fuel consumed for self-generation of heat

7,052

MWh fuel consumed for self-generation of steam

0

Emission factor

19.1

Unit

kg CO2e per metric ton

Emissions factor source

Site specific CO2 emission factor based on carbon content of the supplied purge gas and Alberta Greenhouse Gas Quantification Methodologies

Comment

C8.2e

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

Sourcing method

None (no purchases of low-carbon electricity, heat, steam or cooling)

Low-carbon technology type

Country/area of consumption of low-carbon electricity, heat, steam or cooling

MWh consumed accounted for at a zero emission factor

Comment

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

3,764,505

Total consumption unit

thousand cubic metres

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

1.88

Heating value of feedstock, MWh per consumption unit

10.78

Heating value

HHV

Comment

As the natural gas feedstocks vary site to site, the natural gas feedstock emission factor and heating value will vary from site to site. The reported emission factor and heat value above are approximate weighted averages.

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	100
Coal	0
Biomass	0
Waste (non-biomass)	0

Percentage of total chemical feedstock (%)	
Fossil fuel (where coal, gas, oil cannot be distinguished)	0
Unknown source or unable to disaggregate	0

C9. Additional metrics

C9.1

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

C-CH9.3a

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

Output product

Ammonia

Production (metric tons)

6,062,996

Capacity (metric tons)

7,100,000

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

1.26

Electricity intensity (MWh per metric ton of product)

0.31

Steam intensity (MWh per metric ton of product)

0

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

Comment

Direct emission intensity is based on Scope 1 emissions associated with production of all nitrogen fertilizer products, excluding N₂O industrial process emissions from nitric acid production. The vast majority of nitrogen manufacturing emissions are associated with ammonia production, and exclude CO₂ captured for urea manufacturing, export for enhanced oil recovery or sale to third-parties.

Electricity intensity is based on electricity consumption associated with all activities at nitrogen manufacturing facilities, including manufacturing of nitric acid, which is primarily produced as an intermediate feedstock for manufacturing other fertilizer products. Ammonia manufacturing is typically a net steam exporting process, however the amount of steam recovered is not tracked.

Output product

Nitric acid

Production (metric tons)

1,573,108

Capacity (metric tons)

1,920,000

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

0.82

Electricity intensity (MWh per metric ton of product)**Steam intensity (MWh per metric ton of product)**

0

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

Nitric acid is primarily an intermediate product used for producing other nitrate end products.

Nitrous oxide industrial process emissions associated with nitric acid production are quantified using a site specific emission factor that is updated annually by stack testing. Annual test results can vary year to year, which can result in some year to year variation in direct emissions intensity.

Electricity consumption is tracked at the facility level, not at the product level. Electricity consumption specifically associated with nitric acid production has not been quantified since nitric acid production facilities also produce other products.

Nitric acid manufacturing is generally an exothermic process where excess heat is captured for use in other operations, however the quantity of steam / heat recovered has not been quantified.

Output product

Other, please specify
Potash

Production (metric tons)

12,557,999

Capacity (metric tons)

13,500,000

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

0.04

Electricity intensity (MWh per metric ton of product)

0.13

Steam intensity (MWh per metric ton of product)

0.04

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

0

Comment

Output product

Other, please specify
Phosphate fertilizer products (as P2O5)

Production (metric tons)

1,444,132

Capacity (metric tons)

1,700,000

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

0.41

Electricity intensity (MWh per metric ton of product)

0.87

Steam intensity (MWh per metric ton of product)

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

Comment

The intensity associated with steam consumed or captured in the manufacturing of phosphate fertilizer products has not been quantified.

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
Carbon capture, utilization and storage (CCUS)	Large scale commercial deployment	≤20%		We don't consider CCUS as R&D as the technology is well established. CCUS provides another technical option for reducing GHG emissions. Captured CO2 can be permanently sequestered or used for enhanced oil recovery ("EOR"), a process where CO2 is permanently injected into underground geological formations to maximize recovery and extend the life of oil reservoirs. Nutrien participates in two such projects at our Redwater, AB and Geismar, LA facilities. In 2020, our Geismar facility captured and diverted 270,000 tonnes of CO2 from the atmosphere. Our Redwater facility started capturing previously vented CO2 in December 2019 for injection into the Alberta Carbon Trunk Line. The Redwater facility sent approximately 167,000 tonnes of CO2 to the Alberta Carbon Trunk Line in 2020.
Product redesign	Pilot demonstration	61 - 80%		<p>Digital hub: Nutrien is revolutionizing ag retail with our leading integrated digital platform. Our award-winning digital platform experienced significant acceleration of adoption and usage in 2020, surpassing \$1.2 billion in sales and representing 11 percent of total Retail sales in North America. We expect to expand the breadth of the platform to offer nearly all of our products and services in 2021. We will also be adding new functionalities to the platform such as field planning enhancements, precision agriculture capabilities, and expansion into Brazil and Australia.</p> <p>Carbon Program: We launched a unique Carbon Program in 2020 that is expected to drive a step change in agricultural sustainability and improved carbon management, and the digital hub will support our grower customers and supply chain partners in this effort. We provide products, management practices and services that enable soil</p>

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
				<p>carbon sequestration and reduce field-level GHG emissions, and using our digital technology can help growers monitor and track sustainability outcomes. Nutrien is developing a grower-specific “toolbox” on our digital platform, which will include features such as automated grower data collection, annual field planning sustainability analytics, carbon outcome measurement and streamlined monetization. Our sustainable solutions and carbon pilot projects are designed to develop customized, scalable solutions. This program begins by targeting over 200,000 acres of pilot farmland across North America in 2021 followed by a full roll-out, then a launch in Australia and South America. Working with select growers in our carbon pilots, Nutrien is designing scalable programs that facilitate the use of climate-smart inputs and practices to reduce GHG emissions, improve soil carbon sequestration, and measure the financial, productivity and environmental impacts that result, building program functionality through collaboration. These pilots will help us uncover ways to also scale protocol implementation and improve the verification process. We anticipate a larger-scale commercial implementation in North America and other geographies beginning in 2022.</p>
<p>Waste heat recovery</p>	<p>Large scale commercial deployment</p>	<p>≤20%</p>		<p>We don't consider this as R&D as the technology is well established. Generating lower-carbon energy is one of the ways we can reduce our energy-related Scope 2 emissions. We have two cogeneration projects that efficiently combine heat and power generation. These facilities use natural gas to generate electricity using an efficient gas turbine, and waste heat from the exhaust is recovered to make valuable steam. The emissions reduction is significant as we are eliminating the requirement for coal-fired grid power to our</p>

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
				<p>facilities and associated transmission and distribution losses of electricity over long distances.</p> <p>The first cogeneration project is at our Carseland, AB facility, where we have partnered with TC Energy Corporation to generate steam for our operations from waste heat from their natural gas-fired power plant. This efficient process offsets the requirement for a natural gas boiler to be fired at our site. We use more than 75 percent of the electricity generated, which has a significantly lower emissions intensity than grid electricity.</p> <p>At the second cogeneration project in our Cory Potash mine in Saskatchewan, we consume steam from a SaskPower cogeneration facility, reducing some of our natural gas requirements. Further, Nutrien is constructing a natural gas facility at our Rocanville, SK Potash mine site that is expected to meet the majority of that facility's power demand with lower-emission electricity than available from the grid. It is being designed to accommodate future steam production, offsetting a portion of the steam supply we currently generate using gas-fired boilers.</p> <p>The Rocanville cogeneration facility is expected to be commissioned in mid-2022 with the addition of cogeneration expected as early as 2023.</p>

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	No third-party verification or assurance

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

 Nutrien - 2020 Assurance Report.pdf

Page/ section reference

Page 1 confirms the engagement was for Scope 1 and Scope 2 emissions. Conclusion, pg. 3/3: "Based on the procedures performed, nothing has come to our attention that causes us to believe that for the year ended December 31, 2020, the subject matter information, as described above and disclosed in the ESG Report, have not been prepared and presented, in all material respects, in accordance with the applicable criteria, current as at the date of our report."

Relevant standard

ISAE 3410

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

 Nutrien - 2020 Assurance Report.pdf

Page/ section reference

Page 1 confirms the engagement was for Scope 1 and Scope 2 emissions. Conclusion, pg. 3/3: "Based on the procedures performed, nothing has come to our attention that causes us to believe that for the year ended December 31, 2020, the subject matter information, as described above and disclosed in the ESG Report, have not been prepared and presented, in all material respects, in accordance with the applicable criteria, current as at the date of our report."

Relevant standard

ISAE 3410

Proportion of reported emissions verified (%)

100

C10.2

(C10.2) Do you verify any climate-related information reported in your CDP disclosure other than the emissions figures reported in C6.1, C6.3, and C6.5?

No, we do not verify any other climate-related information reported in our CDP disclosure

C11. Carbon pricing

C11.1

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

Yes

C11.1a

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

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

Argentina carbon tax

Canada federal fuel charge

Saskatchewan OBPS - ETS

C11.1b

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

Alberta Carbon Competitive Incentive Regulation (CCIR) – ETS

% of Scope 1 emissions covered by the ETS

22.6

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

3,963,380

Allowances purchased

23,627

Verified Scope 1 emissions in metric tons CO₂e

3,934,487

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Nutrien's four Alberta nitrogen manufacturing facilities are regulated under the Alberta Technology Innovation and Emissions Reduction (TIER) Regulation, which replaced the Carbon Competitiveness Incentive Regulation (CCIR) in 2020. Under the TIER, an emission allocation for imported electricity, steam and hydrogen is factored into the above reported 'Allowances allocated', however the allocation is not aligned with methodology used to quantify Scope 2 emissions. The TIER program assigns material specific emission allocation factors that are to be used by all large emitters in the TIER program for imported electricity, steam and hydrogen. The mandated output-based allocation factors under TIER are unrelated to the Location or Market-based Scope 2 quantification methods reported in this submission. While the quantity of imported electricity and steam is verified for accuracy and completeness under the TIER program, the associated Scope 2 emissions as reported in the CDP submission are not assessed as part of the TIER verification process. As such, the 'Verified Scope 2 emissions' is assigned 0, even though the quantity of energy imports are verified.

The allowances allocated under the TIER program, as reported in this question, include Scope 3 emissions that are associated with carbon dioxide consumed onsite in the production of urea, as well as CO₂ exported for enhanced oil recovery (EOR). While these CO₂ exports are included in the 'Verified Scope 1 emissions' in this question, they are not included in the Scope 1 emission total reported in Section C6.1.

Three of four Alberta Nitrogen facilities had regulated emissions that were below their emission allowance.

Saskatchewan OBPS - ETS**% of Scope 1 emissions covered by the ETS**

4.5

% of Scope 2 emissions covered by the ETS

0

Period start date

January 1, 2020

Period end date

December 31, 2020

Allowances allocated

513,042

Allowances purchased

17,365

Verified Scope 1 emissions in metric tons CO₂e

464,317

Verified Scope 2 emissions in metric tons CO₂e

0

Details of ownership

Facilities we own and operate

Comment

Five out of six potash facilities had regulated emissions below their emission allowance.

C11.1c**(C11.1c) Complete the following table for each of the tax systems you are regulated by.****Argentina carbon tax**

Period start date

January 1, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

0.07

Total cost of tax paid

46,000

CommentCarbon tax cost is estimated based on a tax rate of US\$6/t CO₂e applied to liquid fuel consumption.**Canada federal fuel charge**

Period start date

January 1, 2020

Period end date

December 31, 2020

% of total Scope 1 emissions covered by tax

0.12

Total cost of tax paid

653,000

Comment

The Canadian federal fuel charge rate was CDN\$20/t CO₂e from Jan. 1 to Mar. 31, 2020 and rose to CDN\$30/t CO₂e beginning Apr. 1, 2020. The fuel charge covers Canadian TD&L, Retail and Corporate business units. Canadian Nitrogen and Potash operations are exempt from the fuel charge as their emissions are covered under the large emitter ETS programs (TIER in Alberta, OBPS in Saskatchewan).

C11.1d

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

Compliance under the Alberta Technology Innovation and Emissions Reduction (TIER) program is met through use of Emission Performance Credits (EPCs) or Offset Credits, or payment into the Alberta Climate Change and Emissions Management Fund (the Fund) at the carbon price of the reporting year. Nutrien annually receives some Emission Performance Credits through a credit transfer agreement with a third-party co-located cogeneration facility that provides utilities to the Carseland Nitrogen facility. Additional EPCs may be generated and banked for future use if a facility's emissions are below its output-based emission allocation. This was the case in 2020 for the Joffre, Redwater and Fort Saskatchewan facilities which generated emission performance credits that will be used to meet a portion of future compliance obligations for any of the Alberta nitrogen facilities. The Alberta TIER program limits the use of credits for meeting compliance obligations, requiring a portion of any compliance to be met by payment into the Fund. In 2020, Nutrien met 60% of the compliance obligation using EPCs with the remaining 40% met through payment into the Fund. Future compliance obligations are expected to be met utilizing credits at or near the 60% annual credit limit with Fund payment used to meet the remaining full compliance. In addition, future facility energy efficiency improvements will reduce the compliance obligation for regulated facilities, and increasing the amount of carbon dioxide captured and transferred to a third party for Enhanced Oil Recovery will provide Alberta-based offset credits that can be used to meet a portion of future compliance obligations.

The Saskatchewan OBPS credit system is currently under development by the regulator. Operations regulated under the Saskatchewan program are expected to have similar options to comply with the emission allowances as Alberta - energy efficiency / emission reductions where feasible, purchase of offset or performance credits, or payment into a government technology fund. The first compliance return with compliance payments will be submitted in Q4 2021.

C11.2

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

Yes

C11.2a

(C11.2a) Provide details of the project-based carbon credits originated or purchased by your organization in the reporting period.

Credit origination or credit purchase

Credit origination

Project type

Energy efficiency: industry

Project identification

The Joffre, Redwater and Fort Saskatchewan nitrogen facility emissions were below their output-based emission allocation under the Alberta Technology Innovation and Emissions Reduction (TIER) Regulation, resulting in an Emission Performance Credit for each tonne of CO₂e they were below their allowance. These facilities met their emission allowance as a result of being among the most energy efficient ammonia producers in the province with emissions below the provincial intensity-based benchmark. The credits are expected to be registered and serialized on the Alberta Carbon Registry in 2021 and can be used for meeting future compliance obligations.

Verified to which standard

Other, please specify

Alberta Technology Innovation and Emissions Reduction Regulation Standard for Validation, Verification and Audit

Number of credits (metric tonnes CO₂e)

52,520

Number of credits (metric tonnes CO₂e): Risk adjusted volume

52,520

Credits cancelled

No

Purpose, e.g. compliance

Compliance

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

No, but we anticipate doing so in the next two years

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

Yes, our customers

Yes, other partners in the value chain

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

Collaboration & innovation

Details of engagement

Run a campaign to encourage innovation to reduce climate change impacts

% of customers by number

0.02

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

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

Our 2030 Commitment is to launch and scale a comprehensive Carbon Program, empowering growers and our industry to accelerate climate-smart agriculture and soil carbon sequestration while rewarding growers for their efforts. In 2020, Nutrien launched a unique Carbon Program that is expected to drive a step change in agricultural sustainability and improved carbon management.

When fertilizers are applied to crops, they break down naturally as they are exposed to environmental factors. As a result, GHG emissions are released by these products (primarily N₂O from nitrogen fertilizer) into the atmosphere. For Nutrien, these emissions are significant as approx. 50% of the fertilizer we sell to our grower customers is nitrogen based and releases these emissions when applied to the soil. In our preliminary analysis, emissions related to the use of sold products represent up to 70% of our total Scope 3 emissions. We believe it's critical to minimize the impact our products have on the environment and we work closely with our growers to help them sustainably intensify crop production with investments in digital technology.

Nutrien is partnering with growers, value chain stakeholders, governments and NGOs to develop a Carbon Program that is designed to support the advancement of a carbon credit market for the agricultural industry through soil carbon sequestration and reduced GHG emissions. Soils naturally store carbon through biological process and growth of plant biomass. Human activities can either negatively affect this process (which results in carbon loss) or positively impact this process by improving carbon sequestration. One way to improve this process is to increase the level of organic matter in the soil, since soils with higher levels of organic matter can retain more water and nutrients, and also store more carbon.

Nutrien's Carbon Program is unique in several key areas:

- trust-based advisory planning & long-term relationships with the grower,
- grower specific "carbon recipes" leveraging Nutrien's proprietary practices & crop inputs while providing digitized crop planning from field data,
- on-farm agronomy support & advice,
- streamlined data collection & easy validation tied to our digital hub and analytic tools, and
- potential monetization for grower payout with Nutrien partnering & managing carbon credit sales within the value chain.

Impact of engagement, including measures of success

The ultimate measure of success will be the creation of monetizable carbon assets at scale that pays growers for every tonne of reduced and sequestered CO₂e to incentivize the adoption of sustainable agronomic practices.

Growers have the ability, through the use of best practices, to increase and maintain optimal levels of organic matter in their soil and optimize the application and efficiency of nitrogen fertilizer to reduce or sequester up to 1-2 tonnes of carbon per acre with potential for further increases with new technology over time.

Nutrien's Carbon Program has the ability to generate long-term value for grower customers by making each acre more profitable and developing an incremental revenue stream tied to sustainable farming practices, driving long-term agriculture sustainability leadership and building operational resiliency to satisfy rapidly evolving compliance and regulatory expectations. By supporting growers to adopt best practices, leverage digital technology (which can measure and

analyze impact) and use crop inputs that support sustainability, we can drive emission improvements throughout the entire agricultural value chain.

Key components include:

- Grower engagement: In 2021, we are conducting multiple program pilots in the US and Canada. We partner with key accounts to build and scale program functionality through collaboration. Our sustainability solutions pilots began in 2019.

- Digital hub development: Nutrien intends to develop a grower-specific “toolbox” on our digital platform, which will include features such as automated grower data collection, annual field planning sustainability analytics, carbon outcome measurement and streamlined monetization.

- Value chain partner outreach: Broad partner outreach is underway with strategic suppliers, downstream partners, NGOs, academic institutions, governments and execution partners.

- Methodology: Grower data collection will primarily use our Agrible® sustainability platform. Carbon credits will be generated using existing and under development protocols/frameworks to independently verify and validate carbon performance, leveraging proven agronomic modeling and soil sampling methods to generate high-quality assets.

- Carbon asset monetization and market development: Our intention is to create high-quality carbon assets that can be monetized in voluntary and compliance markets.

C12.1d

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

Nutrien’s global reach supports a broad base of value chain partners that creates a strong network capable of achieving global sustainability goals and objectives. As the world strives to transform our food system and in the spirit of SDG 17: Partnerships for the Goals, Nutrien encourages ongoing collaboration, sharing of information and pooling of resources for the generation of systems-based solutions.

Our Feeding the Future Plan outlines strategic sustainability priorities that support key transformations and address our most material environmental, social and governance (ESG) risks and opportunities. Sustainable agricultural production supports the global food system and enhances grower resilience and prosperity, and crop input management based on the 4R Nutrient Stewardship System (4Rs) is a key component. The system helps farmers around the world to meet their economic, social and environmental goals by applying regionally specific best management practices in the areas of nutrient rate, time, place and source. Through the 4Rs, farmers are able to sustainably intensify crop production, increasing yield without bringing more land into agricultural production, while reducing nutrient losses to the environment. The 4Rs support the SDGs to enhance food security, improve water quality, enrich soils, increase economic returns for farmers and build communities.

Case Study: Nutrien is a major sponsor of the 4R Solution Project, a collaboration between government, industry and industry associations to advance sustainable agriculture in Sub-Saharan Africa by incorporating the 4Rs into fertilizer management practices for more than 80,000 smallholder farmers (50% women). The program helps smallholder farmers in Ethiopia, Ghana and Senegal grow more nutritious and marketable crops, increase productivity and profit margins, and support improvements in the cooperative business structure. The increased profits can be used to expand farming operations and increase access to education, health care and a more stable and nutritious food supply. We participate in 4R Solution Steering Committee meetings which provide oversight and advise. This project aligns with Nutrien’s Feeding the Future Plan focus areas of Feeding the Planet Sustainably and Inclusive Agriculture, and our primary focus on UN SDG 2 Zero Hunger.

Project description: <https://4rsolution.org/about/>, as follows:

“**The Challenge:** Half a billion people live on small farms, most of which are in Sub-Saharan Africa. These small farms, of which the majority are managed by women, produce 80 per cent of food in developing countries, employ 62 per cent of the population, and generate 27 per cent of GDP. Three key issues faced by smallholder farmers are:

- (1) The limited quality of their production, resulting from depleted soils, unsustainable agricultural practices, especially fertilizer usage;
- (2) Poor post-harvest handling and;
- (3) Limited access to markets.

These challenges are even more intense for women farmers who are further constrained by limited and unreliable access to land, labor, financial services and training opportunities.

The Solution: Addressing these issues will help increase resilience, incomes, and food security, and reduce poverty for men, women and children. Smallholder farmers working through their own co-operatives will grow more, nutritious, and marketable crops, benefiting from better agricultural practices, especially fertilizer usage following 4R Nutrient Stewardship, a science-based fertilizer management program supported by Canada's fertilizer industry.

The Approach: The Co-operative Development Foundation of Canada and Fertilizer Canada will work in partnership with local governments, local non-profit organizations, agricultural input companies, research institutions, and smallholder farmers organized in co-operatives to:

- (1) Enhance sustainable production, using climate smart, best management practices in agriculture and increased value chain access and integration by women and men farmers in the targeted regions in Ethiopia, Ghana and Senegal
- (2) Enhance representation and influence of women in leadership positions & decision-making bodies, especially in co-operatives within targeted communities of Ethiopia, Ghana and Senegal
- (3) Increase integration of gender sensitive 4R principles in relevant standards and policies in Ethiopia, Ghana and Senegal.

Working together, smallholder farmers and agricultural extension workers will benefit from using improved agricultural practices, especially 4R Nutrient Stewardship. Individually, farmers will benefit from increased yields and access to markets while co-operatives will increase their business, production and handling capacity, sustainably consolidating these gains. Government and research institutions will engage in research and exposure programs to increase recognition of the benefits of using 4R globally."

C12.3

(C12.3) Do you engage in activities that could either directly or indirectly influence public policy on climate-related issues through any of the following?

- Direct engagement with policy makers
- Trade associations
- Funding research organizations

C12.3a

(C12.3a) On what issues have you been engaging directly with policy makers?

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
Cap and trade	Support with minor exceptions	Nutrien has engaged with Alberta Environment on the replacement of the Carbon Competitiveness Incentive Regulation ("CCIR") with the "Technology Innovation and Emissions Reduction Regulation" ("TIER") on January 1, 2020. We engage by meeting directly with policy makers, through written requests for submissions from departmental officials, via industry associations as direct representatives in meetings or by	We constructively engage with governments, either alone or through our industry associations, to help develop solutions to emerging regulatory or legislative issues. In addition to discussions on greenhouse gas regulations, we are actively engaging on discussions around how to sustainably supply the worlds growing food and fiber needs while minimizing environmental impacts on air, water quality and supply. Nutrien is partnering with growers, value

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
		<p>providing policy guidance to association representatives.</p>	<p>chain stakeholders, governments and NGOs to develop a Carbon Program that is designed to support the advancement of a carbon credit market for the agricultural industry through soil carbon sequestration and reduced GHG emissions. In terms of exceptions, the Government of Canada has signalled a gaseous Clean Fuel Standard, which contains significant uncertainties and could be duplicative to carbon pricing. Nutrien and industry associations are engaged with the federal government to provide feedback and to advise of technical limitations. Previous reservations about a carbon price in the Canadian context surrounded the treatment of process emissions. This has been addressed with the final TIER program in Alberta.</p>
<p>Other, please specify Sector-specific performance targets</p>	<p>Support with minor exceptions</p>	<p>Nutrien is continuing to take a leadership role in the fertilizer industry’s consultations with governments on fair and equitable product based emission performance standards in an effort to achieve a pragmatic and realistic compliance system that preserves the global competitiveness of the industry. To that end, Nutrien and the Canadian fertilizer industry are currently in discussions with the Government of Canada and relevant provinces on the industry’s GHG reduction target to help meet Canada’s commitment to global climate change objectives. We engage by meeting directly with policy makers, through written requests for submissions from departmental officials, via industry associations as direct representatives in meetings or by providing policy guidance to association representatives.</p>	<p>We constructively engage with governments, either alone or through our industry associations, to help develop solutions to emerging regulatory or legislative issues. In terms of exceptions, the adoption of industrial emission reduction programs in both Alberta and Saskatchewan has generally alleviated concerns surrounding the feasibility of targets that were previously set.</p>
<p>Other, please specify Canada Clean Fuel Standard</p>	<p>Support with minor exceptions</p>	<p>The Canadian federal government is currently conducting consultations with stakeholders to implement a federal Clean Fuel Standard that will apply to liquid fuels beginning in 2022 and gaseous fuels beginning in 2023. This standard will be designed to incentivize the development and</p>	<p>We constructively engage with governments, either alone or through our industry associations, to help develop solutions to emerging regulatory or legislative issues. The Canadian Government has yet to provide all the details or to begin consultation on the most</p>

Focus of legislation	Corporate position	Details of engagement	Proposed legislative solution
		use of lower carbon fuels. Nutrien is tracking development of the standard and will remain engaged through the consultation process both individually and as members of industry associations.	impactful fuel stream. In terms of exceptions, the Clean Fuel Standard which, in its current proposed form, contains significant uncertainties and could contain penalties duplicative to the carbon price. It is difficult to provide support for this program in its current state, however Nutrien and industry associations are engaged with the government to provide feedback.

C12.3b

(C12.3b) Are you on the board of any trade associations or do you provide funding beyond membership?

Yes

C12.3c

(C12.3c) Enter the details of those trade associations that are likely to take a position on climate change legislation.

Trade association

Fertilizer Canada

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association’s position

Fertilizer Canada is an industry association that represents manufacturers, wholesale and retail distributors of nitrogen, phosphate and potash fertilizers. Fertilizer Canada's vision is to play a leadership role in the global fertilizer industry in meeting the challenge of feeding the world with safe and nutritious food. Fertilizer Canada mission: As the unified voice of the Canadian fertilizer industry, promote safe, responsible, and sustainable, globally competitive fertilizer production, distribution and use. They strive to fulfil this mission by developing and implementing four key strategic initiatives: Issues and policy development; Knowledge development and education; Product stewardship; and, Industry services.

As per Fertilizer Canada in their July 12, 2018 press release, "Canada has the opportunity to become a world leader in reducing greenhouse gas emissions on-farms by helping growers become climate-smart. As the federal, provincial and territorial Agriculture Ministers are set to meet next week, they have the opportunity to develop a Pan-Canadian framework for the Canadian agriculture sector contributing to the low carbon economy and creating revenue from carbon pricing systems across the country. A national 4R Climate-Smart Protocol, also known as the Nitrous Oxide Emission Reduction Protocol, can achieve this. The 4R Climate-Smart Protocol is an easily adaptable, science-based solution for Canada’s growers to optimize nitrogen management in their cropping systems and quantifiably demonstrate carbon reductions. Implementing the 4R Climate-Smart Protocol, which incorporates 4R Nutrient Stewardship (Right

Source @ Right Rate, Right Time, Right Place®), increases economic performance for growers while reducing the input costs per unit of crop yield produced."

How have you influenced, or are you attempting to influence their position?

Nutrien participates on the Fertilizer Canada board and through various committees in an effort to help gain consensus. We believe that ongoing cooperation, sharing of information and pooling of resources leads to more informed, effective and lasting outcomes. Nutrien works with Fertilizer Canada regarding climate change by promoting the 4R Nutrient Stewardship System with our growers where possible, and further developing it through our active participation in projects such as the 4R Solution in Africa.

Trade association

The International Fertilizer Industry Association (IFA)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

The mission of the International Fertilizer Industry Association (IFA) is to act as the voice and the ear of the global fertilizer industry, which provides the crop nutrients that allow farmers everywhere to meet the world's growing food, feed, fibre and bioenergy needs in a sustainable manner. IFA serves its members, policy makers, farmers, the scientific community and the interests of the general public by: actively promoting the efficient and responsible production and use of plant nutrients to maintain and increase agricultural production worldwide in a sustainable manner; contributing to the formation of public policy relevant to crop nutrition and soil fertility management; Improving the operating environment of the fertilizer industry in the spirit of free enterprise and fair trade; collecting, compiling and disseminating statistics and other information relevant to the fertilizer industry; and, providing a platform for the discussion of all aspects of the production, distribution and consumption of fertilizers, their intermediates and raw materials.

As per IFA's website, IFA's position on climate change is that fertilizers play two essential roles in the fight against climate change. First, they forestall deforestation, as they allow for increased productivity on arable land. Second, they increase the carbon sequestration potential of agricultural soils by contributing to their building up of soil organic matter. In order to maximize carbon sequestration in soil organic matter, the fertilizer industry advocates for the integrated use of available plant nutrients (organic and inorganic) to improve crop and biomass production. Site-specific nutrient management practices optimize product efficacy and minimize nutrient losses to the environment. The 4Rs Principles are the core of these best management practices. When considering GHG emissions from fertilizer use, the focus should be on relative emissions of agricultural crops grown with the assistance of fertilizers. Zero losses are not an achievable goal given that we are dealing with natural biological processes. Whereas GHGs are emitted during fertilizer production and application, much greater GHG savings are made as a result of enhanced crop productivity through the use of fertilizers. The industry is also committed to reducing its production-related GHG emissions.

How have you influenced, or are you attempting to influence their position?

Nutrien participates in the IFA board and through various committees in an effort to help gain consensus. We believe that ongoing cooperation, sharing of information and pooling of resources leads to more informed, effective and lasting outcomes. Nutrien also works with IFA regarding climate change by promoting the 4R Nutrient Stewardship System with our growers where possible and participating in their benchmarking surveys.

Trade association

The Fertilizer Institute (TFI)

Is your position on climate change consistent with theirs?

Consistent

Please explain the trade association's position

TFI is the leading voice in the fertilizer industry in the United States, 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, farm bill and conservation programs to promote the use of enhanced efficiency fertilizer. TFI's mission is to represent, promote and protect the fertilizer industry. To accomplish its mission, TFI has established the following strategic initiatives:

- To represent, promote and protect a sound fertilizer industry through legislative and regulatory activities at the federal, state and local level.
- To effectively address issues impacting TFI member companies.
- To promote a favorable public image of the fertilizer industry and agriculture.
- To share knowledge about the fertilizer industry with members, government and the agriculture industry on issues relating to fertilizer and the farm economy.

As per TFI's website, "TFI supports climate policies that preserve the competitiveness of US fertilizer manufacturers in the world market. Natural gas plays a critical role in the production of fertilizers. It is the basic building block for nitrogen fertilizers—used to produce the primary ingredient of ammonia.

...

The modern method of producing nitrogen (the Haber-Bosch process) is fast approaching the limit of minimum energy consumption or the scientific end point of energy efficiency. Also, the greenhouse gas emissions from ammonia production are recycled by the fertilizer industry in urea production, beverages production and for use in enhanced oil recovery.

Furthermore, process gas emissions should be exempted from any future greenhouse gas reduction framework. The irreducible nature of emissions from the fertilizer manufacturing process must be considered in any climate change policy.

As energy consumers and producers of products that are essential to the nation's food production system, TFI believes an "all of the above" strategy would go far to help create a level playing field for all sources of energy and further encourage more efficiencies."

How have you influenced, or are you attempting to influence their position?

Nutrien participates on the TFI board and through various committees in an effort to help gain consensus. We believe that ongoing cooperation, sharing of information and pooling of resources leads to more informed, effective and lasting outcomes. Nutrien has representation and significant responsibility on many TFI Committees. We also participate in and contribute information to TFI's annual State of the Industry report, which is used to support and promote the fertilizer industry.

C12.3d

(C12.3d) Do you publicly disclose a list of all research organizations that you fund?

No

C12.3f

(C12.3f) What processes do you have in place to ensure that all of your direct and indirect activities that influence policy are consistent with your overall climate change strategy?

Climate change is a global challenge requiring global solutions. We are working internally, with government and with partners to lower greenhouse gas emissions across the full lifecycle of our products, from mining and manufacturing to field use. In 2020, Nutrien continued to advance its climate strategy, and we defined several key targets and identified numerous opportunities to reduce our emissions including the launch of the agriculture industry's most comprehensive Carbon Program. We enhanced our ESG management framework by incorporating the sustainability function under our corporate development and strategy portfolio, and we are planning further integration of ESG into our existing Enterprise Risk Management ("ERM") and operational processes. Nutrien's corporate strategy and sustainability strategy (includes climate) are managed and aligned by our Executive Vice President, Chief Corporate Development and Strategy Officer. As part of Nutrien's risk management approach, we have a Government & Industry Affairs ("GIA") Team and an active engagement strategy with governments and regulators that keeps us current on regulatory developments affecting our business, allowing us to anticipate new policies and put the Company in the best position for success while leveraging our industry association allies. We have an active Issues Management Team who monitor policy developments to inform the GIA team, and our climate action plan includes analyzing and managing the impact of potential regulatory changes. Nutrien's GIA group manages all direct and indirect activities that influence government policy. We actively participate in industry efforts to address the challenges of climate change and we engage with policy makers and stakeholders on these issues. Our action to manage climate change risks and opportunities benefits the environment, our industry and customers, and the long term profitability of our company. Nutrien participates in a wide array of organizations like the Sustainable Development Solutions Network, World Business Council for Sustainable Development, United Nations Global Compact, Field to Market, retail associations and other groups in which our employees participate. We also work with other like-minded stakeholders to form new entities, such as Ag for Life, to effect change. This widespread involvement contributes to a synergistic network of opportunities and more far-reaching awareness about the importance of agricultural issues, including climate change. These connections mobilize and motivate action at multiple levels, which is necessary to advance sustainability effectively.

C12.4

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

Publication

In voluntary sustainability report

Status

Complete

Attach the document

 ESG Report 2021.pdf

Page/Section reference

Governance: pages 25, 73-75
 Strategy: pages 15-19
 Risks & opportunities: pages 20-26
 Emissions figures: pages 17, 83-84
 Emission targets (2030 Commitments and ESG Performance Goals and Targets): pages 7-8
 Other (ESG management approach & materiality): pages 9-10
 TCFD Index: page 94

Content elements

Governance
 Strategy
 Risks & opportunities
 Emissions figures
 Emission targets
 Other, please specify
 ESG management approach & materiality, TCFD Index

Comment

Our 2021 ESG Report demonstrates how we are advancing ESG integration in our organization and bringing our purpose to life -- grow our world from the ground up. This report offers insight into the risks and opportunities most relevant to our organization. It also outlines how we develop and implement solutions and describes how we measure progress.

Publication

Other, please specify
 sustainability strategy document: Nutrien's Feeding the Future Plan

Status

Complete

Attach the document

 Feeding_The_Future_Plan.pdf

Page/Section reference

strategy: pages 2-4
 emission targets: pages 8-9

Content elements

Strategy
 Emission targets

Comment

We have developed strategic sustainability priorities that support key transformations and address our most material environmental, social and governance (ESG) risks and opportunities. This means innovating and improving to further create long-term value with measurable impacts and outcomes that drive three key areas: feeding the planet sustainably, environment and climate action, and inclusive agriculture.

Publication

In mainstream reports

Status

Complete

Attach the document

 Nutrien-2020-Annual-Report-Enhanced.pdf

Page/Section reference

strategy: pages 7-8, 11

risks & opportunities: pages 14, 58-60

Content elements

Strategy

Risks & opportunities

Comment

Publication

In mainstream reports

Status

Complete

Attach the document

 2020 Nutrien Annual Information Form.pdf

Page/Section reference

risks & opportunities: pages 19-21, 24-31

Content elements

Risks & opportunities

Comment

Publication

In mainstream reports

Status

Complete

Attach the document

 2021 Proxy Circular.pdf

Page/Section reference

governance: pages 23, 32-33
 executive compensation: pages 40-41, 45-52

Content elements

Governance
 Other, please specify
 executive compensation

Comment

Our approach to evaluation and compensation considers ESG factors. In 2020, we introduced three social responsibility metrics to our annual incentive scorecard to underline the importance of ESG. This included adding a component of leadership compensation that was tied directly to Nutrien's ESG performance during the year to demonstrate our focus on key ESG risks and progress across our sustainability strategic pillars.

Each NEO's annual incentive opportunity is determined by performance in up to four components, with an emphasis on key operating and financial metrics:

1. safety, health and environmental (SHE) performance at both the corporate and operating segment ("segment") levels;
2. Nutrien corporate performance reflecting results against both financial and strategic metrics that include Nutrien's environmental, social and governance performance;
3. Nutrien segment performance; and
4. individual performance.

Under "Individual Performance Achievements", a key result for our President & CEO was "significant progress made on sustainability, where ESG scores improved by approximately 20%, and launched Nutrien's carbon management and sustainable agriculture program." A key result for our Executive Vice President and CEO of Nitrogen and Phosphate was "progressed greenhouse gas emission reduction projects and emerging nitrogen production technologies, including low-carbon ammonia and nutrient use efficiency products."

Publication

In voluntary communications

Status

Complete

Attach the document

 Nutrien GHG Emissions - Scope 1 and 2 IMP.pdf

Page/Section reference

Please see Table of Contents, pages 2-3.
 Includes overview (organizational boundary and materiality threshold), quantification methodology, emission calculation methods, and data management.

Content elements

Other, please specify
 processes and procedures Nutrien uses to prepare a corporate-wide GHG emissions inventory for Scope 1 and Scope 2 emissions

Comment

This GHG Emissions Inventory Management Plan (IMP) describes the processes and procedures implemented by Nutrien to prepare a corporate-wide greenhouse gas (GHG) emissions inventory for Scope 1 and Scope 2 emissions following methods aligned with The Greenhouse Gas Protocol: A Corporate Accounting and Reporting Standard 1 (GHG Protocol) and its annexes. It also describes procedures established to deal with estimation of emissions when primary data is missing, as well as variable timeframes and equipment.

C15. Signoff

C-FI (Forward Looking Statements)

(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.

Forward-Looking Statements

Certain statements and other information included in this document constitute "forward-looking information" or "forward-looking statements" (collectively, "forward-looking statements") under applicable securities laws. All statements in this document, other than those relating to historical information or current conditions, are forward-looking statements, including, but not limited to: expectations regarding Nutrien's business and operations; expectations regarding Nutrien's climate strategy, including our greenhouse gas (GHG) emissions reduction targets, and the anticipated timing of the implementation and announcement thereof; expectations regarding our environmental performance and GHG emissions reductions from our facilities; and expectations regarding our climate change opportunities and the capital investment expectations in connection therewith; expectations regarding certain regulatory requirements and our compliance costs associated therewith. These forward-looking statements are subject to a number of assumptions, risks and uncertainties, many of which are beyond our control, which could cause actual results to differ materially from such forward-looking statements. As such, undue reliance should not be placed on these forward-looking statements.

All of the forward-looking statements are qualified by the assumptions that are stated or inherent in such forward-looking statements, including the assumptions referred to below and elsewhere in this document. Although we believe that these assumptions are reasonable, having regard to our experience and our perception of historical trends, this list is not exhaustive of the factors that may affect any of the forward-looking statements and the reader should not place an undue reliance on these assumptions and such forward-looking statements. Current conditions, economic and otherwise, render assumptions, although reasonable when made, subject to greater uncertainty. The additional key assumptions that have been made include, among other things, assumptions with respect to our ability to successfully complete, integrate and realize the anticipated benefits of our completed and future acquisitions and divestitures, and that we will be able to implement our standards, controls, procedures and policies at any acquired businesses to realize the expected synergies; that future business, regulatory and industry conditions will be within the parameters expected by us, including with respect to prices, margins, demand, supply, product availability, supplier agreements, availability and cost of labor and interest, exchange and effective tax rates; the completion of our expansion projects on schedule, as planned and on budget; assumptions with respect to global economic conditions and the accuracy of our market outlook expectations; our expectations regarding the impacts, direct and indirect, of the COVID-19 pandemic on our business, customers, business partners, employees, supply chain, other stakeholders and the overall economy; the adequacy of our cash generated from operations and our ability to access our credit facilities or capital markets for additional sources of financing; our ability to identify suitable candidates for acquisitions and divestitures and negotiate acceptable terms; our ability to maintain investment grade ratings and achieve our performance targets; and the receipt, on time, of all necessary permits, utilities

and project approvals with respect to our expansion projects and that we will have the resources necessary to meet the projects' approach.

Events or circumstances that could cause actual results to differ materially from those in the forward-looking statements include, but are not limited to: general global economic, market and business conditions; failure to complete announced and future acquisitions or divestitures at all or on the expected terms and within the expected timeline; the failure to successfully integrate and realize the expected synergies of future acquisitions, including within the expected timeframe; climate change and weather conditions, including impacts from regional flooding and/or drought conditions; crop planted acreage, yield and prices; the supply and demand and price levels for our products, services and programs; governmental and regulatory requirements and actions by governmental authorities, including changes in government policy (including tariffs, trade restrictions and climate change initiatives), government ownership requirements, changes in environmental, tax and other laws or regulations and the interpretation thereof; political risks, including civil unrest, actions by armed groups or conflict and malicious acts including terrorism; the occurrence of a major environmental or safety incident; innovation and cybersecurity risks related to our systems, including our costs of addressing or mitigating such risks; regional natural gas supply restrictions; counterparty and sovereign risk; delays in completion of turnarounds at our major facilities; gas supply interruptions; any significant impairment of the carrying value of certain assets; risks related to reputational loss; certain complications that may arise in our mining processes; the ability to attract, engage and retain skilled employees and strikes or other forms of work stoppages; the COVID-19 pandemic and its resulting effects on business and economic conditions; and other risk factors detailed from time to time in Nutrien reports, including our 2020 annual report dated February 18, 2021, our annual information form dated February 18, 2021 for the year ended December 31, 2020 and our first quarter 2021 interim report dated May 3, 2021, filed with the Canadian securities regulators and the Securities and Exchange Commission (SEC) in the United States.

The forward-looking statements in this document are made as of the date hereof and Nutrien disclaims any intention or obligation to update or revise any forward-looking statements in this document as a result of new information or future events, except as may be required under applicable Canadian securities legislation or applicable US federal securities laws.

C15.1

(C15.1) Provide details for the person that has signed off (approved) your CDP climate change response.

	Job title	Corresponding job category
Row 1	Executive Vice President, Chief Strategy and Sustainability Officer	Chief Sustainability Officer (CSO)

Submit your response

In which language are you submitting your response?

English

Please confirm how your response should be handled by CDP

	I am submitting to	Public or Non-Public Submission
I am submitting my response	Investors	Public

Please confirm below

I have read and accept the applicable Terms